

Celltrion, Inc. and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2022 and 2021
with the independent auditor's report



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Independent auditor's report
(English Translation of a Report Originally Issued in Korean)

The Shareholders and Board of Directors
Celltrion, Inc.

Opinion

We have audited the consolidated financial statements of Celltrion, Inc. (the "Company") and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as of December 31, 2022 and 2021, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2022 and 2021, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("KIFRS").

Basis for opinion

We conducted our audit in accordance with Korean Standards on Auditing ("KSA"). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in the Republic of Korea, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For the matter below, our description of how our audit addressed the matter is provided in that context.

Recognition and impairment of development costs

As described in Note 13 to the consolidated financial statements, as of December 31, 2022, the Group recognized development costs of ₩1,322,203 million related to the development of biosimilars and generic drugs. As described in Note 2 (Basis of consolidated financial statements preparation and significant accounting policies) to the consolidated financial statements, the Group capitalizes development costs that fully meet the recognition criteria of intangible assets and performs impairment tests of development costs if any indication of impairment is identified.

Recognition of development costs depends on management's judgment, such as technical feasibility and future economic benefits. In assessing impairment of development costs, management's estimation is required, such as forecasting future cash flows. Management's judgments and estimates on these matters are subject to errors due to the complexity of the process and the intervention of management's subjective judgment.

Accordingly, we have identified the recognition and impairment of development costs as a significant risk because we believe that this could have a material effect on profit or loss (or future profit or loss), and thus we determined this item as a key audit matter as it requires significant auditor attention.

For the year ended December 31, 2022, our major audit procedures performed in relation to the recognition of development costs are as follows:

- Identifying internal controls related to the recognition of major development costs and evaluating the effectiveness of such controls
- Evaluating the appropriateness of the accounting policies in relation to the recognition of development costs
- Evaluating the appropriateness on allocation of development costs by each project
- Evaluating contracts and expenditure evidence for major development costs incurred during the current year

For the year ended December 31, 2022, our major audit procedures performed in relation to the impairment of development costs are as follows:

- Identifying internal controls related to the review on an indication of impairment and an impairment assessment of development costs and evaluating the effectiveness of such controls
- Evaluating the rationality of the Group's assumptions about the likelihood of obtaining regulatory approvals by comparing the progress of major projects under development with industry practices and through inquiry of industry prospects
- Assessing methodology and discount rate used by management
- Evaluating variables applied to management's projections in business plans and future cash flows
- Identifying and analyzing changes in assumptions used in past periods to assess consistency of assumptions

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with KIFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with KSA will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with KSA, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matter communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is *Dong Chun Son*.



March 20, 2023

This audit report is effective as of March 20, 2023, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the independent auditor's report date to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

Celltrion, Inc. and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2022 and 2021

“The accompanying consolidated financial statements, including all footnotes and disclosures, have been prepared by, and are the responsibility of, the Group.”

Kee, Woo Sung
Chief Executive Officer
Celltrion, Inc.

Celltrion, Inc. and its subsidiaries
Consolidated statements of financial position
as of December 31, 2022 and 2021
(Korean won in millions)

