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PharmaEssentia Corp.

2019 Annual Report

PharmaEssentia's Annual Report is available at http://mops.twse.com.tw

Published on May 8, 2020

1. **The name, title, contact number, and e-mail address of the Company's spokesperson or acting spokesperson:**

   Spokesperson: Ko-Chung Lin　　E-mail: ir@pharmaessentia.com
   Title: Chief Executive Officer　　Tel: 886-2-2655-7688
   Acting Spokesperson: Muriel Hwang　　E-mail: ir@pharmaessentia.com
   Title: Senior Manager　　Tel: 886-2-2655-7688

2. **The address and contact number of the Company's headquarters, branch offices, and factories:**

   Address of Headquarters: 13F, No. 3, Yuanqu Street, Nankang District, Taipei City
   Tel: 886-2-2655-7688
   Address of Taichung Branch Office: 3F, No. 28, Keya West Road, Daya District, Taichung City
   Tel: 886-4-2567-7880

3. **The name, address, website, and contact number of the agency handling share transfers:**

   Chinatrust Commercial Bank
   Website: http://www.ctbcbank.com
   Address: 5F, No. 83, Section 1, Chongqing South Road, Zhongzheng District, Taipei City
   Tel: 886-2-6636-5566

4. **The name of the certified public accountant who duly audited the annual financial report for the most recent fiscal year, and the name, address, website, and contact number of said person's accounting firm:**

   Name of Certified Public Accountant: Chien-Ju Yu, Li-Feng Lin
   Name of Accounting Firm: Ernst & Young　　Address: No. 333, Section 1, Keelung Rd, Xinyi District, Taipei City
   Website: http://www.ey.com/tw/zh_tw/home　　Tel: 886-2-2757-8888

5. **The name of any exchanges where the company's securities are traded offshore, and the method for accessing information on said offshore securities:** None.
6. **The Company's website:** http://www.pharmaessentia.com

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Letter to Shareholders

Dear shareholders,

First of all, we wish to thank all of you for your years of love and support. The following is a summary of our business achievements in 2019 and the business plan for 2020:

I. 2019 Business Report

(1) Implementation Results of the Business Plan

On February 15, 2019, the European Medicines Agency (EMA) of the European Union (EU) granted a polycythemia vera (PV) license to Besremi (ropeginterferon alfa-2b), which was developed by PharmaEssentia (hereinafter "the Company" or "we"). This drug was listed under prescription insurance coverage in Germany and Austria on September 15, 2019, with 250 mcg(μg)/0.5 mL priced at EU€2,778.26. Later, the Danish Medicines Agency also published the price of Besremi, namely EU€3,178.56 (worth Kr. 23,623.05) per 250 mcg(μg)/0.5 mL. In 2020, the marketing program in Europe further expanded because members of the EU are expected to approve the pricing of Besremi. Other non-EU countries such as Switzerland are also likely to grant a license for Besremi and its pricing.

Regarding PV license application in the US, the US FDA confirmed with us that Besremi requires no Phase III clinical trial in a meeting held in April 2019. In the two pre-biologic license application (pre-BLA) meetings held on August 28 and September 4, 2019, the FDA confirmed that the BLA submission can proceed if we submit the clinical trial data for EMA licensing and the results of assessments using indicators requested by the FDA. We sent the BLA documents for ropeginterferon alfa-2b (P1101) to the FDA on March 13, 2020 (GMT −4) and were notified in the afternoon of March 15 (March 16 in Taiwan; GMT +8) that the documents had been received. Concurrently, the Company applied for a priority review because of P1101's Orphan Drug Designation for PV indications granted by the US FDA in 2012 and the demand of fulfilling unmet medical needs. If the priority review is approved, the review time is expected to be shortened from 10 to 6 months. The Company can then acquire US drug approval by Q4 2020 at the earliest. According to the approval processes, the FDA will first send the received documents to corresponding departments to have the data integrity checked. Generally, the application enters the substantive review stage 60 days after document submission; meanwhile, the approval of a priority review shall be notified altogether.

Regarding PV license application in Japan, we have reached an agreement with Japan's Pharmaceuticals and Medical Devices Agency (PMDA) through multiple meetings, and the Company is allowed to conduct a bridging, two-phase clinical trial on 30 Japanese patients. This trial is expected to be completed within 2 years.

Concerning PV license application in Taiwan, we applied to the Taiwan Food and Drug Administration (TFDA) for a priority review of new-drug registration in June 2019, which was approved on July 10. The registration of Besremi can be processed through the priority review mechanism, which reduces the time for drug licensing from 360 to 240 days, thereby accelerating the launch of Besremi. This mechanism helps Taiwan to become the first country

to benefit from PV drugs.

In terms of PV licensing in China, the Company was approved by China's National Medical Products Administration (NMPA) to conduct a Phase I clinical trial of PV. After the trial is completed, we plan to submit the Phase I results and Phase-III PROUD/CONTI-PV results to the NMPA for PV license approval. We hope to be granted the license or be approved to perform a small-scale bridging trial prior to the license application.

Phase-III clinical trials of our ropeginterferon alfa-2b (P1101), aimed at treating essential thrombocythemia (ET), have been approved by multiple institutions worldwide, namely the FDA in September 2019, the NMPA in November 2019, and the TFDA in January 2020. The license application of this ET medicine is considered a multinational, multicenter Phase-III project, in which the US, Taiwan, South Korea, Japan, and China have participated. The project is estimated to be completed in 2–3 years, after which the license applications can be submitted to said participating countries.

(2) Budget implementation status

Unit: NT$1,000

	2019 Budget (A)	2019 Actual amount (B)	Difference between budget and actual amount (B − A)
Operating revenue	197,322	305,692	108,370
Operating costs	(107,208)	(61,703)	45,505
Gross operating income (loss)	90,114	243,989	153,875
Operating expenses	(2,670,704)	(1,093,212)	1,577,492
Net operating income (loss)	(2,580,590)	(849,223)	1,731,367
Nonoperating income and expenses	20,997	7,079	(13,918)
Earnings before interest and taxes (loss)	(2,559,593)	(842,144)	1,717,449
Net income (loss)	(2,559,593)	(842,994)	1,716,599
Other comprehensive income	-	926	926
Total comprehensive income	(2,559,593)	(842,068)	1,715,525

(3) Analysis of income, expenditure, and profitability

Since obtaining PV licenses in Europe in 2019, we have shipped goods to AOP Orphan Pharmaceuticals (hereinafter "AOP"), and thus the Company has seen substantial revenue growth. However, in the biotechnology industry, the cost of drug development is considerably high for a new pharmaceutical company. Consequently, our overall business is still operating at a loss. In brief, the audited operating revenue, net operating income (loss), and total comprehensive income (loss) in 2019 were NT$305,692K, NT$849,223K, and

NT$842,994K, respectively, equivalent to a loss of NT$3.85 per share.

(4) R&D status

1. 2019 R&D employees and expenses

Unit: NT$1,000

Item/Year		2019
R&D Expenses	Operating revenue (A)	305,692
	R&D expenses (B)	639,575
	Total number of employees (C)	202
	Total number of R&D employees (D)	56
	Ratio of R&D expenses to revenue (B/A)	209%
	Ratio of R&D employees to total employees (D/C)	27%

2. PharmaEssentia is a new-drug development company in the biotechnology industry. In 2020, the Company initiated a multinational, multicenter, Phase-III project dedicated to ET drug development. In addition, the Company continues to invest in various R&D projects. R&D expenses are estimated to account for more than 80% of its operating revenue in 2020.
3. Recent achievements and R&D results
   - The Taichung plant has been awarded the GMP certification by the EMA and Taiwan's Ministry of Health and Welfare.
   - The Taipei pilot production laboratory has been awarded the GMP certification by the EMA.
   - Besremi® (P1101) has received approval for marketing authorization application (MAA) granted by the EMA.
4. Patent applications results in 2019

Issue	Country/organization	Patent Title	Patent Number
February 28, 2019	Argentina	Peptide-Polymer Conjugates	AR072850 B1
June 19, 2019	Malaysia	Therapeutic Use of Protein-Polymer Conjugates	MY-169961-A
November 1, 2019	Gulf Cooperation Council	Therapeutic Use of Protein-Polymer Conjugates	GC0010461

1. Summary of the 2020 Business Plan

(1) P1101: For treating hematological diseases

- P1101 for treating PV: We acquired the EMA license for P1101 in February 2019. We also sent the application to the TFDA in Taiwan on July 31, 2019, and expect to have the license granted in April 2020. After communicating with the FDA, the Company received approval to use European Phase-III human clinical trial data and documents for FDA license

application. The Company plans to submit the BLA application to the FDA in early 2020, and the PV license is expected to be granted in 2020. Furthermore, we have expanded PV clinical research to the Asia region and received approval from Japan's PMDA and China's NMPA for Phase I human clinical trials. Currently, the PMDA stipulates that as long as the safety and effectiveness of a 1-year treatment on 30 Japanese patients are proven, we shall be allowed to apply for a license. The NMPA has similar requirements, which accelerates the marketing authorization of this PV-treatment medicine.

- P1101 for treating ET: Both ET and PV are rare hematological diseases. The Company's P1101 for ET treatment has received the US FDA's orphan drug designation and approval. P1101 will be subjected to multicenter Phase-III clinical trials in the US, Taiwan, Japan, China, and South Korea to observe its therapeutic effect on patients with ET who have received hydroxyurea (HU) treatment but have not achieved the expected treatment results or those whose treatment has failed. The Company gained approval for such trials from the US and China in 2019 and from Taiwan in early 2020. We expect to begin Phase-III clinical trials in the first half of 2020.

(2) P1101 for treating chronic hepatitis

- Hepatitis C genotype 2 (HCV GT2): We obtained approval from the TFDA for a Phase-III clinical trial in 2015 and completed participant recruitment in Q1 2016. The South Korean Ministry of Food and Drug Safety (MFDS) also approved a Phase-III trial. To accelerate participant recruitment, we managed to receive approval from the NMPA for a Phase-III trial in December 2018, for which the recruitment was completed in August 2019. These Phase-III human clinical trials are estimated to be completed in 2020.

(3) Cancer

- Oraxol for treating breast cancer: Oraxol, a cancer drug jointly developed with Athenex in the US, has also completed a safety bridging study in Taiwan. In the future, applications for drug licenses will be filed by combining Athenex's South American Phase-III clinical trial data and pairing them with the evaluation strategies of the US, United Kingdom, Australia, and New Zealand. Athenex plans to submit the license application to the US FDA in Q1 2020 and we will subsequently apply for the Taiwanese license in Q2 2020.
- Anti-PD-1 antibody: The anti-PD-1 antibody is an immune checkpoint inhibitor that can be used to treat melanoma, non-small-cell lung carcinoma, advanced kidney cancer, and other malignant tumors, and it has greatly improved the survival rate of patients with cancer. However, the drug is currently considered expensive by most families. The Company aims to employ its biopharmaceutical R&D experience, production efficiency, and quality control expertise to develop a high-quality and stable anti-PD-1 antibody, and then develop a monoclonal antibody new-drug development platform to reduce production costs and the financial burden of patients. We expect to conduct pilot small-scale mass production in 2019 and perform animal tests and file an investigational new drug (IND) application in 2020.
- KX-01 for treating psoriasis: This product was granted a license by Athenex in the US; the plan is to develop a topical dermatological product in dosage form for psoriasis indications. Phase I clinical trials commenced in Q4 2015. Currently, the Company is in the third stage of Phase I (i.e., determining maximum doses), and completed the stage in 2019. The licensor company (Athenex) has completed Phase-III clinical trials of actinic keratosis (AK)

in the US and begun NDA. We will apply for the Taiwanese license in the first half of next year. The optimal treatment time for using KX01 to treat psoriasis under the maximum dose must be determined; based on the results, the Company will determine its Phase-III clinical trial plans.

(4) Expected sales and references

P1101 for treating PV received approval from the EU's EMA in February 2019, indicating that the Company's business has transformed from processing clinical orders to processing consumer orders. AOP has begun consumer sales in Austria and Germany. Later, the Company intends to negotiate insurance coverage with other EU members. The supply of P1101 is expected to increase steadily. Future sales are estimated according to changes in market supply and demand, drug introduction to hospitals, and national healthcare policies, along with other factors. In addition to drug sales, the Company can create operating revenue by charging royalties calculated based on specified proportions of net sales. The PV license in the US is expected to be granted in Q4 2020, after which consumer sale of the drug can be permitted.

(5) Essential production and marketing policies

- We aim to actively increase the visibility of Besremi globally, train highly skilled professionals in subsidiaries, and smartly use resources to become familiar with local regulations and medical needs. Said plans enable us to apply for local drug licenses and health insurance grants provided by governments. Additionally, we strive to maintain great relationships with opinion leaders and hematologists in various hospitals, obtain priority review for PV license applications in various countries, shorten the licensing time, and accelerate product launch.
- The Company continues to promote its active pharmaceutical ingredient (API) production plant using protein-related techniques to optimize and mass produce new process technologies for commercial use. Therefore, the production efficiency can be enhanced and costs can be reduced.
- The ampoule manufacturing plant in Taichung was officially opened. The plant complies with PIC/s GMP regulations on ampoule production. The plant has effectively connected the upstream and downstream manufacturing companies together and helps complete the production line. In the future, the globally sold P1101 ampoules can be produced and supplied by Taiwan, thereby achieving the vision of global marketing.
- We expect to receive drug licenses in Taiwan and the US this year. Accordingly, marketing strategy development, application for drug pricing approval, and planning of the supply chain system must be completed.

2. Future development strategies

(1)Business plans

We aim to apply for a PV drug license from the US and a PV drug license and orphan drug license from South Korea. The PV license from the Taiwanese government is expected to be granted in Q2 2020. Regarding clinical trials, the Company expects to complete trial applications in South Korea and Japan for Phase-III trials of P1101 in ET treatment.

Concurrently, Phase-III ET trials will be conducted in the US, Taiwan, and China. Furthermore, small-scale PV bridging trials are scheduled to be performed in Japan and China. Oraxol for treating breast cancer and KX-01 for treating AK have been authorized to enter hospital markets. We plan to apply for TFDA licenses for these two drugs in the second half of 2020.

(2)Marketing plans

The Company's drug development has undergone R&D, clinical trials, and production, and has now entered the marketing stage. As mentioned, we expect to be granted PV licenses from the TFDA in Taiwan in the first half of 2020 and the US FDA by the end of 2020. The Company has recruited marketing teams in Taiwan and the US, particularly those for the US market. Our marketing teams have completed their market research and developed market entry plans. Next, we will cooperate with suppliers and develop a market–distribution portfolio. Our US subsidiary will expand its sales, marketing, and medical teams to build comprehensive operations.

3. Influences from external competition, regulations, and the overall operating environment

Since its founding, the Company has followed its original mission of focusing on the development of new drugs and investing resources in various fields, such as innovation and invention, the development of clinical trials, plant building and drug production, and the acquisition of drug licenses for product launch in international markets. We anticipate that through comprehensive vertical integration, we can realize R&D, produce in Taiwan, conduct clinical trials, and generate sales, in addition to producing new drug products that are in line with European, US, and international standards. Therefore, since the establishment of the pilot plant at the Taichung biological agent plant in 2012, the Taichung plant has undergone pilot mass production, TFDA inspection, and validation, as required for drug license applications. Furthermore, in early 2018, the Company's Taichung plant and Taipei laboratory received GMP certification from the EMA, becoming Taiwan's first biopharmaceutical company for new-drug development to receive EMA certification. In December 2018, we also obtained a positive opinion from the Committee for Medicinal Products for Human Use (CHMP) recommending marketing authorization and received the drug license from the EMA in February 2019. The Company will structure its supply chain based on global marketing planning and sales needs to truly achieve the vision of "anchoring in Taiwan and engaging with the world." In addition, the indications of our P1101 for treating PV and ET are structured under orphan drug-related bills; hence, compared with other biotech companies, we have considerable advantages in expanding R&D patent marketing operations for orphan drugs.

In addition to patent portfolios of the Company's self-developed P1101 technology platform, for outsourcing and cooperation, we continue to use external resources and engage in rigorous selection to foster long-term collaborations with excellent manufacturers; build supply chains and sales channels; and hire local international professionals to form core teams through strategic alliances to ensure clinical trial quality. In addition, we comply with local clinical trial regulations. These measures reduce differences between countries and enable the Company to be informed of local regulatory conditions in order to achieve smooth control over projects' progress and quality. Therefore, regardless of R&D technology innovations or matters

concerning marketing and the efficiency of operation resource integration following drug launch, the Company shall focus on long-term sustainable development, fulfill its social responsibilities, and serve in the best interests of its shareholders.

Chairman: Ching-Leou Teng President: Jack Hwang Accounting Manager: Snow Chang

Company Profile

1. Date of Establishment

PharmaEssentia (hereinafter also referred to as "the Company") was founded on May 9, 1990 and began operations in October 2003. The Company is committed to developing new drug products, with Taiwan as the base where new drugs are innovated, invented, tested, produced, developed, and distributed across European and American countries to integrate with international markets.

2.Company History

Year	Important Milestones
1990	• The Company was established, with paid-in capital of NT$1,000,000.
2003	• Received additional capital of NT$500,000,000, raising paid-in capital to NT$501,000,000.
2004	• Awarded the Small Business Innovation Research (SBIR) grant by the Department of Industrial Technology (DOIT), Ministry of Economic Affairs (MOEA), for the first stage of the Company's PEC002 drug development.
2005	• Awarded the SBIR grant by the DOIT for the second stage of the Company's PEC002 drug development.
2006	• Awarded a grant by Taiwan's MOEA for a project on the development of third generation Ropeginterferon alfa-2b (P1101). • Invited to present new drug R&D results at the BIO International Convention. • Received a drug permit for Gemflor (Gemcitabine; GCTB) from Taiwan's health regulatory authorities. • Awarded the 4th National Innovation Award by the Institute for Biotechnology and Medicine Industry (IBMI). • Received additional capital of NT$489,000,000, raising paid-in capital to NT$990,000,000.
2007	• Awarded the SBIR grant by the DOIT for a project on PEG-EPO (pegylated erythropoietin) drug development. • Received the Industry Innovation Award in Recognition of Achievement - Product/System Innovation Category from the DOIT.
2008	• Designated a biotech and new biopharmaceutical company by the MOEA in accordance with the Act For The Development of Biotech and New Pharmaceuticals Industry. • Received additional capital of NT$92,500,000, raising paid-in capital to NT$1,082,500,000.
2009	• Granted US patent for stereoselective synthesis of β-nucleosides of Gemcitabine. • Obtained TFDA approval for a P1101 Phase I clinical trial (MOHWFDA No. 0980303443 on June 11, 2009). • Obtained U.S. FD approval for a P1101 Phase I clinical trial (IND 105,653, 7/20/2009).

Year	Important Milestones
	• Obtained BGTD approval for a P1101 Phase I clinical trial in Canada (control # 131397, 8/14/2009). • Licensed P1101 to AOP Orphan Pharmaceutical (AOP) of Austria for clinical trials of P1101 in the treatment of rare hematologic diseases in European regions and obtained a permit to sell P1101. • Awarded an SBRI grant by the DOIT for a project on the research and development of new processes for anti-cancer GCTB and pilot production. • Awarded an SBRI grant by the DOIT for a project on the development of long-acting interferon beta drugs. • Initiated a P1101 Phase I clinical trial in Montreal, Canada. • Received additional capital of NT$126,485,000, including NT$58,571,000 in capital contributions by claims, raising paid-in capital to NT$1,208,985,000.
2010	• Awarded the 7th National Innovation Award - Corporate Group/R&D Technique Category by the IBMI. • Awarded the 2010 Industry Innovation Award in Recognition of Achievement by the DOIT. • Won Silver Award - Pharmaceutical Category in the 2010 Incentive Reward for Research and Development of Pharmaceutical Technology. • Obtained US FDA Drug Master File (DMF) (No.24278) for GCTB API (active pharmaceutical ingredients). • Received a TFDA drug permit for GCTB API. • Concluded P1101 Phase I clinical trial in Canada; 48 subjects completed the trial. • Initiated a P1101 Phase I/II clinical trial for treatment of PV (polycythemia vera) in Europe.
2011	• Granted TFDA approval to conduct a P1101 Phase II clinical trial for treatment of hepatitis C (Genotype 1) (FDA No. 1005016854 dated May 17, 2011 and FDA No. 1015061146 dated February 4, 2013). • P1101 received Orphan Designation from the EMA (European Medicines Agency) (127th plenary meeting of Committee for Orpha Medicinal Products, 10/5/2011). • Won Award of Excellence – Biomedical Group in the 2011 Taiwan Biomedical and Biotech Agriculture Contest. • AOP presented Phase I/II interim data of P1101 for PV in Europe at the America Society of Hematology (ASH) Annual Meeting and Exposition.

Year	Important Milestones
2012	• P1101 obtained US patent for N-terminal modified interferon alpha. • P1101 obtained US patent for protein–polymer conjugates. • GCTB obtained US patent for novel synthesis of β-nucleosides. • GCTB obtained an R.O.C. patent for stereoselective synthesis of β-nucleosides. • Long-acting PEG-EPO obtained a US patent for protein–polymer conjugates. • P1101 received Orphan Designation from the US FDA (#12-3670, 4/2/2012). • Granted TFDA approval to conduct a P1101 Phase II clinical trial for the treatment of hepatitis C (Genotype 2) (FDA No. 1015013110 dated April 19, 2012 and FDA No. 1025015443 dated May 17, 2013). • Completed plant construction for new protein drugs manufacturing in Taichung and commenced pilot production for validation in November. • AOP presented Phase I/II clinical trial data of P1101 for PV in Europe at the ASH Annual Meeting and Exposition.
2013	• Received NT$252,015,000 in capital contributions by claims, raising paid-in capital to NT$1,461,000,000. • Production plant for protein new drugs in Taichung obtained a TFDA GMP certificate on April 18. • P1101 obtained an R.O.C. patent for protein–polymer conjugates. • P1101 obtained patents for protein–polymer conjugates from nine member states of the Eurasian Economic Union. • Received NT$220,000,000 in cash, raising paid-in capital to NT$1,681,000,000. • Received NT$70,000,000 in cash, raising paid-in capital to NT$1,751,000,000. • Initiated a Phase III clinical trial of P1101 for PV in Europe. • Won the Taipei Biotech Award – Gold in the 2013 R&D Innovation Award. • Received NT$17,520,000 from subscription of employee stock options, raising paid-in capital to NT$1,768,520,000. • Won Gold Award – Biomedical Group in the 2013 Taiwan Biomedical and Biotech Agriculture Contest. • Received NT$100,000,000 in cash, raising paid-in capital to NT$1,868,520,000. • Held a Pre-IND meeting with the US FDA to talk about Phase III clinical trial of P1101 for PV treatment in the US. • AOP and multiple hematologic specialists presented the results of the P1101 PV clinical trial in Europe and other groundbreaking basic study results at the ASH Annual Meeting and Exposition. • Listed as a public company by the Securities and Futures Bureau, Financial Supervisory Commission (stock code: 6446).
2014	• Received NT$23,302,000 from subscription of employee stock options, raising paid-in capital to NT$1,888,828,000. • Listed on the Emerging Stock Market by Taipei Exchange. • P1101 obtained Australia patent for protein–polymer conjugates. • P1101 for MF (myelofibrosis) treatment received Orphan Designation from the US FDA (#14-4244, 4/1/2014). • P1101 for ET (essential thrombocythemia) treatment received Orphan Designation from the US FDA (#14-4245, 4/1/2014).

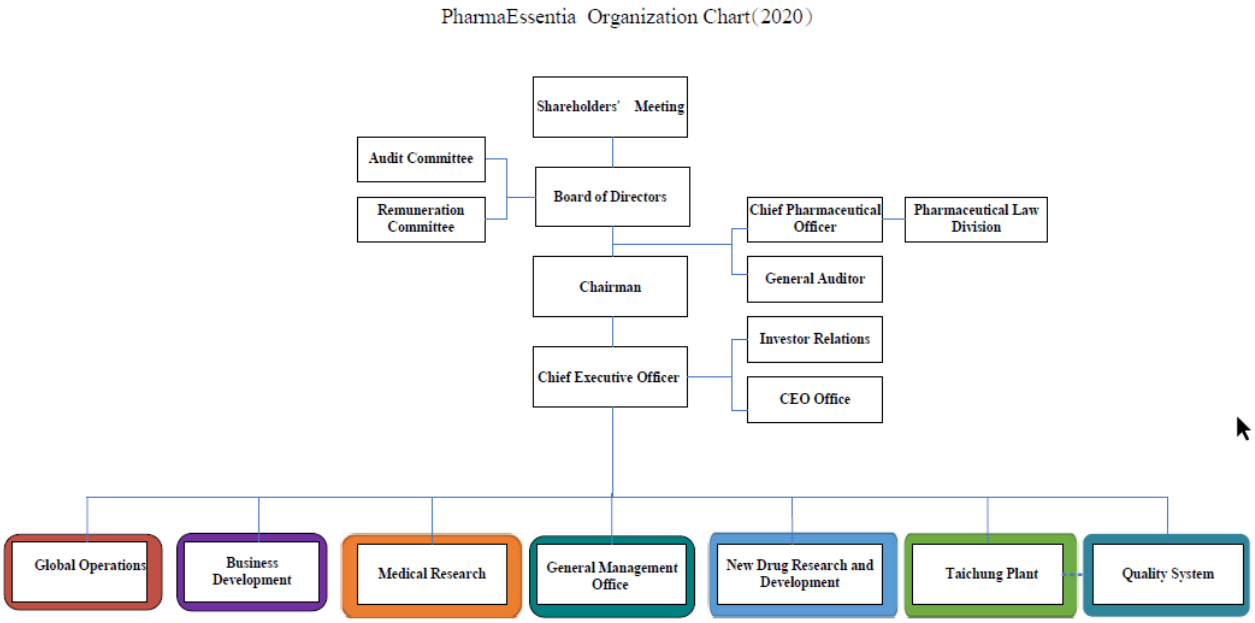
Year	Important Milestones
	• Completed recruitment in Taiwan for a Phase II clinical trial of P1101 hepatitis C GT2 treatment. • Received notice of IND (investigational new drug) acceptance from the US FDA for Phase III trial of P1101 for ET. • Awarded the 11th National Innovation Award - Corporate Group/Innovative Product Category by the IBMI.
2015	• Received US FDA approval to conduct a clinical trial of P1101 on primary myelofibrosis in the US. • Completed the recruitment of a Phase III study (PROUD-PV) of P1101 for the treatment of PV. • Received TFDA approval to conduct a Phase III clinical trial of P1101 for HCV GT2. • Obtained a "successful and marketable opinion on science and technology business and product or technology development" issued by the Industrial Development Bureau, MOEA. • Submitted an IND application to the TFDA in December 2014 after obtaining the licensing rights from Kinex Pharmaceuticals for the development of the new drug KX01 in Greater China and Southeast Asian territories, and received approval from the TFDA on May 27, 2014. • Won the MOHW & MOEA Pharmaceutical Technology Research and Development Award and Gold Award – Pharmaceutical Category. • Received NT$14,004,000 from subscription of employee stock options, raising paid-in capital to NT$1,902,832,000.
2016	• Collaborated with the Hematology Society of Taiwan to jointly organize "MPN Asia," the 1st Annual International Symposium on Myeloproliferative Neoplasms. • Received MFDS approval to conduct a Phase III clinical study of P1101 for HCV GT2 treatment. • Received TFDA approval to conduct a clinical trial protocol (IND) for Oraxol (HM30181 tablets 15 mg/Paclitaxel capsules 30 mg) in breast cancer treatment. • Publicly listed on the Taipei Exchange. • AOP presented the pivotal study results of P1101 in PV treatment at the 2016 ASH Annual Meeting and Exposition. • P1101 obtained a South Korea patent for protein–polymer conjugates. • Received NT$14,004,000 from subscription of employee stock options, NT$23,708,000 from restricted employee stocks, and NT$250,000,000 in cash, raising paid-in capital to NT$2,184,601,000.
2017	• Established the subsidiaries PharmaEssentia Japan KK and PharmaEssentia USA Corporation.. • Received TFDA approval to conduct a registration trial of the concurrent use of Oraxol and Ramucirumab Solution in the treatment of advanced gastric and esophageal cancer. • Hosted the MPN Asia 2nd Annual International Symposium on Myeloproliferative Neoplasms in Japan. • Received US FDA approval for Compassionate Use of P1101 for treatment of PV patients stably controlled on Pegasys. • The Company's P1101 was listed in Priority Review by the CFDA.

Year	Important Milestones
	• Received approval from the MOHW for the compassionate use of P1101 in patients with persistent MF and ET. • The Company's European partner AOP Orphan submitted an application to EMA for permission to sell the Company's P1101 on the market. • The Company's strategic partner AOP presented the CONTI-PV clinical result of P1101 for PV treatment at the 2017 ASH Annual Meeting and Exposition. • Received NT$5,649,000 from subscription of employee stock options and cancelled NT$(2,954,000) in restricted employee stocks, raising paid-in capital to NT$2,187,208,000.
2018	• PharmaEssentia's Taichung Plant received a GMP certificate approved by the EMA and Taiwan's MOHW. • PharmaEssentia's Taipei Laboratory received a GMP certificate approved by the EMA. • TGA permitted a Phase I trial for P1101 in Japan. • Filed anti-arbitration injunction with the International Chamber of Commerce (ICC) for the AOP arbitration case. • Received CFDA approval to conduct a clinical trial of P1101 in China. • CHMP recommended granting marketing authorization for Besremi® (P1101) by AOP. • Received CFDA approval to conduct an international multicenter clinical trial of P1101 for chronic hepatitis C GT2 in China. • Received NT$5,750,000 from subscription of employee stock options and cancelled NT$(2,109,000) in restricted employee stocks, raising paid-in capital to NT$2,190,849,000.
2019	• The EMA granted marketing authorization application (MAA) for AOP's P1101 (Besremi®) on February 19. • Received TFDA approval to conduct a registration trial of the Company's P1101 (injection 500 μg/mL). • Received meeting minutes of face-to-face discussion with the US FDA on PV treatment. • Received approval from the MOHW to conduct a registrational trial of Oraxol for prostate cancer treatment. • EMA website announced AOP's withdrawal of orphan designation for Besremi® for PV treatment.
2020	• Clinical trials for registration and market approval of the use of our company's Ropeginterferon alfa-2b (P1101) Injection 500 μg/mL for essential thrombocytosis (ET) has been approved by the Ministry of Health and Welfare of Taiwan. • Biologics license application (BLA) completed with the US FDA for use of P1101 in polycythemia vera (PV) indication. • GMP and GDP certification received from the Taiwan Ministry of Health and Welfare for the Taichung subsidiary company's new production plant. • Passed the New Drug Application review from the Taiwan Ministry of Health and Welfare for use of P1101 in treating adult patients with PV and asymptomatic splenomegaly indication.

Corporate Governance

1. Organizational System

1.1Organization Chart



1.2 Major Department Functions

Department	Functions
CEO	1. Execute policies and major plans resolved by the Board of Directors. 2. Establish a group vision, seek development opportunities, and build organizational power to realize the Company's vision. 3. Collate and stipulate the group's global operation plans as well as policies and strategies for the development of regional operations. 4. Develop various resources and seek a market niche to devise future mid-/long-term development plans. 5. Supervise and manage the various plans made and goals achieved by the Company.
Global Operations	1. Collate and stipulate short-/mid-/long-term strategies for global business operations to develop new drug markets in different countries. 2. Conduct market trend assessment and development planning. 3. Plan and conduct product commercialization management. 4. Plan technology transfer and product authorization. 5. Vie for international strategic partners.

Department	Functions
Operations in Taiwan	1. Develop and cultivate the market in Taiwan and plan operational strategies and goals for Taiwan. 2. Plan and implement mid-/long-term operational plans for Taiwan. 3. Promote key academic research collaboration and supervise technology development programs for industries. 4. Supervise and manage the various plans made and goals achieved by various units.
New Drug R&D	1. Screen for and assess candidate drugs, research and develop dosage/formulas, and develop drug products. 2. Evaluate in-vitro screening methods and build animal assessment models (primarily outsourced). 3. Conduct small mass production of candidate drugs for early toxicological or animal testing requirements. 4. Transfer technology to GMP (good manufacturing practice) production department (or outsourced GMP manufacturer) for mass production. 5. Ensure that product does not infringe upon patent and apply for patent. 6. Develop, verify, and validate drug molecular analysis methods. 7. Characterize and identify product purity and impurity structure. 8. Assess and introduce new technologies, improve analytical methods, and transfer analytical techniques. 9. Manufacture, identify, and analyze the activities of new antibody drugs.
Medical Research	1. Plan clinical trial protocols, compile and submit clinical trial protocols for review, select study center and investigators, and assess and select a contact research organization (CRO). 2. Conduct clinical trials and coordinate with institutional review boards (IRBs), the CRO, medical institutions, clinical study centers, study investigators, and researchers to ensure trial quality and progress. 3. Track clinical trial progress, write up reports on the adverse reactions of the studied drug, report on statistical analysis of study results, and study reports, as well as communicate with relevant regulatory units in Taiwan and overseas. 4. Plan product medical strategies, interact and communicate with external academic experts, and launch academic events for the medical community. 5. Assist with application for technology development programs.

Department	Functions
Taichung Plant	1. Conduct process development and feasibility study. 2. Conduct process amplification, improvement, and technology transfer. 3. Synthesize drugs and conduct small mass production for early toxicological or animal testing requirements. 4. Apply for patents and assist with completing drug development and market introduction. 5. Plan and conduct GMP biopharmaceutical product production and manufacturing operations. 6. Plan and conduct production and logistics management operations. 7. Plan and conduct improvements to construction works and maintenance and servicing of various support systems. 8. Ensure that production procedures are compliant with GMP regulations. 9. Plan and conduct procurement operations for the Taichung Plant to achieve the purpose of cost-effective procurements. 10. Plan and conduct operations related to plant safety and health, including environmental protection, fire prevention management, and building safety inspections. 11. Conduct matters related to the management of general affairs, company cars, and dormitories. 12. Conduct matters concerning liaison and business dealings with the Central Taiwan Science Park.
Quality System	1. Plan and conduct GMP quality control (QC) operations at QC laboratories. 2. Conduct raw material monitoring, in-process control (IPC), and intermediate and product inspections. 3. Conduct water for injection (WFI) system and heating, ventilation, and air conditioning (HVAC) monitoring. 4. Conduct lab procedures in accordance with GMP regulations (accept transfer of analytical methods, conduct instrument verification, accept validation of analytical methods, and perform stability tests). 5. Plan and conduct operational management and educational training related to GMP-based quality assurance systems. 6. Conduct quality system operating procedures in line with GMP regulations (conduct product release, documentation management, out of specification [OOS] tests, corrective and preventive measures, change of control, and validation implementation operations).
General Management Office	1. Business Planning: Plan and conduct business analysis and propose planning recommendations. 2. Finance and Accounting: Plan budgeting system, supervise budgeting progress, and conduct various financial and accounting operations. 3. Intellectual Property and Legal Affairs: Plan and conduct personnel and training systems for stronger human resource management. 4. Information: Plan and establish informational systems and manage computer systems and information safety. 5. Procurement: Plan and conduct procurement operations to achieve the purpose of cost-effective procurements. 6. Investor Relations: Establish a sound spokesperson system, maintain media relations and disclose information, organize investor relation activities, and handle investor opinions.

2. Information on the Company's Directors, Supervisors, General Manager, Assistant General Managers, Deputy Assistant General Managers, and the Heads of all the Company's Divisions and Branch Units

2.1 Directors

As of March 29, 2020; Shares; %

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Term of Contract	Date First Elected	Shareholding When Elected		Current Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Selected Current Positions at PharmaEssentia and Other Companies	Spouse of or Related Within the Second Degree of Kinship to Any Head of Department, Director, or Supervisor		
							Shares	%	Shares	%	Shares	%	Shares	%			Title	Name	Relationship
Chairman	R.O.C.	Ching-Leou Teng	Female	107.6.25	3 years	101.9.24	2,407,428	1.10	2,683,046	1.19	200,000	0.09	-	-	• Ph.D. in Pharmaceutics, University of Michigan • Post-Doctoral Fellowship, University of Michigan • Reviewer, US Food and Drug Administration (FDA) • Assistant Director, ISIS Pharmaceutical, Inc.	• Chief Pharmaceutical Officer, PharmaEssentia • Director, PharmaEssentia Asia (Hong Kong) Limited. • Director, PharmaEssentia (Hong Kong) Limited. • Director, PharmaEssentia Japan KK • Director, PharmaEssentia USA.,LLC	-	-	-
Director	R.O.C.	Chao-Ho Chen	Male	107.6.25	3 years	98.6.30	3,077,196	1.40	3,659,592	1.63	758,670	0.34	-	-	• National Taipei University of Technology	• Chairman, Hong Tai Co., Ltd. • Chairman, Hong Tai Investment Co., Ltd. • Supervisor, Hong Chih Co., Ltd. • Director, PharmaEssentia Asia (Hong Kong) Limited. • Director, PharmaEssentia (Hong Kong) Limited.	-	-	-
Director	R.O.C.	Tian Chang	Male	107.6.25	3 years	95.6.30	-	-	-	-	-	-	-	-	• Director, Chinese National Federation of Industries • Executive Director, Food Association of Taiwan • Consultant, Taiwan Bakery Association • Director & General Manager, Hunya Foods Co. Ltd.	• -	-	-	-

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Term of Contract	Date First Elected	Shareholding When Elected		Current Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Selected Current Positions at PharmaEssentia and Other Companies	Spouse of or Related Within the Second Degree of Kinship to Any Head of Department, Director, or Supervisor		
							Shares	%	Shares	%	Shares	%	Shares	%			Title	Name	Relationship
Director	R.O.C.	Ben-Yuan Chen	Male	107.6.25	3 years	95.6.30	1,426,886	0.65	1,601,305	0.71	217,752	0.10	-	-	• Department of Electronic Engineering, National Taipei University of Science and Technology • Chairman, Association of Taiwan Private School Culture and Education R.O.C. • Teacher, Department of Electronics, the Affiliated Industrial Vocational High School of National Changhua University of Education, Taichung Municipal Taichung Industrial High School • President, Alumni Association of Taichung Municipal Taichung Industrial High School • President, Alumni Association of National Taipei University of Science and Technology	• Chairman, Chuan Hwa Book Co., Ltd. • Chairman, Yui-Da Culture Business Co., Ltd. • Chairman, Chuen-Yi Information Co., Ltd. • Chairman, Chuan-Hsun Computers Co., Ltd. • Chairman, Taichung Chih-Yung Senior High School • Chairman, Nantou Jerry Foundation • Chairman, Da-Kao Communications Co., Ltd.	-	-	-
Director	R.O.C.	Rep: Lung-Chih Yu	Male	107.6.25	3 years	95.6.30	-	-	-	-	-	-	-	-	• Ph.D., Biochemical Science, National Taiwan University • Researcher, Medical Research Department, MacKay Memorial Hospital	• Professor & Director, Graduate Institute of Biochemical Science, National Taiwan University • Assistant Researcher, Graduate Institute of Biochemistry, Academia Sinica (jointly appointed)	-	-	-
	R.O.C.	National Development Fund, Executive Yuan					22,066,296	10.07	22,066,296	9.80	-	-	-	-			-	-	-
Director	R.O.C.	Rep: Kuo-Rong Cheng	Male	107.6.25	3 years	95.6.30	-	-	-	-	-	-	-	-	• Master's, Law, National Taiwan University • Officer, Ministry of Justice • Specialist, Chief, & Senior Executive Officer, Ministry of Economic Affairs • Supervisor, Taiwan Power Company	• Counsellor & Executive Secretary, Regulatory Committee, Ministry of Economic Affairs • Director, Taiyen Biotech	-	-	-
	R.O.C.	Yao-Hwa Co., Ltd. Management Commission					9,666,000	4.41	9,666,000	4.29	-	-	-	-			-	-	-

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Term of Contract	Date First Elected	Shareholding When Elected		Current Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Selected Current Positions at PharmaEssentia and Other Companies	Spouse of or Related Within the Second Degree of Kinship to Any Head of Department, Director, or Supervisor		
							Shares	%	Shares	%	Shares	%	Shares	%			Title	Name	Relationship
															• Supervisor, Taiyen Biotech • Director, CSBC Corporation				
Director	R.O.C.	Jack Hwang	Male	107.6.25	3 years	104.5.29	1,082,025	0.49	1,239,621	0.55	628,170	0.28	-	-	• Ph.D., Organic Chemistry, University of Pennsylvania, USA • Director, Optimer Pharmaceuticals, Inc., USA • Team Leader, Array BioPharma Inc., USA • Researcher, Amgen Inc., USA	• Supervisor, PharmaEssentia Biotechnology (Beijing) Co., Ltd.	-	-	-
Director	R.O.C.	Shi-Ying Hsu	Male	107.6.25	3 years	101.9.24	21,000	0.01	207,047	0.09	-	-	-	-	• School of Pharmacy, Taipei Medical University • Assistant General Manager, Business Division, Boehringer Ingelheim • Operations Consultant, VIS Pharmaceutical Company • Marketing/Business Consultant, Boehringer Ingelheim	• -	-	-	-
Independent Director	U.S.	Patrick Y. Yang	Male	107.6.25	3 years	103.3.27	-	-	-	-	-	-	-	-	• Ph.D., Electrical Engineering, Ohio State University, USA • Executive Vice President, Operations Department, Genentech Biotech, USA • President, Global Technology Operations, Roche Pharmaceuticals, Switzerland • Vice President, Merck, USA • Member, Bio Taiwan Committee, Executive Yuan	• Executive Vice President, Juno Therapeutics • Chairman, Acepodia, Inc. • Chairman, Stempodia Biotech, Inc. • Chairman, Archigen Biotech, Ltd. (UK) • CEO, Patrick Y. Yang, LLC • Senior Advisor to the CEO, AstraZeneca • Board Director, Andeavor Corporation • Board Director, Codexis, Inc. • Board Director, Amyris, Inc. • Director, AbGenomic	-	-	-

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Term of Contract	Date First Elected	Shareholding When Elected		Current Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Selected Current Positions at PharmaEssentia and Other Companies	Spouse of or Related Within the Second Degree of Kinship to Any Head of Department, Director, or Supervisor		
							Shares	%	Shares	%	Shares	%	Shares	%			Title	Name	Relationship
																• Director, Taiwania Capital			
Independent Director	R.O.C.	Jinn-Der Chang	Male	107.6.25	3 years	103.3.27	-	-	-	-	-	-	-	-	• Ph.D., Accounting, Federal State International University, USA • Ph.D., Law, National Chung Cheng University • Dean, School of Management, Chaoyang University of Science and Technology/Chair Professor, Department of Accounting • Associate Professor, Graduate Institute of Accounting, National Chengchi University • Associate Professor, Graduate Institute of Business Administration, Taipei University • Associate Professor, Department of Financial and Economic Law, Asia University • Dean, Department of Accounting, Chinese Cultural University • First Chairman, R.O.C. Association of Accountants • Member, Taiwan Provincial Government Appeals Review Committee • Auditor, Taipei National Tax Bureau Audit Department, Ministry of Finance • Examiner, Examination Yuan • Consellor, National Audit Office, R.O.C.	• Director, CROWN& CO., CPAs • Chair Professor, Dept. of Financial and Economic Law & Dept. of Accounting and Information Systems, Asia University • Adjunct Professor, Department of Law, National Chung Hsing University • Independent Director, Taiwan Concord Capital Securities Limited • Independent Director, Hua Eng Wire & Cable • Chairman, Jude Enterprise Management Consulting Co., Ltd. • Chairman, Guanbao International Consulting Co., Ltd. • Director, CROWN& CO. Tairi Consulting • Director, CROWN& CO. Consulting •	-	-	-

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Term of Contract	Date First Elected	Shareholding When Elected		Current Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Selected Current Positions at PharmaEssentia and Other Companies	Spouse of or Related Within the Second Degree of Kinship to Any Head of Department, Director, or Supervisor		
							Shares	%	Shares	%	Shares	%	Shares	%			Title	Name	Relationship
Independent Director	R.O.C.	Jien-Heh Tien	Male	107.6.25	3 years	107.6.25	2,000	0	2,000	0	-	-	-	-	• Ph.D., Organic Chemistry, University of Massachusetts, USA • Section Manager, Abbott Laboratories • Associate Director, Theravance Inc. • Senior Director, ARYx Therapeutics Inc., USA • Chairman, Sanli Pharmaceutical Technology Co., Ltd. • Consultant, Xufu Pharmaceutical Technology Co., Ltd.	• Chief Scientific Officer, Sunny Pharmatech Inc.	-	-	-

2.2 Major Shareholders of Institutional Shareholders

As of March 29, 2020

Name of Institutional Shareholders	Major Shareholders of Institutional Shareholders
National Development Fund, Executive Yuan	In accordance with Article 29 of the Statute for Industrial Innovation, the Executive Yuan establishes the National Development Fund and a Management Commission that organizes matters related to fund collection and payment, safekeeping, and use. The Management Commission shall comprise 11 to 13 members, all of whom shall be appointed (hired) by the Executive Yuan.
Yao-Hwa Co., Ltd. Management Commission	The Yao-Hwa Co., Ltd. Management Commission is a management commission managed by the Ministry of Economic Affairs. Currently, the Management Commission comprises 2–6 citizen representatives and 8 government representatives.