	Notes	December 31, 2022	December 31, 2021
Assets			
Current assets			
Cash and cash equivalents	4,5,6,7	₩ 551,187	₩ 1,188,326
Short-term financial assets	4,5,6,8	43,277	31,575
Trade receivables, net	4,5,6,9,34,35	1,621,890	1,101,089
Other receivables, net	4,5,6,9,35	32,200	63,294
Inventories, net	10	616,352	578,057
Other current assets	14,26	64,886	112,130
Total current assets		2,929,792	3,074,471
Non-current assets			
Long-term financial assets	5,6,8	₩ 29,274	₩ 24,435
Long-term trade receivables, net	4,5,6,9	62,888	-
Long-term other receivables	4,5,6,9	91,154	12,491
Investments in associates	11	88,535	64,841
Property, plant and equipment, net	12	1,007,038	950,412
Intangible assets, net	13	1,622,326	1,491,571
Other non-current assets	14	28,461	27,279
Deferred tax assets	21	32,184	28,623
Total non-current assets		2,961,860	2,599,652
Total assets		₩ 5,891,652	₩ 5,674,123
Liabilities			
Current liabilities			
Short-term financial liabilities	4,5,6,16,33	₩ 665,012	₩ 569,598
Trade payables	4,5,6,15,20	50,270	80,723
Other payables	4,5,6,15,33,35	320,244	228,419
Current tax liabilities		88,705	179,552
Provisions	17	1,487	3,850
Other current liabilities	19,26,35	168,379	148,338
Total current liabilities		1,294,097	1,210,480
Non-current liabilities			
Long-term financial liabilities	4,5,6,16,33	₩ 154,468	₩ 174,757
Long-term other payables	4,5,6,15,20	7,576	13,985
Other non-current liabilities	19,26,35	160,202	202,950
Deferred tax liabilities	21	1,105	21,576
Total non-current liabilities		323,351	413,268
Total liabilities		1,617,448	1,623,748
Equity			
Equity attributable to owners of the parent			
Issued capital	1,22	₩ 140,805	₩ 137,948
Share premium	22	853,172	840,337
Retained earnings	23	3,485,110	3,052,474
Accumulated other comprehensive income	24	48,745	24,987
Other components of equity	24	(388,472)	(138,508)
Non-controlling interests	36	134,844	133,137
Total equity		4,274,204	4,050,375
Total liabilities and equity		₩ 5,891,652	₩ 5,674,123

The accompanying notes are an integral part of the consolidated financial statements.

Celltrion, Inc. and its subsidiaries
Consolidated statements of profit or loss
for the years ended December 31, 2022 and 2021
(Korean won in millions, except per share amounts)

	Notes	2022	2021
Revenue	26,34,35 ₩	2,283,967	1,893,401
Cost of sales	26,30,35	(1,251,270)	(805,807)
Gross profit		1,032,697	1,087,594
Selling and administrative expenses	27,30,35	(385,499)	(343,417)
Operating profit		647,198	744,177
Other income	28,35	47,524	53,500
Other expenses	28,35	(87,043)	(84,964)
Finance income	29,35	24,945	42,294
Finance costs	29	(13,507)	(12,798)
Profit (loss) on equity method	11	7,056	(3,586)
Profit before income tax		626,173	738,623
Income tax expenses	21	(94,827)	(152,821)
Continuing operations profit for the year		531,346	585,802
Discontinued operation profit for the year	38	11,220	9,977
Profit for the year		₩ 542,566	₩ 595,779
Attributable to:			
Owners of the parent	₩	537,836	₩ 579,465
Continuing operations profit		526,616	569,488
Discontinued operation profit	38	11,220	9,977
Non-controlling interests	36 ₩	4,731	₩ 16,315
Continuing operations profit		4,731	16,315
Discontinued operation profit	38	-	-
Earnings per share:			
Basic earnings per share	32 ₩	3,894	₩ 4,160
Diluted earnings per share	32 ₩	3,888	₩ 4,141

The accompanying notes are an integral part of the consolidated financial statements.

Celltrion, Inc. and its subsidiaries
Consolidated statements of comprehensive income
for the years ended December 31, 2022 and 2021
(Korean won in millions)

	Notes	2022	2021
Profit for the year		₩ 542,566	₩ 595,779
Other comprehensive income		23,839	19,199
Other comprehensive income that may be reclassified to profit or loss in subsequent periods:			
Exchange differences on translation of foreign operations	24	22,797	27,351
Other comprehensive income that will not be reclassified to profit or loss in subsequent periods:			
Equity adjustments in equity method	11	1,048	(270)
Exchange differences on translation of foreign operations		81	121
Gain (loss) on valuation of financial assets measured at fair value through other comprehensive income	21,24	171	(11,677)
Gain on disposal of financial assets measured at fair value through other comprehensive income	21	-	536
Income tax effects relating to components of other comprehensive income (loss)	21,24	(258)	3,138
Total comprehensive income for the year, net of tax		₩ 566,405	₩ 614,978
Attributable to:			
Owners of the parent	₩	561,594	₩ 598,542
Non-controlling interests	₩	4,811	₩ 16,436

The accompanying notes are an integral part of the consolidated financial statements.

Celltrion, Inc. and its subsidiaries
Consolidated statements of changes in equity
for the years ended December 31, 2022 and 2021
(Korean won in millions)

	Notes	Issued capital	Share premium	Retained earnings	Accumulated other comprehensive income	Other components of equity	Non-controlling interest	Total
	₩	₩	₩	₩	₩	₩	₩	₩
As of January 1, 2021		134,998	812,156	2,475,297	6,298	(121,072)	119,903	3,427,580
Comprehensive income								
Profit for the year		-	-	579,465	-	-	16,315	595,780
Loss on valuation of financial assets measured at fair value through other comprehensive income								
Gain on disposal of financial assets measured at fair value through other comprehensive income	24	-	-	-	(8,466)	-	-	(8,466)
Exchange differences on translation of foreign operations	24	-	-	-	-	-	-	-
Equity adjustments in equity method	24	-	-	-	(196)	-	-	(196)
Total comprehensive income		-	-	579,863	18,689	-	16,436	614,978
Transactions with owners of the parent :								
Stock dividends	22, 23	2,676	-	(2,676)	-	-	-	-
Exercise and forfeit of stock warrants	22, 25	274	28,181	-	-	(7,914)	926	21,467
Recognition of stock warrants	25	-	-	-	-	23,965	1,511	25,476
Acquisition of treasury stock	24	-	-	-	-	(33,891)	(5,235)	(39,126)
Changes in percentage of ownership in subsidiaries, etc.		-	-	-	-	404	(404)	-
Total transactions with owners of the parent		2,950	28,181	(2,676)	-	(17,436)	(3,202)	7,817
As of December 31, 2021		137,948	840,337	3,052,474	24,987	(138,508)	133,137	4,050,375

The accompanying notes are an integral part of the consolidated financial statements.

Celltrion, Inc. and its subsidiaries
Consolidated statements of changes in equity
for the years ended December 31, 2022 and 2021 (cont'd)
(Korean won in millions)

	Notes	Issued capital	Share premium	Retained earnings	Accumulated other comprehensive income	Other components of equity	Non-controlling interest	Total
As of January 1, 2022		₩ 137,948	₩ 840,337	₩ 3,052,474	₩ 24,987	₩ (138,508)	₩ 133,137	₩ 4,050,375
Comprehensive income								
Profit for the year		-	-	537,836	-	-	4,731	542,567
Gain on valuation of financial assets measured at fair value								
through other comprehensive income	24	-	-	-	191	-	-	191
Exchange differences on translation of foreign operations	24	-	-	-	22,797	-	80	22,877
Equity adjustments in equity method	24	-	-	-	770	-	-	770
Total comprehensive income					₩ 23,758		₩ 4,811	₩ 566,405
Transactions with owners of the parent :								
Stock dividends	22, 23	2,732	-	(2,732)	-	-	-	-
Cash dividends	23	-	-	(102,468)	-	-	-	(102,468)
Exercise and forfeit of stock warrants	22, 25	125	12,835	-	-	(3,971)	854	9,843
Recognition of stock warrants	25	-	-	-	-	28,018	1,736	29,754
Acquisition of treasury stock	24	-	-	-	-	(275,973)	(4,576)	(280,549)
Other capital		-	-	-	-	-	844	844
Changes in percentage of ownership in subsidiaries, etc.		-	-	-	-	1,962	(1,962)	-
Total transactions with owners of the parent		₩ 2,857	₩ 12,835	₩ (105,200)	₩ -	₩ (249,964)	₩ (3,104)	₩ (342,576)
As of December 31, 2022		₩ 140,805	₩ 853,172	₩ 3,485,110	₩ 48,745	₩ (388,472)	₩ 134,844	₩ 4,274,204