2.3 Major Shareholders of Institutions that serve as Institutional Shareholders

Name of Institution	Major Shareholder of Institution
-	-

2.4 Professional Qualifications and Independence Analysis of Directors

Criteria / Name	Meet the Following Professional Qualification Requirements, Together With at Least 5 Years of Work Experience			Independence Criteria (Note)												Number of Other Taiwanese Public Companies in Which He or She Concurrently Serving as an Independent Director
	Instructor or Higher Position in a Department of Commerce, Law, Finance, Accounting, or Other Academic Department Related to the Business Needs of the Company in a Public or Private Junior College, College or University	Judge, Public Prosecutor, Attorney, Certified Public Accountant, or Other Professional or Technical Specialist Who Has Passed a National Examination and Been Awarded a Certificate in a Profession Necessary for the Business of the Company	Possesses Work Experience in Commerce, Law, Finance, or Accounting, or That is Otherwise Necessary for the Business of the Company	1	2	3	4	5	6	7	8	9	10	11	12	
Ching-Leou Teng			✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Chao-Ho Chen			✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	0
Tian Chang			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Ben-Yuan Chen			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Lung-Chih Yu	✓		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓		0
Kuo-Rong Cheng			✓	✓		✓	✓		✓	✓	✓	✓	✓	✓		0
Jack Hwang			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Shi-Ying Hsu			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Patrick Y. Yang			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Jinn-Der Chang	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	2
Jien-Heh Tien			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0

(1) Not an employee of the Company or any of its affiliates.

(2) Not a director or supervisor of any of the Company's affiliates (however, being an independent director concurrently in the Company, itsparent company, subsidiaries or subsidiaries of the same parent company in accordance with the Law or local regulations is not restricted here).

(3) Not a natural-person shareholder or holder of shares, together with those held by a spouse, minor children, or held by the person under other names, in an aggregate amount of one percent or more of the total number of issued shares of the company or ranking within the top 10 in holdings.

(4) Not a spouse, relative within the second degree of kinship, or lineal relative within the third degree of kinship, of any of the managers mentioned in the paragraph (1) or persons mentioned in the paragraph (2), (3).

(5) Not a director, supervisor, or employee of an institutional shareholder that directly holds five percent or more of the total number of issued shares of the Company, or ranks as its top five shareholders, or has designated representative in accordance of Article 27 Section 1 or 2 in the Company as director/supervisor (however, being an independent director concurrently in the Company, its parent company, subsidiaries or subsidiaries of the same parent company in accordance with the Law or local regulations is not restricted here).

(6) Not a director, supervisor, or employee of other companies with the Board seats or more than half of the voting shares under control of one person (however, being an independent director concurrently in the Company, its parent company, subsidiaries or subsidiaries of the same parent company in accordance with the Law or local regulations is not restricted here).

(7) Not a director, supervisor, or employee of other companies whose chairman or general manager are the same person or spouse of the Company (however, being an independent director concurrently in the Company, its parent company, subsidiaries or subsidiaries of the same parent company in accordance with the Law or local regulations is not restricted here).

(8) Not a director, supervisor, manager, or shareholder holding five percent or more of the shares of a specified company or institution that has a financial or business relationship with the Company (however, if a specified company or institution possessing shareholdings of more than 20% and less than 50% of the total number of issued shares of the Company, and being an independent director concurrently in the Company, its parent company, subsidiaries or subsidiaries of the same parent company in accordance with the Law or local regulations is not restricted here).

(9) Not a professional individual, or an owner, partner, director, supervisor, or manager or spouse thereof of a sole proprietorship, partnership, company, or institution that provides auditing services or for the past two years, has provided commercial, legal, financial, accounting or consultation services amounted to less than a cumulative NTD500,000 to the Company or to any affiliate of the Company. However, members of the Remuneration Committee, Public Tender Offer Review Committee or Special Merger and Acquisition Committee acting in accordance of Securities and Exchange Act or Business Mergers and Acquisitions Act are not restricted here.

(10) Not having a marital relationship with, or not a relative within the second degree of kinship of any other director of the Company.

(11) Not under any circumstances as noted in Article 30 of Company Act.

(12) Not a governmental, juridical person or its representative as defined in Article 27 of Company Act.

2.5 The General Manager, Assistant General Managers, Deputy Assistant General Managers, and the Chiefs of all the Companys Divisions and Branch Units

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Positions at Other Companies	Managers Who Are Spouses or Within Two Degrees of Kinship		
					Shares	%	Shares	%	Shares	%			Title	Name	Relationship
CEO	R.O.C.	Ko-Chung Lin	Male	106/1/1	3,553,964	1.58	1,300,000	0.58	-	-	• Ph.D., Chemistry, University of Missouri • Post-doctoral Fellowship, Anti-Cancer Drug Innovation Research, University of Missouri • Former Head of Adentri™ Program & Pegylated-Avonex™ Program, Biogen Inc. • Lead inventor of PEG-IFN b (Plegridy), Biogen Inc., Monsanto – Searle	• Director, PharmaEssentia USA Corporation. • Director, PharmaEssentia Japan KK • Executive Director, PharmaEssentia Biotechnology (Beijing) Co., Ltd.	-	-	-
General Manager	R.O.C.	Jack Hwang	Male	104/6/25	1,239,621	0.55	628,170	0.28	-	-	• Ph.D., Organic Chemistry, University of Pennsylvania, USA • Director, Optimer Pharmaceuticals, Inc., USA • Team Leader, Array BioPharma Inc., USA • Researcher, Amgen Inc., USA	• Supervisor, PharmaEssentia Biotechnology (Beijing) Co., Ltd. •	-	-	-
Chief Pharmaceutical Officer	R.O.C.	Ching-Leou Teng	Female	104/6/25	2,683,046	1.19	200,000	0.09	-	-	• Ph.D. in Pharmaceutics, University of Michigan • Post-Doctoral Research, University of Michigan • Reviewer, US FDA • Assistant Director, ISIS Pharmaceutical, Inc.	• Director, PharmaEssentia USA Corporation. • Director, PharmaEssentia Japan KK • Director representative, PharmaEssentia Asia (Hong Kong) Co., Ltd. • Director representative, PharmaEssentia (Hong Kong) Co., Ltd.	-	-	-
Medical Officer	USA	Albert Qin	Male	106/1/13	-	-	-	-	-	-	• Ph.D., Biochemistry and Molecular Pharmacology, Harvard University (1994) • Various positions at international advanced pharmaceutical companies,	• -	-	-	-

Title	Nationality or Place of Registration	Name	Gender	Date Elected	Shareholding		Spouse & Minor Shareholding		Shares Held Through Nominees		Principal Work Experience and Academic Qualifications	Positions at Other Companies	Managers Who Are Spouses or Within Two Degrees of Kinship		
					Shares	%	Shares	%	Shares	%			Title	Name	Relationship
											including senior scientists, clinical assistant directors, clinical general directors, chief scientific officers, and executive directors • Chief Scientific Officer, SymBio in Japan • Medical Director, ImmunoGen, USA • Associate Director, Pfizer • Pharmacologist, Bayer Pharmaceuticals, USA • Biologist, Biogen USA				
Chief Operating Officer, Taichung Plant	R.O.C.	Yen-Tung Luan	Male	103/10/1	142,612	0.06	-	-	-	-	• MSc, Biochemical Engineering, Drexel University, USA • Senior Engineer, Process Development, Genetics Institute, Inc., USA • Lead Engineer, Cell Culture Development, Wyeth Pharmaceuticals • Associate Lead Engineer, Process Development, Pfizer Pharmaceuticals	• -	-	-	-
Senior Manager of Finance	R.O.C.	Snow Chang	Female	104/10/14	57,731	0.03	-	-	-	-	• Master, Accounting, Soochow University • Senior Manager, KGI Securities • Manager, First Taiwan Securities Inc. • Assistant Manager, Jih Sun Securities Co., Ltd. • Senior Auditor, SOLOMON & CO., CPA	• Director, PharmaEssentia Japan KK	-	-	-

3.Remuneration Paid to Directors (Including Independent Directors)

Unit: NT$1,000; 1,000 shares

Title	Name	Directors' Remuneration								Ratio of Total Remuneration (A+B+C+D) to Net Income After Tax (%)		Relevant Remuneration Received by Directors Who are Also Employees								Ratio of Total Remuneration (A+B+C+D+E+F+G) to Net Income After Tax (%)		Compensation Paid to Directors From Invested Companies, Other Than Subsidiaries
		Base Compensation (A)		Severance Pay and Pensions (B)		Compensation to Director (C)		Allowances (D)				Salary, Bonuses, and Allowances (E)		Severance Pay and Pensions (F)		Employee Bonus (G)						
		From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia		From All Consolidated Entities		From PharmaEssentia	From All Consolidated Entities	
																Cash	Stock	Cash	Stock			
Chairman	Ching-Leou Teng	-	-	-	-	-	-	40	40	-	-	7,757	7,757	-	-	-	-	-	-	−0.92	−0.92	None
Director	Chao-Ho Chen	-	-	-	-	-	-	25	25	-	-	-	-	-	-	-	-	-	-	-	-	None
Director	Tian Chang	-	-	-	-	-	-	20	20	-	-	-	-	-	-	-	-	-	-	-	-	None
Director	Ben-Yuan Chen	-	-	-	-	-	-	20	20	-	-	-	-	-	-	-	-	-	-	-	-	None
Director	Lung-Chih Yu	-	-	-	-	-	-	40	40	-	-	-	-	-	-	-	-	-	-	-	-	None
Director	Shu-Fang Cheng	-	-	-	-	-	-	5	5	-	-	-	-	-	-	-	-	-	-	-	-	None
Director	Jack Hwang	-	-	-	-	-	-	40	40	-	-	-	-	-	-	-	-	-	-	-	-	None
Director	Shi-Ying Hsu	-	-	-	-	-	-	40	40	-	-	-	-	-	-	-	-	-	-	-	-	None
Independent Director	Patrick Y. Yang	-	-	-	-	-	-	30	30	-	-	-	-	-	-	-	-	-	-	-	-	None
Independent Director	Jinn-Der Chang	-	-	-	-	-	-	25	25	-	-	-	-	-	-	-	-	-	-	-	-	None
Independent Director	Jien-Heh Tien	-	-	-	-	-	-	40	40	-	-	-	-	-	-	-	-	-	-	-	-	None

*Other than that disclosed in this table, directors' remuneration earned through providing services (e.g., consulting services as a nonemployee) to all consolidated entities in the 2017 financial statements: None.

Director Remuneration Bracket

Remuneration the Company Paid to Each Director by Range	Name of Director			
	Total Remuneration from (A+B+C+D)		Total Remuneration from (A+B+C+D+E+F+G)	
	From PharmaEssentia	From All Consolidated Entities I	From PharmaEssentia	From All Consolidated Entities J
< NT$2,000,000	Ching-Leou Teng, Lung-Chih Yu, Chao-Ho Chen, Tian Chang, Patrick Y. Yang, Jinn-Der Chang, Jack Hwang, Shi-Ying Hsu, Ben-Yuan Chen, Kuo-Rong Cheng, Jien-Heh Tien	Ching-Leou Teng, Lung-Chih Yu, Chao-Ho Chen, Tian Chang, Patrick Y. Yang, Jinn-Der Chang, Jack Hwang, Shi-Ying Hsu, Ben-Yuan Chen, Kuo-Rong Cheng, Jien-Heh Tien	Lung-Chih Yu, Chao-Ho Chen, Tian Chang, Patrick Y. Yang, Jinn-Der Chang, Jack Hwang, Shi-Ying Hsu, Ben-Yuan Chen, Kuo-Rong Cheng, Jien-Heh Tien	Lung-Chih Yu, Chao-Ho Chen, Tian Chang, Patrick Y. Yang, Jinn-Der Chang, Jack Hwang, Shi-Ying Hsu, Ben-Yuan Chen, Kuo-Rong Cheng, Jien-Heh Tien
NT$2,000,000–NT$5,000,000	None	None	None	None
NT$5,000,000– NT$10,000,000	None	None	Ching-Leou Teng	Ching-Leou Teng
NT$10,000,000– NT$15,000,000	None	None	None	None
NT$15,000,000– NT$30,000,000	None	None	None	None
NT$30,000,000– NT$50,000,000	None	None	None	None
NT$50,000,000– NT$100,000,000	None	None	None	None
> NT$100,000,000	None	None	None	None
Total	11	11	11	11

Note 1: Directors name must be shown separately (for institutional directors, both the institution and the representative are required). All compensation paid must be added together. For directors who are also the general manager or assistant general managers, Table (3-1) or (3-2) below must be filled in.

Note 2: This refers to remuneration paid to directors in the most recent year (including salary, compensation for professional services, severance pay, and all bonus and monetary rewards).

Note 3: This refers to filling in directors' profit sharing of the latest fiscal year proposed and resolved by the Board.

Note 4: Payments to directors to cover business expenses (including travel expenditures, allowances, reimbursements, accommodation, company cars, and in-kind supplies). If accommodations, cars, and other transportation or personal allowances are provided, information about the assets (including classification, cost, actual or fair market values of rent, gasoline expenses, and other perks) must be disclosed. Compensation paid to personal drivers must be noted, but not accumulated under the remuneration received.

Note 5: Payments to directors, who are also employees (including general manager, assistant general manager, manager, and employee) to cover business expenses (including salary, compensation for professional services, severance pay, all bonus and monetary rewards, travel expenditures, allowances, reimbursements, accommodation, company cars, and in-kind supplies). If accommodations, cars, and other transportation or personal allowances are provided, information about the assets (including classification, cost, actual or fair market values of the rent, gasoline expenses, and other perks) must be disclosed. Compensation paid to personal drivers must be noted but not accumulated under the remuneration received. Salary expenses recognized in accordance with the International

Financial Reporting Standards (IFRS) 2 “Share-based Payments” include the acquisition of employee stock warrants, new restricted employee shares, and participation in capital increases by cash subscription, which shall all be calculated as remuneration.

Note 6: A person receiving employee remuneration (stock and cash bonus) to the director (including those concurrently serving as a general manager, assistant general manager, other manager, or employee) shall disclose the rewarded amount proposed and resolved by the Board in the latest fiscal year. If the amount cannot be estimated, the distribution amount of this year shall be determined by the actual distribution ratio of the previous year. Tables 1–3 shall be filled in.

Note 7: Total remuneration paid by all companies (including the Company) in the consolidated report to the Company’s director.

Note 8: Disclose remuneration paid by the Company to the director under the suitable range. The name of the receiver must be shown under the suitable range.

Note 9: Disclose remuneration paid by the Group companies (including the Company) in the consolidated report to the director under the suitable range. The name of the receiver must be shown under the suitable range.

Note 10: After-tax net income refers to the after-tax net income in the most recent year; net income after tax reported in accordance with the IFRS refers to after-tax net income in the individual financial statement of the most recent year.

Note 11:

a. Fill in the remuneration amount received by directors from investees other than subsidiaries of the Company in this column.

b. If the directors of the Company receive remuneration from investees other than subsidiaries of the Company, it shall be combined into Column I of the remuneration ranking table and the column renamed as “All Investments.”

c. The remuneration refers to remuneration, compensation (including compensation to employees, directors, and supervisors) and related remunerations for the performance of duties received by a director of the Company serving as a director, supervisor, or manager of an investee of the Company other than subsidiaries.

*The remuneration content disclosed in this Table differs from the income concept of the Income Tax Act; therefore, this Table acts as a form of information disclosure and does not serve the purpose of taxation.

3.2 Remuneration Paid to General Managers and Assistant General Managers

Unit: NT$1,000

Title	Name	Salary (A) (Note 2)		Severance Pay and Pensions (B)		Bonuses and Allowances (C) (Note 3)		Amount of Employee Remuneration (D) (Note 4)				Ratio of Total Remuneration (A+B+C+D) to Net Income After Tax (%)(Note 8)		Compensation Paid to Directors from Invested Companies Other Than Subsidiaries (Note 9)
		From PharmaEssentia	From All Consolidated Entities (Note 5)	From PharmaEssentia	From All Consolidated Entities (Note 5)	From PharmaEssentia	From All Consolidated Entities (Note 5)	From PharmaEssentia		From All Consolidated Entities (Note 5)		From PharmaEssentia	From All Consolidated Entities (Note 5)	
								Cash	Stock	Cash	Stock			
CEO	Ko-Chung Lin	8,358	8,358	233	233	-	-	-	-	-	-	−1.02	−1.02	None
General Manager	Jack Hwang	7,757	7,757	-	-	-	-	-	-	-	-	−0.92	−0.92	None

Note: Actual severance pay and pension paid in 2018 was NT$0.

Remuneration Paid to General Managers and Assistant General Managers

Remuneration Paid by the Company to Each General Manager and Assistant General Manager by Range	Name of General Manager and Assistant General Manager	
	From PharmaEssentia	From All Consolidated Entities (E)
< NT$2,000,000	None	None
NT$2,000,000–NT$5,000,000	None	None
NT$5,000,000– NT$10,000,000	Ko-Chung Lin, Jack Hwang	Ko-Chung Lin, Jack Hwang
NT$10,000,000– NT$15,000,000	None	None
NT$15,000,000– NT$30,000,000	None	None
NT$30,000,000– NT$50,000,000	None	None
NT$50,000,000– NT$100,000,000	None	None
> NT$100,000,000	None	None
Total	2	2

Note 1: Names of the general manager and assistant general managers must be shown separately. For directors who are also the general manager or assistant general managers, Table (1-1) or (1-2) above must be filled in.
Note 2: This includes salary, compensation for professional services, and severance pay paid to the general manager and assistant general managers in the most recent year.
Note 3: Payments to the general manager and assistant general managers to cover business expenses, including bonuses, monetary rewards, travel expenditures, allowances, reimbursements, accommodation, company cars, and in-kind supplies. If accommodations, cars, and other transportation or personal allowances are provided, information about the assets (including classification, cost, actual or fair market values of rent, gasoline expenses, and other perks) must be disclosed. Compensation paid to personal drivers must be noted but not accumulated under the remuneration received. Salary expenses recognized in accordance with IFRS 2 "Share-Based Payment" include acquisition of employee stock warrants, new restricted employee shares, and participation in capital increases by cash subscription, which shall all be calculated as remuneration.
Note 4: Employee remuneration amount (stock and cash) resolved by the Board for distribution to the general manager and assistant general managers. If the distribution amount of this year cannot be estimated, it shall be determined by the actual distribution ratio of last year. Table 1-3 shall be filled in. After-tax net income refers to the after-tax net income in the most recent year; net income after tax reported in accordance with IFRS refers to after-tax net income in the individual financial statement of the most recent year.
Note 5: Aggregated amount of individual compensation paid by all companies (including the Company) in the consolidated statement to the general manager and assistant general managers.
Note 6: Aggregated amount of individual compensation paid by the Company to the general manager and assistant general managers. Names of the receivers must be shown under the suitable range.
Note 7: Aggregated amount of individual compensation paid by all companies (including the Company) in the consolidated statement to the general manager and assistant general managers. Names of the receivers must be shown under the suitable range.
Note 8: After-tax net income refers to the after-tax net income in the most recent year; net income after tax reported in accordance with IFRS refers to after-tax net income in the individual financial statement of the most recent year.
Note 9:
a. Fill in the remuneration amount received by the general manager and assistant general managers from investees other than subsidiaries of the Company in this column.
b. If the general manager and assistant general managers of the Company receive remuneration from investees other than subsidiaries of the Company, it shall be combined into Column E of the remuneration ranking table and the column renamed as "All Investments."
c. The remuneration refers to remuneration, compensation (including compensation to employees, directors, and supervisors), and related remuneration for the performance of duties received by the general manager and assistant general managers of the Company serving as a director, supervisor, or manager of an investee of the Company other than subsidiaries.
*The remuneration content disclosed in this table differs from the income concept of the Income Tax Act; therefore, this table acts as a form of information disclosure and does not serve the purpose of taxation.

3. Name of managers receiving employee compensation and the distribution status

Title	Name	Salary (A) (Note 2)		Severance Pay and Pensions (B)		Bonuses and Allowances (C) (Note 3)		Amount of Employee Remuneration (D) (Note 4)				Ratio of Total Remuneration (A+B+C+D) to Net Income After Tax (%)(Note 8)		Compensation Paid to Directors from Invested Companies Other Than Subsidiaries (Note 9)
		From PharmaEssentia	From All Consolidated Entities (Note 5)	From PharmaEssentia	From All Consolidated Entities (Note 5)	From PharmaEssentia	From All Consolidated Entities (Note 5)	From PharmaEssentia		From All Consolidated Entities (Note 5)		From PharmaEssentia	From All Consolidated Entities (Note 5)	
								Cash	Stock	Cash	Stock			

CEO	Ko-Chung Lin	8,358	8,358	233	233	-	-	-	-	-	-	−1.02	−1.02	None
General Manager	Jack Hwang	7,757	7,757	-	-	-	-	-	-	-	-	−0.92	−0.92	None
Chief Pharmaceutical Officer	Ching-Leou Teng	7,757	7,757	-	-	-	-	-	-	-	-	−0.92	−0.92	None
Medical Officer	Albert Qin	5,948	5,948	-	-	-	-	-	-	-	-	−0.71	−0.71	None
Chief Operating Officer, Taichung Plant	Yen-Tung Luan	5,694	5,694	-	-	-	-	-	-	-	-	−0.69	−0.69	None

3.3.1. Employee remuneration distributed to managers and distribution situation: None.

3.3.2. This section presents a comparison of the ratio of the total amount of remuneration paid to directors, supervisors, general managers, and assistant general managers of the Company and all companies covered in the consolidated financial statements in the past 2 years to after-tax net income shown through the individual or respective financial statements; in addition to explanations of the policies, standards, and composition for remuneration payment, procedures to fix remuneration, and the interrelationship between the business performance and future risks.

(1) Analysis of the ratio of the total amount of remuneration paid to directors, supervisors, general managers, and assistant general managers of the Company and all companies covered in the consolidated financial statements in the past 2 years to after-tax net income:

Unit: NT$1,000

Item	2018				2019			
	Total Remuneration		As a Percentage of Net Income After Tax (%)		Total Remuneration		As a Percentage of Net Income After Tax (%)	
	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities	From PharmaEssentia	From All Consolidated Entities
Directors	7,738	7,738	-0.74	-0.74	7,757	7,757	-0.92	-0.92
CEO and General Manager	15,369	15,369	-1.48	-1.48	16,348	16,348	-1.94	-1.94

(2) Policies, standards, and composition for remuneration payment, procedures to fix remuneration, and the interrelationship between business performance and future risks

a. Remuneration paid to directors and supervisors is handled in accordance with the Company's Articles of Incorporation and determined by considering the position of the director/supervisor in the Company and the value of their participation and contribution to Company operations. The remuneration is internally proposed by the company to the Remuneration Committee for approval and presented to the Board of Directors for review.

i. "Director Remuneration" is the travel expenditure spent to attend Board meetings.

ii. “Relevant Remuneration Received by Directors Who are Also Employees” refers to the salary paid to Chairman Ching-Leou Teng, who is also the Chief Pharmaceutical Officer.

b. Remuneration paid to the CEO and general manager is handled in accordance with the Company’s internal personnel rules and determined by considering the position of the CEO and general manager in the Company, the responsibility they assume, and their contribution to the Company, as well as industry benchmarks. The remuneration is proposed by the Company to the Remuneration Committee for approval and presented to the Board of Directors for review.

In sum, the policies and procedures to fix remuneration paid by the Company to directors, the CEO, and general manager are positively related to the Company’s business performance.

4. Corporate Governance

4.1Operation of the Board of Directors

As of the time of publication, the Board of Directors have been convened for 10 times (A) for 2019 and 2020. The attendance of the directors is as follows:

Title	Name	Attendance in Person (B)	Attendance By Proxy	Attendance Rate in Person (B/A)	Notes
Chairman	Ching-Leou Teng	10	0	100%	
Director	Chao-Ho Chen	7	3	70%	
Director	Tien Chang	6	4	60%	
Director	Pen-Yuan Chen	6	4	60%	
Director	Representative of National Development Fund, Executive Yuan: Lung-Chih Yu	10	0	100%	
Director	Management Committee Representative of Yao Hwa Glass Co. Ltd: Shu-Fang Cheng	3	0	100%	Shu-Fang Cheng was newly appointed on December 4, 2019 (Expected attendance: 3 times)
Director	Cheng-Ku Huang	10	0	100%	
Director	Shih-Ying Hsu	10	0	100%	
Independent Director	Yu-Min Yang	8	2	80%	
Independent Director	Chin-Te Chang	7	2	70%	
Independent Director	Chien-Ho Tien	10	0	100%	

Other matters of note:

1. In the event of any of the following in the operations of the Board of Directors, the date, term, and motion content, opinions of all independent directors, and the Company's response shall be recorded:

(1) Items listed in Article 14-3 of the Securities and Exchange Act:

Date of meeting	Motion	Opinion of independent directors	Company response
January 24, 2019	Investment in IIH Biomedical Venture Fund I Co., Ltd.	Approved by 3 independent directors	Proposal approved as proposed
February 18, 2019	Revision of the issue price range for cash capital increases	Approved by 3 independent directors	Proposal approved as proposed
March 27, 2019	Planning of the reappointment of EY Taiwan for providing the Company with audit services for the 2019 financial statements and tax reports, and assessment of CPA independence	Approved by 2 independent directors (Independent director Chien-Ho Tien attended in proxy for Independent director Chin-Te Chang)	Proposal approved as proposed
	Audit service fees for 2019		
	Amendments to the Company's Articles of Incorporation, Operational Procedures for Acquisition and Disposal of Assets, Operating Procedures for Granting Loans, and Endorsement and Guarantee		

	Regulations		
June 21, 2019	Amendment of the Company's internal audit implementation rules and management regulations	Approved by 3 independent directors	Proposal approved as proposed
August 14, 2019	Carrying out sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic convertible bonds	Approved by 2 independent directors (Independent director Yu-Min Yang attended in proxy for Independent director Chin-Te Chang)	Proposal approved as proposed
December 24, 2019	Stipulated the private placement price, number of shares, subscribers, period of payment, effective date of capital increase, and relevant matters for the 2019 1st private placement of the Company's common shares.	Approved by 3 independent directors	Proposal approved as proposed
February 19, 2020	Planning of the reappointment of EY Taiwan for providing the Company with audit services for the 2020 financial statements and tax reports, and assessment of CPA independence	Approved by 3 independent directors	Proposal approved as proposed
	Audit service fees for 2020		
	2020 Plan for capital increase through issuance of new shares		
	Plans for issuing employee stock options to buy company stock at below-market prices		
April 14, 2020	Proposal to compile a report on the actual implementation of carrying out the sponsoring issuance of overseas depositary receipts through cash capital increase and private placement of common shares or private placement in overseas or domestic convertible bonds presented during the 1st Shareholders Interim Meeting of 2019.	Approved by 3 independent directors	Proposal approved as proposed
	Planning of carrying out the sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic convertible bonds for 2020		

(2) Other recorded or written board meeting resolutions expressing dissenting opinions or reservations from independent directors apart from the above matters: none

2. In the event of a conflict of interests with any director when reviewing a motion, the director name, motion content, reason behind conflict of interest, and participation status in passing resolution shall be recorded:

Date of Meeting	Content	Director name, reason behind conflict of interest, and participation status in passing resolution
January 24, 2019	Investment in IIH Biomedical Venture Fund I Co., Ltd.	Directors Chao-Ho Chen and Lung-Chih Yu avoided conflicts of interests Resolution: The motion was passed by 8 participating directors without objection
August 14, 2019	Carrying out sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement	The Board of Directors were asked to submit a resolution after eight directors, including Ching-Leou Teng and others avoided conflicts of interests. Resolution: Motion passed by all participating directors without objection. The subscribers of the present

	in overseas or domestic convertible bonds	case were individually reviewed. Director Chien-Ho Tien served as the Acting Chairman and approved the review for Ching-Leou Teng, an insider with conflicts of interests. Approval for the remaining insiders with conflicts of interests was passed following their avoidance and Chair Ching-Leou Teng's consultation with the participating directors.
December 24, 2019	Stipulated the private placement price, number of shares, subscribers, period of payment, effective date of capital increase, and relevant matters for the 2019 1st private placement of the Company's common shares.	The Board of Directors were asked to submit a resolution after nine directors, including Ching-Leou Teng and others avoided conflicts of interests. Resolution: Motion passed by all participating directors without objection. The subscribers of the present case were individually reviewed. Director Tien Chang served as the Acting Chairman and approved the review for Ching-Leou Teng, an insider with conflicts of interests. Approval for the remaining insiders with conflicts of interests was passed following their avoidance and Chair Ching-Leou Teng's consultation with the participating directors.
April 14, 2020	Carrying out sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic convertible bonds	The Board of Directors were asked to submit a resolution after eleven directors, including Ching-Leou Teng and others avoided conflicts of interests. Resolution: Motion passed by all participating directors without objection. The subscribers of the present case were individually reviewed. Director Chien-Ho Tien served as the Acting Chairman and approved the review for Ching-Leou Teng, an insider with conflicts of interests. Approval for the remaining insiders with conflicts of interests was passed following their avoidance and Chair Ching-Leou Teng's consultation with the participating directors.

3. Exchange-Listed and OTC-Listed Companies shall disclose information such as evaluation cycle and period, scope and method of evaluation, and evaluation content in the self (or peer) evaluation of the Board of Directors.

Evaluation cycle	Once every year
Evaluation period	Based on the performance of the Board of Directors for the period from January 1, 2019 to December 31, 2019
Evaluation scope	Performance assessment of the Board of Directors, individual board members, Audit Committee, and Remuneration Committee
Evaluation method	Performance assessment based on the internal self-evaluation of the Board of Directors, and the self-assessment of the board members
Evaluation content	(1) Board performance assessment: including level of participation in company operations, quality of board decisions, composition and structure of the board, appointment of the directors and their continuing education, and internal control. (2) Performance assessment of individual board members: including understanding and control of the company goals and tasks, knowledge of director responsibilities, level of participation in company operations, management of internal relationships and communication, director professionalism and continuing education, and internal control. (3) Performance assessment of functional committees: including level of participation in company operations, knowledge of functional committee responsibilities, quality of functional committee decisions, composition of the functional committees and the appointment of its members, and internal control.

The self-evaluation results listed above contained no items that required further improvement.

4. Evaluation on the objectives for reinforcing the functions of the Board of Directors in the current and recent years (e.g., establishing an audit committee, improving information transparency) and its implementation:
   1. The Company has appointed a spokesperson and a deputy spokesperson to ensure that all material information is disclosed in a timely and fair manner to shareholders and stakeholders as references on the Company's financial and business-related information.
   2. The operation of the current Board of Directors is governed by relevant rules and regulations such as the "Rules and Procedures of Board of Directors Meetings."

3. All members of the current Board of Directors have participated in advanced courses on corporate governance topics.
4. The Company has appointed dedicated personnel responsible for reviewing and updating the Company website to enhance the transparency of financial and business information.

4.2 Operation of the Audit Committee

The focus of the Audit Committee's work is to assist the Board of Directors in supervising and fulfilling the quality and integrity requirements on the Company's accounting, auditing, financial reporting process, and financial controls. Matters deliberated by the Audit Committee include financial statements, auditing and accounting policies and procedures, internal control systems, major asset or derivative transactions, major capital loans and endorsements or guarantees, placement or issuance of securities, regulatory compliance, and appointment, termination, and service fees of the CPA.

As of the time of publication, the Audit Committee has been convened for 6 times (A) for 2019 and 2020. The attendance of the committee members is as follows:

Title	Name	Attendance in person (B)	Attendance by proxy	Notes
Independent director	Chin-Te Chang	6	-	
Independent director	Yu-Min Yang	5	1	
Independent director	Chien-Ho Tien	6	-	

Other matters of note:

1. In the event of any of the following in the operations of the Audit Committee, the date and term of the Board of Directors meeting, motion content, resolutions of the Audit Committee, and the Company's response to the opinions of the Audit Committee shall be recorded and expounded:
   (1) Items listed in Article 14-5 of the Securities and Exchange Act:

Board Meeting	Proposal content and follow up	Items listed in Article 14-5 of the Securities and Exchange Act	Resolutions passed by two-thirds majority of the board of directors but not approved by the audit committee
2019 1st Meeting	1. Examination of the Company's 2018 Financial Statements 2. Deficit Compensation Plan for 2018 3. Planning of the reappointment of EY Taiwan for providing the Company with audit services for the 2019 financial statements and tax reports, assessment of CPA independence, and audit service fees for 2019 4. Amendments to the Operational Procedures for Acquisition and Disposal of Assets, Operating Procedures for Granting Loans, and Endorsement and	V	None

	Guarantee Regulations 5. Statement of Internal Control for 2018		
	Resolution of the Audit Committee (March 19, 2019): Passed by all Audit Committee members		
	Company's response to the Audit Committee opinion: passed by all participating directors		
2019 2nd Meeting	1. Amendment of the Company's internal audit implementation rules and management regulations	V	None
	Resolution of the Audit Committee (June 21, 2019): Passed by all Audit Committee members.		
	Company's response to the Audit Committee opinion: passed by all participating directors		
2019 3rd Meeting	1. Adoption of the Company's 2019 Q2 Consolidated Financial Statements 2. Carrying out sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic convertible bonds	V	None
	Resolution of the Audit Committee (August 7, 2019): Passed by all Audit Committee members.		
	Company's response to the Audit Committee opinion: passed by all participating directors		
2019 4th Meeting	1. Equity acquisition of Panco Healthcare Co., Ltd and acquisition agreement 2. Plans to capitalize development expenses directly related to the US BLA of PV that satisfy the technical feasibility conditions. 3. Stipulated the private placement price, number of shares, subscribers, period of payment, effective date of capital increase, and relevant matters for the 2019 1st private placement of the Company's common shares 4. 2020 Operation Plan and Budget 5. 2020 Audit Plan	V	None
	Resolution of the Audit Committee (December 24, 2019): Passed by all Audit Committee members.		
	Company's response to the Audit Committee opinion: passed by all participating directors		
2020 1st Meeting	1. Examination of the Company's 2019 Financial Statements and Business Report 2. Deficit Compensation Plan for 2019 3. Planning of the reappointment of EY Taiwan for providing the Company with audit services for the 2020 financial statements and tax reports, and assessment of CPA independence 4. Audit service fees for 2020 5. Plans for cash capital increase through	V	None

	issuance of new shares in 2020 6. Business Operation Plan 7. Plans to change fund utilization items of the 1st cash capital increase in 2015 and the 1st cash capital increase in 2016 before being listed over-the-counter 8. Plans for issuing employee stock options to buy company stock at below-market prices 9. Statement of Internal Control for 2019		
	Resolution of the Audit Committee (February 19, 2020): Passed by all Audit Committee members.		
	Company's response to the Audit Committee opinion: passed by all participating directors		
2020 2nd Meeting	1. Modified the equity acquisition agreement between the Company and Panco Healthcare Co. Ltd (hereafter referred to as Panco Healthcare), and the appointment of directors, supervisors, and managers of Panco Healthcare 2. As of April 14, 2020, 29,331,802 shares from the Plan for Cash Capital Increase through Private Placements approved during the 2019 1st Shareholders Interim Meeting (October 1, 2019) remain unsubscribed. Following the shareholders meeting in May 27, 2020, the Company will no longer issue the remaining unsubscribed shares 3. Planning of carrying out the sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic convertible bonds for 2020 4. Operation plans, director and manager appointments, and capital increase plans for the South Korean subsidiary company 5. Added content on explaining the Company's plan to increase capital for the US subsidiary company, PharmaEssentia USA Corporation	V	None
	Resolution of the Audit Committee (April 14, 2020): Passed by all Audit Committee members.		
	Company's response to the Audit Committee opinion: passed by all participating directors		

(2) Resolutions passed by two-thirds or more of the board of directors but not approved by the audit committee, apart from the above matters: none

2. In the event of a conflict of interests with any independent director when reviewing a motion, the independent director name, motion content, reason behind conflicts of interest, and participation status in passing resolution shall be recorded: none

3. Communication between independent directors with internal control managerial personnel and the CPA:

(1) Communication between independent directors and the CPA

Date	Focal points of communication
March 27, 2019	Communication matters between EY Young with the Audit Committee, independent directors, and Company management
February 19, 2020	Communication matters between EY Young with the Audit Committee, independent directors, and Company management

(2) Communication between independent directors and internal control managerial personnel

In addition to submitting an audit report to the independent directors for review every month, the manager of the internal audit department of the Company also reports material findings of audits of the Audit Committee and Board of Directors to individual Board members.