Celltrion, Inc. and its subsidiaries
Consolidated statements of cash flows
for the years ended December 31, 2022 and 2021
(Korean won in millions)

	Notes	2022	2021
Operating activities			
Cash generated from operations	33	₩ 217,904	₩ 1,047,103
Income tax paid		(217,040)	(135,944)
Net cash flows provided by operating activities		864	911,159
Investing activities			
Cash inflow from investing activities			
Interest received		12,632	4,310
Dividend received		233	2,239
Decrease in short-term financial assets		35,283	17,034
Decrease in long-term financial assets		546	1,638
Decrease in other receivables		27,518	-
Decrease in long-term other receivables		8,019	604
Decrease in investments in associates		8,551	11,863
Receipt of other grants		-	73
Proceeds from disposal of property, plant and equipment		3	14
Proceeds from disposal of intangible assets		10	27,823
Receipt of government grants		32	32,129
Changes in consolidation scope		17,488	-
Cash outflows from investing activities			
Increase in short-term financial assets		(44,575)	(49,951)
Increase in other receivables		(676)	(41,014)
Increase in long-term financial assets		(6,295)	(4,834)
Increase in long-term other receivables		(7,468)	(2,858)
Acquisition of investments in associates		(32,879)	(32,782)
Acquisition of property, plant and equipment		(111,169)	(63,379)
Acquisition of intangible assets		(200,817)	(258,186)
Acquisition of other assets		-	(548)
Changes in consolidation scope		(3,487)	-
Net cash flows used in investing activities		₩ (297,051)	₩ (355,825)

(Continued)

Celltrion, Inc. and its subsidiaries
Consolidated statements of cash flows
for the years ended December 31, 2022 and 2021 (cont'd)
(Korean won in millions)

	Notes	2022	2021
Financing activities			
Cash inflows from financing activities			
Increase in short-term financial liabilities	₩	118,163	₩ 182,431
Increase in long-term financial liabilities		62,626	24,994
Issuance of ordinary shares		9,862	21,486
Cash outflows from financing activities			
Interest paid		(22,667)	(16,022)
Dividend paid		(102,451)	(4)
Decrease in short-term financial liabilities		(77,524)	(108,023)
Decrease in current portion of long-term borrowings		(54,481)	(132,043)
Decrease in lease liabilities		(3,163)	(2,951)
Decrease in guarantee deposits		(17)	-
Stock issuance costs		(19)	(19)
Acquisition of treasury stock		(280,549)	(39,126)
Net cash flows used in financing activities		(350,220)	(69,277)
Net increase (decrease) in cash and cash equivalents		(646,407)	486,057
Net foreign exchange difference		9,268	17,975
Cash and cash equivalents at the beginning of the year		1,188,326	684,294
Cash and cash equivalents at the end of the year	₩	551,187	₩ 1,188,326

The accompanying notes are an integral part of the consolidated financial statements.

1. Corporate information

General information about Celltrion, Inc. (the “Company”) and its subsidiaries (collectively referred to as the “Group”) is as follows:

The Company was incorporated on February 27, 1991 and listed its common stock on the KOSDAQ Market of the Korea Exchange (KRX) on July 19, 2005. The Company changed its name on August 19, 2008 from Orchem Co., Ltd. to Celltrion, Inc. after the merger with Celltrion, Inc., which was established on February 26, 2002. The Company’s stock, which was listed on the KOSDAQ Market, has been transferred to the KOSPI Market on February 9, 2018.

The primary business objective of the Company is to engage in the development and production of various therapeutic proteins including oncology treatment drugs through the Company’s bioengineering and mammalian cell-culture technology. The Company’s head office is located in the Incheon Free Economic Zone.

The Company’s shareholders and their shareholdings as of December 31, 2022 and 2021 are as follows:

	2022		2021	
	Number of shares	Equity interest	Number of shares	Equity interest
Celltrion Holdings Co., Ltd.	28,223,603	20.04%	27,670,200	20.06%
Celltrion Skincare Co., Ltd.	2,976,330	2.11%	2,917,971	2.12%
Ion Investment B.V.	6,087,954	4.32%	9,090,834	6.59%
Others	100,504,820	71.39%	96,944,993	70.27%
Treasury stock	3,012,503	2.14%	1,323,130	0.96%
	140,805,210	100.00%	137,947,128	100.00%

1.1 Consolidated subsidiaries

Consolidated subsidiaries as of December 31, 2022 and 2021 are as follows:

Subsidiaries	Equity interest		Country of domicile	Year-end	Primary business activity
	2022	2021			
Celltrion Pharm, Inc.	54.85%	54.93%	Korea	December	Manufacturing and sales of medicine
Celltrion Europe Limited	100.00%	100.00%	United Kingdom	December	Biopharmaceuticals clinical trial
Celltrion Global Safety Data Center	99.99%	99.99%	Philippines	December	Global drug safety data management
Celltrion USA, Inc. (*1)	-	100.00%	USA	December	Sales of chemical drug
Celltrion Biopharma	100.00%	100.00%	Ireland	December	Biopharmaceuticals clinical trial
Celltrion Group Hong Kong	70.00%	70.00%	Hong Kong	December	Biopharmaceuticals business in China
Shanghai Vcell Biotech (*2)	70.00%	70.00%	China	December	Biopharmaceuticals R&D (including clinical trials)
Celltrion Asia Pacific PTE	100.00%	100.00%	Singapore	December	Sales and R&D of chemical drug

(*1) 100% of Celltrion USA, Inc. shares were sold to Celltrion Healthcare in the current year and therefore it is excluded from the subsidiaries (See Notes 35(1), 38).

(*2) Celltrion Group Hongkong holds 100% of the shares.

1.2 Changes in the scope of consolidation

Details of subsidiaries included in and excluded from the consolidated financial statements as of December 31, 2022 are as follows:

Subsidiary	Newly included/excluded in consolidation	Description
Celltrion USA, Inc	Excluded	Sale of shares

1.3 Financial information of subsidiaries (before elimination of intercompany transactions)

The condensed statement of financial position of subsidiaries as of December 31, 2022 and 2021, and the related condensed statement of profit or loss and other comprehensive income of subsidiaries for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

Subsidiaries	2022		
	Assets	Liabilities	Equity
Celltrion Pharm, Inc.	₩ 599,724,549	₩ 242,938,002	₩ 356,786,547
Celltrion Europe Limited	2	-	2
Celltrion Global Safety Data Center	2,304,604	572,596	1,732,008
Celltrion USA, Inc (*1)	-	-	-
Celltrion Biopharma	-	-	-
Celltrion Group Hong Kong	38,840,497	33,654,707	5,185,790
Shanghai Vcell Biotech	1,466,019	9,108	1,456,911
Celltrion Asia Pacific PTE	391,659,625	36,956,777	354,702,848

Subsidiaries	2022		
	Revenue	Profit (loss)	Comprehensive income (loss)
Celltrion Pharm, Inc.	₩ 386,039,613	₩ 25,959,948	₩ 25,959,948
Celltrion Europe Limited	-	-	-
Celltrion Global Safety Data Center	3,877,132	314,077	267,540
Celltrion USA, Inc (*1)	150,405,453	1,562,220	1,614,631
Celltrion Biopharma	-	-	-
Celltrion Group Hong Kong	-	(2,507,160)	(1,965,857)
Shanghai Vcell Biotech	-	89,340	39,236
Celltrion Asia Pacific PTE	136,045,910	1,207,329	23,961,203

1.3 Financial information of subsidiaries (before elimination of intercompany transactions) (cont'd)

Subsidiaries	2021		
	Assets	Liabilities	Equity
Celltrion Pharm, Inc.	₩ 637,884,365	₩ 305,915,567	₩ 331,968,798
Celltrion Pharma USA (*2)	-	-	-
Celltrion Europe Limited	2	-	2
Celltrion Global Safety Data Center	2,123,610	659,142	1,464,468
Celltrion USA, Inc (*1)	92,120,901	84,581,763	7,539,138
Celltrion Biopharma	-	-	-
Celltrion Group Hong Kong	35,719,238	28,567,591	7,151,647
Vcell Healthcare (*2)	-	-	-
Shanghai Vcell Biotech	1,417,712	37	1,417,675
Celltrion Asia Pacific PTE	371,554,346	40,812,701	330,741,645