4.3 Corporate governance practices, its dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies, and reasons

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
1. Has the Company formulated and disclosed corporate governance practices based on the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies?	✓		The Company has formulated corporate governance practices, which have been approved by the Board of Directors.	None
2. Company ownership structure and shareholder interests				None
(1) Has the Company formulated internal operating procedures to handle shareholder suggestions, concerns, disputes and litigation matters, and implemented them in accordance with the procedures?	✓		(1) The Company has formulated Internal Material Information Processing Operation Procedures, and has appointed a spokesperson and deputy spokesperson to handle shareholder enquiries.	
(2) Does the Company have a list of major shareholders who actually control the Company and the ultimate controlling	✓		(2) The company has dedicated shareholder service management personnel who manages relevant	

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
party of the major shareholders?			information and has appointed a dedicated shareholder service agent to assist in handling shareholder service-related matters. The Company is informed of the major shareholders who actually control the Company and their ultimate controlling party.	
(3) Has the Company established and implemented control risk management and firewall mechanisms between affiliate companies?	✓		(3) The Company has formulated control mechanisms such as the Transaction Operation Procedures for Corporate Group Member, Specified Companies, and Related Parties and the Operational Procedures for Supervising Subsidiary Companies.	
(4) Has the Company formulated internal regulations prohibiting insiders of the company from using undisclosed information to buy or sell securities?	✓		(4) The Company has formulated the Operation Procedures for Processing Internal Material Information and Preventing Insider Trading.	
3. Composition and Responsibilities of the Board of Directors (1) Has the Board of Directors formulated and implemented a diversification policy regarding its composition?	✓		(1) During the 2018 Shareholders Meeting, the Company appointed 11 directors (including 3 independent directors) based on the Articles of Incorporation. The composition of the Board is diversified; it has 2 female directors, and the	

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
			Board members have business, legal, financial and industry-related experience.	
(2) In addition to setting up a Remuneration Committee and an Audit Committee in accordance with the law, has the Company voluntarily established other functional committees?	✓		(2) The Company has set up a Remuneration Committee and established an Audit Committee on June 25, 2018. In the future, other functional committees can be set up as per need.	
(3) Has the Company formulated board performance evaluation regulations and method, conducted regular performance evaluation every year, and reported the performance evaluation results to the Board of Directors, and used it as a reference for individual directors' remuneration and nomination for reappointment?	✓		(3) The Company has formulated the regulations for the self or peer evaluation of the Board of Directors, which was approved by the Board on September 14, 2018. The performance evaluation of the Board will be carried out in 2019 and 2020 and the performance evaluation results will be reported to the Board.	
(4) Does the Company regularly evaluate CPA independence?	✓		(4) The Company evaluates CPA independence from various aspects such as financial benefits, financing and guarantees, business relationships, family and personal relationships, employment relationships, gift and special offers, auditor rotation, and non-audit matters. On February 19, 2020, the Board of Directors reviewed the CPA's Statement of	

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
			Independence.	
4. Has the Exchange-Listed and OTC-Listed Company appointed qualified and appropriate numbers of personnel as corporate governance personnel, and appointed a corporate governance manager dedicated toward corporate governance matters (including but not limited to providing information required by the directors and supervisors to carry out their duties, assisting directors and supervisors in complying with the law, handle matters related to board and shareholders meetings in accordance with regulations, and compiling minutes of board and shareholders meeting)?	✓		The New Business Development Division and the General Administration Division are responsible for matters related to corporate governance.	None
5. Has the Company established communication channels for stakeholders (including but not limited to shareholders, employees, clients and customers, and suppliers), a stakeholder section in the Company website, and respond appropriately to corporate social responsibilities topics deemed crucial to the stakeholders?	✓		The Company has appointed a spokesperson and deputy spokesperson to serve as the communication channel for stakeholders. The Company has set up a stakeholder interaction section to respond to relevant enquiries.	None
6. Has the Company appointed a professional shareholder service agent to handle shareholder services?	✓		The Company has appointed CTBC Bank to handle shareholder services	None
7. Information disclosure (1) Has the Company set up a website to disclose its financial, business, and corporate governance information?	✓		(1) The Company website serves to provide information of various types such as introduction of the Company, its clinical research and	None

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
(2) Has the Company adopted other methods of information disclosure (such as setting up an English website, designating a person to be responsible for the collection and disclosure of Company information, implementing a spokesperson system, placing information on institutional investor conferences on the Company website)? (3) Does the company announce and file the annual report within two months after the end of the fiscal year, and announce and file the Q1–Q3 financial statements and monthly operations within the prescribed deadline?	✓		development, products, news, finance and businesses, corporate social responsibility, and corporate governance. The Company also discloses the information on the Market Observation Post System in accordance with the law. (2) The Company has appointed dedicated personnel for collecting and disclosing information, and has appointed a spokesperson and deputy spokesperson. (3) The Company announced the 2019 consolidated and individual financial statements on February 27, 2020.	
8. Does the Company have other material information that is conducive to understanding the company's corporate governance practices (including but not limited to employee interests, employee care, investor relationships, supplier relationships, stakeholder interests, status of continuing education of directors and supervisors, implementation	✓		(1) Employee interests: established an employee welfare committee, implemented pension plans, purchased employee group insurance plans, and other measures (2) Employee care: regularly convenes labor–management meetings in accordance with the Labor Standards Act and other	None

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
status of risk management policies and risk measurement standards, implementation status of client/customer policies, purchase of indemnity insurance for directors and supervisors)?			relevant regulations safeguarding the legal interests of employees (3) Investor relationships: discloses finance and business information, and material information on the Market Observation Post System for investors knowledge in accordance with relevant regulations, and appropriately handles investor enquiries and maintains satisfactory investor relationships (4) Supplier relationships: fulfill obligations corresponding to the rights of suppliers according to contracts, ensuring that the delivery date, price, quality, and other details meet the requirements and enabling a satisfactory communication and partnership with each other. (5) Stakeholder interests: disclose finance, business, and material information on the Market Observation Post System for stakeholder knowledge (7) Continuing education of directors: all our Directors have professional backgrounds and have continually engaged in continuing their education in related courses. (7) Implementation status of risk management policies	

Assessment item	Actual practice			Dissimilarity with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Y	N	Summary description	
			and risk measurement standards: the Company has established appropriate policies, procedures, and internal controls for risk management in accordance with relevant regulations. Major financial activities are subject to review by the Board of Directors in accordance with relevant regulations and internal control measures. (8) Implementation status of client/customer policies: Good communication with customers; the Company has dedicated sales personnel who respond to customer needs in a timely manner. (9) Purchase of indemnity insurance for directors and supervisors: stipulated in the Articles of Incorporation and has purchased indemnity insurance for directors and supervisors.	
9. Please state improvements to the corporate governance evaluation results released by the Corporate Governance Center of the Taiwan Stock Exchange Corporation in the most recent year, and state priorities and measures for those who have not improved. The Company was placed in the second group (6%–20%) in the 2019 corporate governance evaluation, which is a significant improvement from 2018. We will continue to disclose information through the corporate social responsibility section and investor section on the Company website, disclose corporate governance structure, shareholders meeting information, Chinese and English financial statements, as well as regulations and other relevant information. With the establishment of the Audit Committee in 2018, we have achieved significant growth and progress in terms of safeguarding shareholder rights and interests, equal treatment of shareholders, strengthening the structure and operations of the Board of Directors, and improving information transparency.				

4.4 If the Company has a salary and compensation committee, it should disclose its composition, responsibilities, and operations:

The Company has established a Remuneration Committee. The current members are Independent directors Chin-Te Chang, Yu-Min Yang, and Chien-Ho Tien and Professor Ming-Chuan Hsieh, whose main responsibilities are to formulate and review the policies, systems, standards, and structure concerning the performance evaluation and remuneration of directors and managers.

1. Composition details of the Remuneration Committee

Identity type (Note 1)	Criteria / Name	Has >5 years of work experience and the following professional qualifications			Whether satisfying independence standards (Note 2)										Member of the salary and compensation committee of how many other companies?	Notes
		Lecturer or higher positions in a public or private colleges or	Judge, prosecutor, lawyer, accountant, or other professional and technical	Work experience in business, legal affairs, finance, accounting or other	1	2	3	4	5	6	7	8	9	10		
Independent director	Chin-Te Chang	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	2	Satisfying criteria
Independent director	Yu-Min Yang			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	Satisfying criteria
Independent director	Chien-Ho Tien			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	Satisfying criteria
Other	Ming-Chuan Hsieh	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	Satisfying criteria

Note 1: Please fill in as director, independent director, or others in Identity Type.

Note 2: For members satisfying the following conditions during the two years before and during their tenure of office, please mark "✓" in the space below each condition code.

(1) Not an employee of the company or any of its affiliates.

(2) Not a director or supervisor of the company or any of its affiliates (excluding independent directors appointed in accordance with the Act or the laws and regulations of the local country by, and concurrently serving as such at, a public company and its parent or subsidiary or a subsidiary of the same parent).

(3) Not a natural-person shareholder who holds shares, together with those held by the person's spouse, minor children, or held by the person under others' names, in an aggregate of one percent or more of the total number of issued shares of the company or ranking in the top 10 in holdings.

(4) Not a spouse, relative within the second degree of kinship, or lineal relative within the third degree of kinship, of a managerial officer under (1) or any of the persons in (2) and (3).

(5) Not a director, supervisor, or employee of a corporate shareholder that directly holds five percent or more of the total number of issued shares of the company, or that ranks among the top five in shareholdings, or that designates its representative to serve as a director or supervisor of the company under Article 27, Paragraph 1 or 2 of the Company Act (excluding independent directors appointed in accordance with the Act or the laws and regulations of the local country by, and concurrently serving as such at, a public company and its parent or subsidiary or a subsidiary of the same parent).

(6) Not a director, supervisor, or employee of another company in which a majority of the company's director seats or voting shares and those of any other company are controlled by the same person (excluding independent directors appointed in accordance with the Act or the laws and regulations of the local country by, and concurrently serving as such at, a public company and its parent or subsidiary or a subsidiary of the same parent).

(7) Not a director (or governor), supervisor, or employee of another company or institution in which the chairperson, general manager, or person holding an equivalent position of the company and a person in any of those positions at another company or institution are the same person or are spouses (excluding independent directors appointed in accordance with the Act or the laws and regulations of the local country by, and concurrently serving as such at, a public company and its parent or subsidiary or a subsidiary of the same

parent).

(8) Not a director, supervisor, officer, or shareholder holding five percent or more of the shares, of a specified company or institution that has a financial or business relationship with the company (excluding specified companies or institutions holding 20% or more but less than 50% of the total number of issued shares of the company and is an independent director appointed in accordance with the Act or the laws and regulations of the local country by, and concurrently serving as such at, a public company and its parent or subsidiary or a subsidiary of the same parent).

(9) Not a professional individual who, or an owner, partner, director, supervisor, or officer of a sole proprietorship, partnership, company, or institution that, provides auditing services to the company or any affiliate of the company, or that provides commercial, legal, financial, accounting or related services to the company or any affiliate of the company for which the provider in the past 2 years has received cumulative compensation exceeding NT$500,000, or a spouse thereof; provided, this restriction does not apply to a member of the remuneration committee, public tender offer review committee, or special committee for merger/consolidation and acquisition, who exercises powers pursuant to the Act or to the Business Mergers and Acquisitions Act or related laws or regulations.

(10) None of the circumstances listed in Article 30 of the Company Act.

2. Information on the practices of the Remuneration Committee

(1) The Company's Remuneration Committee has 3 committee members.

(2) The yearly focus of the Remuneration Committee is to reinforce corporate governance and strengthen the functions of the Board of Directors, and to improve the remuneration system for directors and managers of the company. Hence, in accordance with Article 14-6 of the Securities and Exchange Act and the Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Taiwan Stock Exchange or the Taipei Exchange promulgated by the Financial Supervisory Commission on March 18, 2011 (Ref. No.: Jin-Guan-Zheng-Fa-Zi-1000009747), the Board of Directors approved to establish a Remuneration Committee, formulate the Company's Remuneration Committee Organizational Rules, and approved the appointment of the first Remuneration Committee members.

(3) Term of office of the present Committee: June 25, 2018–June 24, 2021. As of the time of publication, the Remuneration Committee has convened for 3 times (A) for 2019 and 2020. The qualifications and attendance of the committee members is as follows:

Title	Name	Attendance in person (B)	Attendance by proxy	Actual attendance rate (%) [B/A]	Notes
Chair	Chin-Te Chang	3	0	100%	
Member	Yu-Min Yang	3	0	100%	
Member	Chien-Ho Tien	3	0	100%	
Member	Ming-Chuan Hsieh	3	0	100%	

Other matters of note:

1. In the event the Board of Directors does not adopt or modify the suggestions of the Remuneration Committee, the date and term of the Board of Directors meeting, motion content, resolutions of the Board, and the Board's resolution and Company's response to the opinions of the Remuneration Committee shall be recorded: none.
2. In the event a motion of the Remuneration Committee encounters dissenting opinions or reservations from committee members and is accompanied with records or written statements, the Remuneration Committee Meeting date and term, motion content, opinions of all members and response to the opinions shall be recorded: none.
3. Motions and resolutions of the 2019 Remuneration Committee Meeting

	Time	Motion	Resolution	
	2019 1st Remuneration Committee Meeting	1. Review of the 2018 performance assessment of managers 1. Review of the 2018 remuneration policies for managers and the 2018 promotion and salary increase plans	Passed without objection by all participating committee members.	
	2019 2nd Remuneration Committee Meeting	1. Employee Stock Ownership Trust of the Company	All participating committee members agreed that the motion shall be proposed again following a revision.	
	2020 1st Remuneration Committee	1. Review of the 2019 performance assessment of managers 2. Review of the 2020 salary increase plans of managers	Passed without objection by all participating committee members.	

4.5 Fulfilment of social responsibility:

Assessment item	Actual Practice			Dissimilarity with Corporate Social Responsibility Best Practice Principles and reasons
	Y	N	Summary description	
1. Has the Company conducted risk assessments on environmental, social, and corporate governance issues related to company operations and formulated related risk management policies or strategies based on the concept of materiality?	✓		(1) The Company has formulated the Corporate Social Responsibility Practice Principles and continues to practice corporate social responsibility. (2) Environmental issues The Company has formulated energy-saving and carbon-reduction policies to promote environmental protection-related matters and encouraged them among colleagues. (3) Social issues The Company has formulated and implemented reasonable employee welfare measures in line with the organizational goals and	None

Assessment item	Actual Practice			Dissimilarity with Corporate Social Responsibility Best Practice Principles and reasons
	Y	N	Summary description	
			human resource development, and developed work regulations with clear and effective rewards and punishment systems; it is oriented to cultivate professional and technical personnel and encourages employees to share and exchange knowledge and enhance their academic skills, in order to accomplish various missions. (4) Social contribution Sponsored the Taiwan New Year Concert 2020 and The 17th International Symposium on Viral Hepatitis and Liver Diseases ISVHLD—Global Hepatitis Summit	
2. Has the company set up a full-time (part-time) unit that promotes corporate social responsibility, which is authorized by the Board of Directors to senior management to deal with and reports to the Board of Directors?	✓		In order to improve the management of corporate social responsibility, the New Business Development Division and the General Administration Division of the Company have been made responsible for promoting corporate social responsibility, continuing the implementation of corporate social responsibility, and regularly reporting to the board of directors.	None
3. Environmental issues (1) Has the Company established an appropriate environmental management system according to the characteristics of its industry?	✓		(1) The company continues to promote environmental protection-related matters to staff and	None

Assessment item	Actual Practice			Dissimilarity with Corporate Social Responsibility Best Practice Principles and reasons
	Y	N	Summary description	
			requires them to comply.	
(2) Has the company committed to improving the utilization efficiency of various resources and used recycled materials with low impact on the environment?	✓		(2) The company carries out the disposal and recycling of wastes in accordance with the contents of the industrial waste disposal plan, and handles various related public affairs in accordance with the environmental protection regulations of the competent authority.	
(3) Has the company assessed the current and future potential risks and opportunities of climate change for the Company, and taken measures to address climate-related issues?	✓		(3) Monitoring climate change and mitigating the greenhouse effect is a joint responsibility of all countries in the world. To execute our social responsibility and continue to promote emission reduction, we are scheduled to achieve the target of reducing per capita emissions by 1% in 2020 based on the most recent figures of 2019.	
(4) Has the company compiled statistics on greenhouse gas emissions, water consumption and total amount of waste in the past two years, and formulated policies for energy conservation and carbon reduction, greenhouse gas reduction, water use reduction, or other waste management?	✓		(4) The company actively pays attention to issues of energy saving and carbon reduction and greenhouse gas reduction. The company implements air conditioning temperature control in the summer and effectively uses energy to achieve energy saving and carbon reduction.	
4. Safeguarding social welfare (1) Has the company formulated relevant management policies and	✓		(1) The company abides by relevant labor laws and	None

Assessment item	Actual Practice			Dissimilarity with Corporate Social Responsibility Best Practice Principles and reasons
	Y	N	Summary description	
procedures in accordance with relevant regulations and international human rights conventions?			regulations and formulates relevant labor operation procedures to protect workers from situations that may endanger the basic rights of workers.	
(2) Has the company formulated and implemented reasonable employee welfare measures (including remuneration, leaves, and other benefits), and appropriately reflected operating performance or results in employee remuneration?	✓		(2) In accordance with the provisions of the Corporate Governance Best Practice Principles for TWSE / TPEx Listed Companies, the Company reinforced the responsibilities of directors by which operation transparency is enhanced and shareholder interests protected. The Company also regularly holds employee seminars to promote the Company's cultural policies, and formulates work codes with clear and effective reward and punishment systems.	
(3) Does the Company provide a safe and healthy working environment for employees, and regularly implement safety and health education for employees?	✓		(3) The Company values the safety and health of employees and regularly conducts employee health checks.	
(4) Has the Company established an effective career development training program for employees?	✓		(4) In order to meet organizational goals and human resource development, improve staff quality, professional competence and work efficiency, in-service employees can participate in various professional technical training and training courses after	

Assessment item	Actual Practice			Dissimilarity with Corporate Social Responsibility Best Practice Principles and reasons
	Y	N	Summary description	
			approval as required by their position and work needs. The Company encourages employees to share and exchange knowledge to enhance their academic skills in order to accomplish various missions. Oriented toward cultivating professional and technical personnel, the Company provides employees with convenient and diverse learning channels and opportunities and strengthens their professional training when required.	
(5) With regard to customer health and safety, customer privacy, marketing and labeling of products and services, does the Company follow relevant regulations and international standards, and formulate relevant protection policies and appeal procedures for safeguarding consumer rights?	✓		(5) We have dedicated sales staff to provide customer service and safeguard consumer rights.	
(6) Has the Company formulated supplier management policies that require suppliers to follow relevant regulations on environmental protection, occupational safety and health or labor human rights, and implemented them?	✓		(6) The Company and its suppliers maintain open communication channels, and safeguard the rights and interests of both parties reasonably on the basis of mutual trust and reciprocity.	
5. Does the Company reference international report preparation standards or guidelines to prepare corporate social responsibility reports and other reports for disclosing the Company's non-financial information? Are the	✓		The Company has begun work on preparing corporate social responsibility reports and other reports that disclose the Company's non-financial information	None

Assessment item	Actual Practice			Dissimilarity with Corporate Social Responsibility Best Practice Principles and reasons
	Y	N	Summary description	
aforementioned reports supported by the trust or guaranteed opinions of third-party verification units?			in 2020, which is expected to be completed in the second half of this year.	

6. If the company has formulated corporate social responsibility practice principles in accordance with the Corporate Social Responsibility Best Practice Principles, please state the differences between the two in their operations, if any:
The Corporate Social Responsibility Practice Principles formulated by the Company are consistent in its spirit and practical implementation and have no significant dissimilarities.

7. Other material information that may aid in understanding the operations on corporate social responsibility:
(1) Environmental protection: The Company implements environmental protection in accordance with relevant laws and regulations, and fulfills the responsibilities of an environmentally friendly citizen.
(2) Social welfare: The Company is committed to outside its industry and donates to research institutions as appropriate.
(3) Human rights and employee interests:
1. The Company maintains a favorable working environment in accordance with the “Act of Gender Equality in Employment” and “Sexual Harassment Prevention Act” and other laws to protect employee work rights.
2. To improve the quality and work skills of employees and enhance their efficiency and quality of work, the Company has formulated Learning and Training Management Regulations aimed at training outstanding professionals, thereby improving operational performance and enabling the effective development and use of human resources.
(4) Safety and health:
1. The Company attaches great importance to the management of employees’ occupational safety and health, and department managers pay attention at all times to control occupational safety and health risks and improve performance.
2. The company has formulated laboratory-related operating specifications to standardize basic procedures for employees to operate equipment, and organizes on-the-job labor safety and health education training at random to ensure a safe working environment.

8. Please state details if the Company corporate social responsibility report has satisfied the verification standard of a relevant verification agency: none

4.6 Ethical corporate management practices and adopted measures

Assessment item	Actual practice			Dissimilarity with Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Y	N	Summary description	
1. Formulated of ethical corporate management policies and plans (1) Has the Company formulated the ethical corporate management policies approved by the Board of Directors, and expressed its commitment to the policies and practices of ethical corporate management in the regulations and external documents, as well as the Board and management's commitment to actively implement the operating policy? (2) Has the Company established an assessment mechanism for the risks of unethical behavior, regularly analyzed and evaluated business activities with a high risk of unethical behavior, and formulated plans to prevent such behaviors that encompass the prevention measures stipulated in Article 7, Subparagraph 2 of the Ethical Corporate Management Best Practice Principles for TWSE / GTSM Listed Companies? (3) Has the company adopted preventive measures and regularly reviewed plans concerning items listed in Article 7, Subparagraph 2 of the Ethical Corporate Management Best Practice Principles for TWSE / GTSM Listed Companies or other business activities with a high risk of unethical behavior?	✓ ✓ ✓		(1) The company has formulated Ethical Corporate Management Practice Principles and established satisfactory corporate governance and risk control mechanisms in order to achieve the sustainable development of the Company. (2) The Company's directors, managers, employees, or persons with substantial control are strictly prohibited from directly or indirectly providing, promising, requesting or accepting any improper favors, or other acts of unethical behavior that violate integrity, lawfulness, or fiduciary duty. (3) The Company has established a code of conduct for employees, based on the principles of self-discipline, integrity, honesty towards customers, investors, colleagues, suppliers and everyone we come into contact with. Employees are also strictly prohibited from accepting any inappropriate favors and	None

Assessment item	Actual practice			Dissimilarity with Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Y	N	Summary description	
			hospitality.	
2. Implementing ethical corporate management (1) Does the Company evaluate the integrity records of the counterparties and clearly stipulate terms of ethical behavior in the contract signed with counterparties? (2) Has the Company set up a special unit for promoting ethical corporate management under the Board of Directors, which regularly reports to the Board (at least once a year) on its ethical corporate management policies and plans aimed at preventing unethical behavior and supervises the implementation? (3) Has the Company formulated policies to prevent conflicts of interest, provided appropriate reporting channels, and implemented them?	✓ ✓ ✓		(1) The Company's business activities do not involve illegal matters or purposes. For those who have a record of unethical behavior, the person may be demoted, suspended, or removed from the list of qualified suppliers. (2) The Company established an organizational hierarchy to achieve division of labor and mutual supervision. At present, the audit office conducts regular and random audits and reports regularly to the Board of Directors. (3) The directors of the Company maintain a high degree of self-discipline and disclose vital details of their conflicts of interests in motions listed by the Board when the motions present a conflict of interest with the director or their proxy. Such directors abstain from discussion and passing resolutions and do not exercise the proxy voting right authorized by another director	None

Assessment item	Actual practice			Dissimilarity with Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Y	N	Summary description	
			when their conflicts of interests are against the interests of the Company.	
(4) Has the Company established an effective accounting system and internal control for the implementation of ethical corporate management, and drafted internal audit units based on the assessment results for risks of unethical behavior, and complied with the plan to prevent such behavior, or entrust an accounting firm to perform the audit?	✓		(4) The Company established an effective accounting and internal control system. The Company has been promoting the digitization of operations, which connects various management functions from one computer to another other, laying interconnecting checks at each layer to execute the management of anomalies.	
(5) Does the Company regularly hold internal and external ethical corporate management training?	✓		(5) The Company will continue to hold internal and external ethical corporate management training.	
3. Offence-reporting practices (1) Has the Company formulated a clear reporting and reward system, established convenient reporting channels, and assigned appropriate personnel to handle subjects being reported?	✓		The Company accepts all notifications of unlawful or unethical matters, and has an independent special unit responsible for related investigation.	None
(2) Has the company established standard operating procedures for accepting offence-reporting investigations, follow-up measures to be taken after the investigation is completed, and related confidentiality mechanisms?	✓		Confidentiality of the identity of the informants and the content of the report are ensured. The results of the investigation are regularly announced to all employees and reported to the members of the Board of Directors.	
(3) Has the company taken measures to protect whistleblowers from improper treatment due to their	✓			

Assessment item	Actual practice			Dissimilarity with Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Y	N	Summary description	
reporting of others' offences?				
4. Reinforcing information disclosure (1) Does the Company disclose the content of its ethical corporate management principles and promote its effectiveness on the Company website and the Market Observation Post System?	✓		The Company website discloses the status of the Company and complies with relevant laws concerning posting timely information on the Market Observation Post System.	None
5. If the company has formulated ethical corporate management practice principles in accordance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies, please state the differences between the two in their operations, if any: none				
6. Other material information conducive to understanding the ethical corporate management practices of the Company (e.g., amendments to existent practice principles following reviews): none				

4.7 If the company has formulated corporate governance practice principles and related regulations, the company should state where the information can be found:

The Company has formulated Corporate Governance Practice Principles and relevant information can be found under the corporate governance section of the Company website.

4.8 Other material information that may assist in understanding the operations of corporate governance must be disclosed:

The Board of Directors convene at least once every quarter. Managers and accounting supervisors attend the meeting to face enquiries from directors, and audit managers attend the meeting to report audit findings to the Board of Directors and Audit Committee

4.9 Implementation of an Internal Control System

PharmaEssentia Corporation

Statement on the Internal Control System

Based on the findings of a self-assessment, PharmaEssentia states the following with regard to its internal control system during 2019:

1. PharmaEssentia's board of directors and management are responsible for establishing, mplementing, and maintaining an adequate internal control system. Our internal control process is designed to provide reasonable assurance over the effectiveness and efficiency of our operations (including profitability, performance, and safeguarding of assets); the reliability, timeliness, and transparency of our reporting; and compliance with applicable rulings, laws, and regulations.
2. The internal control system has inherent limitations. No matter how perfectly designed it is, an effective internal control system can provide only reasonable assurances of accomplishing its three stated objectives. Moreover, its effectiveness may be subject to changes because of extenuating circumstances beyond our control. Nevertheless, our internal control system contains self-monitoring mechanisms, and PharmaEssentia shall take immediate remedial actions in response to any identified deficiencies.
3. PharmaEssentia evaluates the design and operating effectiveness of its internal control system based on the criteria provided in the Regulations Governing the Establishment of Internal Control Systems by Public Companies (hereinafter "the Regulations"). The criteria adopted by the Regulations identify five key components of managerial internal control: (1) control environment, (2) risk assessment, (3) control activities, (4) information and communication, and (5) monitoring activities. Each component is further branched into several items, the details of which can be found in the Regulations.
4. PharmaEssentia has evaluated the design and operating effectiveness of its internal control system according to the aforementioned components of internal control.
5. Based on the findings of such evaluation, PharmaEssentia believes that—as of December 31, 2019—it has maintained, in all material respects, an effective internal control system (that includes the supervision and management of its subsidiaries), to provide reasonable assurance over its operational effectiveness and efficiency, reliability, timeliness, transparency of reporting, and compliance with applicable rulings, laws, and regulations.
6. This Statement is an integral part of PharmaEssentia's annual report and prospectus, and will be made public. Any falsehood, concealment, or other illegality in the content made public shall entail legal liability under Articles 20, 32, 171, and 174 of the Securities and Exchange Act.
7. This statement was passed by the board of directors in their meeting held on February 19, 2020, with none of the 11 attending directors expressing dissenting opinions, and the remainder all affirming the content of this Statement.

PharmaEssentia Corporation

Chairman: Ching-Leou Teng

General Manager: Jack Hwang

2.If a CPA was engaged to conduct a special audit of the internal control system, provide its audit report: None.

4.10 For the most recent fiscal year or during the current fiscal year up to the date of publication of the annual report, disclose any sanctions imposed in accordance with the law upon the company or its internal personnel, any sanctions imposed by the company upon its internal personnel for violations of internal control system provisions, principal deficiencies, and the state of any efforts to make improvements: None.

4.11 Material resolutions of a shareholder meeting or board of directors meeting during the most recent fiscal year or during the current fiscal year up to the date of publication of the annual report:

1. Review of the implementation of Shareholders Meeting resolutions

The 2019 Annual Shareholders Meeting of the Company was held on June 26, 2019 at Taipei Nangang Exhibition Hall. The following resolutions were passed and a review of their implementation statuses are as follows:

Report Items

1. 2018 Business Report
   All attending shareholders have been informed
2. 2018 Audit Committee's Review Report
   All attending shareholders have been informed
3. Business Operation Plan Progress Report
   All attending shareholders have been informed

Proposed Adoptions

1. 2018 Business Report and Financial Statements

Resolution: The motion was put to vote in its original proposal after the chair has consulted all the participating shareholders and did not encounter any objection. According to the results, of the 152,127,843 votes represented by the participating shareholders (including electronic votes), 147,710,781 were in favor, 154,834 were against, and 4,262,228 abstained or did not vote. The number of votes in favor amounted to 97.09% of the total votes, exceeding the legal requirement. Therefore, the proposal was approved.

2. 2018 Deficit Compensation Statement

Resolution: The motion was put to vote in its original proposal after the chair has consulted all the participating shareholders and did not encounter any objection. According to the results, of the 152,127,843 votes represented by the participating shareholders (including electronic votes), 147,564,173 were in favor, 155,836 were against, and 4,407,834 abstained or did not vote. The number of votes in favor amounted to 97.00% of the total votes, exceeding the legal requirement. Therefore, the proposal was approved.

Discussions

1. Amendments to the Articles of Incorporation

Resolution: The motion was put to vote in its original proposal after the chair has consulted all the participating shareholders and did not encounter any objection. According to the results, of the 152,468,433 votes represented by the participating shareholders (including electronic votes), 146,101,526 were in favor, 153,834 were against, and 6,213,073 abstained or did not vote. The number of votes in favor amounted to 95.82% of the total votes, exceeding the legal requirement. Therefore, the proposal was approved.

2. Amendments to the Operational Procedures for Acquisition and Disposal of Assets

Resolution: The motion was put to vote in its original proposal after the chair has consulted all the participating shareholders and did not encounter any objection. According to the results, of the 152,468,433 votes represented by the participating shareholders (including electronic votes), 146,101,525 were in favor, 153,835 were against, and 6,213,073 abstained or did not vote. The number of votes in favor amounted to 95.82% of the total votes, exceeding the legal requirement. Therefore, the proposal was approved.

3. Amendments to the Operating Procedures for Granting Loans

Resolution: The motion was put to vote in its original proposal after the chair has consulted all the participating shareholders and did not encounter any objection. According to the results, of the 152,468,433 votes represented by the participating shareholders (including electronic votes), 146,101,521 were in favor, 154,839 were against, and 6,213,073 abstained or did not vote. The number of votes in favor amounted to 95.82% of the total votes, exceeding the legal requirement. Therefore, the proposal was approved.

4. Amendments to the Endorsement and Guarantee Regulations

Resolution: The motion was put to vote in its original proposal after the chair has consulted all the participating shareholders and did not encounter any objection. According to the results, of the 152,468,433 votes represented by the participating shareholders (including electronic votes), 146,168,015 were in favor, 87,345 were against, and 6,213,073 abstained or did not vote. The number of votes in favor amounted to 95.86% of the total votes, exceeding the legal requirement. Therefore, the proposal was approved.

There were no extempore motions in the present Shareholders Meeting. For voting details on the various proposals, please refer to the 2019 Shareholders Meeting minutes.

2. Board of Director Meetings

Date	Major motions	Resolution
January 24, 2019	1. Investment in IIH Biomedical Venture Fund I Co., Ltd.	Directors Chao-Ho Chen and Lung-Chih Yu avoided conflicts of interests. The motion was passed by 8 participating directors without

Date	Major motions	Resolution
		objection
February 18, 2019	1. Revision of the issue price range for cash capital increases	Passed without objection by all participating directors
March 27, 2019	1. Examination of the Company's 2018 Financial Statements and Business Report	Passed without objection by all participating directors
	2. Deficit Compensation Plan for 2018	Passed without objection by all participating directors
	3. Planning of the reappointment of EY Taiwan for providing the Company with audit services for the 2019 financial statements and tax reports, and assessment of CPA independence	Passed without objection by all participating directors
	4. Audit service fees for 2019	Passed without objection by all participating directors
	5. Amendments to the Articles of Incorporation, Operational Procedures for Acquisition and Disposal of Assets, Operating Procedures for Granting Loans, Endorsement and Guarantee Regulations.	Passed without objection by all participating directors
	6. Statement of Internal Control for 2018	Passed without objection by all participating directors
	7.Capital increase for the US subsidiary company, PharmaEssentia USA, LLC	Passed without objection by all participating directors
	8. Change in director in the Japanese subsidiary company, PharmaEssentia Japan KK, and the addition of 1 supervisor.	Passed without objection by all participating directors
	9. Drafting of matters related to the 2019 Annual Shareholders Meeting	Passed without objection by all participating directors
	10. Cancellation of 2018 Q4 restricted stock awards and stipulating the effective date of capital reduction	Passed without objection by all participating directors
	11. Exercising the 2018 Q4 employee stock options and stipulating the effective date of capital increase	Passed without objection by all participating directors
	12. Review of the 2018 performance assessment of managers	Passed without objection by all participating directors
	13. Review of the remuneration policy and 2018 promotion and salary increase of managers	The motions for promoting Senior manager Hsueh-Ling Chang and increasing the salaries of managers for 2018 were passed without

Date	Major motions	Resolution
		objection by all participating directors. Regarding the motion on subsidizing senior managers departing for the United States to visit relatives, it was suggested by participating directors that the Company should first establish an overseas high-level talent recruitment or related system and then propose the motion for discussion at the Board meetings.
May 14, 2019	1. Adoption of the Company's 2019 Q1 Consolidated Financial Statements	Passed without objection by all participating directors
	2. Amendments to the Articles of Incorporation	Passed without objection by all participating directors
	3. Cancellation of 2019 Q1 restricted stock awards and effective date of capital reduction	Passed without objection by all participating directors
	4. Exercising the 2019 Q1 employee stock options and stipulating the effective date of capital increase	Passed without objection by all participating directors
June 21, 2019	1. Amendment of the Company's internal audit implementation rules and management regulations	Passed without objection by all participating directors
August 14, 2019	1. Adoption of the Company's 2019 Q2 Consolidated Financial Statements	Passed without objection by all participating directors
	2. Authorizing conducting on-site examinations on Panco Healthcare	Passed without objection by all participating directors
	3. Initial technical collaboration between the Company and the US Axis Company (Axis Therapeutics Limited) on T-cell Receptor Engineered T-cell Therapy	Passed without objection by all participating directors
	4. Carrying out sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic convertible bonds	Motion passed by all participating directors without objection. The subscribers of the present case were individually reviewed. Director Chien-Ho Tien served as the Acting Chairman and approved the review for Ching-Leou Teng, an insider with conflicts of interests. Approval for the remaining insiders with conflicts of interests was passed following their avoidance and Chair Ching-Leou Teng's consultation with the participating directors.
	5. Planning of matters related to the	Passed without objection by all

Date	Major motions	Resolution
	2019 1st Shareholders Interim Meeting	participating directors
	6. Exercising the 2018 Q2 employee stock options and stipulating the effective date of capital increase	Passed without objection by all participating directors
November 14, 2019	1. Adoption of the Company's 2019 Q3 Consolidated Financial Statements	When the motion was put to vote, 9 participating directors (including those attending by proxy) voted in favor, whereas 1 director, Director Tsui-Ling Lo, voted against. The motion was thus passed.
	2. Capital increase for PharmaEssentia Japan KK	When the motion was put to vote, 9 participating directors (including those attending by proxy) voted in favor, whereas 1 director, Director Tsui-Ling Lo, voted against. The motion was thus passed.
	3. Exercising the 2019 Q3 employee stock options and stipulating the effective date of capital increase	Passed without objection by all participating directors
December 24, 2019	1. Equity acquisition of Panco Healthcare Co., Ltd and acquisition agreement	Passed without objection by all participating directors. In addition, the following clause shall be added to the equity purchase agreement passed in accordance with this motion, "the original shareholders of Panco Healthcare shall bear the net income/loss after taxes arising from the business operations before the date of completing the equity acquisition of Panco Healthcare in 2020."
	2. Plans to capitalize development expenses directly related to the US BLA of PV that satisfy the technical feasibility conditions.	Passed without objection by all participating directors
	3. Stipulated the private placement price, number of shares, subscribers, period of payment, effective date of capital increase, and relevant matters for the 2019 1st private placement of the Company's common shares.	Motion passed by all participating directors without objection. The subscribers of the present case were individually reviewed. Director Tien Chang served as the Acting Chairman and approved the review for Ching-Leou Teng, an insider with conflicts of interest. Approval for the remaining insiders with conflicts of interest was passed following their avoidance and Chair Ching-Leou Teng's consultation with the participating directors.

Date	Major motions	Resolution
	4. 2020 Operation Plan and Budget	Passed without objection by all participating directors. The actual implementation of the 2020 budget must be based on the principle of increasing income and decreasing expenses to lower losses.
	5. Line of credit from banks	Passed without objection by all participating directors.
	6. Employee Stock Ownership Trust of the Company	Participating directors agreed that the motion shall be discussed but not put to resolution.
	7. 2020 Audit Plan	Passed without objection by all participating directors
	8. Amendments to the Ethical Corporate Management Practice Principles of the Company	Passed without objection by all participating directors
February 19, 2020	1. Examination of the Company's 2019 Financial Statements and Business Report	Passed without objection by all participating directors
	2. Deficit Compensation Plan for 2019	Passed without objection by all participating directors
	3. Planning of the reappointment of EY Taiwan for providing the Company with audit services for the 2020 financial statements and tax reports, and assessment of CPA independence	Passed without objection by all participating directors
	4. Audit service fees for 2020	Passed without objection by all participating directors
	5. Plans for cash capital increase through issuance of new shares in 2020	Passed without objection by all participating directors
	6. Business Operation Plan	Passed without objection by all participating directors
	7. Plans to change fund utilization items of the 1st cash capital increase in 2015 and the 1st cash capital increase in 2016 before being listed over-the-counter	Passed without objection by all participating directors
	8. Plans for issuing employee stock options to buy company stock at below-market prices	Passed without objection by all participating directors
	9. Capital increase for the US subsidiary company, PharmaEssentia USA Corp.	Passed without objection by all participating directors
	10. Capital increase for PharmaEssentia Biotechnology (Beijing) Co., Ltd.	Passed without objection by all participating directors
	11. Establishment of the South	Passed without objection by all

Date	Major motions	Resolution
	Korean subsidiary company	participating directors
	12. Plans to sign a marketing and advertisement service agreement with RevHealth for the US newly launched drug, Besremi	Passed without objection by all participating directors
	13. Plans to cancel 740,741 shares awarded in a final ruling.	Passed without objection by all participating directors
	14. Statement of Internal Control for 2019	Passed without objection by all participating directors
	15. Drafting matters related to the 2020 Annual Shareholders Meeting	Passed without objection by all participating directors
	16. Exercising the 2019 Q4 employee stock options and stipulating the effective date of capital increase	Passed without objection by all participating directors
	17. Modifications to the Company's organizational structure	Passed without objection by all participating directors
	18. Review of the 2019 performance assessment of managers	Passed without objection by all participating directors
	19. Review of the 2019 salary increase of managers	Passed without objection by all participating directors
April 14, 2020	1. Operation plans, director and manager appointments, and capital increase plans for the South Korean subsidiary company	Passed without objection by all participating directors
	2. Modified the equity acquisition agreement between the Company and Panco Healthcare Co. Ltd (hereafter referred to as Panco Healthcare), and the appointment of directors, supervisors, and managers of Panco Healthcare	Passed without objection by all participating directors
	3. Proposal to compile a report on the actual implementation of carrying out the sponsoring issuance of overseas depositary receipts through cash capital increase and private placement of common shares or private placement in overseas or domestic convertible bonds presented during the 1st Shareholders Interim Meeting of 2019.	Passed without objection by all participating directors
	4. Planning of carrying out the sponsoring issuance of overseas depositary receipts through cash capital increase and/or cash capital increase through private placement of common shares and/or private placement in overseas or domestic	Motion passed by all participating directors without objection. The subscribers of the present case were individually reviewed. Director Chien-Ho Tien served as the Acting Chairman and approved the review for Ching-Leou Teng, an insider

Date	Major motions	Resolution
	convertible bonds for 2020	with conflicts of interests. Approval for the remaining insiders with conflicts of interests was passed following their avoidance and Chair Ching-Leou Teng's consultation with the participating directors.
	5. Added content on explaining the Company's plan to increase capital for the US subsidiary company, PharmaEssentia USA Corporation	Passed without objection by all participating directors
	6. Revise matters related to the 2020 Shareholders Meeting	Passed without objection by all participating directors

4.12 Content in which a major motion of the Board of Directors encountered dissenting opinions from a director or supervisor and is accompanied with records or written statements in the most recent year and up till the time of publication of the Annual Report:

On November 14, 2019, during the 2019 7th Board Meeting convened by the Seventh Term Board of Directors, when the motions "Adoption of the Company's 2019 Q3 Consolidated Financial Statements" and "Capital increase for PharmaEssentia Japan KK" was put to vote, 9 participating directors (including those attending by proxy) voted in favor, whereas 1 director, Director Tsui-Ling Lo, voted against. The motions were thus passed.

A summary of the written opinion of Director Tsui-Ling Lo is as follows:

(1) What is the reason behind the Accounts Receivables in the Consolidated Balance Sheet? To what company products do the Accounts Receivables correspond? Why have not the suppliers paid? What is the reason behind the current inventory balance of NT$180 million, which is 6 times that of the 2018 closing balance? What is the reason behind the one-fold increase in Other prepaid items? What matters required prepayments? The operating revenue between January and September 2019 increased drastically (an increase of NT$100 million) compared with the same period the previous year; please explain from which product is the revenue attributable to; what is the equivalent quantity of the product; and on how many patients was the product used?