Subsidiaries	2021		
	Revenue	Profit (loss)	Comprehensive income (loss)
Celltrion Pharm, Inc.	₩ 398,738,209	₩ 34,206,203	₩ 34,206,203
Celltrion Pharma USA(*2)	-	(34,160)	(33,318)
Celltrion Europe Limited	-	-	-
Celltrion Global Safety Data Center	3,054,435	261,940	291,557
Celltrion USA, Inc (*1)	84,608,937	9,180,721	8,918,237
Celltrion Biopharma	-	-	-
Celltrion Group Hong Kong	-	(4,515,527)	(3,581,736)
Vcell Healthcare (*2)	-	(25,307)	213,981
Shanghai Vcell Biotech	-	(299,435)	(126,868)
Celltrion Asia Pacific PTE	73,363,439	(1,970,349)	25,328,231

(*1) It is excluded from the subsidiaries in the current year due to the sale of shares and the amount was generated before the sale of shares, including amounts classified as discontinued operations.

(*2) The pertaining subsidiary was liquidated in the current year and excluded from Celltrion subsidiaries and the amounts are from the period before the liquidation.

2. Summary of significant accounting policies

The significant accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in Korean in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("KIFRS") enacted by the *Act on External Audit of Stock Companies*. The accompanying consolidated financial statements have been translated into English from Korean financial statements. In the event of any differences in interpreting the financial statements or the independent auditor's report thereon, Korean version, which is used for regulatory reporting purposes, shall prevail.

2.1 Basis of preparation (cont'd)

The consolidated financial statements of the Group have been prepared in accordance with KIFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board ("IASB") that have been adopted by the Republic of Korea.

The preparation of the consolidated financial statements requires the use of certain critical accounting estimates. It also requires management to exercise judgment in the process of applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.2 Changes in accounting policies and disclosures

2.2.1 New and amended standards adopted by the Group

The Group applied for the first time certain standards and amendments, which are effective for annual periods beginning on or after January 1, 2022. The Group does not early adopt any standards, interpretations, and revisions that are announced but not yet effective. The nature and the impact of each new standard or amendment is described below:

2.2.1.1 Amendment to KIFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* - Onerous contracts -- Cost of Fulfilling a Contract

Onerous contract is a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it. This amendment allows the costs directly attributable to the contract for providing goods or services to include incremental costs (e.g., materials and labor costs) and allocation of other costs (an allocation of the depreciation charge for an item of tangible assets used in fulfilling that contract or allocation of costs needed for managing and supervising the contract) when determining whether the contract is an onerous contract. General administrative costs are not directly related to the contract and are excluded if they cannot be explicitly imposed on the counter party under the contract.

Since there are no onerous contracts falling within the scope of this amendment in the current year within the Group, the amendment does not impact the consolidated financial statements of the Group.

2.2.1.2 Amendment to KIFRS 1103 *Business Combinations* - Framework for Financial Reporting Reference

This amendment to make no significant changes to requirements when replacing the previously announced framework for preparation and presentation of financial statements with framework for financial reporting announced in March 2018.

To prevent any day 2 profit or loss out of liabilities and contingent liabilities of KIFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* or KIFRS interpretation 2121 *Levies*, exceptions are made to recognition principles of KIFRS 1103 *Business Combinations*. Such exceptions requires to apply the standards of KIFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* or KIFRS interpretation 2121 *Levies* in order to assess whether present obligation exists on acquisition date.

In addition, this amendment added a new paragraph to KIFRS 1103 *Business Combinations* in order to clarify that the contingent asset cannot be recognized on acquisition date.