(2) In the Operation Plans submitted for establishing the subsidiary company, the schedule of various planned items were all delayed. Take the case of PV treatment for example; it was originally planned that the program will enter Phase III clinical trial this year, obtain the drug permit license by 2020, and launch the drug onto the market by 2021. According to the present capital increase information, this program of the subsidiary is currently in Phase I clinical trial, expects to complete participant recruitment in 2020, and obtain the drug permit license in 2021. I demand that a review report on the delays of the various programs in the Japanese market be presented to the Board of Directors first, and propose concrete methods for improvement.

The Company replied to each of the questions in detail during the Meeting, and subsequently provided the various responses in writing. The details have been recorded in the Board Meeting minutes.

4.13 Summary of the resignation of the company's chairman of the board, general manager, accounting supervisor, finance supervisor, internal audit supervisor, and R&D supervisor during the most recent fiscal year up to the printing of the annual report: None.

5.Information on CPA Professional Fees

Accounting Firm	Name of CPA		CPA's Audit Period	Remark
Ernst & Young	Chien-Ju Yu	Li-Feng Lin	2019.1.1–2019.12.31	

Monetary Unit: NT$1,000

Fee Range \ Fee Items		Audit Fee	Nonaudit Fee	Total
1	< NT$2,000,000		V	
2	NT$2,000,000–NT$4,000,000	V		V
3	NT$4,000,000–NT$6,000,000			
4	NT$6,000,000–NT$8,000,000			
5	NT$8,000,000–NT$10,000,000			
6	>NT$10,000,000			

5.1. When nonaudit fees paid to the CPA, to the accounting firm of the CPA, and/or to any affiliated enterprise of such accounting firm are one quarter or more of the audit fees paid thereto, the amounts of both audit and nonaudit fees as well as details of nonaudit services shall be disclosed.

Monetary Unit: NT$1,000

Accounting Firm	Name of CPA	Audit Fee	Non-Audit Fee					CPA's Audit Period	Remarks
			System Design	Company Registration	Human Resource	Others	Subtotal		
Ernst & Young	Chien-Ju Yu Li-Feng Lin	2,050	-	-	-	220	220	2019.1.1~ 12.31	Auditing and certification of subsidiary's annual financial statements cost NT$220,000.

5.2. When the company changes its accounting firm and the audit fees paid for the fiscal year of such change are lower than those for the previous fiscal year, the amounts of the audit fees before and after the change and the reasons shall be disclosed: N/A.

5.3. When the audit fees paid for the current fiscal year are lower than those for the previous fiscal year by 15% or more, the reduction in the amount of audit fees, reduction percentage, and reason(s) therefore shall be disclosed: N/A.

(1) Information on Replacement of the CPA

6. Regarding the Former CPA:

Date of Change	As of the Financial Statement for Q1 of 2017		
Reasons and Explanation for Changes	Former CPA Su-Wen Lin was replaced by Chien-Ju Yu due to internal job rotation and arrangements of Ernst & Young.		
State Whether the Appointment was Terminated or Rejected by the Consignor or CPAs	Client / Status	CPA	Consignor
	Appointment terminated automatically	N/A	N/A
	Appointment rejected (discontinued)	N/A	N/A
Opinions Other Than Unmodified Opinions Issued in the Last 2 Years and Reasons for Them	None		
Does any disagreement in opinion exist with the issuer?	Yes		Accounting principle or practice
			Disclosure of financial statements
			Auditing scope or procedures
			Others
	No	✓	
	Explanation		
Supplementary Disclosure (Disclosures Specified in Article 10.6.1.4–7 of the Standards)	None		

Regarding the Successor CPA:

Accounting Firm	Ernst & Young
Name of CPA	Chien-Ju Yu
Date of Engagement	As of the financial statement for Q1 of 2017
Prior to the Formal Engagement, Any Inquiry or Consultation on the Accounting Treatment or Accounting Principles for Specific Transactions, and the Type of Audit Opinion That Might be Rendered on the Financial Report	N/A
Written Opinions from Successor CPAs That Differ From Those of the Former CPA	None

The company shall mail to the former CPA a copy of disclosures it is making pursuant to item A and (c) of the here preceding item, and advise the accountant of the need to respond by mail within 10 days should he/she disagree. The company shall disclose the content of the response letter from the former CPA: N/A.

Where the Company’s Chairperson, General Manager, or Any Managerial Officer in Charge of Finance or Accounting Matters Has in the Most Recent Year Held a Position at the Accounting Firm

of its CPA or at an Affiliated Enterprise of Such Accounting Firm, the Name and Position of The Person, and the Period During Which the Position was Held, Shall be Disclosed.

None.

7.Any Transfer of Equity Interests and/or Pledge of or Change in Equity Interests by a Director, Supervisor, Managerial Officer, and Shareholder With a Stake of More than 10% During the Most Recent Fiscal Year or During the Current Fiscal Year up to the Date of Publication of the Annual Report. Where the Counterparty in any Such Transfer or Pledge of Equity Interests is a Related Party, Disclose the Counterparty's Name, its Relationship Between That Party and the Company as Well as the Company's Directors, Supervisors, and 10% Shareholders, and the Number of Shares Transferred or Pledged.

8.Changes in Shareholding of Directors, Supervisors, Managers, and Major Shareholders

As of March 29, 2020; shares

Title	Name	2018		2019 (as of Apr 29)	
		Shares Holding +(−)	Shares Pledged +(−)	Shares Holding +(−)	Shares Pledged +(−)
Chairman	Ching-Leou Teng	209,620	(414,000)	-	-
Director	National Development Fund Executive Yuan	582,396	-	-	-
Director	Chao-Ho Chen	-	-	-	-
Director	Tian Chang	174,419	-	-	-
Director General Manager	Jack Hwang	-	-	-	-
Independent Director	Jinn-Der Chang	-	-	-	-
Independent Director	Patrick Y. Yang	89,932	(164,000)	-	-
Independent Director	Jien-Heh Tien	-	-	-	-
Director	Ben-Yuan Chen	-	-	-	-
Director	Yao-Hwa Co., Ltd. Management Commission	-	-	-	-
Director	Shi-Ying Hsu	186,047	-	-	-
CEO	Ko-Chung Lin	116,280	321,000	-	-
Chief Medical Officer	Albert Qin	-	-	-	-
Chief Operating Officer, Taichung Plant	Yen-Tung Luan	39,884	-	-	-
Senior Manager of Finance	Snow Chang	11,629	-	-	-

(1) Relationship information, if the counterparty in any such transfer of equity interests by directors, supervisors, managers, and major shareholders is a related party: None.

(2) Relationship information, if the counterparty in any such pledge of equity interests is a related party: None.

9.Relationship Information, If Among The Company's 10 Largest Shareholders Any One is a Related Party or a Spouse and Relative Within the Second Degree of Kinship of Another

As of March 29, 2020; Shares; %

Name	Shareholding		Spouse & Minor Shareholding		Shareholding by Nominee Arrangement		Top 10 Shareholders Who are Spouses or Within Two Degrees of Kinship, Title or Name and Relationship		Remarks
	Shares	%	Shares	%	Shares	%	Name	Relationship	
National Development Fund Executive Yuan	22,066,296	9.80	-	-	-	-	-	-	-
Rep: Mei-Ling Chen	-	-	-	-	-	-	-	-	-
Yao-Hwa Co., Ltd. Management Commission	9,666,000	4.29	-	-	-	-	-	-	-
Rep: Chuan-Neng Lin	-	-	-	-	-	-	-	-	-
Hong Tai Investment Co., Ltd.	9,397,108	4.17	-	-	-	-	Chao-Ho Chen	Chairman of the company	-
Rep: Chao-Ho Chen	3,659,592	1.63	758,670	0.34	-	-	Han-Cheng Chen Yu-Ching Chen Hong Tai Investment	Relative within two degrees of kinship Relative within two degrees of kinship Chairman of the company	-
Han-Cheng Chen	9,123,947	4.05	-	-	-	-	Yu-Ching Chen Chao-Ho Chen	Relative within two degrees of kinship Relative within two degrees of kinship	-
Jui-Yu Yu	6,273,306	2.79	-	-	-	-	-	-	-
Yu-Ching Chen	4,559,000	2.02	-	-	-	-	Han-Cheng Chen Chao-Ho Chen	Relative within two degrees of kinship Relative within two degrees of kinship	-
Chao-Ho Chen	3,659,592	1.63	758,670	0.34	-	-	Han-Cheng Chen Yu-Ching Chen Hong Tai Investment	Relative within two degrees of kinship Relative within two degrees of kinship Chairman of the	

As of March 29, 2020; Shares; %

Name	Shareholding		Spouse & Minor Shareholding		Shareholding by Nominee Arrangement		Top 10 Shareholders Who are Spouses or Within Two Degrees of Kinship, Title or Name and Relationship		Remarks
	Shares	%	Shares	%	Shares	%	Name	Relationship	
								company	
Ko-Chung Lin	3,553,964	1.58	-	-	-	-	-	-	-
JPMorgan Chase Bank in Custody for Franklin Templeton Emerging Market Smaller Companies Fund	2,698,900	1.20	-	-	-	-	-	-	-
Ching-Leou Teng	2,683,046	1.19	-	-	-	-	-	-	-

10.The Total Number Of Shares and Total Equity Stake Held in Any Single Enterprise by the Company, its Directors and Supervisors, Managers, and Any Companies Controlled Either Directly or Indirectly by the Company

As of DEC 31, 2019; Unit: 1,000 shares; %

Investment	Investment of the Company		Investments From Directors, Supervisors, Managers, and Any Companies Controlled Either Directly or Indirectly by the Company		Total Investment	
	Shares	%	Shares	%	Shares	%
PharmEssentia Asia (Hong Kong) Co., Ltd.	3,200	100%	-	-	3,200	100%
PharmEssentia (Hong Kong) Co., Ltd. (Note 1)	-	-	-	-	-	-
PharmaEssentia Japan KK	11,150	100%	-	-	11,150	100%
PharmaEssentia USA.,LLC	-	100%	-	-	-	100%

Note 1: To expand the mainland Chinese market, the Company established the wholly owned PharmaEssentia (Hong Kong) Co., Ltd. in October 2013 to manage the Company’s patents. As of March 31, 2019, PharmaEssentia (Hong Kong) had only completed the registration process. The Company has not yet issued shares.

Information on Capital Raising Activities

1.Capital and Shares
1.1Source of Share Capital

As of March 29, 2020; Unit: NT$1,000; 1,000 shares

Year/Month	Issue Price (NT$)	Authorized Share Capital		Capital Stock		Remark		
		Shares	Amount	Shares	Amount	Sources of Capital	Capital Increase by Assets Other Than Cash	Other
2015/01	10	200,100	2,001,000	189,182	1,891,822	-	NT$2,994,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10401007270 dated 2014.1.21.
2015/05	10	200,100	2,001,000	189,712	1,897,121	-	NT$5,299,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10401079880 dated 2014.5.8.
2015/08	10	200,100	2,001,000	189,954	1,899,542	-	NT$2,421,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10401180580 dated 2014.8.24.
2015/10	10	200,100	2,001,000	190,283	1,902,832	-	NT$3,289,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10401227070 dated 2014.10.28.
2016/3	150	200,100	2,001,000	195,283	1,952,832	NT$50,000,000 cash	-	Shou-Shang-Tzu No. 10501062410 dated 2016.3.31.
2016/4	10	200,100	2,001,000	195,458	1,954,583	-	NT$1,751,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10501073000 dated 2016.4.25.
2016/4	10	200,100	2,001,000	195,662	1,956,621	-	NT$2,038,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10501084170 dated 2016.4.28.
2016/6	10	200,100	2,001,000	198,130	1,981,301	-	NT$24,680,000 from restricted stock awards.	Shou-Shang-Tzu No. 10501122570 dated 2016.6.15.
2016/8	159	400,000	4,000,000	218,130	2,181,301	NT$200,000,000 cash	-	Shou-Shang-Tzu No. 105011860600 dated 2016.8.12.
2016/8	10	400,000	4,000,000	218,348	2,183,486	-	NT$2,185,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10501206390 dated 2016.8.23.
2016/12	10	400,000	4,000,000	218,460	2,184,601	-	NT$2,086,000 from conversion of stock warrants; (NT$972,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10501272390 dated 2016.12.1.
2017/1	10	400,000	4,000,000	218,538	2,185,389	-	NT$876,000 from conversion of stock warrants; (NT$88,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10601009870 dated 2017.1.26.

2017/5	10	400,000	4,000,000	218,812	2,188,128	-	NT$2,827,000 from conversion of stock warrants; (NT$88,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10601064650 dated 2017.5.19.
2017/8	10	400,000	4,000,000	218,885	2,188,850	-	NT$723,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10601121590 dated 2017.8.25.
2017/11	10	400,000	4,000,000	218,721	2,187,208	-	NT$1,223,000 from conversion of stock warrants; (NT$2,866,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10601161720 dated 2017.11.29.
2018/4	10	400,000	4,000,000	218,969	2,189,686	-	NT$2,478,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10701038950 dated 2018.4.12.
2018/5	10	400,000	4,000,000	219,008	2,190,088	-	NT$402,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10701058900 dated 2018.5.30.
2018/9	10	400,000	4,000,000	219,126	2,191,260	-	NT$1,206,000 from conversion of stock warrants; (NT$34,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10701106890 dated 2018.9.5.
2018/11	10	400,000	4,000,000	219,085	2,190,849	-	NT$1,664,000 from conversion of stock warrants; (NT$2,075,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10701146730 dated 2018.11.27.
2019/4	10	400,000	4,000,000	219,230	2,192,297	-	NT$1,478,000 from conversion of stock warrants; (NT$30,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10801041280 dated 2019.4.23.
2019/6	10	400,000	4,000,000	219,105	2,191,048	-	NT$726,000 from conversion of stock warrants; (NT$1,975,000) restricted stock awards recovered.	Shou-Shang-Tzu No. 10801041280 dated 2019.6.3.
2019/9	10	400,000	4,000,000	219,276	2 ,192,766	-	NT$1,718,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10801118240 dated 2019.9.3.
2019/12	10	400,000	4,000,000	219,375	2 ,193,756	-	NT$990,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10801173720 dated 2019.12.3.
2020/1	10	400,000	4,000,000	225,043	2 ,250,438	-	NT$56,682,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10801041280 dated 2020.1.13.
2020/3	10	400,000	4,000,000	225,053	2,250,538	-	NT$100,000 from conversion of stock warrants.	Shou-Shang-Tzu No. 10901032270 dated 2020.3.3.

As of March 29, 2020; Shares

Type of Stock	Authorized Share Capital			Remark
	Issued Shares	Unissued Shares	Total	
Common Stock	225,161 ,935	174,838,065	400,000,000	Listed

Note: This includes 108,068 employee stock options that were converted into common stocks but not yet registered.

1.2 Composition of Shareholders

As of March 29, 2020

Shareholder Composition / No. of Shareholders	Government Agencies	Financial Institutions	Other Juridical Persons	Individuals	Foreign Institutions and Individuals	Treasury Stock	Total
Number of Shareholders	1	3	81	10,824	95	0	11,004
Shareholding	22,066,296	2,101,520	29,423,890	146,071,370	25,498,859	0	225,161,935
Holding Percentage (%)	9.80%	0.93%	13.07%	64.88%	11.32%	0	100.00%

1.3 Distribution Profile of Share Ownership

Common share – NT$10/share

As of March 29, 2020

Shareholder Ownership	Number of Shareholders	Shareholding	Holding Percentage (%)
1 – 999	2323	134627	0.06
1,000 – 5,000	5957	11988867	5.32
5,001 – 10,000	1000	7686912	3.41
10,001 – 15,000	435	5518475	2.45
15,001 – 20,000	287	5139737	2.28
20,001 – 30,000	290	7267844	3.23
30,001 – 50,000	258	10147424	4.51
50,001 – 100,000	226	15913941	7.07
100,001 – 200,000	107	15227053	6.76
200,001 – 400,000	63	18002228	8.00
400,001 – 600,000	16	7665345	3.40
600,001 – 800,000	8	5694733	2.53
800,001 – 1,000,000	4	3501499	1.56
1,000,001 or over	31	109,619,281	30
Total	11,235	219,469,992	11,004

2. Preferred share: None.

Major Shareholders

As of March 29, 2020

Share / Name of Major Shareholder	Shareholding	Holding Percentage (%)
National Development Fund Executive Yuan	22,066,296	9.80
Yao-Hwa Co., Ltd. Management Commission	9,666,000	4.29
Hong Tai Investment Co., Ltd.	9,397,108	4.17
Han-Cheng Chen	9,123,947	4.05
Jui-Yu Yu	6,273,306	2.79
Yu-Ching Chen	4,559,000	2.02
Chao-Ho Chen	3,659,592	1.63
Ko-Chung Lin	3,553,964	1.58
J JPMorgan Chase Bank in Custody for Franklin Templeton Emerging Market Smaller Companies Fund	2,698,900	1.20
Ching-Leou Teng	2,683,046	1.19

The Company's Net Worth Per Share, Earnings Per Share, Dividends Per Share, and Related Information

2. Unit: 1,000 shares; NT$

Item / Year			2018	2019	As of March 31, 2020
Market Price Per Share	Highest Market Price		204	186	124
	Lowest Market Price		141.5	96	53.6
	Average Market Price		177.11	134.86	91.90
Net Worth Per Share	Before Distribution (Note 1)		11.28	10.02	N/A
	After Distribution (Note 1)		11.28	10.02	N/A
Earnings Per Share	Weighted Average Shares (Note 1)		218,494	219,137	225,162
	Earnings Per Share (Note 1)		−4.76	(3.85)	N/A
Dividends Per Share	Cash Dividends (Note 1)		-	-	-
	Stock Dividends	Dividends from Earnings	-	-	-
		Dividends from Capital Surplus	-	-	-
	Accumulated Undistributed Dividend		-	-	-
Return on Investment	Price/Earnings Ratio		-	-	-
	Price/Dividend Ratio		-	-	-
	Cash Dividend Yield		-	-	-

*If shares are distributed in connection with a capital increase out of earnings or capital reserve, further disclose information on market prices and cash dividends retroactively adjusted based on the number of shares after distribution.

Note 1: Calculated using NT$10 par value per share.

4.6.The Company’s Dividend Policy and Implementation

1. Dividend Policy in the Articles of Incorporation

   Article 20: If the Company sustains profit for the year (i.e., the profit before employee and director remunerations are deducted from profit before tax and after cumulative losses are reimbursed), not less than 1% of the profit shall be set aside as employee remuneration and not more than 5% of the profit shall be set aside as director remunerations.

   The distribution ratio of employee and director remuneration and the distribution method of employee remuneration in the form of shares or cash shall be resolved by a majority vote at a meeting attended by more than two-thirds of the directors and shall be reported at the shareholder meeting.

   Employees receiving remuneration in the form of shares or cash must include employees of subordinate companies meeting certain criteria.

   Matters related to stock ownership plans for the Company’s employees shall be handled in accordance with the Company’s regulations on dividend distribution for employees.

   Article 20-1: The Company’s earnings at the end of the accounting year shall be first subject to taxation and reimbursement of previous losses, followed by a 10% provision for statutory earnings reserve. A special capital reserve shall be set aside or reversed in accordance with relevant laws or as requested by the authorities in charge. The remainder plus undistributed earnings carried over from previous years shall be distributed according to the distribution plan proposed by the Board of Directors and submitted to the shareholders’ meeting for approval.

   Considering the current environment and growth phase of the company, the Company will facilitate future business development and expansion by distributing earnings according to its capital expenditure and fund requirement. At least 10% of earnings may be distributed to shareholders by way of cash dividends or stock dividends, provided, however, that the ratio for cash dividends does not exceed 10% of the total distribution.

2. Proposal to Distribute Dividend for the Year

   The Board of Directors of the Company approved the resolution on February 19, 2020 to not distribute dividends for the year 2019.

4.7 Effect of Stock Dividend on the Company's Business Performance and Earnings Per Share: None.

4.8 Compensations to Employees, Directors, and Supervisors

1. The percentages or ranges with respect to employee, director, and supervisor compensation, as set forth in the company's articles of incorporation:
   If the Company sustains profit for the year (i.e., the profit before employee and director remunerations are deducted from the profit before tax and after cumulative losses are reimbursed), not less than 1% of the profit shall be set aside as employee remuneration and not more than 5% as director remuneration.
   The distribution ratio of employee and director remuneration and the method of distribution of employee remuneration in the form of shares or cash shall be resolved by a majority vote at a meeting attended by more than two-thirds of the directors and shall be reported at the shareholder meeting.
   Employees receiving remuneration in the form of shares or cash must include employees of subordinate companies meeting certain criteria.
   Matters related to stock ownership plans for the Company's employees shall be handled in accordance with the Company's regulations on dividend distribution for employees.
2. The basis for estimating the amount of employee, director, and supervisor compensation, for calculating the number of shares to be distributed as employee compensation, and the accounting treatment of the discrepancy, if any, between the actual distributed amount and the estimated figure, for the current period:
   Not applicable given the Company's state of deficit in 2019.
3. Information on any approval by the board of directors for distribution of compensation:
   (1) The amount of any employee compensation distributed in cash or stocks and compensation for directors and supervisors; if any discrepancy exists between that amount and the estimated figure for the fiscal year these expenses are recognized, the discrepancy, its cause, and the status of treatment shall be disclosed: None.
   (2) The amount of any employee compensation distributed in stocks, and the size of that amount as a percentage of the sum of the after-tax net income stated in the parent company's financial reports or individual financial reports for the current period and total employee compensation: None.

4. The actual distribution of employee, director, and supervisor compensation for the previous fiscal year: None.

4.9 Repurchase of the Company's Shares: None.

2. Issuance of Corporate Bonds.

None.

3. Issuance of Preferred Shares.

None.

4. Issuance of Global Depository Receipts.

None.

5. Status of Employee Stock Option Plan

Issuance of Employee Stock Options

1. Compensation Plans for Unexpired Employee Stock Options Issued by the Company

As of March 29, 2020

Type of Employee Stock Option	2013 1st Issuance of Employee Stock Options	2017 1st Issuance of Employee Stock Options
Date of Effective Registration	N/A (Note)	2017.9.18
Issue Date	2013, 1st issuance, 1st period 2013, 1st issuance, 2nd period 2013, 1st issuance, 3rd period	2017, 1st issuance, 1st period 2017, 1st issuance, 2nd period
Number of Units Issued	7,745,000 units (2013, 1st issuance, 1st period) 631,000 units (2013, 1st issuance, 2nd period) 24,000 units (2013, 1st issuance, 3rd period)	2,166,000 units (2017, 1st issuance, 1st period) 2,234,000 units (2017, 1st issuance, 2nd period)
Ratio of Shares That Can be Subscribed to Total Issued Shares	4.29%	2.01%
Subscription Period	7 years	7 years
Contract Execution Method	Issuance of new common stocks	Issuance of new common stocks
Period and Ratio in Which Subscription is Restricted (%)	The cumulative proportion of shares that can be subscribed 3 months after expiration: 25% The cumulative proportion of shares that can be subscribed 1 year and 3 months after expiration: 50% The cumulative proportion of shares that can be subscribed 2 years and 3 months after expiration: 75% The cumulative proportion of shares that can be subscribed 3 years and 3 months after expiration: 100% The maximum cumulative proportion of shares that can be subscribed for every month after 3 years and 3 months	The cumulative proportion of shares that can be subscribed 2 years after the expiration of the subscription period: 50% The cumulative proportion of shares that can be subscribed 3 years after the expiration of the subscription period: 75% The cumulative proportion of shares that can be subscribed 4 years after the expiration of the subscription period: 100%

	increases proportionally.	
Number of Shares Obtained	7,712,000 shares	0
NT$ Amount of the Shares Subscribed	NT$77,116,000	0
Number of Unsubscribed Shares	688,000 shares	2,139,000 shares 2,234,000 shares
Subscription Price Per Share of the Unsubscribed Shares	NT$10	NT$74 NT$88
Ratio of the Number of Unsubscribed Shares to the Number of Issued and Outstanding Shares	0.3%	1.94%
Effect on Shareholders' Equity	The current employee stock options were aimed at retaining talent and encouraging employees to increase their solidarity with the hope of creating benefits for the company and shareholders. The ratio of the number of unsubscribed shares to the number of issued and outstanding shares was 0.4%, posing no significant effect on the degree of dilution of shareholder equity.	The current employee stock options were aimed at retaining talent and encouraging employees to increase their solidarity with the hope of creating benefits for the company and shareholders. The ratio of the number of unsubscribed shares to the number of issued and outstanding shares was 2.01%, posing no significant effect on the degree of dilution of shareholder equity.

Note: The Company was not publicly listed when the current employee stock options were issued. The stock options were issued pursuant to Article 167-2 of the Company Act following the resolution and approval of the Board of Directors.

2. Names and subscription status of managerial officers who have obtained employee stock options and of employees who rank among the top 10 in terms of the number of shares to which they have subscription rights through employee stock options acquired:

As of March 29, 2020; Unit: Shares; NT$

	Title	Name	Number of Shares Obtained	Ratio of Number of Shares Obtained to Total Issued Shares (Note 9)	Exercised				Not Exercised			
					Number of Shares Subscribed	Subscription Price (NT$)	NT$ Amount of the Shares Subscribed	Ratio of Number of Shares Subscribed to Total Issued Shares	Number of Shares Subscribed	Subscription Price (NT$)	NT$ Amount of the Shares Subscribed	Ratio of Number of Shares Subscribed to Total Issued Shares
Management	CEO	Ko-Chung Lin	3,511,000	1.60%	2,110,564	10、74、88	21,105,640	0.96%	1,400,436	10、74、88	103,904,720	0.64%
	Chief Pharmaceutical Officer	Ching-Leou Teng										
	General Manager	Jack Hwang										
	Senior Director, Bioprocess Development	Shu-Yuan Wang (Note 1)										
	Senior Director, Cell Culture Engineering	Chi-Chang Li (Note 2)										
	Chief Financial Officer	Hui-Ming Chang (Note 3)										
	Director, New Drug Research and Development	Yu Ho (Note 4)										
	Senior Director, U.S. Operations	Shu-Feng Li (Note 5)										
	Director, Medical Research	Joe K. Tseng (Note 6)										
	General Manager Office	Hsu Hsu (Note 7)										
	Chief Medical Officer	Albert Qin										
	Chief Operating Officer, Taichung Branch	Yen-Tung Luan										
	Senior Manager of Finance	Snow Chang										
Employee	Chief of Taichung Plant	Kuo-Hsiung Wu (Note 8)	1,798,000	0.82%	1,592,764	10、88	15,927,640	0.73%	205,236	10、88	6,264,360	0.09%
	Pharmaceutical Scientist	Hui-Hua Lin										
	Small Molecule Engineering	Kuo-Hsi Kao										
	Administration	Kuo-Lung Lin										
	Small Molecule Engineering	Chung-Hsun Chien										
	Small Molecule Engineering	Wei-Te Li										
	Taichung Branch	Kuo-Tsang Lin										
	Small Molecule Engineering	Kang-Ting Fan										
	Protein Engineering	Ming-Bing Hsu										
	New Drug Analysis	Hsin-Chieh Li										

Status of Any Private Placement of Employee Stock Options During the 3 Most Recent Fiscal Years: None.

6. Status of Employee Restricted Stock

As of March 29, 2020

Type of Employee Restricted Stock	**Procedures for the First Issuance of Restricted Stock to Employees in 2015**
Date of Effective Registration	Resolved and approved at the shareholder meeting on May 29, 2015 and approved as per FSC No. 1040025786 dated July 8, 2015.
Issue Date	July 4, 2016
Number Of Shares Issued	2,468,000 common stocks
Issue Price	NT$10/share
Ratio of the Number of Shares Issued to Total Issued Shares	1.13%
Vesting Conditions of Restricted Employee Shares	**1. Indicator A: The listing of the Company's negotiable securities is completed (10%)** (1) Who can receive: Employees who are the main contributors in trading the Company's negotiable securities. (2) Vesting time point: On the day the Company's common stocks are listed on the Taipei Exchange within 1.5 years of the issuance of these restricted employee shares. (3) Percentage of vesting: 100% of restricted employee shares can be vested on the day of occurrence. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if they are not achieved by the specified time point, and the Company will buy back and cancel the shares at the original issue price. **2. Indicator B: MAA for P1101 for PV is submitted to the EMA (20%)** (1) Who can receive: Employees who are the main contributors in submitting an MAA for the Company's P1101 for PV to the EMA. (2) Vesting time point: Time point I: When recruitment for the Phase III clinical trial is completed within 1 year of the issuance of these restricted employee shares. Time point II: When the MAA is submitted to the EMA within 2 years of the issuance of these shares. (3) Percentage of vesting: 50% of restricted employee shares can be vested at Time Points I and II, respectively. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if they are not achieved by the specified time point, and the Company will buy back and cancel the shares at the original issue price. **3. Indicator C: BLA for P1101 for PV is submitted to the US FDA (20%)** (1) Who can receive: Employees who are the main contributors in submitting a BLA for the Company's P1101 for PV to the US FDA. (2) Vesting time point: Time point I: When recruitment for the Phase III clinical trial is completed within 1 year of the issuance of these restricted employee shares. Time point II: When the BLA is submitted to the US FDA within 2.5 years of the issuance of these shares. (3) Percentage of vesting: 50% of restricted employee shares can be vested at Time Points I and II, respectively. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if they are not achieved by the specified time point, and the Company will buy back and cancel the shares at the original issue price. **4. Indicator D: Documents for Phase III clinical study application for P1101 for HCV GT2 are submitted and recruitment is completed (20%)** (1) Who can receive: Employees who are the main contributors in applying for and recruiting subjects for Phase III clinical trials in Taiwan and South Korea for the Company's P1101 for HCV GT2. (2) Vesting time point: Time point I: When the applications for the Phase III clinical trials are submitted to the TFDA within 1 year of the issuance of these restricted employee shares. Time point II: When the applications for the Phase III clinical trials are submitted to KFDA within 1 year of the issuance of these shares. Time point III: When recruitment for the Phase III clinical trials is completed within 2 years of the issuance of these shares. (3) Percentage of vesting: 25%, 25%, and 50% of restricted employee shares can be vested at Time Points I, II, and III, respectively. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if the conditions are not achieved by the specified time point, and the Company will buy back and cancel the shares at the

	original issue price. **5. Indicator E: Documents for Phase III clinical study application for P1101 for ET are submitted (10%)** (1) Who can receive: Employees who are the main contributors in applying for a Phase III clinical trial in Taiwan and any other country for the Company's P1101 for ET. (2) Vesting time point: Time point I: When the application for the Phase III clinical trial is submitted to the US FDA within 1 year of the issuance of these restricted employee shares. Time point II: When the application for the Phase III clinical trial is submitted to the authorities of any other country within 1 year of the issuance of these shares. (3) Percentage of vesting: 50% of restricted employee shares can be vested at Time Points I and II, respectively. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if they are not achieved by the specified time point, and the Company will buy back and cancel the shares at the original issue price. **6. Indicator F: CTA for P1101 for the first indication is submitted to the CFDA by the sub-subsidiary in Beijing (5%)** (1) Who can receive: Employees who are the main contributors in assisting with the establishment of the sub-subsidiary in Beijing and assisting the CTA for P1101 in China. (2) Vesting time point: Time point I: When the sub-subsidiary in Beijing is established. Time point II: When the Company's sub-subsidiary in Beijing has submitted a CTA to the CFDA. (3) Percentage of vesting: 50% of restricted employee shares can be vested at Time Points I and II, respectively. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if they are not achieved by the specified time point, and the Company will buy back and cancel the shares at the original issue price. **7. Indicator G: New employees (10%)** (1) Who can receive: Newly hired employees who have not yet obtained employee stock options. (2) Vesting time point: Time point I: When employees are still on the job within 1 year of the issuance of these restricted employee shares. Time point II: When employees are still on the job within 2 years of the issuance of these shares. (3) Percentage of vesting: 50% of restricted employee shares can be vested at Time Point I, and 100% can be cumulatively vested at Time Point II. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if the employees set forth in Indicator G are not working for the company by the vesting time point, and the Company will buy back and cancel the shares at the original issue price. **8. Indicator H: Seniority (5%)** (1) Who can receive: Employees who are the main contributors in the Company's operational business development. (2) Vesting time point: Time point I: 1 year after the issuance of these restricted employee shares. Time point II: 2 years after the issuance of these shares. (3) Percentage of vesting: 50% of restricted employee shares can be vested at Time Point I, and 100% of restricted employee shares can be cumulatively vested at Time Point II. After the issuance of restricted employee shares meeting this indicator, the vesting conditions are considered unmet if the employees set forth in Indicator H are not working for the company by the vesting time point, and the Company will buy back and cancel the shares at the original issue price.
Restrictions on the Rights of New Restricted Employee Shares	1. The employee shall not sell, pledge, transfer, endow, set as guarantee, or dispose of (by other means) the new restricted employee shares. 2. Voting rights at shareholder meetings: Same as other common shares issued by the Company. 3. Shareholders' rights to distribute (subscribe) stocks and dividends: Same as other common shares issued by the Company, provided that stocks and dividends distributed are commissioned through trust.
Custody Status of Restricted Employee Shares	Prior to meeting vesting conditions, restricted employee shares shall be placed in the custody of stock trust. When new shares are allocated, the Company is deemed to have the authorization to sign and amend trust-related contracts on behalf of the employee receiving the new shares.
Measures To Be Taken When Vesting Conditions Are Not Met	1. Voluntary resignation: For restricted employee shares that do not meet the vesting conditions, the conditions are considered unmet on the day of an employee's resignation, and the Company will recover and cancel the shares at the original issue price. 2. Other types of termination of employment relationships (including termination of labor contracts, dismissal, and severance without notice): If for other reasons, except those mentioned above, the Company terminates the labor contract with an employee, the Company will recover and cancel, at the original issue price, the restricted employee shares that do not meet the vesting conditions. 3. Retirement: On the day of an employee's retirement, the vesting conditions shall be considered unmet, and the Company will recover and cancel (at the original issue price) the restricted employee shares that do not meet the vesting conditions. However, the Board of Directors may issue a portion or all of the restricted employee shares that do not meet the vesting conditions after considering the employee's performance and overall contribution. 4. Unpaid leave and parental leave: For employees approved by the Company to receive unpaid leave or parental leave, the rights of the restricted employee shares that do not meet the vesting conditions are restored as of the day of employee's reinstatement, provided that the

	vesting period is pushed back according to the period of unpaid leave taken. 5. General death: General death refers to death other than the occupational death set forth in Paragraph 7, Item 4 of Article 5. The vesting conditions are considered unmet on the day of an employee's death, and the Company will recover and cancel (at the original issue price) the restricted employee shares that do not meet the vesting conditions. 6. Employees who are physically disabled in occupational accidents and are unable to continue working for the company: For employees who are physically disabled in an occupational accident and are unable to continue working for the company, the restricted employee shares that do not meet the vesting conditions still meet the vesting conditions according to the schedule set forth in the vesting conditions of this article. 7. Employees who die from occupational accidents: As of the day of the employee's death, for restricted employee shares that do not meet the vesting conditions, the successor still meets the conditions according to the schedule set forth in the vesting conditions of this article. 8. Transfer: If an employee is transferred to an affiliate or other company, the restricted employee shares that do not meet the vesting conditions shall be handled according to the procedure for voluntary resignation. However, as required for the operation of the Company, the restricted employee shares obtained by employees who are transferred by the Company to an affiliate or another company are not affected by such a transfer. 9. For restricted employee shares that do not meet the vesting conditions (including for the reasons listed in the preceding paragraphs), the Company will recover and cancel these shares at the original issue price, provided that the employee is not required to return or pay back the dividends received thereof. 10. If employees terminate or cancel the authorization granted to the Company in violation of Item 1 of Article 6 before meeting the vesting conditions, the Company has the right to recover and cancel the restricted employee shares that do not meet the vesting conditions from the employee at the original issue price. 11. For issued shares that are recovered or bought back in accordance with the aforementioned regulation, an application for registration of change in capital shall be submitted to the competent authority at least once every quarter.
Number of Shares Recovered or Bought Back	812,911 shares
Number of Shares Without Restricted Rights	1,655,089 shares
Number of Shares With Restricted Rights	0 share
Ratio of the Number of Shares With Restricted Rights to the Number of Total Issued Shares (%)	-
Effect on Shareholders' Equity	No effect on the degree of dilution of shareholders' equity.

6.1.9. Names and acquisition status of managerial officers who have acquired new restricted employee shares and of employees who rank among the top 10 in the number of new restricted employee shares acquired:

	Title	Name	Number of Shares Obtained	Ratio of Number of Shares Obtained to Total Issued Shares (Note 7)	Without Restricted Rights				Without Restricted Rights			
					Number of Shares Without Restricted Rights	Issue Price (NT$)	NT$ Amount of Issue	Ratio Of Total Issued Shares (%)	Number of Shares With Restricted Rights	Issue Price (NT$)	NT$ Amount of Issue	Ratio Of Total Issued Shares (%)
Management	Chairman and Chief Pharmaceutical Officer	Ching-Leou Teng	762,000	0.35%	762,000	10	7,620,000	0.35%	-	-	-	-
	General Manager	Jack Hwang										
	Chief Strategy Officer	Ko-Chung Lin										
	Senior Director, US Operations	Shu-Feng Li (Note 1)										
	Chief Operating Officer, Taichung Branch	Yen-Tung Luan										
	General Manager Office	Hsu Hsu (Note 2)										
	Director, New Drug Research and Development	Yu Ho (Note 3)										
	Director, Medical Research	Joe K. Tseng (Note 4)										
	Senior Manager of Finance	Snow Chang										
Employee	Assistant General Manager, Quality System, Taichung Branch	Chien-Chao Chu	404,000	0.18%	404,000	10	4,040,000	0.18%	-	-	-	-
	Director, Production and Manufacturing, Taichung Branch	Chao-Sheng Cheng										
	Deputy Director, New Business Development	Hao-Lun Yuan (Note 5)										
	Director, Drug Science	Che Hsu										
	Manager, Audit Office	Ming-Chuan Liang (Note 6)										
	Assistant Manager, Audit Office	Ming-Shan Lu										
	Director, Marketing Planning	Craig N Zimmerman										
	Director, Marketing Planning	Samuel S Lin										
	Manager, Marketing Planning	Ting-Fang Wang										
	Special Assistant, General Manager Office	Chia-Yen Su										

7. Issuance of New Shares in Connection With Mergers or Acquisitions or With Acquisitions of Shares of Other Companies: None.

8. Financing Plans and Implementation

Among the Company's previous public offerings, issuances, and private placements of securities, plans with the time of completion within 3 years of the registration date were as follows: a 2015 plan for issuing new shares for cash capital increase, a 2016 plan for issuing new shares for cash capital increase prior to entering the OTC market, and a 2019 plan for private placement of common shares. Among these, the 2016 pre-OTC cash capital increase and 2019 private placement of common shares plans were still in process. The content and implementation of issuance plans are hereby explained as follows:

2015 Issuance of New Shares for Cash Capital Increase

(1) Plan content:

1. Date of approval by the industry competent authority and document no.: Approved per 5 January 2016 Letter No. Financial-Supervisory-Securities Firm-1040053484 of the Financial Supervisory Commission.
2. Total capital required for plan: NT$750,000,000.
3. Source of fund: Issuance of 5,000,000 common shares for cash capital increase at NT$10 par value per share and an issue price of NT$150 per share, totaling NT$750,000,000.
4. Plan items, status of capital use, and expected benefits:

(1) Plan items and status of capital use

Unit: NT$1,000

Item	Expected Completion Date	Total Capital Required	Status of Planned Capital Use		
			2016		
			Q2	Q3	Q4
Replenish working capital	Q4 2016	750,000	258,336	269,814	221,850
Total		750,000	258,336	269,814	221,850

(2) Expected benefits

The Company implemented a cash capital increase in 2015 primarily to replenish working capital and enhance financial structure, and is expected to increase its capital ratio, strengthen financial structure, and promote its solvency.

5. Changes to plan content, reasons for changes, and benefits preceding and following changes

(1) On February 19, 2020, the plan was changed by resolution of the Board of Directors.

(2) Reasons for changes

The total capital raised by cash capital increase in 2015 was NT$750,000,000. The original financing plan was prepared according to the forecasted statement of cash receipts and disbursements for April 2016 to December

2016. By the end of 2016, the Company expected to complete implementation of funds needed for the research and development, clinical trials, general and administrative expenses, and purchase of R&D production equipment for the new drug P1101 and other new drug projects. However, the status and capital use of this cash capital increase were compiled according to the operational status and clinical progress at the time, in which the new drug P1101 was used in phase III clinical trials to treat polycythemia vera (PV). Following the completion of participant recruitment in May 2015, the Austrian partner AOP was expected to obtain the EU European Medicines Agency's (EMA) marketing authorization in 2017. Therefore, approximately NT$110,707,000 was budgeted for the purchase of R&D production equipment in the April 2016 to December 2016 forecasted statement of cash receipts and disbursements to meet mass production demands for the active pharmaceutical ingredient (API) of P1101-PV after its entry into the European market. However, the review process was complex and rigorous; therefore, the period of the EMA's new drug review was prolonged, which caused a delay in the purchase of R&D production equipment. As of the end of 2016, the Company's accumulated actual expense was NT$545,938,000 and actual implementation progress was 72.79%. Therefore, implementation of the remaining NT$204,062,000 was postponed until the end of the third quarter of 2018.

(3) Capital use following changes

Unit: NT$1,000

Item	Expected Completion Date	Total Capital Required	Status of Planned Capital Use									
			2016			2017				2018		
			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Replenish working capital	Q1 2017	649,511	161,812	165,888	196,133	125,678	0	0	0	0	0	0
Purchase R&D production equipment	Q3 2018	100,489	1,932	152	20,021	2,797	1,131	7,198	14,043	2,404	45,707	5,104
Total		750,000	163,744	166,040	216,154	128,475	1,131	7,198	14,043	2,404	45,707	5,104

(1) Benefits following changes

The Company's cash capital increase in 2015 is primarily aimed at replenishing working capital and bolstering financial structure, and is expected to increase its own capital ratio, invigorate its financial structure, and enhance its solvency. Of these raised funds, NT$100,489,000 was primarily employed to purchase R&D and API production equipment required by the

Taichung Plant and Taipei Pilot Production Laboratory to produce APIs required in P1101 clinical trials, as well as to construct a biopharmaceutical manufacturing plant that complies with good manufacturing practice (GMP) regulations. The Company's Taichung Plant and Taipei Pilot Production Laboratory both received GMP certificates from the EMA in January 2018. Additionally, the Company's P1101, used to treat PV, also obtained marketing authorization from the EMA in February 2019. Therefore, the API of P1101 produced by the Company's Taichung Plant began to be exported to the European market in 2019, and the Company anticipates that following approval of licenses in other markets, its production scale can be continuously expanded.

(2) Implementation status:

In 2015, the Company issued new shares as a means of cash capital increase; that issuance raised NT$750,000,000. This was changed by resolution of the Board of Directors on February 19, 2020 to replenish working capital and also to balance funding needs for the R&D of new drug P1101 and other new drug development projects, clinical trials, general and administrative expenses, and R&D production equipment. The statuses and explanations of capital use are presented as follows:

Unit: NT$1,000

Item	Expected Completion Date	Progress		Implementation Status			Subtotal	Notes
				Q2–Q4 of 2016	2017	Q1–Q3 of 2018		
New drug P1101 (Replenish working capital)	Q1 2017	Expense amount	Estimated	241,932	67,217	0	309,149	
			Actual	241,932	67,217	0	309,149	
		Implementation progress (%)	Estimated	78.26	21.74	0.00	100.00	
			Actual	78.26	21.74	0.00	100.00	
Other R&D expenses (Replenish working capital)	Q1 of 2017	Expense amount	Estimated	176,403	58,461	0	234,864	
			Actual	176,403	58,461	0	234,864	
		Implementation progress (%)	Estimated	75.11	24.89	0.00	100.00	
			Actual	75.11	24.89	0.00	100.00	
General and administrative expenses (Replenish working capital)	Q4 of 2016	Expense amount	Estimated	105,498	0	0	105,498	
			Actual	105,498	0	0	105,498	
		Implementation progress (%)	Estimated	100.00	0.00	0.00	100.00	
			Actual	100.00	0.00	0.00	100.00	
Replenish working capital Total	Q1 of 2017	Expense amount	Estimated	523,833	125,678	0	649,511	
			Actual	523,833	125,678	0	649,511	

		Implementation progress (%)	Estimated	80.65	19.35	0.00	100.00	
			Actual	80.65	19.35	0.00	100.00	
R&D production equipment	Q3 of 2018	Expense amount	Estimated	22,105	25,169	53,215	100,489	
			Actual	22,105	25,169	53,215	100,489	
		Implementation progress (%)	Estimated	22.00	25.05	52.95	100.00	
			Actual	22.00	25.05	52.95	100.00	
Total	Q3 of 2018	Expense amount	Estimated	545,938	150,847	53,215	750,000	
			Actual	545,938	150,847	53,215	750,000	
		Implementation progress (%)	Estimated	72.79	20.11	7.10	100.00	
			Actual	72.79	20.11	7.10	100.00	

(3) Benefits analysis

Unit: NT$1,000

Item	Year	(Before Capital Increase) 2015	(After Capital Increase) Q1 of 2016
Basic Financial information	Current assets	600,635	1,153,171
	Total assets	1,040,599	1,582,870
	Current liabilities	247,305	196,917
	Total liabilities	351,038	299,152
	Net asset value per share (NT$)	3.62	6.57
Financial Structure	Debt ratio (%)	33.73	18.90
	Ratio of long-term capital to property, plant, and equipment (%)	232.66	424.98
Solvency	Current ratio	242.87	585.61
	Quick ratio	229.71	568.53

The Company's cash capital increase plan in 2015 was used primarily to replenish working capital and purchase R&D production equipment. The plan was used for funds needed for the P1101 and new drug development projects according to the new drug development schedule; the plan was completed in the third quarter of 2018. As listed in the aforementioned table, the Company's current assets and net asset value per share increased substantially following the 2015 cash capital increase; the net asset value was greater than half of the capital stock listed in the financial report. Regarding financial ratios, the debt ratio also decreased from 33.73% to 18.90%; the ratio of long-term capital to property, plant, and equipment increased from 232.66% to 424.98%; the current ratio increased from 242.87% to 585.61%; and the quick ratio increased from 229.71% to 568.53%. The aforementioned evidence indicates an improvement in the Company's solvency, an increased flexibility in short-term capital mobilization ability, and a more robust financial structure. The financial position of the Company following capital increase is markedly superior to that before capital increase and has been strengthened.

Furthermore, the Company's Taichung Plant and Taipei Pilot Production Laboratory both received GMP certificates from the EMA in January 2018. After obtaining a license from the EMA for P1101-PV in February 2019, we began exporting the relevant API to the European market. Therefore, its benefits should be evident.

2016 Pre-OTC Issuance of New Shares for Cash Capital Increase

(1) Plan content:

1. Date of approval by the industry competent authority and document no.: Approved per 15 June 2016 Letter No. Financial-Supervisory-Securities Firm-1050015542 of the Financial Supervisory Commission.
2. Total capital required for plan: NT$3,393,387,000.
3. Source of funds: Issuance of 20,000,000 common stock shares for cash capital increase at NT$10 par value per share and minimum underwriting price at competitive auction of NT$132.5 per share; the bidders with the highest bids win the bid. The public subscription underwriting price of NT$173.82 was calculated based on the weighted average of the price and quantity of all successful bids. However, because the average price was greater than 1.2 times the minimum underwriting price, the public subscription underwriting price was issued at NT$159 per share, and the total amount raised was NT$3,393,387,000.
4. Plan items, status of capital use, and expected benefits:

(1) Plan items and status of capital use

Unit: NT$1,000

Item	Expected Completion Date	Total Capital Required	Status of Planned Capital Use					
			2016		2017			
			Q3	Q4	Q1	Q2	Q3	Q4
Replenish working capital	Q4 2017	3,393,387	397,428	152,572	548,391	717,436	625,287	952,273
Total		3,393,387	397,428	152,572	548,391	717,436	625,287	952,273

(2) Expected benefits:

The Company's pre-OTC cash capital increase in 2016 was primarily used to replenish working capital to support the funding needs of the Company's R&D projects and to strengthen the Company's financial structure. The cash capital increase provided positive benefits for the Company's industry competitiveness and overall operational planning and development.

5. Changes to plan content, reasons for changes, and benefits preceding and following changes

(1) On February 19, 2020, the plan was changed by resolution of the Board of Directors.

(2) Reasons for changes

The total amount of funds raised in the 2016 pre-OTC cash capital increase was NT$3,393,387,000. The original capital plan was intended for use in

replenishing working capital; supporting the funding needs of the R&D of the new drug P1101 and other new drug development projects; laboratory consumables; clinical trials; and meeting the needs of future overseas marketing and other daily operating expenses. The plan was expected to be completed by the end of 2017. However, the content of the estimates table for capital use compiled from cash capital increase also includes non-cash outflow items such as depreciation expenses, amortization expenses, and employee stock option expenses. Furthermore, the Company's new drug P1101 was used in phase III clinical trials to treat PV. Following the completion of participant recruitment in May 2015, the Company's Austrian partner, AOP, was expected to receive market authorization from the EMA in 2017. However, that initial authorization required longer than anticipated time because the review comprised numerous challenges and a rigorous process. At the beginning of December 2018, the EMA's Committee for Medicinal Products for Human Use (CHMP) provided a positive opinion recommending market authorization. In February 2019, new drug market authorization was obtained from the EMA. Based on considerations of risk control for new drug development and a stable financial foundation, the Company slowed the progress of its capital investment progress in P1101 and in various new drug R&D efforts. From the working capital in the second half of 2016, the balance of the 2015 cash capital increase also remains available for expenses. Therefore, at the end of 2017, the Company's actual spending of accumulated funds was NT$590,495,000 and actual implementation progress was 17.40%; implementation of the remaining NT$2,802,892,000 was postponed to the end of the second quarter of 2020. Additionally, because the US is the world's largest pharmaceutical market, the plan was changed to include reinvestment in the US subsidiary PharmaEssentia USA Corporation in order to conveniently perform license application and marketing activities in the US region.

(3) Capital use following changes

Unit: NT$1,000

Item	Expected Completion Date	Total Capital Required	Status of Planned Capital Use													
			2017				2018				2019				2020	
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Replenish working capital	Q2 of 2020	2,820,709	29,994	177,213	175,986	207,302	161,806	177,258	179,474	267,419	189,244	201,354	264,125	350,551	244,716	194,267
Reinvestment—PharmaEssentia USA	Q2 of 2020	572,678	0	0	0	0	58,453	0	61,100	0	61,370	0	31,075	30,680	150,000	180,000
Total		3,393,387	29,994	177,213	175,986	207,302	220,259	177,258	240,574	267,419	250,614	201,354	295,200	381,231	394,716	374,267

(4) Benefits following changes

The Company's pre-OTC 2016 cash capital increase was primarily employed to replenish working capital and reinvest in a US subsidiary to support the funding needs of the Company's various R&D projects and future US regional marketing. The funds were also used to strengthen the Company's financial structure and provide positive benefits for the Company's industry competitiveness and overall operational planning and development.

Additionally, NT$572,678,000 of these raised funds was employed for capital increase to reinvest in shareholding of the 100% US subsidiary, PharmaEssentia USA, to support PharmaEssentia USA's initial operations, human resources expansion, and marketing activities. The Company anticipates receiving a FDA drug certificate for P1101-PV by the end of 2020 and beginning sales. Profits are estimated to begin from 2022.

(2) Implementation status:

In 2016, the Company issued new stocks for a pre-OTC cash capital increase and raised NT$3,393,387,000. The plan was changed by resolution of the Board of Directors on February 19, 2020. Its primary purpose is to replenish working capital and support the funding needs of the R&D of P1101 and other new drug development projects, laboratory consumables, clinical trials, general and administrative expenses, and reinvestment in a US subsidiary. The status and explanations of capital use are presented as follows:

Unit: NT$1,000

Item	Expected Completion Date	Progress		Implementation Status			Expected Implementation	Subtotal	Note
				2017	2018	2019	First half of 2020		
New drug P1101 (replenish working capital)	Q2 of 2020	Expense amount	Estimated	223,817	314,570	564,994	336,782	1,440,163	
			Actual	223,817	314,570	564,994	0	1,103,381	
		Implementation progress (%)	Estimated	15.54	21.84	39.23	23.39	100.00	
			Actual	15.54	21.84	39.23	0.00	76.61	
Other R&D expenses (replenish working capital)	Q4 of 2019	Expense amount	Estimated	213,596	342,895	204,135	0	760,626	
			Actual	213,596	342,895	204,135	0	760,626	
		Implementation progress (%)	Estimated	28.08	45.08	26.84	0.00	100.00	
			Actual	28.08	45.08	26.84	0.00	100.00	
General and administrative expenses	Q2 of 2020	Expense amount	Estimated	153,082	128,492	236,145	102,201	619,920	
			Actual	153,082	128,492	236,145	0	517,719	

(replenish working capital)		Implementation progress (%)	Estimated	24.69	20.73	38.09	16.49	100.00	
			Actual	24.69	20.73	38.09	0.00	83.51	
Replenish working capital Total	Q2 of 2020	Expense amount	Estimated	590,495	785,957	1,005,274	438,983	2,820,709	
			Actual	590,495	785,957	1,005,274	0	2,381,726	
		Implementation progress (%)	Estimated	20.93	27.86	35.64	15.57	100.00	
			Actual	20.93	27.86	35.64	0.00	84.43	
Reinvestment in PharmaEssentia USA	Q2 of 2020	Expense amount	Estimated	0	119,553	123,125	330,000	572,678	
			Actual	0	119,553	123,125	0	242,678	
		Implementation progress (%)	Estimated	0.00	20.88	21.25	57.62	100.00	
			Actual	0.00	20.88	21.25	0.00	42.38	
Total	Q2 of 2020	Expense amount	Estimated	590,495	905,510	1,128,399	768,983	3,393,387	
			Actual	590,495	905,510	1,128,399	0	2,624,404	
		Implementation progress (%)	Estimated	17.40	26.68	33.25	22.67	100.00	
			Actual	17.40	26.68	33.25	0.00	77.33	

(3) Benefits analysis

Unit: NT$1,000

Item \ Year		(Before Capital Increase) Q2 of 2016	(After Capital Increase) Q3 of 2016
Basic financial information	Current assets	1,011,385	4,256,394
	Total assets	1,431,474	4,662,892
	Current liabilities	64,137	83,555
	Total liabilities	164,856	183,825
	Net asset value per share (NT$)	6.39	20.51
Financial structure	Debt ratio (%)	11.52	3.94
	Ratio of long-term capital to property, plant, and equipment (%)	436.59	1,534.38
Solvency	Current ratio	1,576.91	5,094.12
	Quick ratio	1,528.27	5,053.61

The Company's 2016 pre-OTC cash capital increase was primarily intended to replenish working capital and increase capital of the US subsidiary PharmaEssentia USA and is being used for the funding needs of P1101 and various new drug development projects according to the new drug R&D schedule. Its implementation is expected to be completed in the second quarter of 2020. As presented in the aforementioned table, the Company's current assets and net asset value per share increased substantially after the cash capital increase. In terms of financial ratios, the debt ratio decreased from 11.52% to 3.94%; the ratio of long-term capital to property, plant, and equipment grew from 436.59% to 1,534.38%; the current ratio surged from 1,576.91% to 5,094.12%; and the quick ratio increased from 1,528.27% to 5,053.61%. Evidently, the Company's solvency has increased, short-term

capital mobilization ability is more flexible, its financial structure is more stable, and its financial position is markedly superior to that before the 2016 capital increase. The Company's financial position has been enhanced. Additionally, the payback period of PharmaEssentia USA, combined with the remaining capital increase in 2020 required for the US subsidiary's funds, is in total approximately 6.03 years.

2019 Private Placement of Common Shares

(1) Plan content:

1. Total capital required for plan: NT$501,000,000.
2. Source of funds: Private placement of 5,668,198 common shares at NT$10 par value per share and an issue price of NT$86 to raise a total of NT$487,465,000. The remaining amount of NT$13,535,000 will be handled using the Company's own funds.
3. Delivery date of private placement shares: December 30, 2019.
4. Plan items, status of capital use, and expected benefits:

(1) Plan items and status of capital use

On October 1, 2019, the Company's extraordinary general meeting approved the issuance of new stocks by private placement. The plan items comprised the replenishment of working capital, strengthening of financial structure, execution of new drug R&D, reinvestment, and the support of other funding needs to satisfy the Company's long-term development. On December 24, 2019, the Company's provisional meeting of the Board of Directors passed a resolution of an actual 5,668,198 private placement stock shares with paid-in capital totaling NT$487,465,028. This was used for a capital increase in the Japan subsidiary, PharmaEssentia Japan KK, and for indirect investment in sub-subsidiary PharmaEssentia Biotechnology (Beijing) Ltd. (hereinafter referred to as "PharmaEssentia Beijing") by means of a capital increase in the Hong Kong subsidiary, PharmaEssentia Asia (Hong Kong) Ltd. (hereinafter referred to as "PharmaEssentia Hong Kong").

Unit: NT$1,000

Item		Expected Completion Date	Total Capital Required	Status of Planned Capital Use							
				2020				2021			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Reinvestment	PharmaEssentia Japan	Q4 of 2021	321,000	30,000	0	30,000	21,000	30,000	60,000	60,000	90,000
	PharmaEssentia Biotechnology (Beijing)	Q4 of 2021	180,000	15,000	0	15,000	0	30,000	30,000	30,000	60,000
Total			501,000	45,000	0	45,000	21,000	60,000	90,000	90,000	150,000

(2) Expected benefits:

The total amount of the Company's private placement cash capital increase is NT$487,465,000; the primary purpose is to increase the capital of PharmaEssentia Japan to manage operations such as clinical trials of P1101 in the Japan region, communication with the Japan PMDA and drug licensing applications, and subsequent new drug marketing. Furthermore, capital of PharmaEssentia Hong Kong is increased to indirectly invest in PharmaEssentia Beijing, and thereby manage operations such as clinical trials of P1101 in the Mainland China region, communication with the China NMPA and drug licensing applications, and subsequent new drug marketing.

To treat PV, in October 2019 the Company applied for a phase II clinical trial from the PMDA through the Japan subsidiary. The Company anticipates receiving a Japanese drug license in 2022, beginning sales by the end of 2022, and beginning profits from 2023 onwards. Additionally, to treat PV, in October 2018 the Company applied for a phase I clinical trial from the Mainland China CFDA (now renamed NMPA). The Company anticipates receiving a Mainland China drug license in 2022, beginning sales in 2022, and beginning profits from 2022 onwards.

5. Changes in plan content, reasons for changes, and benefits preceding and following changes:

The Company's plan for the private placement of common shares has not changed.

(2) Implementation status:

In 2019, the Company issued new shares for cash capital increase using private placement. The amount raised was NT$487,465,000 and its primary purpose was reinvestment in the Japan subsidiary and the Beijing sub-subsidiary. The Company began to deliver stock shares on December 30, 2019. Upon review of meeting minutes for the November 14, 2019 Board of Directors meeting, the Company has approved the capital increase of PharmaEssentia Japan by US$3,000,000, which is approximately NT$90,000,000. As of the publication date of the evaluation report, the Company has increased the capital of PharmaEssentia Japan by US$1,000,000, which is approximately NT$30,000,000. Furthermore, upon review of meeting minutes for the February 19, 2020 Board of Directors meeting, the Company also approved capital increase of PharmaEssentia Hong Kong by US$1,000,000, thereby increasing the capital of PharmaEssentia Beijing by US$1,000,000 (approximately NT$30,000,000) through PharmaEssentia Hong Kong. Therefore, the Company should be able to reinvest in the Japan subsidiary and in the Mainland China sub-subsidiary according to this private

placement plan.

(3) Benefits analysis

The Company’s execution of the 2019 private placement of common shares plan is primarily for reinvestment in the Japan subsidiary, PharmaEssentia Japan, and in the Mainland China sub-subsidiary, PharmaEssentia Beijing. PharmaEssentia Japan is expected to begin generating revenue in 2022, with a payback period of approximately 4.75 years. PharmaEssentia Beijing is expected to begin generating revenue in 2022, with a payback period of approximately 3.04 years.

Overview of Business Operations

1. Description of Business

1.1Business Scope

1.1.1Main Business Activities

The Company's major lines of business are as follows:

A. Wholesale of Chemistry Raw Materials
B. Wholesale of Drugs and Medicines
C. Wholesale of Drugs, Medical Goods
D. Wholesale of Cosmetics
E. Retail sale of Chemistry Raw Materials
F. Retail sale of Drugs and Medicines
G. Retail sale of Drugs and Medical Goods
H. Retail sale of Cosmetics
I. Retail Sale of Second-Type Patent Medicine
J. International Trade
K. Intellectual Property
L. Pharmaceuticals Examining Services
M. Biotechnology Services
N. Research Development Service
O. Beverage Manufacturing
P. Other Food Manufacturing Not Elsewhere Classified
Q. Basic Industrial Chemical Manufacturing
R. Drugs and Medicines Manufacturing
S. Cosmetics Manufacturing
T. Other Chemical Products Manufacturing
U. All business items that are not prohibited or restricted by law, except those that are subject to special approval.

1.1.2Relative Weight of Primary Products

The Company mainly engages in the research, development, production, and sales of new drugs. Its operating revenues are primarily generated from licensing income, royalty

payments after a drug is introduced to the market, and sales of goods. The revenue and weight for 2019 are as follows:

Unit: NT$1,000; %

Revenue Item	2019	
	Revenue	Weight (%)
Sale of goods- Beseremi (P1101)	293,464	96%
Sale of goods- Q10	3,335	1%
Provision of labor services	8,893	3%
Total	305,692	100%

Revenue from P1101/Ropeginterferon alfa/Besremi from clinical trials for myeloproliferative neoplasms (MPNs) and treatment for PV and rare diseases as a percentage of total revenue, annual growth rate, and country are described as follows:
The Company's new drug Besremi (Ropeginterferon alfa-2b, hereafter P1101) was officially granted marketing authorization by the EMA in February 2019. This drug is mainly used in the treatment of rare diseases such as PV. In 2019, the sale of this new drug to European markets totaled approximately NT$293,464,000, accounting for 96% of the Company's total sales for the year and representing 1,201.91% growth from the previous year.

1.1.3 Current Products (Services)

Product	**Category**	**Indication**
P1101 (Ropeginterferon alfa-2b)	Developed by the Company	Polycythemia vera (PV)
		Essential thrombocythemia (ET)
		Hepatitis B
		Hepatitis C
Anti-PD-1 antibody (immune checkpoint inhibitor)	Developed by the Company	Cancer
Oraxol (Oral paclitaxel)	Licensed to Develop	Breast cancer, advanced gastric cancer, and esophageal cancer
KX01 (Kinase inhibitor)	Licensed to Develop	Psoriasis, actinic keratosis (AK)

1.1.4 New Products (Services) Planned for Development

The Company will use the established R&D platform for new drugs and continue to develop other profitable long-acting biopharmaceutical drugs, such as pegylated erythropoietin (PEG-EPO, long-acting EPO), long-acting pegylated granulocyte colony stimulating factor (PEG-GCSF), and long-acting β-interferon (PEG-INFβ).

1.2 Overview of Industry

(1) Status and Development of the Industry

Biotechnology (biotech) and pharmaceutical industries are added-value industries

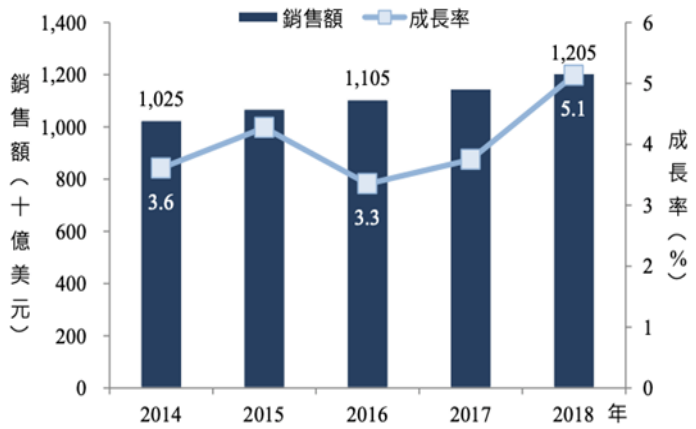
characterized by both innovative R&D and value creation. Biotech and pharmaceutical industries are thriving globally under the influence of factors such as medical advancements, reduced mortality rates, biotech breakthroughs, population aging, and increased demand for health care. Because biotech and pharmaceutical industries are closely related to the safety and health of people, rigorous control over quality, safety, efficacy, and laws are required throughout drug development from new discoveries, feasibility studies, preclinical trials, and clinical trials to new drug approval for sale and marketing. Nevertheless, biotech and pharmaceutical industries are technology intensive and necessitate large amounts of investments, R&D technologies, time resources, and high-risk exposure.

Multiple countries are committed to the development of the biotech and pharmaceutical industries, which are a new indicator of a country's competitiveness in scientific and technological industry. Taiwan has experienced how its pharmaceutical industries have transformed their drug development processes for the past 30 years. The enforcement of the Act For The Development Of Biotech And New Pharmaceuticals Industry in 2008 has provided manufacturers with technological, capital, and labor support in the form of tax incentives to promote the industrial development of new drugs. In recent years, Taiwan's government has responded to the emerging development of biotech and pharmaceutical industries, breakthroughs in technological innovation, and future health care demands by increasing the production value and competitiveness of biotech and pharmaceutical industries. In 2016, the government included biotech and pharmaceutical industries in its 5+2 innovative industries plan, which proposes to transform Taiwan into an Asia-Pacific biotech and pharmaceutical R&D industrial center. In 2017, the Act For The Development Of Biotech And New Pharmaceuticals Industry was amended to expand the scope of applications for the biotech and pharmaceutical industries, relax rules regarding high-risk medical instruments, and incorporate new biotech and pharmaceutical products.

With the support of government policies and government funds, manufacturers are invested in the development of innovative drugs. R&D outcomes for new drugs in Taiwan have been published over the past 10 years. New drug products have obtained marketing authorization not only in Taiwan but also overseas through strategic international alliances. This achievement is a testament to Taiwan's international competitiveness in new drug R&D. By increasing Taiwan's international visibility and recognition, the government hopes to create more opportunities to form strategic alliances overseas, thereby enhancing the development of biotech and pharmaceutical industries in Taiwan. PharmaEssentia is a new drug developer and manufacturer of biologics. In the next section, the status of pharmaceutical markets and new drug R&D in Taiwan and globally are described to provide an overview of the industry to which the Company belongs.

A. Overview of the Global Pharmaceutical Market

Size of the Global Pharmaceutical Market, 2014–2018



Source: IQVIA; organized by the ITIS Research Team of the Property Asset Division, Development Center for Biotechnology (DCB, July 2019); 2019 Yearbook of the Pharmaceutical Industry

The global pharmaceutical market will continue to develop as more new drugs enter the market. According to IQVIA statistics, the global pharmaceutical market was valued at approximately US$1.2 trillion in 2018 and grew at a rate of 5.1% relative to the market size in 2017. Since the United States launched a trade war with China at the beginning of 2018, the global economic outlook has been uncertain. According to the International Monetary Fund, global growth was projected to slow from 4% in 2017 to 3.6% in 2018 and 3.2% in 2019. Although the development of the world economy continues to slow, the increase in health care demand and diseases of affluence in emerging markets coupled with population aging have driven the demand for geriatric treatments and increased healthcare costs. As a result, the global pharmaceutical market grew steadily in 2018 at a rate higher than the compound annual growth rate (CAGR) over the past 5 years. IQVIA estimates that the global pharmaceutical market will reach US$1.5 trillion by 2023 at a CAGR of 3%–6% between 2019 and 2023.

Overview of the World's 10 Largest Pharmaceutical Markets and Future Growth in 2018

單位：億美元；%

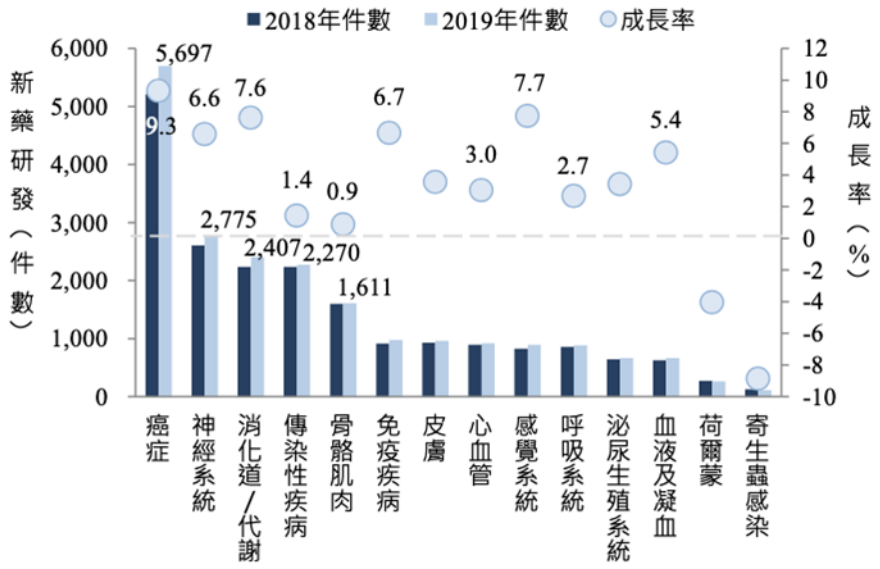
排名	國家	2018 年		占全球藥品市場比率	2014～2018 年 CAGR	2019～2023 年 CAGR
		銷售額	成長率			
1	美國	4,849	3.9	40.2	7.2	4～7
2	中國大陸	1,323	7.9	11.0	7.6	3～6
3	日本	864	1.9	7.2	1.0	-3～0
4	德國	535	18.6	4.4	5.0	3～6
5	法國	368	11.2	3.1	1.5	-1～2
6	義大利	344	18.6	2.9	6.3	2～5
7	巴西	318	-3.9	2.6	10.8	5～8
8	英國	284	10.5	2.4	6.2	2～5
9	西班牙	246	14.4	2.0	5.4	1～4
10	加拿大	222	7.2	1.8	5.0	2～5

Source: IQVIA; organized by the ITIS Research Team of the Property Asset Division, DCB (July 2019); 2019 Yearbook of the Pharmaceutical Industry

According to statistical data published by IQVIA, the United States is the world's largest pharmaceutical market, with a size reaching US$484.9 billion in 2018, which accounted for 40.2% of the global market. Specifically, sales in the US and Chinese drug markets exceeded US$100 billion, accounting for 51.2% of the entire pharmaceutical market, primarily because the growth of the global pharmaceutical market was driven by the expiration of drug patents, the continual increase of new drugs introduced to the market, and the increased demand of the US pharmaceutical market. Mainland China, which is the second largest market, accounted for 11.0% of the global market in 2018. Because of uncertainties in the US–China trade war and government-imposed control over drug prices, the CAGR of China's pharmaceutical market is projected to slow to 3%–6%.

B. Overview of Global New Drug R&D

Growth and Number of New Drug R&D Projects for Various Disease Treatments Globally, 2018 and 2019



Note: Number of cases in 2018 as of January 2018; number of cases in 2019 as of January 2019.

Source: Pharmaprojects; organized by the ITIS Research Team of the Property Asset Division, DCB (July 2019); 2019 Yearbook of the Pharmaceutical Industry

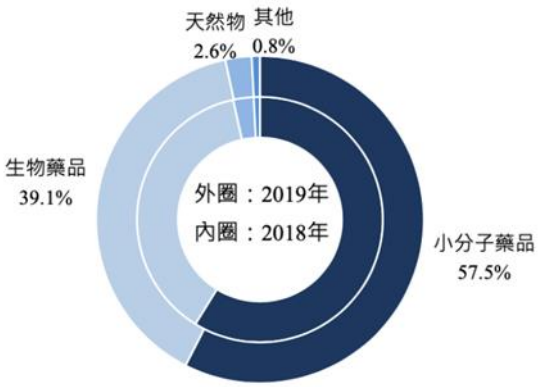
New drug R&D projects were categorized by the diseases they treat. Most of the projects (n = 5,697) involved new drugs for cancer treatment; the growth rate of these projects was 9.3% in 2019, which was double that of the second highest number of projects, which involved new drugs for the nervous system. Cancer drug projects still had the highest growth rate among all project categories, suggesting that cancer treatment is the main focus of the market. The development and market size of anticancer drugs are also projected to continue growing, prompting numerous companies to invest in cancer drug development. The new drug P1101, developed by PharmaEssentia, can be used in the treatment of blood disorders, bleeding disorders, and cancer and in cancer immunotherapy. Therefore, the R&D of this new drug provides economic benefits.

C. Overview of the Global Biopharmaceutical Market

The rapid development of biochemical technologies has slowly turned biologics into mainstream products in the global pharmaceutical market. The main difference between biologics and traditional chemical drugs lies in the method with which they are researched, developed, and manufactured. Biologics are developed and manufactured using bioengineering technologies, such as genetic, cellular, and protein engineering. Biologics are used to treat or prevent human diseases, including anemia, cancer, and autoimmune diseases. Conventional chemical drugs are produced by using various chemicals in different mixtures. Because chemical drugs are produced using only single-chemical engineering

technologies, these drugs are easy to manufacture and mass produce. By contrast, biologics are produced using several bioengineering technologies in different disciplines; therefore, they require more time to research and develop than do chemical drugs. The development of biotech has catalyzed the development and launching of biologics. Because biologics have excellent therapeutic efficacy and minimal side effects, they have become the best-selling drugs since their launch in the market. PharmaEssentia specializes in the research, development, and manufacturing of biologics, particularly focusing on new protein drugs.

Figure 1. Types of Drugs Developed Globally, 2018 and 2019



Note: Number of cases in 2018 as of January 2018; number of cases in 2019 as of January 2019.

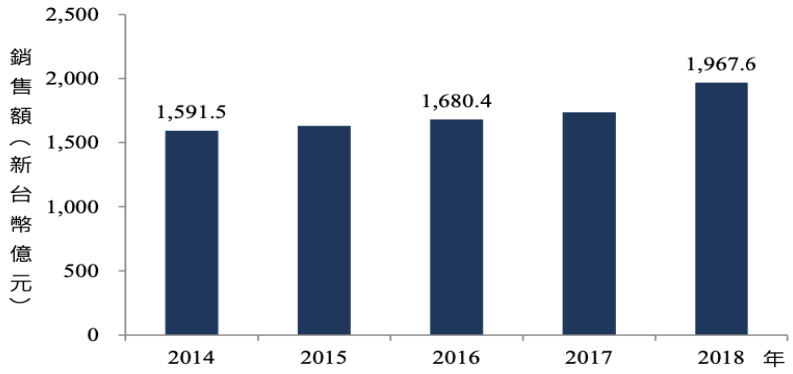
Source organized by the ITIS Research Team of the Property Asset Division, DCB; 2019 Yearbook of the Pharmaceutical Industry

Statistics of the types of drugs developed globally as of 2019 (Figure 1) indicate that new drug R&D projects mostly involved small-molecule drugs (chemical drugs; n = 9,164), accounting for 57.5% of all new drug projects, which was a 3.8% increase from that in 2018. R&D projects involving biologics were the second largest category comprising 6,241 projects, which was 39.1% of all new drug R&D projects and represented a 10.3% increase from 2018. Notably, the number of biologics projects increased faster than the number of small-molecule drug projects, and the number of biologic projects as a percentage of all R&D projects increased from 37.7% in 2018 to 39.1% in 2019.

D. Overview of the Pharmaceutical Market in Taiwan

Pharmaceutical industries in Taiwan have experienced 30 years of development. At the end of June 2019, 143 pharmaceutical manufacturers were approved as new biopharmaceutical companies, and 346 new biopharmaceutical drugs were approved. More than 10 pharmaceutical products have obtained marketing authorization at home and abroad, enabling a complete pharmaceutical system comprising processes that range from API development, drug synthesis, dosage form development, formula design, biologic processing, and other conventional API and generic drug development to the research and development of niche-based APIs, me-too drugs, biologics, and new drugs developed using innovative technologies and innovation capacity. However, because of the small internal market demand and pressure on the National Health Insurance (NHI) system, Taiwan's government hopes that by increasing the country's international visibility and recognition, it can create more opportunities to form strategic alliances overseas to disperse development risks globally, thereby driving pharmaceutical industrial development in Taiwan to enable these industries to compete with world-class pharmaceutical companies.

Figure 2. Size of the Pharmaceutical Market in Taiwan, 2014–2018



Source: IQVIA; organized by the ITIS Research Team of the Property Asset Division, DCB (July 2019); 2019 Yearbook of the Pharmaceutical Industry

The pharmaceutical market in Taiwan has maintained years of steady growth. However, the Taiwanese government has attempted to control and reduce growing medical expenditures through measures such as adjusting insurance premiums, introducing partial reimbursement policies, and controlling the prices of NHI-reimbursed drugs. These measures have influenced the magnitude of growth in Taiwan's pharmaceutical market. According to data published by IQVIA (Figure 2), domestic sales of pharmaceutical products in 2018 amounted to NT$196.76 billion, which was an increase of 13.4% from NT$173.54 billion in 2017. The domestic

pharmaceutical market is projected to continue growing as the population ages and demand for drugs for treating cancer and chronic diseases increases in Taiwan.

E. Overview of New Drug R&D in Taiwan

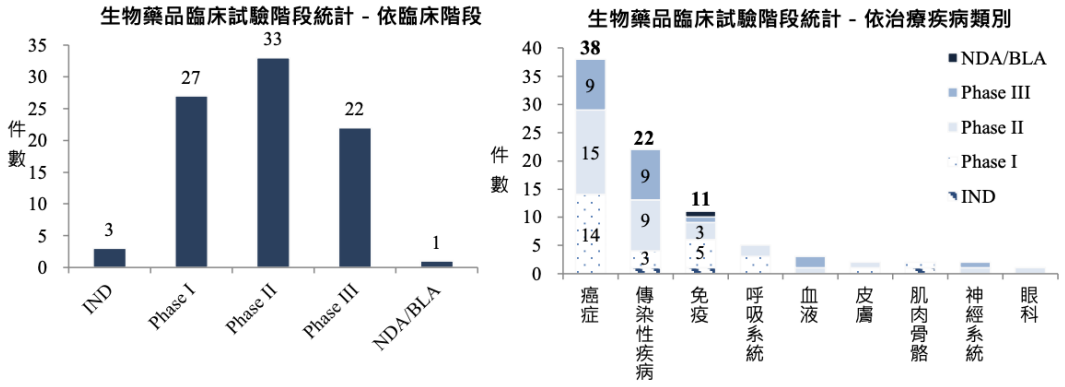
The number of new drug clinical trials by Taiwanese manufacturers has continued to increase, and the number of products entering the postclinical and marketing phases is increasing. The 2019 Yearbook of the Pharmaceutical Industry reported that as of May 31, 2019, 18 clinically tested products developed by Taiwanese manufacturers have been approved for market introduction. Nine of these products were small-molecule drugs and five were biologics. These manufacturers were approved to market 15 new drug products in Taiwan and three products overseas. PharmaEssentia was granted marketing authorization by the EMA for its new drug Besremi (P1101) in February 2019 and obtained a drug permit license directly from overseas. At present, the Company has applied for a drug permit license in Taiwan; the application is under review.

F. Overview of the Biopharmaceutical Market in Taiwan

Taiwan is implementing policies to develop biologics. These policies and laws are focused on expanding the scope of applications and refining the review, performance, and development of clinical trials. For example, the Act For The Development Of Biotech And New Pharmaceuticals Industry was amended in 2017 to include emerging technologies (e.g., gene therapy, precision medicine, and cell therapy) in the scope of R&D subsidies, which will facilitate the strengthening of biologics innovation and development in Taiwan. After a series of meetings, the Bio Taiwan Committee under the Executive Yuan concluded that focus should be placed on developing the niche of new protein drugs and biosimilars. Most biopharmaceutical industry chains has been established. A complete industry chain helps Taiwan’s biopharmaceutical industries to undertake R&D initiatives, accelerate product introduction, and strengthen international competitiveness.

Because experienced Taiwanese companies have returned to Taiwan, approximately 50 manufacturers in Taiwan are currently involved in developing biologics (see Table 1), and most of them specialize in the development of protein drugs (including recombinant protein drugs and antibody biosimilars). The global biopharmaceutical market has grown considerably faster than the overall pharmaceutical market has. In response, the Taiwan government included biologics as a focus of development for biotech and pharmaceutical industries. Therefore, biologics still have potential for future development.

Figure 3. Number of Clinical Trials for Biologics Developed by Taiwanese Manufacturers



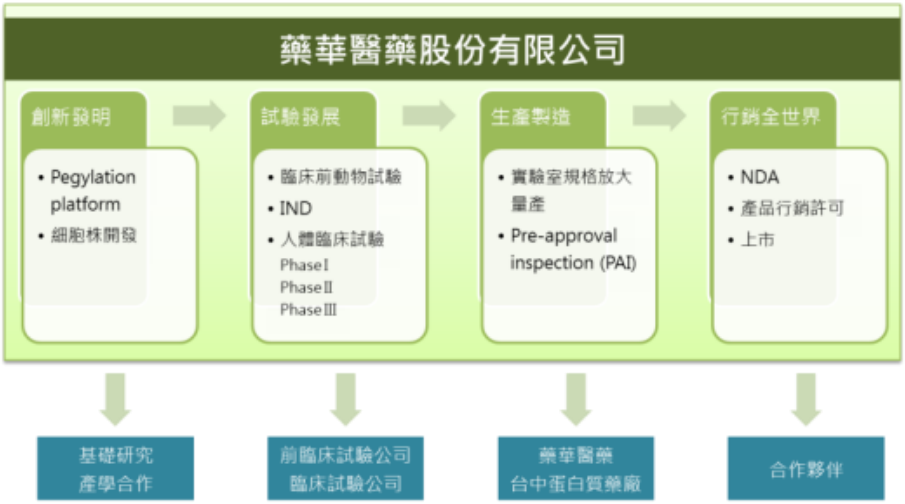
註：資料統計至 2019 年 5 月 31 日

Source: Organized by the ITIS Research Team of the Property Asset Division, DCB (July 2019); 2019 Yearbook of the Pharmaceutical Industry

Taiwanese industries are committed to the research and development of biologics. As of May 31, 2019, a total of 86 INDs and biologics were in clinical trials and new drug application/biologic license application (NDA/BLA) review. Of these drugs, 27, 33, and 22 were in phase-I, phase-II, and phase-III clinical trials, respectively. An analysis of the distribution of biopharmaceutical development in Taiwan by disease treatment indicates that 33 biologics developed by manufacturers are used mainly for cancer treatment (Figure 3).