Since the Group does not possess contingent asset, liabilities, and contingent liabilities under the scope of this amendment, the amendment does not impact the consolidated financial statements of the Group.

2.2.1.3 Amendments to KIFRS 1016 - *Property, Plant and Equipment*: Proceeds before Intended Use

The amendments prohibit entities deducting from the cost of an item of property, plant and equipment, any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Instead, an entity recognizes the proceeds from selling such items, and the costs of producing those items, in profit or loss.

Since there is no sale of goods produced out of tangible assets made available on the earliest commencement date or afterward presented, the amendment does not impact the consolidated financial statements of the Group.

2.2.1.4 KIFRS 1101 *First-time Adoption of KIFRS*– Subsidiary as a first-time adopter

The amendment permits a subsidiary that elects to apply paragraph D16(1) of KIFRS 1101 to measure cumulative translation differences using the amounts reported by the parent, based on the parent's date of transition to KIFRS. This amendment is also applied to an associate or joint venture that elects to apply paragraph D16(1) of KIFRS 1101.

Since the Group's subsidiaries are not first-time adopters, the amendment does not impact the consolidated financial statements of the Group.

2.2.1.5 KIFRS 1109 *Financial Instruments* – Fees in the '10 per cent' test for derecognition of financial liabilities

The amendment clarifies the fees that an entity includes when assessing whether the terms of a new or modified financial liability are substantially different from the terms of the original financial liability. These fees include only those paid or received between the borrower and the lender, including fees paid or received by either the borrower or lender on the other's behalf. An entity applies the amendment to financial liabilities that are modified or exchanged on or after the beginning of the annual reporting period in which the entity first applies the amendment. There is no similar amendment proposed for KIFRS 1039 *Financial Instruments: Recognition and Measurement*.

As there were no modifications during the year to the financial instruments of the Group, the amendment does not impact the consolidated financial statements of the Group.

2.2.1.6 KIFRS 1041 *Agriculture* – Taxation in fair value measurements

The amendments remove the requirement in paragraph 22 of KIFRS 1041 that entities exclude cash flows for taxation when measuring the fair value of assets within the scope of KIFRS 1041.

Since the Group does not possess assets within the scope of this standard as of the current end of the reporting period, the amendment does not affect financial statements of the Group.

2.2.2 Standards issued but not yet adopted by the Group

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's consolidated financial statements are disclosed below.

2.2.2.1 KIFRS 1117 Insurance Contracts

In 2021, KIFRS 1117 Insurance Contracts, a comprehensive new accounting standard for insurance contracts covering recognition and measurement, presentation and disclosure was issued. Once effective, KIFRS 1117 will replace KIFRS 1104 Insurance Contracts that was issued in 2007. KIFRS 1117 applies to all types of insurance contracts (i.e., life, non-life, direct insurance and re-insurance), regardless of the type of entities that issue them, as well as to certain guarantees and financial instruments with discretionary participation features. A few scope exceptions will apply. The overall objective of KIFRS 1117 is to provide an accounting model for insurance contracts that is more useful and consistent for insurers. In contrast to the requirements in KIFRS 1104, which are largely based on grandfathering previous local accounting policies, KIFRS 1117 provides a comprehensive model for insurance contracts, covering all relevant accounting aspects. The core of KIFRS 1117 is the general model, supplemented by:

- A specific adaptation for contracts with direct participation features (the variable fee approach); and
- A simplified approach (the premium allocation approach) mainly for short-duration contracts.

KIFRS 1117 is effective for reporting periods beginning on or after January 1, 2023, with comparative figures required. Early application is permitted, provided the entity also applies KIFRS 1109 and KIFRS 1115 on or before the date it first applies KIFRS 1117. This standard is not applicable to the Group.