(2) Links Among the Upstream, Midstream, and Downstream Industry Segments

The links among the upstream, midstream, and downstream segments of the industry involved in the Company's new drug development are presented as follows:



The Company is an R&D-oriented biopharmaceutical company specializing mainly in the development of new drugs. The Company is based in Taiwan, where it invents new drugs, develops clinical trials, and produces and manufactures pharmaceutical products for global distribution. Because pharmaceutical products are used in the human body, their safety and efficacy must be strictly controlled by governmental institutions globally through a series of mechanisms, including premarket reviews and postmarket monitoring. Hence, biopharmaceutical industries are unlike general industries. Generally, the R&D, production, and market distribution of new drug products must undergo the following processes:

A. Basic laboratory and applied research: This phase primarily involves the exploration of pharmaceutical products by industrial and academic institutions and research units in Taiwan and overseas.

B. Technological and pharmaceutical pilot development: In this phase, pilot plants first confirm the feasibility of commercializing lab-made products and subsequently develop specifications and manuals for batch production. In addition, they must define methods for product analysis and equipment cleaning to ensure compliance with regulatory requirements.

C. Preclinical study: Nonclinical animal testing is performed on current Good Manufacturing Practice (cGMP)-conforming pharmaceutical products and include pharmacokinetic, toxicological, and pharmacological tests to ensure that products are effective and safe in animal bodies.

D. Application for human clinical trial: This phase involves submitting an IND application to pharmaceutical and health authorities and commencing a three-phase human clinical trial. The phase-I trial verifies drug safety in healthy participants. In phase II, a small number of participants is enrolled for purposes of obtaining the basis of drug efficacy and exploring possible effective doses. After study efficacy reaches a level of reproducibility, the phase-III trial is conducted on a larger number of patients to establish therapeutic efficacy and perform long-term response monitoring. If the expected result is obtained after the phase-III trial, an NDA or BLA can be submitted to pharmaceutical and health authorities. After the drug permit license is obtained, the new pharmaceutical product can be distributed to the market for sale.

E. Pharmaceutical manufacturing and registration trial (plant inspection): The aforementioned phases are part of the pharmaceutical R&D process. A pharmaceutical product that passes all three phases of clinical trial is proven to be safe and effective in patients. However, potential manufacturers of this product must be inspected and verified by pharmaceutical and health authorities before the product can be commercialized for production and sale.

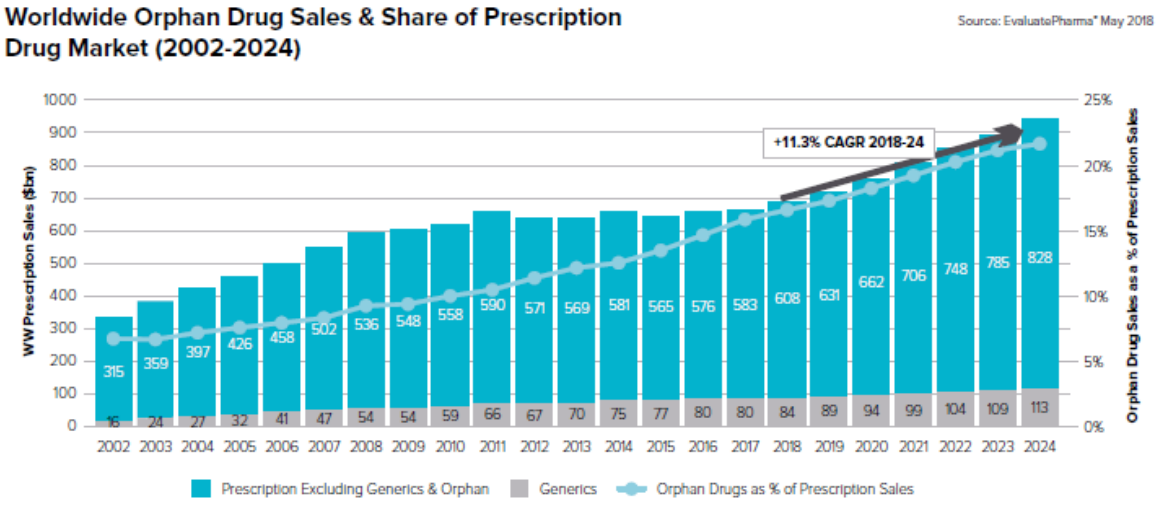
(3) Product Development Trends

A. P1101 for the treatment of rare blood disorders

P1101 is used to treat myeloproliferative disorders, including PV, essential thrombocythemia (ET), and primary myeloid fibrosis (PMF). PV and ET are rare blood disorders. Rare diseases are those with low prevalence rates, are uncommon, and affect few patients. Individual countries define rare diseases differently. In Taiwan, the Rare Disease and Orphan Drug Act defines rare diseases as those with prevalence rate less than 1 in 10,000, and they are identified through considerations for genetic disease counseling or disease prevention, difficulty of diagnosis and treatment and disease severity, and coverage in the current NHI program. In Europe, a rare disease is considered to be one that affects less than 5 out of 10,000 patients, whereas in the United States, a disease is classified as rare if it affects fewer than 200,000 patients. Japan's Orphan Drug Law defines a rare disease as one that affects fewer than 50,000 patients. The World Health Organization (WHO) defines a rare disease as a disease or pathological change affecting 0.65‰–1‰ patients of the total population. Globally, 7000–8000 types of rare diseases have been confirmed. They account for 10% of human diseases, and only approximately 1% of these rare diseases can be treated effectively.

Rare diseases have different onset and disease characteristics, and they are generally severe or life-threatening. MPNs are a type of disease caused by abnormal changes in myeloid stem cells that result in the excessive proliferation of differentiated blood cells. Typical MPNs can be classified into PV, ET, chronic myelogenous leukemia, and PMF, none of which have cures or effective treatment methods, and they are treated with medication to control symptoms only.

Estimated Size of the Global Orphan Drug Market



According to EvaluatePharma forecasts, the global orphan drug market will grow at 11.3% CAGR between 2018 and 2024, reaching US$262 billion by 2024. This trend demonstrates that orphan drugs remain the focus of new drug development. The use of P1101 in the treatment of PV and ET is described as follows:

(A) PV

PV symptoms develop slowly and occasionally, and PV may remain asymptomatic for many years. PV typically develops in elderly people. In PV, blood thickens because of excess red blood cells and circulates slowly around certain tissues, limiting oxygen supply and causing symptoms such as headache, dizziness, weakness, and shortness of breath. In severe cases, symptoms include an enlarged spleen, blood clotting, and an increased risk of stroke.

Current treatments for PV include phlebotomy, low-dose aspirin, medication using hydroxyurea (HU, a chemotherapeutic agent), off-label use of the conventional interferon Pegasys, and bone marrow transplant. However, these treatment methods remain inapplicable for one-fourth of patients with PV and can cause other complications and increase the risk of blood cancer. Currently, the only US Food and Drug Administration (FDA)-approved medication for PV is Jakafi, which is developed by Incyte Corporation, a company listed on the Nasdaq stock market. Jakafi was approved in the United States in December 2014. However, it is limited to use as a second-line drug when all of the aforementioned treatment options are ineffective.

The Company's P1101 product (product name: Besremi) for the treatment of PV was granted marketing authorization by the EMA through our partner in Austria, AOP Orphan Pharmaceuticals (AOP), in February 2019. After a series of communications with the US FDA, we obtained their approval to use the data and documents of the European phase-III clinical trial to submit a BLA to the FDA. P1101 was subsequently established as a first-line drug for use before Jakafi.

(B) ET

ET is a rare blood disorder that causes bone marrow to produce excess platelets. Similar to PV, ET is related to the mutation of the JAK2 gene. ET is mainly treated using concurrent low-dose aspirin and HU; however, 20%–40% of patients become intolerant or nonresponsive to HU treatment. Consequently, these patients are exposed to an increased risk of disease

progression and lower survivability. Anagrelide (Agrylin/Xagrid, Shire and Thromboreductin, AOP Orphan Pharmaceuticals AG) is a medication that was approved by the European Union (EU) in February 2018 for the treatment of ET. Anagrelide is also the standard treatment medication; however, it is associated with several side effects, such as edema and diarrhea and the possibility of vasodilation, palpitation, and heart failure. Patients with a history of abnormal cardiovascular function must carefully monitor changes in their disease condition after using anagrelide. Without proper treatment, patients with ET are exposed to increased risks of blood clotting and hemorrhage. The Company expects to complete the phase-III clinical trial and submit a BLA to the FDAs of various countries in 2022.

B. P1101 for chronic hepatitis treatment

Hepatitis B is among the most prevalent infectious diseases globally. According to the WHO, approximately 400 million people are carriers of the hepatitis B virus (HBV), and approximately 1 million people die from hepatitis B and associated diseases annually. Each year, 10–30 million people in the world develop hepatitis B, and 5%–10% of them become carriers.

The development of oral antiviral drugs for hepatitis B is focused on inhibiting virus replication and reducing drug resistance. Infected patients are prone to virus mutation and drug resistance if they continue to use medicine despite having persistently high levels of HBV. At this point, physicians assess patients' conditions and adjust their treatment methods and medications accordingly. Most patients with hepatitis B prefer oral administration of antiviral drugs because interferon therapy is associated with greater restrictions and side effects. Therefore, oral administration remains a common clinical practice. Current oral drugs include lamivudine, adefovir, entecavir, and telbivudine.

According to the 2017 Global Hepatitis Report published by the WHO in April 2017, more than 325 million people globally are carriers of the HBV or hepatitis C virus (HCV), and few of them know that they are carriers. The number of deaths increases as the number of infected people increases. In 2015, 1.34 million people died from hepatitis infection; this number is roughly equal to the number of deaths due to the human immunodeficiency virus and tuberculosis. Patients with chronic hepatitis B and C must receive treatments frequently to prevent complications of cirrhosis and liver cancer for 10 to 20 years. Patients with hepatitis are asymptomatic in the early stages of infection. Patients develop symptoms such as headache, nausea, and dizziness as side effects of interferon

therapy. Currently, PEG-Intron (Merck) and Pegasys (Roche) are long-acting pegylated interferons available on the market. These drugs are administered by injection once per week. Side effects persist for 2 to 3 days after injection, but by the time patients feel slightly improved, they must receive the next treatment. This cycle psychologically and physiologically affects patients' everyday lives, making patients reluctant to receive treatment. Therefore, patients with hepatitis urgently require a new-generation long-acting interferon that causes minimal side effects and is administered over a longer interval (e.g., once every 2 weeks).

The WHO estimates that 71 million people globally have chronic hepatitis C. The actual number of infected patients may be underestimated because patients are asymptomatic in the first few weeks of infection, contributing to the low detection rate. Although hepatitis C can be completely cured using small-molecule drugs, approximately one-tenth of patients with hepatitis C are also carriers of HBV. During treatment for hepatitis C, the reduction of HCV levels triggers the onset of hepatitis B; the surface antigen levels for HBV in these patients are relatively low, which increases the success of interferon treatments. This type of patient is the best candidate for receiving interferon therapy. The Company is also prepared to invest in this direction. Patients coinfected with HBV/HCV are included in the scope of interferon therapy. This type of coinfection may be classified as a rare disease.

The Company currently uses P1101 to treat genotype-2 chronic HCV infections. In 2012, we obtained approval from the Taiwan FDA (TFDA) to conduct a phase-II clinical trial in Taiwan. In 2014, we completed patient enrollment for this phase-II trial. In May 2015, we obtained a letter of approval from the TFDA for the phase-III human clinical trial. In January 2016, we began enrolling patients for the phase-III trial. In March 2016, the Company obtained approval from the Ministry of Food and Drug Safety of South Korea to conduct a phase-III clinical trial in South Korea designed to provide 24 weeks of treatment. In total, 276 patients will be enrolled for the phase-III trials in Taiwan and South Korea. To accelerate enrollment, approval for a phase-III clinical trial was obtained from the China FDA (CFDA) in December 2017, and patient enrollment was completed in August 2019. This phase-III trial is expected to be completed in 2020.

C. Cancer Medicine

According to the latest report by the WHO's International Agency for Research on Cancer, in 2018, 18.1 million new cancer cases were diagnosed worldwide,

and 9.6 million deaths were reported. The global cancer burden will increase incrementally by 3%–5% per year, and by 2020, the world will have 20 million new cancer cases and approximately 12 million cancer-related deaths. Cancer medications will make up 10% of the global pharmaceutical market, and this percentage will continue to increase. In fact, the IQVIA Global Oncology Trends 2018 indicated that the global cancer drug market will reach US$200 billion by 2020 and grow by 10%–13% on average over the next 5 years. The United States will remain the fastest-growing market in the world, growing at 12%–15%. The subsequent section describes two medications used in cancer treatment: anti-PD-1 antibody and oral paclitaxel (Oraxol).

(A) Immune checkpoint inhibitor: Anti-PD-1 antibody

Cancer immunotherapy increases autoimmune cell activity and stimulates the autoimmune system to detect and eliminate cancer cells and maintain normal bodily functions. Because PD-1/PD-L1 monoclonal antibodies are highly effective and safe, major pharmaceutical manufacturers globally are committed to their research and development. According to Progressive Markets Research, the cancer immunotherapy market was valued at US$57.26 billion in 2017 and is projected to reach US$166.71 billion by 2025 at 14.42% CAGR during 2018–2025, and this market will continue to grow.

The Company's P1101 is a new-generation long-acting interferon with short-term side effects. Its dosage can be flexibly adjusted, providing physicians with a greater scope of applications according to indications or disease severity. The development of cancer immunotherapy has provided numerous tools for the treatment of cancer and has gradually influenced the cancer treatment market. The Company will leverage the production efficiency and quality control strengths of its manufacturing sites to engage in the research and development of PD-1/PDL-1 monoclonal antibodies. We hope that the combined use of PD-1/PDL-1 antibodies and P1101 can strengthen patients' immune responses to different cancers. By leveraging this major strength, the Company will further expand the scope of applications for P1101 to include malignant melanoma, T cell lymphoma, hairy cell leukemia, and liver cancer, among other indications.

(B) Oral Paclitaxel (Oraxol)

According to meeting minutes of the Center for Drug Evaluation (CDE) on October 30, 2015, the CDE has in principle accepted the Company's application for a drug permit license. In the application, the Company used (a) data from clinical trials conducted in South Korea and South America by Athenex (formerly Kinex Pharmaceuticals; data comprised 200 patients in

phases I, II, and III), (b) data from a pharmacokinetics study conducted in Taiwan by PharmaEssentia, and (c) treatment response data (24 patients examined over a trial period of one year). In the second quarter of 2016, the Company submitted an application for the development of drugs with a new route of administration to the TFDA. In July 2016, we received approval from the Taiwan Ministry of Health and Welfare to use Oraxol in a breast cancer clinical trial. In the first quarter of 2017, we initiated the pharmacokinetics study and response trial, which were designed to span a treatment period of 4 months. In 2019, the Company completed the safety bridging study in Taiwan. In the future, the Company will combine these results with the South American three-phase interim analysis data generated by Athenex and submit them for review in accordance with the laws and regulations of the United States, United Kingdom, Australia, and New Zealand. Athenex plans to apply for a drug permit license with the US FDA in the first quarter of 2020, after which the Company will apply for a drug permit license in Taiwan in the second quarter of 2020. In April 2017, the Company received TFDA approval to conduct a registration trial on the concurrent use of Oraxol and ramucirumab solution in the treatment of advanced gastric and esophageal cancer. Phase I of this trial will be completed by the second quarter of 2020.

D. KX01 for psoriasis

KX01 is a new compound molecule developed by the American biotech company Athenex (formerly Kinex Pharmaceuticals). KX01 has been proven to have a substantial inhibitory effect on cancer cell proliferation and has entered a phase-II trial in the United States. The Company believes that the mechanism of action by which KX01 inhibits cell proliferation is applicable to nonmalignant proliferative intractable psoriasis. Therefore, the Company has in-licensed KX01 from Athenex to develop a topical psoriasis ointment in Taiwan, mainland China, Hong Kong, Macau, Singapore, and Malaysia. KX01 is a new drug with new APIs. The Company's KX01 product entered a phase-I clinical trial in October 2015. We completed the third stage of the phase-I trial in 2019 and will conduct the fourth stage in 2020. This trial will be completed by 2020. The optimal treatment duration at the maximum dose of KX01 in the treatment of psoriasis must be determined. The Company will determine the three-phase clinical trial plans on the basis of this result. The licensing company, Athenex, has completed the phase-III clinical trial of actinic keratosis (AK) in the United States and has begun an NDA in the United States. The Company also plans to apply for a drug permit license in Taiwan in the first half of next year.

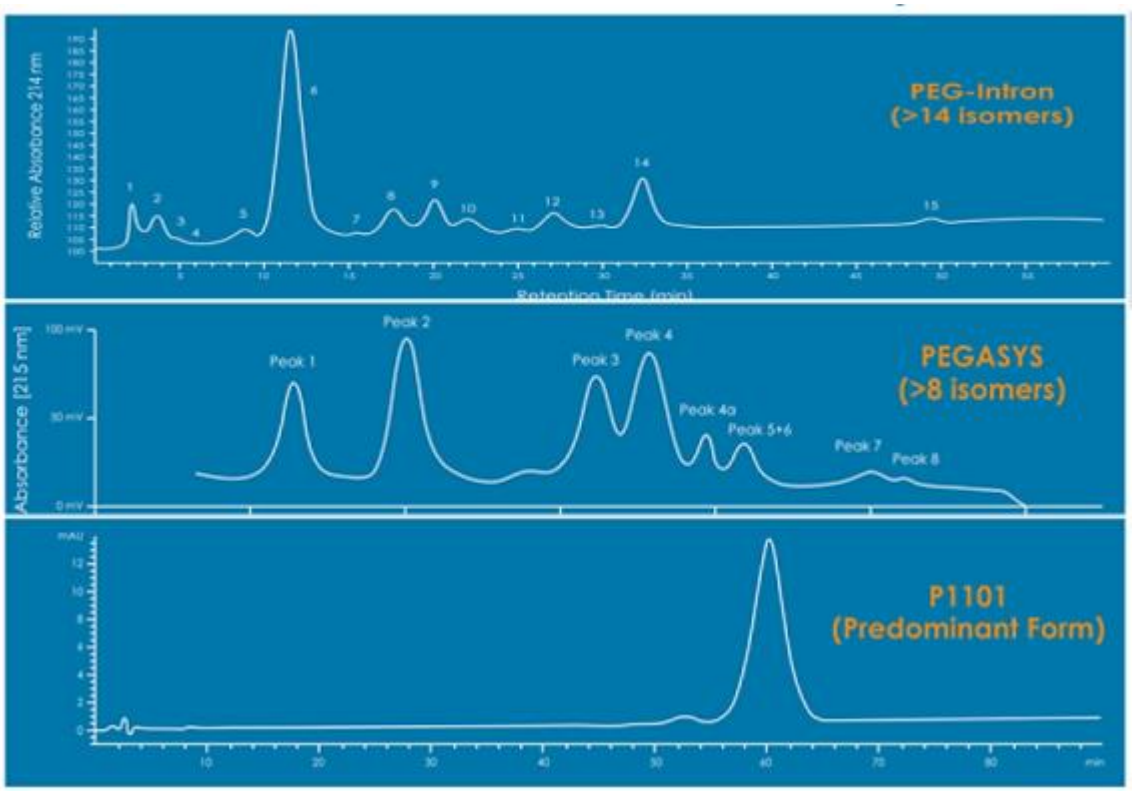
(4) Product Competition

Ropeginterferon alfa-2b (P1101) is a pharmaceutical product invented by PharmaEssentia. In February 2019, the EU issued a drug permit license for P1101 in the treatment of PV. The Company signed a licensing contract with AOP in September 2009 to license out P1101 to AOP for its sale and clinical trials in the treatment of proliferative blood disorders. Licensed countries include countries in Europe and the Middle East as well as Turkey and Russia. After obtaining the license and selling the product in the market, AOP will pay us the agreed amount of tiered royalties in proportion to the amount of sales made in the licensed countries. As agreed, the Company must provide P1101 products to AOP for sale and collect income, in addition to the licensing fees and royalties, from AOP.

The Company plans to submit a BLA to the US FDA by using data reports and data from the EU-based phase-III clinical trial. We also held a pre-BLA meeting with the FDA in September 2019. We expect to submit the BLA by the first quarter of 2020 and simultaneously apply for priority review, enabling us to reduce the review period from 10 months to 6 months. We expect to obtain a US PV drug permit license by the end of 2020. The Company will expand PV clinical studies to other Asian countries. We obtained approval from the PMDA in Japan and the CFDA in China to conduct a phase-I clinical trial. Currently, the PMDA requires us to complete 1 year of treatment for 30 Japanese patients and prove the safety and efficacy of P1101 in Japanese patients before we can apply for a drug permit license. The CFDA imposed similar requirements. Pursuant to regulatory requirements, if P1101 obtains drug permit licenses from the world's 10 most advanced countries, an application for a drug permit license can be submitted directly to the TFDA. The Company submitted this application on July 31, 2019 and obtained priority review. We expect to obtain a drug permit license for P1101 in April 2020.

ET and PV are rare blood disorders. The Company's P1101 drug for the treatment of ET has received orphan drug designation in the United States. We plan to conduct a multinational, multicenter phase-III clinical trial in the United States, Taiwan, Japan, China, and South Korea to verify and observe the efficacy of P1101 in HU-experienced patients with ET for which treatment did not achieve the expected efficacy or failed. In 2019, the Company obtained approval to conduct a clinical trial in the United States and China. In February 2020, the Company obtained approval to conduct a clinical trial in Taiwan. We expect to initiate a phase-III trial in 2020. These trials will enroll patients from the United States, Japan, China, Taiwan, and South Korea; therefore, the trial period will span 2 to 3 years, and the phase-III trial will be completed in 2022.

HPLC results of PEG-Intron, PEGASYS, and P1101:



2.1.1. Technologies and R&D Overview

1. Technological Arrangement in Business Operations and R&D

   The Company's core technologies:

   A. A method for improving the amalgamation of long-acting polyethylene glycol (PEG) polymer.
   B. The selection of 40K PEG molecules (40K PEG is generally considered to be the optimal limit in the human body).
   C. The attachment of PEG polymer to a specifically designed position on interferon-α-2b to yield the compound of a single active ingredient.
   D. Proline interferon-α-2b, which was innovated and invented by the Company for the treatment of new disease indications. Currently, the patents obtained by the Company include the four aforementioned techniques.

      PEG-P-IFN α-2b single molecule was produced using the Company's unique polymerization technique, which not only reduces the purification procedures and duration but also greatly increases the production yield. A considerable amount of P1101 can be produced using liters of fermenting tanks in our pharmaceutical manufacturing facility (hereinafter referred to as "pharma facility"), a single process operation, and subsequent processing procedures. The entire manufacturing process from start to finish only takes a few weeks. The pharma facility is highly efficient in manufacturing products and can provide economic benefits for the Company.

2. R&D Personnel and Their Educational Background

   As of the end of April 2020, the educational background distribution of the Company's

R&D personnel were as follows:

Education	Number of People	Percentage
PhD	17	26%
Master's Degree	46	70%
Bachelor's Degree	3	4%
Total	66	100%

As of the end of May 2019, the educational backgrounds of the Company's main R&D personnel were as follows:

Name	Title	Seniority	Highest Education
Albert Qin	Chief Medical Officer	24 years	PhD, Molecular Pharmacology and Biochemistry, Harvard Medical School, USA
Che Hsu	Director	25 years	PhD, Chemistry, University of Utah, USA
Yi-Te Yu	Deputy Director	20 years	PhD, Basic Medical Science, College of Medicine, National Cheng Kung University, ROC
Kuo-Hsi Kao	Senior Researcher II	16 years	PhD, Organic Chemistry, National Normal University, ROC
Wei-Te Li	Senior Researcher II	13 years	PhD, Organic Chemistry, National Normal University, ROC
Nian-Tzu Chen	Senior Researcher II	12 years	UC Davis Comparative Pathology, USA
Shih-Kuan Wu	Manager	31 years	PhD, Biochemistry, University of Illinois, USA
Ching-Kuang Chuang	Director	13 years	PhD, Biochemistry and Molecular Biology, National Taiwan University, ROC
Shih-Lung Yen	Director	22 years	Dr. rer. nat. in Biologie, Die Universirty Bayreuth, Germany

3. R&D Expenses Invested in the Past 5 Years and Up to the Date of Publication of the Annual Report

Unit: NT$1,000

Item	2015	2016	2017	2018	2019
R&D Expenses	713,615	685,835	683,318	785,713	639,575
Net Operating Revenue	11,589	5,473	4,035	26,236	305,692
As a Percentage of Net Revenue	6,158%	12,531%	16,935%	2,995%	209.22%

Our Company is an investigational new drug company in the biotech industry. Besides the ET international multi-center Phase III clinical trial protocol to be added in 2020, the Company will continue to invest in the research and development of respective projects. It is estimated that the overall R&D expenditure throughout the year will account for at least 80% of the annual revenue.

4. Technologies or Products Successfully Developed in the Past 5 Years and Up to the Date of Publication of the Annual Report

Type	Product	Indication	Current Development Stage
Hematology	P1101 (New-generation long-acting Ropeginterferon alfa-2b) Developed by PharmaEssentia	Polycythemia vera (PV)	Europe: Granting marketing authorization was recommended by the CHMP in December 2018 US: Preparing data documents for a Phase III clinical trial and submitting a biologics license application (BLA) Taiwan: Preparing for a bridging study (or exempted) Japan: Phase I clinical trial in progress China: Phase I clinical trial in progress
		Essential thrombocythemia (ET)	Worldwide: Applying for a Phase III clinical trial review of INDs
	PEG-EPO (Long-acting EPO) Developed by PharmaEssentia	Anemia in patients with kidney disease, anemia caused by chemotherapy for cancer	Phase I Production expected in Q3
	PEG-GCSF (Long-acting pegylated granulocyte colony stimulating factor) Developed by PharmaEssentia	Neutropenia caused by chemotherapy and AIDS	Phase I Production expected next year
Chronic Hepatitis	P1101 (New-generation long-acting Ropeginterferon alfa-2b) Developed by PharmaEssentia	Hepatitis B	Applying for a Phase III clinical trial review (common technical document; CTD); reply from China was received in mid-June and a consultation meeting was held in Japan; review approved by the TFDA
		Hepatitis C	Phase III clinical trial in progress
		HBV/HCV co-infection	Converting to investigator-initiated trial (IIT)
Oncology	Anti-PD-1 antibody (immune checkpoint inhibitor) Developed by PharmaEssentia	Cancer	Phase I Production expected in Q4
	Oraxol® (Oral Paclitaxel) Developed Through Licensing	Breast cancer	Taiwan: Completed a safety bridging study South America: Partner Athenex is conducting a Phase III clinical trial in South America; data analysis is expected to be completed in Q3 of 2019
		Gastric and esophageal cancer	Phase I clinical trial in progress
	Oradoxel® (Oral form of docetaxel and novel P-glycoprotein inhibitor HM30181A)	Prostate cancer	TFDA approved a Phase I clinical trial
Dermatology	KX01 (Kinase inhibitor) Developed Through Licensing	Psoriasis	Taiwan: Phase I clinical trial in progress; preliminary and positive outcomes were obtained.

(1) Preclinical animal study:

All of the pre-clinical animal studies of the Company that are meant to understand the safety or effectiveness of a drug are outsourced to an outside CRO to facilitate the research and development of new drugs. The Company at the moment prioritizes suppliers with AAALAC or IACUC qualifications. Getting to know that the collaborative CRO is AAALAC (Association for Assessment and Accreditation for Laboratory Animal Care) or IACUC (Institutional Animal Care and Use Committee) certified helps us believe that the said suppliers will respect and abide by laboratory standards in terms of protecting the welfare of lab animals as we blieve in the judgment of the said international organizations.

2.1.2. Long- and Short-Term Business Development Plans

1. Short-Term Business Development Strategy and Plan

   In terms of the short-term development strategy and planning, due to the fact that the Company's P1101 (a long-acting interferon of the new generation) was already officially approved by the EU EMA to be marketed on February 19, 2019. In the future, efforts will continue to apply for its permits in countries around the world for use in PV. The Company is conducting a Phase III global clinical trial of P1101 concurrently in the US, Taiwan, Japan, Korea, and Mainland China for treating throbocythemia (ET). Clinical trials of P1101 in other indications, including chronic Hepatitis B and other rare blood proliferative disorders are ongoing, too. In addition, clinical trials will be continued for licensed new drugs, including oral cancer drug Oraxol®/Oratecan®/Oradoxel® and psorirasis medication KX01.

2. Mid-/Long-Term Development Strategy and Plan

   For the mid-to-long-term development strategy and plan, the Company will expand its technical platform. Starting with PEGylated new protein-based drug, we will expand to take advantage of what we are good at, that is, chemical synthesis, in the research and development of small molecular new drugs and develop protein-based new drugs as cancer immunotherapy so that the cure rate of cancer can be significantly enhanced to benefit the patients. Moreover, the Company will develop new compound new drugs and become a first-rate professional pharmaceutical company in the world with complete vertical integration. It will help enhance the visibility of the Company in the international medicinal R&D industry and secure the Company's position in world medicinal research and development.

2. Overview of Markets, Production, and Sales

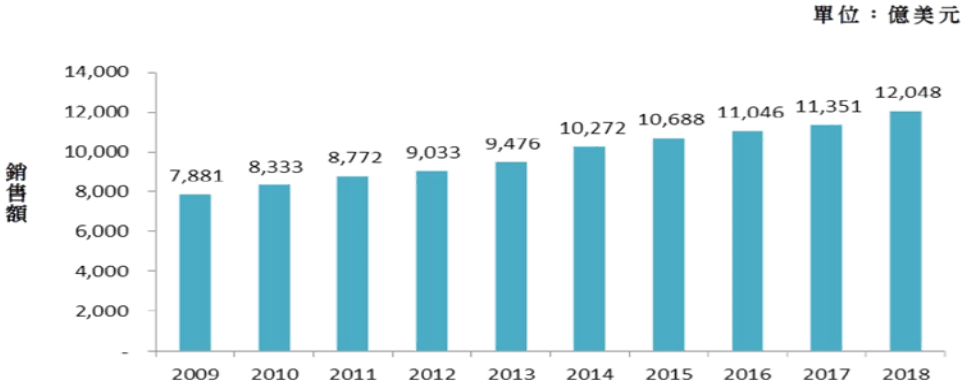
2.2.1. Market Analysis

(1) Origins and Destinations of Primary Products (Services)

The global drug market is growing as the impacts from expiring patents of brand drugs drop, the quantity of drugs approved to be marketed continues to increase, and the demand on the drug market of the US climbs. According

to the statistics of IQVIA, the sales on the global drug market in 2018 totaled around US$1.20 trillion in value, a growth of around 6.1% from 2017 and stopped the sliding trends in the growth rate over the past few years (See Figure 4).

Figure 4. Global drug market development update



Source: The Global Use Of Medicine in 2019 and outlook to 2023, IQVIA, 2019 Biotechnology Industry White Paper

Table 3. 2018 Global drug sales distribution

單位：億美元，%

地區別	2018 年銷售額	2014~2018 年 CAGR	2019~2023 年 CAGR
先進國家	8,000	5.7	3~6
-美國	4,849	7.2	4~7
-歐洲五國	1,775	4.7	1~4
-日本	864	1.0	(-3)~0
新興醫藥國家	2,859	9.3	5~8
其他	1,189	3.2	2~5
合計	12,048	6.3	3~6

附註：CAGR：複合年成長率(Compound Annual Growth Rate)。

資料來源：The Global Use of Medicine in 2019 and Outlook to 2023, IQVIA, 2019 年 1 月。

The drug market scale in 2018 of advanced countries such as the US, the five countries in Europe (Germany, France, the United Kingdom, Italy, and Spain), Japan, Canada, Australia, and South Korea) was worth around US$800 billion, accounting for 66.40% of the overall global drug market; they remain to be the primary markets at present. Emerging markets such as the Mainland China, Brazil, India, and Russia, on the other hand, had a combined market scale worth of US$285.9 billion in 2018, accounting for around 23.73% of the overall global drug market (See Table 3). It is estimated that as far as the CAGR is concerned in the coming five years, the US is 3.2%,

Mainland China around 9.3%, and Japan 2.6%. Among the five countries in West Europe, the United Kingdom is the highest (4.4%) and for the others, it is around 2.1% to 2.8%. In Brazil, it is around 4% and Canada around 2.6%.

Table 4. 2018 scales of Top 10 categories of therapeutic drugs around the world

單位：億美元，%

藥品領域	2018 年銷售額	2023 年銷售額	2019~2023 年 CAGR
Oncologics(癌症用藥)	995	1400~1500	6-9
Diabetics(降血糖用藥)	787	1150~1250	7-10
Respiratory(呼吸疾病用藥)	605	700~800	2-5
Autoimmune(自體免疫用藥)	535	700~850	6-9
Antibiotics and Vaccines(抗生素和疫苗)	406	400~480	0-3
Blood Coagulation(凝血用藥)	398	550~650	7-10
Pain(疼痛疾病用藥)	397	400~480	0-3
Mental Health(精神疾病用藥)	355	320~400	(-2)-1
Immunology(免疫疾病用藥)	342	450~550	6-9
Hypertension(高血壓用藥)	299	270~310	(-2)-1

註：調查統計範圍包含美國、法國、德國、義大利、西班牙、英國、日本、加拿大、中國大陸、巴西、俄羅斯、印度、土耳其及墨西哥等 14 個國家。

資料來源：The Global Use of Medicine in 2019 and Outlook to 2023, IQVIA, 2019 年 1 月。

Meanwhile, according to the statistics of IQVIA (See Table 4), oncologics remained Top 1 among the medications used in 2018, with the sales worth up to US$99.5 billion. The continuous rise in sales is the result of increasing number of people diagnosed with cancer each year and the fact that drugs that can effectively treat cancer are yet to be available at present. It is estimated that the sales will grow at 6% to 9% each year in the coming five years and will exceed US$140 billion in 2023. Diabetics and autoimmune diseases are prioritized in the development of drugs, too. Their growths will be 7% to 10% and 6% to 9% in the coming five years, respectively, too, due to the increasing population with related diseases and the fact that pharmaceutical companies are devoted to the development of drugs in related fields. It is estimated that the market scales will be worth US$125 billion and US$85 billion, respectively, in 2023. In other words, the overall global drug market will be able to keep its growing streak in the future with the growth in the use volume of drugs driven by economic growths in emerging countries and the continuous climbing sales of drugs treating cancer.

Table 5. 2018 Top 10 brand drugs and sales around the world

單位：億美元，%

品牌藥/廠商名稱	主要適應症	2017 年銷售額	2018 年銷售額	2017~2018 年成長率
Humira (AbbVie)	類風濕關節炎、克隆氏症、乾癬、幼年型自發性多關節炎等	184.27	199.36	8.2
Eliquis (Bristol-Myers Squibb/Pfizer)	抗凝血劑	73.95	98.72	33.5
Revlimid (Celgene)	多發性骨髓瘤	81.87	96.85	18.3
Opdivo (Bristol-Myers Squibb/Ono)	黑色素瘤	57.63	75.70	31.4
Keytruda (Merck & Co)	晚期黑色素瘤	38.09	71.71	88.3
Enbrel (Amgen/Pfizer)	類風濕關節炎、牛皮癬、克隆氏症	78.85	71.26	-9.6
Herceptin (Roche)	乳腺癌	70.13	69.81	-0.5
Avastin (Roche)	結直腸癌	66.86	68.47	2.4
Rituxan (Roche/Biogen)	非何杰金氏淋巴瘤	72.98	67.50	-7.5
Xarelto (Bayer/ Johnson & Johnson)	抗凝血劑	62.34	65.89	5.8

資料來源：Genetic Engineering & Biotechnology News, 2019 年 3 月。

Data show (See Table 5) that among the Top 10 brand drugs sold globally in 2018, seven continued to climb in sales. Humira®, the drug treating multiple autoimmune diseases, including rheumatoid arthritis that is developed by AbbVie, in particular, Tops the list. Despite the introduction of biosimilars targeting it during development to the market, as the indications continue to expand and with price adjustment, its sales reached new heights again in 2018 to arrive at US$19.936 billion. Nevertheless, the introduction to the market of Humira® biosimilars by the European Union inhibited the growths in sales outside the US market. As a result, the growth was only 8.2% compared to 2017 yet it secured the first place. The drug of Merck&Co treating advanced melanoma Keytruda obbtained a total of 11 permits as new drug or new indication in the US, the European Union, Japan, and Mainland China in 2018, contributing to the explosion in the growth of its sales that reached US$ 7.171 billion, a growth of 88.3% from 2017 and making it the fastest growing one among the Top 10 brand drugs. According to observations, among the Top 10 brand drugs around the world, biological preparations are gradually gaining prominence. Except for Revlimid®, Eliquis®, and Xarelto®, which are small molecular drugs, all the others are biological preparations, indicating the growing importance of biological preparations to the scale of the global drug market.

(2) Market Share

The Company's new drug Beremi, which has been authorized to AOP in Europe, was approved by the EU EMA to be marketed (MAA) in February 2019. The strategic partner AOP will proactively expand the market share.

(3) Supply and Demand and Growth Potential on the Market in the Future

The Company primarily develops long-acting biological preparations. In terms

of its R&D strategy, the unique coupling technology is applied to modifying existing long-acting biological preparations. Selected R&D items are consistently products with existing annual sales exceeding US$1 billion on the market. The access threshold for biological preparations is high so the competition is generally less than ordinary small molecular drugs, in addition to facts that the Company owns the exclusive synthesis patented technology and that biological preparation manufacturers that comply with European and American regulations can control the production timeframe on their own. Products that are under research and development cover blood disorders, infections, and cancer drugs; all are fields that continue to grow on the market. They target American and European markets and are hopefully to help the Company maintain a certain market share for its new biological preparations.

(4) Competitive Niche

A. Robust R&D team and multiple patents

The R&D team of the Company has had many years of experience in researching and developing new drugs. The outstanding R&D accomplishments are the biggest assets of the Company. Patents obtained in multiple countries help protect the R&D accomplishments and ensure sustainable operations of the Company. In addition, the team highly keeps track of the latest biological technologies and new drug development trends to be precise in selecting R&D items to accordingly be capable of selecting the most potential development targets after animal studies and begin clinical trials involving human subjects and eventually fulfill the marketing and sale goals.

B. Familiarity with International New Drug Market

Multiple members on the team have worked for major pharmaceutical companies in the US before, including Biogen, ISIS, Amgen, Abott, and Johnson & Johnson, etc. Some of them were once officials reviewing drugs at the US Food and Drug Administration (FDA). They have an in-depth understanding of the new drug market in the US and can fully keep track of the changes in market demand, R&D activities of the competition, and regulatory requirements and accordingly plan management strategies for the Company’s new drugs in terms of research and development, clinical trials, and international marketing.

C. Independent Production and Manufacturing

The Company finished setting up a plant for new biological preparations in October 2012 and obtained the TFDA GMP permit in April 2013 and te EMA GMP Certificate in January 2018. During the process, we hired multiple groups of experts specializing in helping international pharmaceutical companies set up plants: Denmark NNE was in charge of planning and design, Australia Synertec provided guidance on how to establish the validation system and the documentation system,

and Mr. Jordanov, who had experiences in helping 11 biological preparation manufacturers set up new plants, served as the general counsel. Taiwan I&K Engineering Co., Ltd. on the other hand, was the primary construction contractor. The completion of the plant marked not only the fact that Company had complete international experiences but also that the first biological preparation new plant establishment experience was officially part of the biological technology industry in Taiwan. P1101, whose permit was issued by the European Union in February 2019, is exactly being produced and manufactured at the Company's new biological preparation plant. With this new biological preparation plant that meets international criteria, it helps the Company maximize the R&D results during the laboratory process and transfer them to meet the mass production criteria of international standards. Besides fully keeping track of the quality of new drugs, there are absolute advantages in terms of cost control.

D.Support from Countries around the World in National Policy

Besides considering the market properties of a drug, the Company continues to devote to the development of drugs treating the rare condition polycythemia vera (PV) because of the relatively little competition and high price range and mainly because of the fact that PV patients require continuous medication, which will contribute to the constantly increase in the accumulative number of PV patients. A rare condition refers to one that has a low prevalence rate, is uncommon, and is associated with a small number of patients. The Company embarks on the development of new drugs from the perspective of rare conditions. Primary target markets for the treatments of rare blood disorders include advanced countries in Europe and America. Unlike other countries, high-price drugs are highly acceptable in Europe and America. In addition, the development of orphan drugs is emphasized in advanced countries and prioritized under local policies. It helps the P1101 of the Company to gain the upper hand in sales in advanced countries in America and Europe. P1101 is also known for its multiple indications. As a result, it can also be used to treat Hepatitis B and Hepatitis C. Hepatitis research in Taiwan is leading the world, too. Physicians specializing in liver disease are known for their enriched experiences in conducting clinical trials. The fact that the number of patients is greater in Asia also helps with the conduct of clinical trials.

E.Multiple Products in Varied R&D Stages

Given the extended duration of R&D associated with new drugs, if the Company is devoted to only one product, after it is introduced to the market, there will be no other products close to be marketed to continue generating income and the enormous time and resources required for the research and development of new products will cause difficulties in the continuous operation of the Company. Besides developing the

most advanced long-acting interferon P1101, the Company continues to develop other long-acting protein-based drugs, such as the PEG-GCSF long-acting leukocyte growth hormone and the PEG-EPO long-acting erythropoietin, and starts to develop new cancer immunotherapies for the next ten years. Besides independent R&D, the Company is capable of introducing technologies for the development of new products (for the Oraxol oral cancer drug and the KX01 kinase inhibitor). In the future, the current model will be followed, too, to independently research and develop a series of new products on the one hand and to cooperate in the development of potential new drugs with external companies on the other hand so that product diversity may be maximized.

(5) Favorable and unfavorable factors for future development and response strategies

I. Favorable Factors

A. Primary products may be applied to the treatment of multiple disorders.

i. For P1101 as a primary product, not only polycythemia, other indications can be developed, too; it may be used in multiple rare blood disorders. The use of P1101 in the treatment of PV has been certified by the EMA/FDA (ODD) and will be entitled to monopoly on the market for ten years and seven years, respectively, once introduced to the market. The same model in developing P1101 for the treatment of PV will be followed to continue developing P1101 for treating other rare blood disorders.

ii. In light of the high tolerated dose of P1101 in humans, many clinicians are very interested in applying P1101 to the treatment of other malignancies and cancers for which effective therapies are yet available and physician-initiated clinical trials are proactively planned. These trials will help boost the confidence of physicians in applying P1101 and significantly help reduce the difficulty in recruiting subjects for clinical trials and the marketing and promotion of products once they are available on the market in the future.

iii. Hepatitis research in Taiwan is leading the world. Physicians specializing in liver disease are known for their enriched experiences in conducting clinical trials. The fact that the number of patients is greater in Asia is in favor of conducting clinical trials, too.

B. Key Technology Patent

The Company is an R&D company in nature that primarily develops new drugs. Patents are important assets of the Company. Owning key technologies helps not only with the development of other new products and licensing to others with their use to generate income but also with the avoidance of infringing upon someone else’s intellectual properties during development, which can give rise to unnecessary delays and disputes during research and development.

C. Multiple Products in Varied R&D Stages

i. Given the extended duration of R&D associated with new drugs, if only one product is being researched and developed, after it is introduced to the market, there will be no other products close to be marketed to continue generating income and the enormous time and resources required for the research and development of new products will cause difficulties in the continuous operation of the Company. Besides developing the most advanced long-acting interferon P1101, PharmaEssentia continues to develop other long-acting protein-based drugs, such as PEG-GCSF and PEG-EPO, etc. starts to develop new cancer immunotherapies for the next ten years.

ii. Besides independent R&D, the Company is capable of introducing technologies for the development of new products (for the KX01 kinase inhibitor). In the future, the current model will be followed, too, to independently research and develop a series of new products on the one hand and to cooperate in the development of potential new drugs with external companies on the other hand so that product diversity may be maximized.

II. Unfavorable factors and countermeasures

Unfavorable factor	Countermeasure
Protein-based new drugs involve a relatively long R&D duration and higher manufacturing difficulty	Efforts are made to primarily modify long-acting protein-based drugs that are already available on the market in order to reduce the uncertainty of drugs in terms of safety and to shorten the R&D duration and minimize the investment risk.
Biosimilars are faced with increasing competition on the market each day.	For the development of biosimilars with a high technical threshold and high access barriers, there should be a careful evaluation procedure while products to be researched and developed are being selected that covers technology, market, patent, and regulatory requirements to ensure that the development of products may be completed and the drug registration permit may be obtained within the shortest period of time possible.

Biotech talent is seriously wanted in Taiwan, particularly that with professional practical experiences in proteion chemistry.	The Company works proactively with the Phd On-the-job Training Program introduced by the government in finding suitable talent to receive complete training and later devote to practical tasks in the Company, creating a win-win situation for the industry and the academic circle.

2. Important Purposes and Production/Manufacturing Process of Currently Marketed Products

The Company is one that researches and develops and manufactures protein-based new drugs on the basis of the PEG technical platform for the independent research and development of long-acting protein-based drugs and the small molecular synthesized drugs technology. For the time being, it primarily focuses on the fields covering blood, infection, and tumor-related diseases. Its primary product, P1101, has completed Phase III clinical trials in Europe for treating PV and the official report on the treatment with P1101 of PharmaEssentia was provided by the EU Committee for Medicinal Products for Human Use (CHMP) on December 13, 2018 and was officially granted the marketing authorization (MAA) by the EU EMA in February 2019. As for the US market, the Company was approved by the US FDA to apply the Phase III clinical trial data and documentation in Europe to apply for a drug permit with the US FDA. The Company plans to submit the BLA drug permit application to the FDA in the first quarter of 2020 and applies for prioritized review concurrently to hopefully reduce the duration of review from ten months to six months and to obtain the PV drug permit by the end of 2020 in the US. Meanwhile, as scheduled, the global international multi-center ET Phase III clinical trial will be activated to maximize product efficacy and clinical and marketing deployments will be proactively promoted for rare conditions such as PV and ET in Japan and in China.

3. Supply of Primary Raw Materials

The Company is a R&D-oriented new biotech company that is devoted to the innovation and invention, trials, and development of new drugs. While developing new drugs, researchers professionally determine and select primarily raw materials with optimal quality and purity by referring to publications and R&D results. In order to maintain quality of drugs and keep consistent the sources of raw materials for the data of experiments conducted during respective stages, suppliers of materials used in the development of new drugs will not be easily replaced. As such, raw materials selected to support respective stages of new drug development by the Company are mainly from international well-known heavyweights; this ensures the quality and stability of raw materials supplied.

4. Description of Major Gross Profit Margin Changes by Each Department Classification or Major Product Classification for the Most Recent 2 Years:

The Company's new pharmaceutical product has been approved for market distribution. There were no major changes in the gross profit of each department classification or major product classification.

2.2.2. List of Principal Suppliers and Clients

1. The names of any suppliers accounting for 10% or more of the Company's total procurement amount in either of the 2 most recent fiscal years, the amounts bought from each, and the percentage of total procurement accounted for by each:

Unit: NT$1,000

Year	2018				2019			
No.	Name	Amount	As a Percentage of Net Revenue (%)	Relationship with the Company	Name	Amount	As a Percentage of Net Revenue (%)	Relationship with the Company
1	Zuellig Pharma Holdings Pte. Ltd.	9,092	19.87	None	Ypsomed AG	27,806	34.70	None
2	BD Taiwan Branch	6,069	13.27	None	Merck Taiwan	8,454	10.55	None
3	Cintrade BioProcess	6,007	13.13	None	-	-	-	-
4	Merck Taiwan	5,625	12.30	None	-	-	-	-
	Other	18,955	41.43		其他	43,877	54.75	
	Total	45,748	100.00		進貨淨額合計	80,137	100.00	

Description of change: For 2019, because of the minimum purchases requirement of the No. 1 supplier to result in relatively high value of the purchases each time, the purchases from suppliers throughout the year showed an increase higher than the overall ratio. For the remainder, the Company does not make purchases from a single supplier with a weight exceeding 25%.

2. The names of any clients accounting for 10% or more of the Company's total sales amount in either of the 2 most recent fiscal years, the amounts sold to each, and the percentage of total sales accounted for by each:

Unit: NT$1,000

Year	2018				2019			
Item	Name	Amount	As a Percentage of Net Revenue (%)	Relationship with the Company	Name	Amount	As a Percentage of Net Revenue (%)	Relationship with the Company
1	AOP Orphan Pharmaceuticals AG	22,541	85.92	無	AOP Orphan Pharmaceuticals AG	293,464	96.00	無
	Other	3,695	14.08		Other	12,228	4.00	
	Total	26,236	100.00		Total	305,692	100.00	

Description of change: The Company deals primarily with the research and production of new drugs. Among them, P1101, the new drug treating PV and hepatitis, is the primary product under research and development at the moment. In the treatment of PV, in particular, positive feedback was obtained from the EU CHMP in December 2018 for the marketing authorization recommendation and the marketing authorization (MAA) was officially obtained from the EU EMA in February 2019. Despite the fact that AOP is given the exclusive dealership of P1101 on the European market to result in the possibility of sales focusing on AOP, spontaneous operation and distribution are mainly planned at present for the products developed by the Company on top of

P1101. As far as the US market is concerned, the US FDA has approved the use of Phase III clinical trial data and documentation in Europe to apply for a drug permit with the FDA. The Company submitted the BLA drug permit application to the FDA in March 2020. Meanwhile, as scheduled, the global international multi-center ET Phase III clinical trial will be activated to maximize product efficacy and clinical and marketing deployments will be proactively promoted for rare conditions such as PV and ET in Japan and in China. Also, Phase II and Phase III clinical trials of P1101 in Hepatitis B and Hepatitis C are ongoing upon approval in multiple countries. Therefore, the Company's P1101 has been given the marketing authorization one after another on other markets. With the expansion in the scope of indication, it would help effectively decentralize sources of customers in the future.

2.2.3. Production Volume for the Most Recent 2 Years:

Unit: NT$1,000; 1,000 tablets

Year	2018			2019		
Volume / Product	Capacity	Quantity	Amount (Note)	Capacity	Quantity	Amount (Note)
P1101	-	-	-	-	34,524,200	230,592
PharmaQ10	-	715	3,548	-	332	2,014

Note: This refers to the cost of the finished product.

2.2.4. Sales Volume for the Most Recent 2 Years:

Unit: NT$1,000; 1,000 tablets

Year	2018				2019			
Volume / Product	Domestic Sale		Export		Domestic Sale		Export	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Sale of goods	448	3,680	-	-	465	3,335	33	293,464
Research Income	-	15	-	22,541	-	8,893	-	-
Total	448	3,695	-	22,541	448	3,695	-	22,541

3. Number of Employees in the Last 2 Years and Up to the Date of Publication of the Annual Report

Unit: Person; Year

Year		2018	2019	As of April 30, 2020
Number of Employees	Manager or above	26	43	49
	General employee	151	171	174
	Total	177	214	223
Average Age		39	39	40
Average Years of Service		4.54	4.89	4.64
Education Level Percentage (%)	PhD	15	13	13
	Master’s Degree	54	56	57
	Bachelor’s Degree	29	29	28
	High School or below	2	2	2

4. Environmental Protection Expenditures

Total losses (including compensation for damages) and fines for environmental pollution for the 2 most recent fiscal years, and during the current fiscal year up to the date of publication of the annual report, and an explanation of the measures (including corrective measures) and possible disbursements to be made in the future (including estimates of losses, fines, and compensation resulting from any failure to adopt responsive measures, or if it is not possible to provide such an estimate, an explanation of the reason why it is not possible):

1. The Company's acquisition of a permit for pollution emissions:
   A. Stationary pollution source: Permit no. for installing an antistationary pollution facility: CTSPESD No. BC063-02; Permit no. for emitting stationary pollution: CTSPESD No. BC061-07
   B. Water pollution prevention: Permit no. for water pollution prevention: CTSPEWP No. BD017-09
   C. Waste removal and disposal: Proposal for the Disposal of Industrial Waste: Approval No. 1080012377
2. Pollution prevention fees payable:
   A. Air pollution control fee

      No air pollution control fee was incurred because the raw materials and pollution emitted by the manufacturing activities at the Taichung Plant were below the thresholds for charging.
   B. Wastewater treatment fee

2018	2019
NT$122,098,000	NT$138,784,000

3. Pursuant to Article 28 of the Waste Disposal Act, which states that enterprises shall employ professional technical personnel, the Taichung Plant is part of the manufacturing industry and should submit a waste disposal proposal, and has a registered capital of NT$2 billion or more. Hence, the Taichung Plant is required to employ professional technical personnel, which the Company has ensured.

Institution	Company Name	Permit	Approval No.
Clearance	1. Shin Shin Environmental Protection Engineering Co.,	Waste Clearance	2017 Taichung City Fei-Yi-Qing No. 0006

	Ltd.	Permit	
	2. How-Well Enterprise Co., Ltd.		2018Taichung City Fei-Qing No. 0012
	3. Skylark Technology Enterprise Co., Ltd.		2019 Taichung City Fei-Qing No. 0074
	4. Nanke Environmental Technology Co., Ltd.		2015 Tainan City Fei-Qing-A No. 081-1090531-00
Disposal	1. Taichung City Refuse Incineration Plant	Waste Disposal Permit	-
	2. How-Well Enterprise Co., Ltd.		Fu-Shou-Huan-Fei No. 1070079036
	3. How-Well Medical Waste Disposal Enterprise Co., Ltd.		Fu-Shou-Huan-Fei No. 1080285481
	4. Resource Recycling Facility, Environmental Resource Research Center, National Cheng Kung University		Tai-Jiao-Zi(6) No. 1040033509A

4. List the company's investments in major antipollution facilities, the use purpose of such facilities, and the possible effects to be produced: None.

5. Describe the processes undertaken by the company for environmental pollution improvements in the most recent 2 fiscal years and up to the publication date of the prospectus. If there have been any pollution disputes, their handling processes should also be described: None.

6. Describe the loss (including damage compensation paid) suffered by the company because of environmental pollution incidents in the most recent 2 fiscal years and up to the publication date of the prospectus, the total penalty/fine amount, as well as a disclosure of its future preventive policies (including improvement measures) and possible expenses to be incurred (including possible losses if no preventive measures are taken, and the penalties and estimated damage compensation amount; if reasonable estimations cannot be made, please present the facts that explain why not): No losses and penalties were incurred in 2018 and 2019.

7. Explain the current pollution conditions and the impact of its improvement to profits, competitive position, and capital expenditures of the company, as well as the projected major environment-related capital expenses to be made for the upcoming 2 fiscal years: To

discharge wastewater in accordance with the control standards of the Central Taiwan Science Park, the Company plans to build a wastewater treatment facility that controls the chemical oxygen demand level and water acidity/alkalinity.

8. Workplace and Employee Safety and Protection Measures

Our Taichung branch has established the Work Rules for Labor Safety and Health for employees to regulate safety and management matters. Matters implemented to ensure the health and safety of our Taichung branch are as follows:

(1) Health and safety management unit and personnel

The Company has established a health and safety management unit in accordance with the Occupational Safety and Health Act. The unit is headed by the supervisor of the Administrative Management Department. The Administrative Management Department has established an "Environmental Safety Group" that performs tasks related to safety, health, and environmental protection and is composed of a safety and health administrator and designated environmental personnel. The health and safety administrator is appointed as the head of health and safety operations.

(2) Facility safety

The Company's production facility is equipped with safety protection measures such as emergency stop buttons on autoclave machines and safeguards on cutting machines. Detectors are installed at sites where hydrogen and liquid nitrogen are used to prevent leakage. Dangerous equipment (e.g., Category A pressure vessels) is serviced and maintained on a monthly basis. Annual/quarterly/monthly/daily automatic inspection is performed as required by law (Category A pressure vessels, power generators, small furnace, centrifuge, and vehicles/cars). When signing a contract with contractors, the Company requires contractors to comply with the health and safety requirements in its Contractor Management Rules.

(3) Environment and health

To create a risk-free work area, localized ventilation facilities are installed in work areas were chemical are used. Monthly/daily automatic inspection is performed as required by law (activities involving organic solvents and specific

chemical substances). Work environment measurements are performed every 6 months. Drinking water facilities are serviced and maintained on a monthly basis. Water quality is checked by certified laboratories every 3 months to ensure the cleanliness of drinking water for employees.

(4) Fire control and safety

The Company has installed a complete fire service system in accordance with the Fire Services Act. The system comprises a fire alarm system, water supply system, evacuation system, and fire extinguishers. Fire drills are held every 6 months to better equip employees with knowledge on the use of fire control and evacuation systems. Firefighting equipment is checked regularly to ensure that the equipment is functional whenever required. Certified organizations or technicians specializing in firefighting equipment are hired every year to check, repair, and provide reports on firefighting equipment.

(5) Education and training

New employees must receive general education and training on health and safety. Existing employees must also receive such general education. Pursuant to the law, the Company has appointed a supervisor of organic solvent operation, supervisor of specific chemical operation, first aider, Category A pressure vessel operator, boiler operator, and high-pressure gas vessel operator.

(6) Employees' right to know

In training new employees, information regarding preventive and precautionary measures for hazardous and dangerous substances is provided to reduce the occurrence of workplace safety incidents. Safety data sheets (SDSs) are provided at chemical work stations and in storage areas, and employees are taught to interpret their contents.

(7) Health examination and health promotion

New employees are required to submit a physical examination sheet. Every year, employees involved in special operations must receive a health examination. Every year, all employees must undergo a health examination (in accordance with GMP laws and regulations). Health promotion activities are held every year (including weight loss, aerobic exercise, ball games, and stress relief talks).

(8) Recurrence prevention

Every occupational injury incident is investigated to enforce preventive measures. Workplace incident improvement measures are proposed by the Environmental Safety Group, IT Department, and Production Department within 48 hours of an incident. Disaster statistics are calculated every month and reported to the Central Taiwan Science Park.

(9) Group insurance

The Company purchases group insurance for all its employees so they can receive reasonable labor or group insurance claims and take time off without worrying when they sustain occupational injury.

(10) Healthy workplace certification

The Company is committed to safety, health, and environmental management. In addition to caring for the safety of employees at work, the Company is concerned about their physical health status. The Health Promotion Administration of the Ministry of Health and Welfare awarded a badge to the Company as a form of encouragement for committing further to the cause. In 2017, the Company received the Badge of Accredited Healthy Workplace for its efforts in health promotion.

5. Labor Relations

1. List all employee benefits, continuing education, training, retirement systems, and the status of their implementation, as well as the status of agreements between labor and management, and all measures aimed at preserving the rights and interests of employees:

(1) Employee benefits

Labor insurance: In accordance with the Labor Insurance Act.

National health insurance: In accordance with the National Health Insurance Act.

Group insurance: All employees are eligible to life insurance, liability insurance, and medical insurance, which cover hospitalization and cancer treatments. All policies are fully covered by the Company.

Employee bonus: Any earnings concluded in a fiscal year shall be first used to pay the statutory taxes and make up for losses of previous years, and the distribution ratio of employee bonuses for the year shall be proposed and approved by the Board of Directors, after which it shall be presented at the shareholder meeting for ratification.

Employee stock options: The Company invites professionals to join and be a part of the Company's work team and retains outstanding employees who demonstrate development potential. The Company cares for its employees and helps them to improve their quality of life, ensuring they are motivated to create benefits for the Company and shareholders. Following approval by the Board of Directors, employee stock options are issued in accordance with the Procedures for Employee Stock Option Issuance and Subscription.

Year-end bonus/recreational activities: The Company regularly organizes employee trips and provides year-end bonuses. The Company has an Employee Welfare Committee in place that plans, promotes, and implements employee benefits, which include aspects in relation to weddings, funerals, birthdays, celebrations, employee trips, holiday bonuses, and occasional department gatherings. Committee members are elected in accordance with the law by employees through a voting process.

(2) Continuing education and training

New employees: On the first day of work, employees are given an orientation tour around the workplace during which personnel rules, the company profile, work rules, and supervisors and colleagues are introduced to them.

Continuing Education Rules for Existing Employees: All full-time employees are encouraged to participate in on-the-job education and training courses to promote lifelong learning, impart professional knowledge and skills, and improve their humanistic qualities, thereby enhancing employees' service quality, literacy, and job performance.

(3) Retirement systems and their implementation status

Pursuant to the Labor Standards Act, the Company has established the Employee Retirement Rules, which state that for employees who opt for the old pension system, the Company shall make monthly contributions equal to 2% of each employee's monthly salary to their pension account with the Bank of Taiwan set up in the name of the labor pension reserve supervision committee. As of July 1, 2005 following the implementation of the Labor Pension Act (hereinafter referred to as the "new pension system"), a defined contribution plan shall apply to the years of service for employees who were originally applicable to the Rules and opted for the new pension

system or employees who report for duty after the implementation of the new pension system. Accordingly, the Company shall make monthly contributions equal to 6% of each employee's monthly salary to their individual pension account at the Bureau of Labor Insurance.

(4) Status of agreements between labor and management and all measures aimed at preserving the rights and interests of employees

The Company adopts communication, incentive, and education mechanisms to fulfill employee needs in a timely manner, which helps to forge a positive relationship in which employees and the Company share and work together toward common goals and interests. Subsequently, employees' loyalty to the Company and job satisfaction are enhanced, increasing their willingness to commit to the Company and contribute more to creating value for it. The Company maintains uninterrupted communication and harmonious relations with its employees; therefore, no major labor disputes have occurred as of late.

2. Describe any losses suffered by the company because of labor disputes occurring in the most recent 2 fiscal years and up to the publication date of the prospectus, and disclose the estimated amount expected to be incurred in the present and future as well as preventive measures; if a reasonable estimate cannot be made, an explanation of why it cannot be made should be provided:

The Company did not suffer any losses because labor disputes in the past 2 years and up to the publication date of the annual report.

6. Material Contracts

Business partners	Contract type	Contract period	Content
AA Co.	License fee expenditure for new drugs	2011/12/8– Date of patent expiry	Preparation and production/Clinical trials/Sales right of KX01/KX02 for psoriasis indications in Taiwan, Singapore, Malaysia, China, and Hong Kong
AA Co.	License fee expenditure for new drugs	2013/12/16 2011/12/8– Date of patent expiry	Exclusive rights to Oraxol and Oratecan in oral dosage form in Taiwan, Singapore, and Vietnam

HH institution	Testing technique authorization	2018/8/15– 2018/6/30	Nucleic acid residue testing technique
BB Ltd. Co.	Clinical trial	2010/12/7– End of trial	Clinical trial delegation
CC institution	Clinical trial	2015/7/10– End of trial	Entrustment to the institution for a sample laboratory analysis of a phase III clinical trial on the P1101 new drug treatment for the type 2 hepatitis C virus
Beijing DD Inc.	Clinical trial	2016/5/4– End of trial	Entrustment to the company for a registration application (clinical trial application) and relevant communication projects in China regarding the new drug, P1101
Singapore EE Co.	Clinical trial	2017/8/1– End of trial	Entrustment to the company for a phase I clinical trial on the new drug, P1101, in Australia
U.S. FF Co.	Clinical trial	2017/12/24– End of trial	Entrustment to the company for management of data concerning the phase III clinical trial on P1101 treatment for essential thrombocythemia and collection of statistics
Hong Kong GG Co.	Clinical trial	2019/1/10– End of trial	Entrustment to the company for a phase III clinical trial on the P1101 new drug treatment for the type 2 hepatitis C virus in China
II Co.	Clinical trial	2019/4/1– End of trial	Entrustment to EPSI for P1101 clinical trials in China, South Korea, and Japan
JJ institution	Entrusted services	2018/9/1– End of trial	Entrustment to the hospital for preventive and safe open treatment using the new drug, P1101

Financial Highlights

6.1. Condensed Balance Sheets and Statements for the Past 5 Fiscal Years

6.1.1. Condensed Balance Sheet and Statement of Comprehensive Income

1. Condensed Balance Sheet – IFRS

Unit: NT$1,000

Item \ Year		Consolidated Financial Data for the Past 5 Years				
		2015	2016	2017	2018	2019
Current Assets		600,635	4,086,478	3,259,081	2,262,525	1,919,122
Property, Plant, and Equipment		343,266	314,611	280,638	372,277	423,190
Intangible Assets		20,378	17,843	16,407	16,488	98,234
Other Asset		76,320	79,602	113,050	153,753	518,864
Total Assets		1,040,599	4,498,534	3,669,176	2,805,043	2,959,410
Current Liabilities	Before Distribution	247,305	127,706	117,762	245,205	336,678
	After Distribution	247,305	127,706	117,762	245,205	336,678
Noncurrent Liabilities		103,733	100,443	93,929	87,879	367,656
Total Liabilities	Before Distribution	351,038	228,149	211,691	333,084	704,334
	After Distribution	351,038	228,149	211,691	333,084	704,334
Equity Attributable to Owner of the Parent Company		689,561	4,270,385	3,457,485	2,471,959	2,255,076
Capital Stock		1,902,832	2,184,601	2,187,208	2,190,849	2,250,438
Capital Surplus		201,709	4,370,364	2,164,838	1,321,811	875,656
Retained Earnings	Before Distribution	(1,415,909)	(2,174,956)	(872,851)	(1,011,629)	(843,512)
	After Distribution	(1,415,909)	(2,174,956)	(872,851)	(1,011,629)	(843,512)
Other Equity		929	(109,624)	(21,710)	(29,072)	(27,506)
Treasury Shares		-	-	-	-	-
Noncontrolling Interests		-	-	-	-	-
Total Equity	Before Distribution	689,561	4,270,385	3,457,485	2,471,959	2,255,076
	After Distribution	689,561	4,270,385	3,457,485	2,471,959	2,255,076

Note 1: The financial statements for each year have been audited and reviewed by a CPA.

Note 2: The financial data for each year were data from an IFRS-based consolidated financial report.

2. Consolidated Statement of Comprehensive Income – IFRS

Unit: NT$1,000

Year / Item	Consolidated Financial Data for the Past 5 Years				
	2015	2016	2017	2018	2019
Operating Revenue	11,589	5,473	4,035	26,236	305,692
Gross Profit	(30,466)	4,336	4,297	(2,158)	243,989
Income (Loss) from Operations	(861,853)	(848,683)	(889,475)	(1,054,890)	(849,223)
Nonoperating Income and Expenses	8,652	3,765	17,167	15,722	7,079
Profit (Loss) before Income Tax	(853,201)	(844,918)	(872,308)	(1,039,168)	(842,144)
Profit (Loss) from Continuing Operations	(853,201)	(844,918)	(872,308)	(1,039,760)	(842,994)
Loss from Discontinuing Operations	-	-	-	-	-
Net Income (Loss)	(853,201)	(844,918)	(872,308)	(1,039,760)	(842,994)
Other Comprehensive Income (Loss) for the Year (Net After Income Tax)	(130)	(2,434)	(1,953)	472	926
Total Comprehensive Income (Loss) for the Year	(853,331)	(847,352)	(874,261)	(1,039,288)	(842,068)
Net Income (Loss) Attributable to: Owners of the Parent Company	(853,201)	(844,918)	(872,308)	(1,039,760)	(842,994)
Net Income (Loss) Attributable to: Noncontrolling Interests	-	-	-	-	-
Total Comprehensive Income (Loss) Attributable to: Owners of the Parent Company	(853,331)	(847,352)	(874,261)	(1,039,288)	(842,068)
Total Comprehensive Income (Loss) Attributable to: Noncontrolling Interests	-	-	-	-	-
Earnings Per Share (NT$)	(4.50)	(4.14)	(4.01)	(4.76)	(3.85)

Note 1: The financial statements for each year have been audited and reviewed by a CPA.

Note 2: The financial data for each year were data from an IFRS-based consolidated financial report.

3. Unconsolidated Condensed Balance Sheet – IFRSs

Unit: NT$1,000

Item \ Year		Consolidated Financial Data for the Past 5 Years				
		2015	2016	2017	2018	2019
Current Assets		582,164	4,070,154	3,237,878	2,180,603	1,882,742
Investments Accounted for Using the Equity Method		16,776	14,703	14,275	93,227	53,300
Property, Plant, and Equipment		343,266	314,611	280,603	371,504	414,218
Intangible Assets		20,378	17,843	16,407	16,488	80,938
Other Asset		76,320	79,602	112,783	129,898	447,432
Total Assets		1,038,904	4,496,913	3,661,946	2,791,720	2,878,630
Current Liabilities	Before Distribution	245,610	126,085	110,532	231,822	314,540
	After Distribution	245,610	126,085	110,532	231,882	314,540
Noncurrent Liabilities		103,733	100,443	93,929	87,879	309,014
Total Liabilities	Before Distribution	349,343	226,528	204,461	319,761	623,554
	After Distribution	349,343	226,528	204,461	319,761	623,554
Equity Attributable to Owner of the Parent Company		1,902,832	2,184,601	2,187,208	2,190,849	2,250,438
Capital Stock		201,709	4,370,364	2,164,838	1,321,811	875,656
Retained Earnings	Before Distribution	(1,415,909)	(2,174,956)	(872,851)	(1,011,629)	(843,512)
	After Distribution	(1,415,909)	(2,174,956)	(872,851)	(1,011,629)	(843,512)
Other Equity		929	(109,624)	(21,710)	(29,072)	(27,506)
Treasury Shares		-	-	-	-	-
Noncontrolling Interests	Before Distribution	689,561	4,270,385	3,457,485	2,471,959	2,255,076
Total Equity	After Distribution	689,561	4,270,385	3,457,485	2,471,959	2,255,076

Note 1: The financial statements for each year have been audited and reviewed by a CPA.

Note 2: The financial data for each year were data from an IFRS-based unconsolidated financial report.

4. Unconsolidated Statement of Comprehensive Income – IFRS

Unit: NT$1,000

Item \ Year	Consolidated Financial Data for the Past 5 Years				
	2015	2016	2017	2018	2019
Operating Revenue	11,589	5,473	4,035	26,236	305,692
Gross Profit	(30,466)	4,336	4,297	(2,158)	243,989
Income (Loss) from Operations	(858,935)	(847,261)	(858,606)	(910,411)	(640,264)
Nonoperating Income and Expenses	5,734	2,343	(13,702)	(129,349)	(202,730)
Profit (Loss) before Income Tax	(853,201)	(844,918)	(872,308)	(1,039,760)	(842,994)
Profit (Loss) from Continuing Operations	(853,201)	(844,918)	(872,308)	(1,039,760)	(842,994)
Loss from Discontinuing Operations	-	-	-	-	-
Net Income (Loss)	(853,201)	(844,918)	(872,308)	(1,039,760)	(842,994)
Other Comprehensive Income (Loss) for the Year (Net After Income Tax)	(130)	(2,434)	(1,953)	472	926
Total Comprehensive Income (Loss) for the Year	(853,331)	(847,352)	(874,261)	(1,039,288)	(842,068)
Earnings Per Share (NT$)	(4.50)	(4.14)	(4.01)	(4.76)	(3.85)

Note 1: The financial statements for each year have been audited and reviewed by a CPA.

Note 2: The financial data for each year were data from an IFRS-based unconsolidated financial report.

6.1.2. Name of CPAs and Auditors' Opinions for the Past 5 Fiscal Years

1. Name of CPAs and Auditors' Opinions for the Past 5 Fiscal Years

Year	CPA	Name of Firm	Audit Opinion
2015	Su-Wen Lin, Chien-Che Huang	Ernst & Young	An unqualified opinion
2016	Su-Wen Lin, Li-Feng Lin	Ernst & Young	An unqualified opinion
2017	Chien-Ju Yu, Li-Feng Lin	Ernst & Young	An unqualified opinion
2018	Chien-Ju Yu, Li-Feng Lin	Ernst & Young	An unqualified opinion
2019	Chien-Ju Yu, Li-Feng Lin	Ernst & Young	An unqualified opinion

2. Reason for Change in CPA

Due to internal adjustments within Ernst & Young, the CPAs Su-Wen Lin and Li-Feng Lin were replaced by the CPAs Chien-Ju Yu and Li-Feng Lin as of the financial statement for Q1 of 2017.

6.2. Financial Analysis

1. Consolidated – IFRS

Analysis Item (Note) \ Year			Consolidated Financial Data for the Past 5 Years				
			2015	2016	2017	2018	2019
Financial Structure	Debt Ratio (%)		33.73	5.07	5.77	11.87	23.80
	Long-Term Fund for Property, Plant, and Equipment (%)		230.45	1,387.77	1,264.04	828.57	654.92
Solvency	Current Ratio (%)		242.87	3,199.91	2,767.51	922.71	570.02
	Quick Ratio (%)		229.71	3,170.72	2,708.65	893.59	473.86
	Times Interest Earned (%)		(448.05)	(446.28)	(496.04)	(656.62)	(111.24)
Operating ability	Average Collection Turnover (Times)		23.72	7.65	5.56	2.20	2.74
	Average Collection Days for Receivables		16	48	66	166	133
	Average Inventory Turnover (Times)		0.39	0.01	-	0.22	0.27
	Average Payment Turnover (Times)		0.54	0.01	-	1.75	2.50
	Average Inventory Turnover Days		936	36,500	-	1,659	1,352
	Property, Plant, and Equipment Turnover (Times)		0.03	0.02	0.02	0.09	0.86
	Total Assets Turnover (Times)		0.01	0.01	0.00	0.01	0.11
Profitability	Return on Total Assets (%)		(63.10)	(30.45)	(21.32)	(32.08)	(29.04)
	Return on Equity (%)		(79.07)	(34.07)	(22.58)	(35.07)	(35,67)
	Pre-tax Income to Paid-in Capital Ratio (%)	Income from Operations	(45.14)	(38.78)	(39.26)	(48.15)	(37.74)
		Pre-tax Income	(44.84)	(38.68)	(39.88)	(47.49)	(37.50)
	Net Margin (%)		(7,362.16)	(15,437.93)	(21,618.54)	(3,963.10)	(275.77)
	Earnings Per Share (NT$)		(4.50)	(4.14)	(4.01)	(4.76)	(3.85)
Cash Flow	Cash Flow Ratio (%)		註 1	註 1	註 1	註 1	註 1
	Cash Flow Adequacy Ratio (%)		註 1	註 1	註 1	註 1	註 1
	Cash Flow Reinvestment Ratio (%)		註 1	註 1	註 1	註 1	註 1
Leverage	Operating Leverage		註 2	註 2	註 2	註 2	註 2
	Financial Leverage		註 2	註 2	註 2	註 2	註 2

Analysis of deviation over 20% in financial ratios over the past 2 fiscal years:

1. Management Capability (accounts receivable turnover and average collection days): The marketing authorization given by the European Union in February 2019 to the new drug P1101 of the Company led to the strategic partner AOP increasing its purchase orders placed with the Company and it contributed to a significant increase in the operating income.
2. Management Capability (inventory turnover, accounts payable turnover, and average inventory turnover days): It is the result of the increase in the inventory caused by the initiation of commercial production and stocking to support future sales after the primary product of the Company P1101 was granted the EU drug permit in February 2019.
3. Profitability (return on assets, return on equity, and net profit margin): It is the result of the Company's operating gross profit far smaller than operating expenses caused by the revenue yet to be significant and continuous expenses on research and development of other products despite the drug permit of the primary product P1101 obtained in the EU in February 2019 and gradual market availability ever since.

3. Unconsolidated – IFRS

Analysis Item (Note) \ Year			Consolidated Financial Data for the Past 5 Years				
			2015	2016	2017	2018	2019
Financial Structure	Debt Ratio (%)		33.63	5.04	5.58	11.45	21.66
	Long-Term Fund for Property, Plant, and Equipment (%)		230.45	1,387.77	1,264.20	828.80	649.54
Solvency	Current Ratio (%)		237.03	3,228.10	2,929.36	940.39	598.57
	Quick Ratio (%)		223.78	3,199.52	2,867.79	910.64	497.37
	Times Interest Earned (%)		(448.05)	(446.28)	(496.04)	(656.24)	(133.26)
Operating Ability	Average Collection Turnover (Times)		23.72	7.65	5.57	2.20	2.74
	Average Collection Days for Receivables		16	48	66	166	133
	Average Inventory Turnover (Times)		0.39	0.01	-	0.22	0.27
	Average Payment Turnover (Times)		0.54	0.01	(0.02)	2.05	2.51
	Average Inventory Turnover Days		936	36,500	-	1,659	1,352
	Property, Plant and Equipment Turnover (Times)		0.03	0.02	0.02	0.09	0.87
	Total Assets Turnover (Times)		0.01	-	-	0.01	0.11
Profitability	Return on Total Assets (%)		(63.14)	(30.47)	(21.35)	(32.18)	(29.56%)
	Return on Equity (%)		(79.07)	(34.07)	(22.58)	(35.07)	(35.67)
	As a Percentage of Paid-in Capital Ratio (%)	Income from Operations	(45.14)	(38.78)	(39.26)	(41.56)	(28.45)
		Pre-tax Income	(44.84)	(38.68)	(39.88)	(47.46)	(37.46)
	Net Margin (%)		(7,362.16)	(15,437.93)	(21,618.54)	(3,963.1)	(275.77)
	Earnings Per Share (NT$)		(4.50)	(4.14)	(4.01)	(4.76)	(3.85)
Cash Flow	Cash Flow Ratio (%)		註 1	註 1	註 1	註 1	註 1
	Cash Flow Adequacy Ratio (%)		註 1	註 1	註 1	註 1	註 1
	Cash Flow Reinvestment Ratio (%)		註 1	註 1	註 1	註 1	註 1
Leverage	Operating Leverage		註 2	註 2	註 2	註 2	註 2
	Financial Leverage		註 2	註 2	註 2	註 2	註 2

Analysis of deviation over 20% in financial ratios over the past 2 fiscal years:

1.Management Capability (accounts receivable turnover and average collection days): The marketing authorization given by the European Union in February 2019 to the new drug P1101 of the Company led to the strategic partner AOP increasing its purchase orders placed with the Company and it contributed to a significant increase in the operating income.

2. Management Capability (inventory turnover, accounts payable turnover, and average inventory turnover days): It is the result of the increase in the inventory caused by the initiation of commercial production and stocking to support future sales after the primary product of the Company P1101 was granted the EU drug permit in February 2019.

3. Profitability (return on assets, return on equity, and net profit margin): It is the result of the Company's operating gross profit far smaller than operating expenses caused by the revenue yet to be significant and continuous expenses on research and development of other products despite the drug permit of the primary product P1101 obtained in the EU in February 2019 and gradual market availability ever since.

Note 1: The calculation formulas used for the financial analysis are as follows:

1. Financial Structure

(1) Debt ratio = total liabilities / total assets

(2) Long-term fund to property, plant and equipment ratio = (shareholders' equity + noncurrent liabilities) / net property, plant, and equipment

2. Solvency

(1) Current ratio = current assets / current liabilities

(2) Quick ratio = (current assets − inventories − prepaid expenses) / current liabilities

(3) Times interest earned = earnings before interest and taxes / interest expenses

3. Operating Ability

(1) Receivables (including accounts receivable and notes receivable arising from business operations) turnover rate = net sales / average receivables (including accounts receivable and notes receivable arising from business operations) for each period

(2) Average collection days for receivables = 365 / receivables turnover rate

(3) Average inventory turnover = cost of sales / average inventory

(4) Payables (including accounts payable and notes payable arising from business operations) turnover rate = cost of sale / average payables (including accounts payable and notes payable arising from business operations) for each period

(5) Average days of sale = 365 / average inventory turnover

(5) average payment turnover = cost of sales / average trade payables

(6) Property, plant, and equipment turnover = operating revenue / average net property, plant, and equipment

(7) Total assets turnover = operating revenue / average total assets

4. Profitability

(1) Return on total assets = (net income + interest expenses * (1 − effective tax rate)) / average total assets

(2) Return on equity = net income / average equity

(3) Pre-tax income to paid-in capital ratio = income before tax / paid-in capital

(4) Net margin = net income /operating revenue

(5) Earnings per share = (net profit after tax – dividends on preferred shares) / weighted average number of issued shares (Note 2)

5. Cash flow

(1) Cash flow ratio = net cash provided by operating activities / current liabilities

(2) Cash flow adequacy ratio = 5-year sum of cash from operations / 5-year sum of capital expenditures, inventory additions, and cash dividend

(3) Cash flow reinvestment ratio = (cash provided by operating activities − cash dividends) /
(gross property, plant, and equipment + long-term investments + other noncurrent assets + working capital) (Note 3)

6. Leverage

(1) Operating leverage = (operating revenue − variable cost) / income from operations (Note 4)

(2) Financial leverage = income from operations / (income from operations − interest expenses)

Note 2: When the above formula for calculating earnings per share is used during measurement, pay attention to the following matters:

1. Measurement should be based on the weighted average number of common shares, not the number of issued shares at year end.

2. In any case where there is a cash capital increase or treasury stock transaction, the period of time in circulation shall be considered when calculating the weighted average number of shares.

3. In the case of capital increase out of earnings or capital surplus, the calculation of earnings per share for the past fiscal year and the fiscal half-year shall be retrospectively adjusted based on the capital increase ratio, without the need to consider the issuance period for the capital increase.

4. If the preferred shares are nonconvertible cumulative preferred shares, the dividend of the current year (whether issued or not) shall be subtracted from the net profit after tax, or added to the net loss after tax. In the case of noncumulative preferred shares, if there is net profit after tax, dividends on preferred shares shall be subtracted from the net profit after tax; if there is loss, then no adjustment must be made.

Note 3: Pay attention to the following matters when performing cash flow analysis:

1. Net cash flow from operating activities means net cash in-flow amounts from operating activities listed in the statement of cash flows.

2. Capital expenditures means the amounts of cash out-flows for annual capital investment.

3. Inventory increase will only be entered when the ending balance is larger than the beginning balance. An inventory decrease at year end will be deemed zero for calculations.

4. Cash dividend includes cash dividends from both common shares and preferred shares.

5. Gross property, plant, and equipment value means the total value of property, plant, and equipment prior to the subtraction of accumulated depreciation.

Note 4: Issuers shall separate operating costs and operating expenses by their nature into fixed and variable categories. When estimations or subjective judgments are involved, pay attention to their reasonableness and to maintaining consistency.

Note 5: In the case of a company whose shares have no par value or have a par value other than NT$10, for the calculation of the abovementioned paid-in capital ratio, the ratio of equity attributable to owners of the parent as stated in the balance sheet shall be substituted.

Note 6: The financial data for Q1 of 2019 have been reviewed by a CPA. Relevant profit (loss) was calculated for the year.

Note 7: The Company was not required to produce an unconsolidated financial statement for Q1 of 2019.

Note 8: Cost of sales for Q1 of 2019 was negative, resulting in a negative financial ratio.

6.3. Supervisors' or Audit Committee's Report for the Most Recent Year's Financial Statement

Audit Committee's Review Report

The Board of Directors has prepared and submitted to the undersigned, the Audit Committee of PharmaEssentia Corporation, the 2019 Business Report, Financial Statements, and the proposal of distribution of earnings. The Financial Statements have been duly audited by Ernst & Young. Furthermore, the abovementioned report, statements, and proposal have been examined and determined to be correct by the undersigned. This Report is duly submitted in accordance with Article 14-4 of the Securities and Exchange Act and Article 219 of the Company Act.

Convener of the Audit Committee:

February 19, 2020

6.4. Financial Statement for the Most Recent Fiscal Year, Including an Auditor's Report Prepared by a Certified Public Accountant, as well as a 2-Year Comparative Balance Sheet, Statement Of Comprehensive Income, Statement of Changes in Equity, Cash Flow Chart, and Any Related Footnotes or Attached Appendices:

Please see of this Annual Report.

6.5. The Company's Unconsolidated Financial Statement for the Most Recent Fiscal Year Certified by a CPA:

Please see this Annual Report.

6.6. If the Company and its Affiliates Have Experienced Financial Difficulties in the Most Recent Fiscal Year or During the Current Fiscal Year up to the Date of Publication of the Annual Report, the Annual Report Shall Explain How Said Difficulties Impacted the Company's Financial Situation:

None.

Financial Status, Operating Results, and Risk Management

7.1. Financial Status

1. Consolidated – IFRS

Unit: NT$1,000; %

Item \ Year	2018	2019	Difference	
			Amount	Amount
Current Assets	2,262,525	1,919,122	(343,403)	(15.18)
Property, Plant, and Equipment	372,277	423,190	50,913	13.68
Intangible Assets	16,488	98,234	81,746	495.79
Other Assets	153,753	518,864	365,111	237.47
Total Assets	2,805,043	2,959,410	154,367	5.50
Current Liabilities	245,205	336,678	91,473	37.30
Noncurrent Liabilities	87,879	367,656	279,777	318.37
Total Liabilities	333,084	704,334	371,250	111.46
Capital Stock	2,190,849	2,250,438	59,589	2.72
Capital Surplus	1,321,811	875,656	(446,155)	(33.75)
Retained Earnings (Cumulative Loss)	(1,011,629)	(843,512)	168,117	(16.62)
Total Equity	2,471,959	2,255,076	(216,883)	(8.77)

Analysis of Variation: (10% or more variation in the monetary amounts, and the amount equals 1% of the total assets for the fiscal year)

1. The reduction in current assets is caused by related expenses continuously devoted to research and development.
2. The increase in real estate, premises, and equipment is mainly the result of the completed expansion of the Taichung plant and the addition of instruments and equipment.
3. The increase in intangible assets is the result of recognizing intangible assets under development.
4. The increase in the sum of other assets, non-current liabilities, and liabilities is the result of the adoption of IFRS16 since 2019 in the recognition of right-of-use assets and lease liabilities.
5. The reduction in capital reserve and accumulated deficits is the result of making up for deficits with capital reserve for the current year.

2. Unconsolidated – IFRS

Unit: NT$1,000; %

Item \ Year	2018	2019	Difference	
			Amount	Amount
Current Assets	2,180,603	1,882,742	(297,861)	(13.66)
Investment Accounted for Using the Equity Method	93,227	53,300	(39,927)	(42.83)
Property, Plant, and Equipment	371,504	414,218	42,714	11.50
Intangible Assets	16,488	80,938	64,450	390.89
Other Assets	129,898	447,432	317,534	244.45
Total Assets	2,791,720	2,878,630	86,910	3.11
Current Liabilities	231,882	314,540	82,658	35.65
Noncurrent Liabilities	87,879	309,014	221,135	251.64
Total Liabilities	319,761	623,554	303,793	95.01
Capital Stock	2,190,849	2,250,438	59,589	2.72
Capital Surplus	1,321,811	875,656	(446,155)	(33.75)
Retained Earnings (Cumulative Loss)	(1,011,629)	(843,512)	168,117	(16.62)
Total Equity	2,471,959	2,255,076	(216,883)	(8.77)

Analysis of Variation: (10% or more variation in the monetary amounts, and the amount equals 1% of the total assets for the fiscal year)

1. The reduction in current assets is caused by related expenses continuously devoted to research and development.
2. Equity-accounted investments are to recognize investment losses.
3. The increase in intangible assets is the result of recognizing intangible assets under development.
4. The increase in the sum of current assets, non-current liabilities, and liabilities is the result of the adoption of IFRS16 since 2019 in the recognition of right-of-use assets and lease liabilities.
5. The reduction in capital reserve and accumulated deficits is the result of making up for deficits with capital reserve for the current year.

7.2. Financial Performance

7.2.1. Analysis of Operating Results in Consolidated Financial Statement – IFRS

Unit: NT$1,000; %

Item \ Year	2018	2019	Increase/Decrease	
			Amount	% Variation
Operating Revenue	26,236	305,692	279,456	1,065.16
Net Operating Revenue	26,236	305,692	279,456	1,065.16
Operating Cost	(28,394)	(61,703)	(33,309)	117.31
Gross Profit	(2,158)	243,989	246,147	(11,406.26)
Operating Expenses	(1,052,732)	(1,093,212)	(40,480)	3.85
Income (Loss) from Operations	(1,054,890)	(849,223)	205,667	(19.50)
Nonoperating Income and Expenses	15,722	7,079	(8,643)	(54.97)
Income (Loss) Before Income Tax	(1,039,168)	(842,144)	197,024	(18.96)
Minus: Income Tax Expense	(592)	(850)	(258)	43.58
Other Comprehensive Income (Loss) for the Year	472	926	454	(96.19)
Net Profit (Loss) After Tax	(1,039,288)	(842,068)	197,220	(18.98)

Analysis of Variation: (10% or more variation in the monetary amounts, and the amount equals 1% of the total assets for the fiscal year)

1. The increase in the operating income, operating cost, and operating gross profit is the result of the increase in the income, operating cost, and gross profit from the sales of the new drug that was given the permit in Europe this year and the accordingly increased number of purchase orders from AOP.
2. Operating losses and after-tax net losses are mainly the result of the increase in operating income after the drug permit is obtained in Europe.

7.2.2. Analysis of Operating Results in the Unconsolidated Financial Statement – IFRS

Unit: NT$1,000; %

Item \ Year	2018	2019	Increase/Decrease	
			Amount	% Variation
Operating Revenue	26,236	305,692	279,456	1,065.16
Net Operating Revenue	26,236	305,692	279,456	1,065.16
Operating Cost	(28,394)	(61,703)	(33,309)	117.31
Gross Profit	(2,158)	243,989	246,147	(11,406.26)
Operating Expenses	(908,253)	(884,253)	24,000	(2.64)
Income (Loss) from Operations	(910,411)	(640,264)	270,147	(29.69)
Nonoperating Income and Expenses	(129,349)	(202,730)	(73,381)	56.73
Income (Loss) before Income Tax	(1,039,760)	(842,994)	196,766	(18.92)
Minus: Income Tax Expense	-	-	-	-
Other Comprehensive Income (Loss) for the Year	472	926	454	96.19
Net Profit (Loss) After Tax	(1,039,288)	(842,068)	197,220	(18.98)

Information on **Major Changes**: (With a change in value of 10% and above and the value reaching 1% of the total assets for the specific year)

1. Operating expenses and operating losses are the result of the increase in expenses devoted to research and development of the current term.
2. The increase in non-operating income and expenditure is mainly the result of the increase in recognizing investment losses activated by overseas subsidiaries for clinical trials.

7.2.3. Sales Volume Forecast and Basis, Potential Impact on the Company's Financial Operations and Measures to be Taken in Response

The Company's primary product, P1101, has completed Phase III clinical trials in Europe for treating PV and the official report on the treatment with P1101 of PharmaEssentia was provided by the EU Committee for Medicinal Products for Human Use (CHMP) on

December 13, 2018 and was officially granted the marketing authorization (MAA) by the EU EMA in February 2019. The Company successfully passed the EMA establishment inspection at once in September 2017 and in early 2018, both the Taichung platn and the trial mass production laboratory in Taipei received the EMA GMP Certificates. As for the US market, the Company was approved by the US FDA to apply the Phase III clinical trial data and documentation in Europe to apply for a drug permit with the US FDA. The Company submitted the BLA drug permit application to the FDA in March 2020 and applies for prioritized review concurrently to hopefully reduce the duration of review from ten months to six months and to obtain the PV drug permit by the end of 2020 in the US. Meanwhile, as scheduled, the global international multi-center ET Phase III clinical trial will be activated to maximize product efficacy and clinical and marketing deployments will be proactively promoted for rare conditions such as PV and ET in Japan and in China. Once the Phase III clinical trial is completed for the new drug and a drug permit is obtained and the drug is marketed, it will contribute significantly to the growths in revenue and profitability in the future.

7.3.Cash Flow

7.3.1. Analysis of Cash Flow Changes During the Most Recent Years

1. Consolidated Financial Statement

Unit: NT$1,000; %

Year / Item	2018	2019	(Increase) Decrease	% (Increase) Decrease
Operating Activities	(826,843)	(945,021)	(118,178)	14.29
Investing Activities	(188,808)	(237,863)	(49,055)	25.98
Financing Activities	(3,741)	411,494	415,235	(11,099.57)
Analysis of Changes: 1. The increase in cash out-flows for operating activities is mainly the result of the increase in accounts receivable and the inventory for the current year. 2.The increase in cash out-flows for investment activities is the result of recognizing intangible assets under development for the current year. 3. The cash in-flows from fund-raising activities are attributable to the capital increase in cash through private placement organized in 2019.				

2. Unconsolidated Financial Statement

Unit: NT$1,000; %

Item \ Year	2018	2019	(Increase) Decrease	% (Increase) Decrease
Operating Activities	(684,102)	(742,917)	(58,815)	8.60
Investing Activities	(390,793)	(397,778)	6,985	1.79
Financing Activities	(3,741)	418,060	421,801	11,275
Analysis of Changes: 1. The increase in cash in-flows from fund-raising activities is mainly the result of the increase in private placements of common stock organized for the current year.				

7.3.2. Liquidity Analysis for the Coming Year and Corrective Measures to be Taken in Response to Liquidity:

Cash – beginning balance (1)	Expected net cash flow from perating activities for the year (2)	Expected cash outflow (3)	Expected cash balance (insufficiency) (1)+(2)-(3)	Countermeasures against cash insufficiency	
				Investment plan	Wealth management plan
1,364,725	606,124	2,712,608	(741,759)	-	Fundraising

1. Analysis of cash liquidity for the coming year
   (1) Net out-lows for operating activities: The net cash out-flows for operating activities are mainly caused by investments made in related clinical trials, expenses on research and development, and personnel cost.
   (2) Net in-flows from financing activities: The in-flows are mainly from the NT$2,013,000 thousand expected to be raised through the issuance of additional 22,000 thousand shares upon capital increase in cash.
2. Expected remedies for shortage in cash and liquidity analysis: For the coming year, the Company expects to continue investing in respective new drug research and development projects and clinical trials of respective phases and hence generally speaking, the net cash out-flows will remain. The Company plans to organize capital increase in cash. Once completed, it shall be sufficient to support the required operational and capital expenditures of the Company in the coming year.

7.4. Effect of Major Capital Expenditures on Financial Operations During the Most Recent Years:

None.

7.5. Investment Policy for the Most Recent Fiscal Year, Main Reasons for Profits/Losses, Improvement Plan, and Investment Plans for the Coming Year:

1. The Company's investment policy

   Re-investments made by the Company take into consideration factors such as clinical promotion, drug marketing, and market deployment, among others, and are handled by respective departments in accordance with the internal control system after they are submitted to the Board of Directors, where they are discussed and approved.

2. Main Reasons for Profits/Losses

(1) PharmaEssentia Biotechnology (Beijing) Ltd.

In order to expand its market share in Mainland China, the Company set up PharmaEssentia Asia. (Hong Kong) Limited with 100% shareholding in October 2013 to manage related patents of the Company. The said company, however, has only completed the establishment registration procedure, without any payment for shares wired. In addition, for the sake of expanding its market share in Mainland China to facilitate future new drug R&D and clinical trials, the Company set up PharmaEssentia Asia. (Hong Kong) Limited with 100% shareholding in February 2014 and through PharmaEssentia Asia. (Hong Kong) Limited, the re-invested company PharmaEssentia Biotechnology (Beijing) Co., Ltd. was set up in December 2014. For 2019, the Company recognized investment losses adopting the equity method worth NT$13,164 thousand from its reinvestments in PharmaEssentia Biotechnology (Beijing) Co., Ltd. through PharmaEssentia Asia. (Hong Kong) Limited.

(2) PharmaEssentia Japan KK

In order to expand its market share in Japan and to obtain drug permits in Japan for subsequent research and development, among others, the subsidiary PharmaEssentia Japan KK was established in February 2017 in Tokyo and the investment losses recognized by the Company for 2019 totaled NT$ 79,122 thousand.

(3) PharmaEssentia USA Corporation.

It is expected that once the drug permit for P1101-PV is obtained in the US at the end of 2020, sales of Besremi in the US can begin and hence the reinvestment will be directed towards PharmaEssentia USA in the future in order to form a complete distribution and marketing team and integrate the supply chain in advance.

3. Investment Plans for the Coming Year

   Investment plans will be increased reflective of the operating demand of respective subsidiaries in the future.

7.6. Risk Management

7.6.1. Impact of Recent Interest Rates, Exchange Rate Fluctuations, and Inflation on the Company's Profit and Loss and Future Response Measures

1. Impact of changes in interest rates on the company's profit and loss and future response measures

   The Company purchased its Nankang office in 2014 by taking out a collateral loan of NT$105,850,000 with the bank. The nonoperating interest expenses in 2018 and 2019 were NT$1,755,000 and NT$1,582,000, respectively. In general, the changes in interest rate exert no material impact on the Company. The Company remains an active participant in forging and maintaining a strong relationship with its bank, which will guarantee favorable interest rates and efficient fund acquisition in the future should the Company need to apply for loans.

2. Impact of exchange rate fluctuations on the company's profit and loss and future response measures

   In the Company's operating activities, relevant expenses required to conduct clinical trials overseas are paid in foreign currencies and potentially affected by exchange rates. The nonoperating net profit (loss) on foreign currency exchange for 2018 and 2019 was NT$540,000 and NT$ (5,304,000), respectively. In general, exchange rate fluctuations have no material impact on the Company's business outcomes. To mitigate the impact of exchange rate fluctuations, the Company collects exchange rate information at all times, pay attention to currency trends and changes in international foreign exchange market, and maintain a positive interactive relationship with the bank to obtain extensive information on foreign exchanges as well as more favorable exchange rates.

3. Impact of inflation on the company's profit and loss and future response measures

   Inflation does not impact the Company's technologies and expenses required for the R&D of new drugs as well as new pharmaceutical products that are still being developed. Therefore, inflation has not imposed direct and material impacts on the Company's previous profits and losses. The Company will remain vigilant for market price variations and maintain a positive interactive relationship with its suppliers and clients. The Company will also take appropriate actions in response to reduce impacts on its profits and losses.

7.6.2. The company's policy regarding high-risk investments, highly leveraged investments, loans to other parties, endorsements, guarantees, and derivatives transactions, the main reasons for

the profits/losses generated thereby, and response measures to be taken in the future.

1. High-risk investments and highly leveraged investments: None.
2. Loans to other parties, endorsements, and guarantees: The Company has formulated the "Procedures for Lending Funds to Other Parties" and "Procedures for Endorsement and Guarantee," which it follows when lending funds to other parties and providing endorsement and guarantees.
3. Derivatives transactions: None.

7.6.3. R&D work to be conducted in the future, and further expenditures expected for such work:

Period	R&D Plans
Short-to-Mid Term	New long-acting protein drugs: P1101 for treatment of other indications Small molecule drugs: KX01 (Kinase inhibitor), Oraxol (oral paclitaxel), and Oratecan (oral camptothecin)
Mid-to-Long Term	Continue to research and develop new long-acting protein drugs Continue to develop R&D technologies for small molecule drugs Establish a cell strain development platform and introduce new platform applications Develop new drugs for cancer immunotherapy (PD-1/PD-L-1 monoclonal antibodies) Develop new drug PEG-INF-β (muscle atrophy) for sickle cell anemia and β thalassemias

Every year, the Company allocates budgets for R&D work according to the progress of new drug development projects. For 2017 and 2018, the R&D expenses were NT$683,318,000 and NT$785,713,000, respectively. The Company will continue to invest in R&D work in the future.

7.6.4. Effect of important policies adopted and changes in the legal environment at home and abroad on the company's financial operations and measures to be taken in response.

Amendments to policies and laws did not have any material impact on the Company in the most recent fiscal years and up to the publication date of the Annual Report.

7.6.5. Effect of developments in science and technology as well as industrial change on the company's financial operations and measures to be taken in response.

The Company specializes in new protein drugs. Its latest development was a new generation long-acting interferon drug called P1101. P1101 can be used to treat blood proliferative

disorders, chronic hepatitis, skin cancer, and T cell lymphoma among other indications. This new drug has unlimited market potential. The Company's R&D team regularly adjusts its development strategies according to industry R&D trends and discusses possible factors that influence the Company's resource allocation. The team takes immediate actions in response to any progress in biotechnologies that may impact the entire biotech industry and the Company. Hence, recent developments in science and technology as well as industrial changes have not exerted any immediate material impacts on the Company's operations.

7.6.6. Effect of changes in corporate image on crisis management and measures to be taken in response.

The Company upholds the value of ethical and robust management. Since its inception, the Company has actively reinforced its internal management, improved quality and efficiency, and made plans to penetrate the capital market to recruit high-caliber talents, hone the capabilities of management teams, and contribute business achievements to shareholders and members of society, thereby fulfilling its corporate social responsibility. Thanks to the Company's positive corporate image, no corporate crisis has occurred in the Company as a result of changes to corporate image.

7.6.7. Expected benefits and possible risks associated with any merger and acquisitions, and mitigation measures being or to be taken.

The Company has had no merger and acquisition plans in the most recent fiscal years and up to the publication date of the annual report.

7.6.8. Expected benefits and possible risks associated with any plant expansion and mitigation measures being or to be taken.

The Company completed the construction of a pharma facility in Taichung in October 2012 and obtained a GMP (good manufacturing practice) certificate on April 18, 2013. Per current estimations, the facility has the capacity to meet mass production demands following the acquisition of drug permits and market distribution. The Taichung Plant has received a GMP certificate from the EMA (European Medicines Agency) and the MOHW (Ministry of Health and Welfare).

7.6.9. Risks associated with any consolidation of sales or purchasing operations, and mitigation

measures being or to be taken.

The Company mainly engages in new drug development. Its operating revenues are primarily generated from licensing income, royalty payments after a drug is introduced to the market, and the sale of goods. The EMA granted an MAA (marketing authorization application) for Besremi®, which was licensed out to AOP in Europe by our subsidiary in Japan, on February 19. Because the Company has granted AOP in Austria the right to sell the product in Europe, the Middle East, and the Commonwealth of Independent States, the Company expects to earn royalty payments and income from the sale of the pharmaceutical product. The Company will ensure the collection of debts.

7.6.10. Effect upon and risk to the company in the event a major quantity of shares belonging to a director, supervisor, or shareholder holding greater than a 10% stake in the company has been transferred or otherwise changed hands, and mitigation measures being or to be taken.

The Company did not transfer or change a major quantity of shares belonging to a director, supervisor, or shareholder holding greater than a 10% stake in the company in the most recent fiscal years and up to the publication date of the annual report.

7.6.11. Effect upon and risk to the company associated with any change in governance personnel or top management, and mitigation measures being or to be taken.

The Company has made no changes to top management in the most recent fiscal years and up to the publication date of the annual report.

7.6.12. List major litigious, nonlitigious, or administrative disputes that (1) involve the company and/or any company director, company supervisor, the general manager, any person with actual responsibility for the firm, any major shareholder holding a stake greater than 10%, and/or any company or companies controlled by the company; and (2) have been concluded by means of a final and unappealable judgment or are still under litigation. Where such a dispute could materially affect shareholders' equity or the prices of the company's securities, the annual report shall disclose the facts of the dispute, the amount of money at stake in the dispute, the date of litigation commencement, the main parties to the dispute, and the status of the dispute as of the date of publication of the annual report.

The Company's major litigious cases that have been concluded by means of a final judgment or are still under litigation:

Corporation title	Parties	Legal disputes	Start date of litigation	Handling situation as of the publication date of the prospectus
PharmaEssentia Corp.	Black Gold Global Sdn. Bhd (BGG), Malaysia	The Company authorized the Q10 production technology to BGG in 2008, yet BGG failed to make the payment according the contract.	April 2012	The Company has failed to collect 1,108,130 MYR (including 990,000 MYR, the balance payment of the license fee) and US$5,500. Therefore, the Company applied for the compulsory dissolution of BGG on April 18, 2012, and the Malaysian court issued a "winding-up order" on October 18, 2012 and granted the dissolution. The Company declared the amount of allocated claim to be retrieved to the Malaysian court and is currently awaiting the creditors' meeting convened by the Malaysian court. However, the accounts receivable were recognized as a full loss in 2013 and 2014, which had no significant effect on the financial business of the Company.
PharmaEssentia Corp.	AOP Orphan Pharmaceuticals AG(AOP), Austria	In 2009, the Company authorized AOP the rights of clinical trials and sales concerning P1101 for the treatment of myeloproliferative neoplasms (MPN) in Europe, post-Soviet	March 2018	The Company has invited Baker & McKenzie, a German lawyer team to investigate the overall situation, drawn up an arbitration strategy to protect the rights and interests of the Company, and made a counterclaim to terminate the license agreement in the same arbitration procedure. This case is still at a trial stage. The arbitration judgement has not been made.

		states, and the Middle East. Given that numerous resources have been invested in drug R&D, and the sales market of MPN drugs in Europe has greatly expanded, the Company considered that AOP has seriously violated the agreement and claimed the termination of the license agreement. AOP appealed to the International Chamber of Commerce for an arbitration		
PharmaEssentia Corp.	Wu	Former employee, Wu, filed a civil lawsuit in the Taiwan Taipei District Court to request the Company to return 370,371 shares.	April 2019	This case (No. 2210, 2019) was rejected by the Taiwan Taipei District Court on September 10, 2019. Wu filed an appeal (Kang-Zi No. 1414, 2019), which was rejected by the Taiwan High Court on November 29, 2019)

PharmaEssentia Corp.	Wei	Former employee, Wei, resigned in 2006 filed a civil lawsuit in the Taiwan Shilin District Court in 2019 to request the Company to pay 111,111 shares.	November 2019	The Company has appointed a lawyer as the litigation agent, and the hearing of the case has not been held.

7.6.13. Other important risks and mitigation measures taken

Items	Possible Risks	Response Measures
R&D	• R&D and biocompatibility test results are not as expected. • Competitors overtake the Company in terms of R&D progress. • R&D professionals are difficult to cultivate and retain. • Clinical trial progress or results are not as expected.	• Perform a thorough assessment through animal studies and user experiences and strictly control trial quality using rigorous visual inspection mechanisms. • Simultaneously develop new drugs for different indications to disperse the risk of developing only a single drug. • Recruit professionals with a background in the biotech industry; create and maintain a positive R&D environment in which benefits and opportunities for further education are offered to retain talented employees. • Actively cooperate with relevant academic and educational institutions to establish cooperative education projects and foster high-caliber professionals for the biopharmaceutical industry.
External Cooperation	• The progress or results of sponsored studies are not as expected.	• Select the most cooperative study institutions for long-term cooperation to avoid delays caused by communication problems and technical differences. • The clinical study company sponsored by the Company not only strictly adheres to the Good Clinical Practice (GCP) standards but also hires professional managers with international experience to ensure study quality and comply with clinical trial laws and regulations.
Manufacturing	• The time required to complete process validation is difficult to estimate because the schedule for product distribution is uncertain. If a product is produced too early, it will approach its expiration date by the time it is distributed in the market; however, if a product is produced too late, unexpected problems might arise that affect the review schedule. • To export new drug	• Communicate and coordinate with competent authorities at all times and make necessary adjustments in line with regulatory requirements regarding pharm facility specifications. • The Company is committed to new drug development by directing resources to innovations, inventions, clinical trials, and manufacturing plants, and obtaining drug permits for global distribution. With complete vertical integration, we hope to research, develop, and manufacture new drug products in Taiwan that are

	products, manufacturing plants must be inspected by the EMA (European Medicines Agency) and US FDA. The inspection standards and progress may change at any time.	comparable to and completely in line with products clinically tested and sold worldwide, including European countries and the United States. Ever since the pilot plant of the Taichung Plant was completed in 2012, it has undergone a series of processes, including pilot production, TFDA inspection, and validated production for drug permit applications. Subsequently, at the beginning of 2018, the Taichung Plant received a GMP (good manufacturing practice) certificate from the EMA, making PharmaEssentia the first biopharmaceutical company in Taiwan to be certified by the EMA. After obtaining the drug permit, the Company will be able to structure its supply chain according to global marketing plans and sales demand.
Marketing	• The main markets of new drug products for the treatment of rare blood disorders are based in advanced countries such as European nations and the United States where competitors are major international manufacturers, rendering market penetration difficult.	• Medicine and pharmacy in the United States are clearly distinguished. One of the key strategies for gaining a share of the market is ascertaining sales and distribution channels to forge long-term customer relationships for market expansion. • The Company's P1101 is a long-acting interferon with fewer side effects, high safety, and flexible dosing adjustment. The Company has granted exclusive right of sale in Europe to AOP. The Company's strategic partner AOP presented the PROUD-PV pivotal study results of P1101 for PV treatment at the 2016 American Society of Hematology (ASH)'s Annual Meeting and Exposition. P1101 is safer and more well tolerated compared with HU (hydroxyurea). In addition, the primary endpoints in the CONTI-PV trial presented at the 2017 ASH meeting were statistically significant. In February 2017, the EMA confirmed the completeness of AOP's application documents and initiated the procedure for new drug review. Plant inspection results indicated no major deficiencies. At the beginning

		of 2018, the EMA issued GMP certificates to the Taichung Plant and Taipei Laboratory. • Accompanied by internationally renowned opinion leaders and legal experts, the Company has held multiple meetings with US FDA officials. The participants unanimously agreed that the meeting yielded positive outcomes and could facilitate US market penetration in the future. The Company is actively preparing for premarketing activities, which include building positive relations with medical leaders, the MPN Research Foundation, and patient interest groups, to expedite the application for a drug permit. The Company received US FDA approval for Compassionate Use of P1101 for treating PV patients stably controlled on Pegasys, subsequently seizing market opportunities.
Laws	• It is difficult to keep track of the status of drug permit applications in different countries. Competent authorities of different countries often provide inconsistent opinions regarding clinical trial agreements. The approval times for IND (investigational new drug) applications vary. • Amendments to health insurance and payment policies.	• First, gain international recognition by obtaining US FDA approval for an IND program, and then communicate with the competent authorities of other countries to expedite the clinical review process. • Prepare review documents by following ICH Guidelines to reduce differences among countries.
Finance	• New drugs take a long time and are expensive to develop.	• Keep a well-replenished supply of funds and adhere to a strict budget plan. • Comply with the government's industry policies and apply for project funding. • The Company has obtained a drug permit in Europe for its new drug Besremi® and is slowly selling the product in various European countries. Product sales are expected to generate operating revenue for the company and provide additional

		funds. • Before generating income from product sales and royalty payments, the Company sources its funds primarily from cash capital increase, with additional support from bank loans.

7.7. Other Important Matters

Effect of information security risks on the company's financial operations and measures taken in response:

To comprehensively raise awareness on information security and protect business secrets and the interests of its stakeholders, the Company has assessed its information security and Internet risks. Following the assessment, the Company was determined to be at high risk of information leakage (i.e., confidential information regarding clinical studies and drug products produced) and cyberattacks, both of which may incur financial losses to the company. In response, the Company has installed various network security systems (e.g., a firewall) to safeguard the various information functions of department operations and established the following measures for information security control and monitoring:

1. Applying for and making changes to account access after obtaining permission from the responsible supervisor.
2. Establishing an appropriate password control principle for critical systems.
3. Sending regular reminders to users about information security and usage to raise all employees' awareness on information security.
4. User information and files are a company's crucial assets. Departments should be asked to classify and archive user information and files and grant appropriate document access according to users' level of authority after application and approval.
5. Users must avoid using the company's email to send or receive emails or files that are unrelated to the Company's business, thereby avoiding occupying the Company's network resources and putting its computers at risk of viruses.
6. Users must avoid using the Company's network to browse websites or up-/download information that is unrelated to the Company's business, thereby avoiding occupying the Company's network resources and putting its computers at risk of viruses.
7. Implementing information security management by raising awareness, preventing future problems, recording user behavior, sending automatic warning messages, and performing regular inspection.

Special Notes

8.1. Information Related to Affiliates

8.1.1. Consolidated Business Report of Affiliates

1. Organizational Chart of Affiliates

Affiliate Name	Shareholding
PharmaEssentia (Hong Kong) Corporation	-
PharmaEssentia Asia (Hong Kong) Corporation	100%
PharmaEssentia Biotechnology (Beijing) Co., Ltd.	100%
PharmaEssentia Japan KK	100%
PharmaEssentia USA Corporation.	100%

Note 1: To expand the mainland Chinese market, the Company established the wholly owned PharmaEssentia (Hong Kong) Co., Ltd. in October 2013. As of December 31, 2018, PharmaEssentia (Hong Kong) had only completed the registration process. The Company has not yet issued shares.

2. Basic Information of Affiliates

Affiliate Name	Region	Main Business Activity	Shareholding	Amount Invested
PharmaEssentia (Hong Kong) Corporation	Hong Kong	Biotechnology services	-	-
PharmaEssentia Asia (Hong Kong) Corporation	Hong Kong	Biotechnology services	100%	48,837
PharmaEssentia Biotechnology (Beijing) Co., Ltd.	Beijing	Biotechnology services	100%	24,248
PharmaEssentia Japan KK	Japan	Biotechnology services	100%	154,105
PharmaEssentia USA Corporation.	USA	Biotechnology services	100%	242,678

Note 1: To expand the mainland Chinese market, the Company established the wholly owned PharmaEssentia (Hong Kong) Co., Ltd. in October 2013. As of December 31, 2018, PharmaEssentia (Hong Kong) had only completed the registration process. The Company has not yet issued shares.

3. Information on Personnel Who Are Presumed to Have a Controlling and Subordinate Relationship with the Company and the Reasons Behind the Presumption: None.

4. Business Scope of Affiliated Companies: Biotechnology services and clinical trials.

5. Rosters of Directors, Supervisors, and General Managers of Affiliates

Affiliate Name	Title	Name or Representative	Shareholding	
			Shares	%
PharmaEssentia (Hong Kong) Corporation	Director	Ching-Leou Teng Chao-Ho Chen	-	-
PharmaEssentia Asia (Hong Kong) Corporation	Director	Ching-Leou Teng Chao-Ho Chen Warren Chen	-	-
PharmaEssentia Biotechnology (Beijing) Co., Ltd.	Executive Director	Ko-Chung Lin Jack Hwang	-	-

	Supervisor			
PharmaEssentia Japan KK	Director Supervisor	Ko-Chung Lin Ching-Leou Teng Snow Chang Katsuya Yonezu Narihisa Miyachi Chia-Yen Su	-	-
PharmaEssentia USA Corporation.	Director	Ko-Chung Lin Ching-Leou Teng Craig Zimmerman	-	-

6. Operational Highlights of Affiliates (Unconsolidated Financial Information)

As of December 31, 2018; Unit: NT$1,000

Affiliate Name	Capital	Total Assets	Total Liabilities	Net Worth	Operating Revenues	Income from Operations	Income (Loss) for the Year
PharmaEssentia Asia (Hong Kong) Corporation	48,837	20,351	4,861	15,490	-	(18,145)	(18,175)
PharmaEssentia Biotechnology (Beijing) Co., Ltd.	24,248	3,121	3,369	(248)	-	(13,247)	(13,164)
PharmaEssentia Japan KK	154,105	15,530	7,320	8,210	142	(78,123)	(79,122)
PharmaEssentia USA Corporation.	242,678	98,199	68,599	29,600	-	(112,690)	(113,797)

Note: The company is a limited company and therefore has no earnings per share.

8.1.2. Consolidated Financial Statements of Affiliates

Please see this annual report.

8.1.3. Affiliation Report

The Company is not a subordinate company prescribed under the Affiliated Enterprise section of the Company Act; therefore, the Company is not required to produce an affiliation report.

8.2. Private Placement Securities in the Most Recent Year and Up to the Publication Date of This Annual Report:

Item	First private placement in 2019 (Note 1) Date issued: December 30, 2019
Type of private placement security (Note 2)	Common stock
Date and quantity/value approved through the shareholder's meeting (Note 3)	As decided through the first special shareholders' meeting of the Company on October 1, 2019, for common stock within the limit of 35,000 thousand shares, global depository receipt, and/or private placement of common stock through capital increase in cash, and/or private placement of global or domestic convertible corporate bonds may be adopted once or in separate efforts (no more than 3) within one year since the date when the decision was made through the shareholders' meeting.
Basis for and legitimacy of pricing	1. As required by the Directions for Public Companies Conducting Private Placements of Securities, the reference price shall be the higher of the simple average closing price

	of the common stocks for either the 1, 3, or 5 business days or for the 30 business days before the price determination date, after adjustment for any distribution of stock dividends, cash dividends or capital reduction. 2. Based on the foregoing pricing price determination principle, the price of NT$ 106.8 obtained with the simple average closing price of the common stocks for the 30 business days before the price determination date, that is, December 24, 2019, and after adjustment for any distribution of stock dividends, cash dividends or capital reduction, is the reference price. The current private placement price is set at NT$86, which is 80.5% of the reference price and no below the 80% reference price as decided through the special shareholders' meeting.				
Method chosen for specific people (Note 4)	Targets of the current private placement of securities are limited to specific people defined in Article 43-6 of the Securities and Exchange Act and the original (2002) Tai-Cai-Zheng-(I)-Tzi No. 0910003455 letter dated June 13, 2002 from the Securities and Futures Bureau, Ministry of Finance.				
Rationale for organizing private placements	In light of the relatively extended time-effectiveness and convenience associated with private placements and the fact that privately placed securities may not be freely assigned within three years, it will better ensure the long-term relationship between the Company and the subscribers. In addition, private placements organized by the authorized Board of Directors reflective of the actual operating demand of the Company helps effectively enhance the mobility and flexibility in fund-raising for the Company. As such, private placements need to be organized.				
Number of shares (or number of corporate bonds)	5,668,198 shares of common stock				
Date of payment and date of filing	Date of payment: December 30, 2019 Date of filing: January 8, 2020				
Date of delivery	January 20, 2020				
Information of subscriber	Target of private placement	Eligibility (Note 5)	Quantity subscribed	Relationship with the company	Involvement in corporate operation
	Jan, Ching-leou	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	116,280	Chairman of the Company	Insider or related party of the Company
	Chen Chao-He	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	581,396	Director of the Company	Insider or related party of the Company
	Chen Ben-Yuan	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	174,419	Director of the Company	Insider or related party of the Company
	Huang Zheng-Gu	Article 43-6 Paragraph 1	23,256	Director of the Company	Insider or related party of the

	Sub-paragraph 3 of the Securities and Exchange Act			Company
Xu Shi-Ying	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	186,047	Director of the Company	Insider or related party of the Company
Lin Guo-Zhong	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	116,280	CEO of the Company	Insider or related party of the Company
Luan Yan-Dong	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	34,884	Chief Operation Officer of Taichung Branch	Insider or related party of the Company
Zhang Xue-Ling	Article 43-6 Paragraph 1 Sub-paragraph 3 of the Securities and Exchange Act	11,629	Financial and Accounting Supervisor of the Company	Insider or related party of the Company
Zeng Ming-Kun	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	40,698	Shareholder of the Company	None
Yu Rui-Yu	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	1279,070	Shareholder of the Company	None
Huang Ma-Li	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	174,419	Shareholder of the Company	None
Chen Li-Jin	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	290,698	Shareholder of the Company	None
Zheng Shu-Yun	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities	174,419	Shareholder of the Company	None

	and Exchange Act			
Zheng Xian-Zhi	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	174,419	Shareholder of the Company	None
Wang Jian-Ming	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	174,419	Shareholder of the Company	None
Lin Yu-Zhen	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	93,024	Shareholder of the Company	None
Zhan Yi-Ren	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	58,140	Shareholder of the Company	None
You Guei-Zhi	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	290,698	Shareholder of the Company	None
Wu Fu-Yu	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	23,256	Shareholder of the Company	None
SuChiang Chemical & Pharmaceutical Co., Ltd.	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	174,419	Shareholder of the Company	None
KGI Bank Fiduciary Investment Account of HONGKONG JOYRICH INVESTMENTS LIMITED	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	174,000	Shareholder of the Company	None
Hunya Foods Co., Ltd.	Article 43-6 Paragraph 1 Sub-paragraph 2	465,117	Shareholder of the Company	None

	of the Securities and Exchange Act			
Fan Gang-Ting	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	23,256	Employee of the Company	None
Hsu Zhe	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	29,070	Employee of the Company	None
Su Jing-Xing	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	17,442	Employee of the Company	None
Lin Hui-Hua	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	34,884	Employee of the Company	None
Xu Ming-Bin	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	34,884	Employee of the Company	None
Lu Ming-Shan	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	17,442	Employee of the Company	None
Wu Shi-Guan	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	23,256	Employee of the Company	None
Cai You-Kui	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	17,442	Employee of the Company	None
Li Wei-Der	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	11,628	Employee of the Company	None

	Lin Da-Ren	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	11,628	Employee of the Company	None
	Xie Yue	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	23,256	None	None
	Huang Fan-Xiu	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	11,628	None	None
	I&K Engineering Co., Ltd.	Article 43-6 Paragraph 1 Sub-paragraph 2 of the Securities and Exchange Act	581,395	None	None
Actual subscription (or conversion) price	NT$ 86 per share				
Difference between the actual subscription (or conversion) price and the reference price	The actual subscription price is NT$ 86 per share, which is 80.5% of the reference price, NT$ 106.8 per share.				
Impacts on the shareholder's equity of private placement (such as increase in the accumulated deficits...)	Fund-raising by means of private placement of common stock for capital increase in cash does not involve expenditure on the interest associated with liabilities, reduces the financial risk for the Company, and helps immediately improve the Company's financial structure and increase the flexibility for the Company over financial allocation. It is expected to reinforce the competitive advantages of the Company, improve the operating efficacy, and strengthen the financial structure and hence helps with the shareholders' equity positively.				
Utilization of privately raised funds and status of implementation of the plan	Value of required funds for the current plan: NT$501,000 thousand Funding source: 5,668,198 shares of common stock are privately placed, with the denomination per share being NT$10 and each share issued at NT$ 86; that is, NT$ 487,465 thousand is raised. The shortage of NT$ 13,535 thousand will be supported by the self-owned assets of the Company.				
Expressed benefits of private placement	The current private placement for capital increase in cash is meant mainly to increase the capital size of the subsidiary in Japan PharmaEssentia Japan in order for the latter to take charge of clinical trials conducted in Japan of P1101 and to communicate with the Japan PMDA and apply for a drug permit, and to facilitate subsequent marketing of the new drug, among others and also that of the subsidiary in Hong Kong PharmaEssentia Hong Kong to indirectly invest in the sub-subsidiary PharmaEssentia Beijing, to communicate with the China NMPA and apply for a drug permit, and to facilitate subsequent marketing of the new drug, among others The Phase II clinical trial to support the use of the Company's P1101 in treating PV was				

	already applied for by the subsidiary in Japan with the Japan PMDA in October 2019 and the drug permit is expected to be obtained in 2022 and sales will begin at the end of 2022. Profits are expected to show in 2023 onwards. In addition, the Company already applied for the Phase I clinical trial with the China CFDA (now changed to NMPA) in October 2018 and the drug permit is expected to be obtained in 2022 and sales will begin. Profits are expected to show in 2022 onwards.
Certificate of payment of subscribed (converted) shares (bond conversion entitlement certificate), shares, shares from free placement	None

Note 1: The number of fields may be adjusted reflective of the actual number of placements. When private placement of securities occurs in separate efforts, they shall be listed separately.

Note 2: The type of securities involved in the private placement shall be provided, such as common stock, preferred stock, convertible preferred stock, preferred stock with warrants, common corporate bond, convertible corporate bond, corporate bond with warrant, overseas convertible corporate bond, global depository receipt, and employee stock warrant, etc.

Note 3: When the private placement involves corporate bonds, please provide the date and quantity approved by the Board of Directors.

Note 4: For ongoing private placements, if the subscribers are approached, the name(s) of the subscriber(s) as well as the relationship with the Company shall be specified.

Note 5: The information specified in Article 43-6 Paragraph 1 Sub-paragraphs 1, 2, or 3 of the Securities and Exchange Act shall be provided.

8.3. The Company's Common Shares Acquired, Disposed Of, and Held by Subsidiaries in the Most Recent Year and Up to the Publication Date of this Annual Report:

None.

8.4. Other Necessary Supplements:

None.

8.5. Any Situations Listed in Article 36, Paragraph 3, Subparagraph 2 of the Securities and Exchange Act, Which Might Materially Affect Shareholders' Equity or the Price of the Company's Securities, in the Most Recent Year and Up to the Publication Date of This Annual Report:

None.

PharmaEssentia Corp.

Chairman: Ching-Leou Teng

General Manager: Jack Hwang