2.2.2.2 Amendments to KIFRS 1001: Classification of Liabilities as Current or Non-current

Amendments to paragraphs 69 to 76 of KIFRS 1001 specify the requirements for classifying liabilities as current or non-current. The amendments clarify:

- What is meant by a right to defer settlement
- That a right to defer must exist at the end of the reporting period
- That classification is unaffected by the likelihood that an entity will exercise its deferral right
- That only if an embedded derivative in a convertible liability is itself an equity instrument would the terms of a liability not impact its classification

The amendments are effective for annual reporting periods beginning on or after January 1, 2023 and must be applied retrospectively. The Group is currently assessing the impact the amendments will have on current practice and whether existing loan agreements may require renegotiation.

2.2.2.3 Amendments to KIFRS 1008 - Accounting Policies, Changes in Accounting Estimates and Errors - Definition of Accounting Estimates

The amendments clarify the distinction between changes in accounting estimates and changes in accounting policies and the correction of errors. Also, they clarify how entities use measurement techniques and inputs to develop accounting estimates. The amendments are effective for annual reporting periods beginning on or after January 1, 2023 and apply to changes in accounting policies and changes in accounting estimates that occur on or after the start of that period. Earlier application is permitted. The amendments are not expected to have a material impact on the Group.

2.2.2.4 Amendments to KIFRS 1001 Presentation of Financial Statements - Disclosure of Accounting Policies

The amendments provide requirements and guidelines for an effective publishing of the Group's accounting policies. KIFRS 1001 requires the Group to disclose significant accounting policies. The amendments replaced "significant accounting policies" to "material accounting policies" and added further explanations and examples to help companies apply the concept of materiality in making decisions about accounting policy disclosure. These amendments are effective for fiscal years beginning on or after January 1, 2023 with earlier application permitted. The Group is reviewing disclosure of significant accounting policy information disclosures to ensure consistency with the amended requirements.

2.2.2.5 Amendment to KIFRS 1012 *Income Taxes* - Deferred Tax related to Assets and Liabilities arising from a Single Transaction

The amendments narrow the scope of the initial recognition exception under KIFRS 1012, so that it no longer applies to transactions that give rise to equal taxable and deductible temporary differences. The amendments should be applied to transactions that occur on or after the beginning of the earliest comparative period presented. In addition, at the beginning of the earliest comparative period presented, a deferred tax asset (provided that sufficient taxable profit is available) and a deferred tax liability should also be recognised for all deductible and taxable temporary differences associated with leases and decommissioning obligations. The Group is currently assessing the impact of the amendments.

2.3 Consolidation

The Group has prepared the consolidated financial statements in accordance with KIFRS 1110 *Consolidated Financial Statements*.

(a) Subsidiaries

Subsidiaries are all entities over which the Company has control. The Company controls the corresponding investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The consolidation of a subsidiary begins from the date the Company obtains control of a subsidiary and ceases when the Company loses control of the subsidiary.

The Group applies the acquisition method to account for business combinations. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are initially measured at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquiree on an acquisition-by-acquisition basis in the event of liquidation, either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of acquiree's identifiable net assets. All other non-controlling interests are measured at their acquisition-date fair values, unless another measurement basis is required by other standards. Acquisition-related costs are expensed as incurred.

Goodwill is recognized as the excess of the aggregate of the consideration transferred, the amount of any non-controlling interest in the acquiree, and the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree over the identifiable net assets acquired. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

Balances of receivables and payables, income and expenses and unrealized gains on transactions between the Group and subsidiaries are eliminated. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

In transactions with non-controlling interests, which do not result in loss of control, the Group recognizes directly in equity attributable to owners of the parent any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received, and attribute it to the owners of the parent.

(b) Associates

Associates are all entities over which the Group has significant influence, and investments in associates are initially recognized at acquisition cost using the equity method. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If there is any objective evidence that the investment in the associate is impaired, the Group recognizes the difference between the recoverable amount of the associate and its book value as impairment loss.

(c) Joint Arrangements

A joint arrangement, wherein two or more parties have joint control, is classified as either a joint operation or a joint venture. A joint operator has rights to the assets, and obligations for the liabilities, relating to the joint operation and recognizes the assets, liabilities, revenues and expenses relating to its interest in a joint operation. A joint venturer has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

2.4 Segment reporting

Management performs the allocation of resources and assessment of performance by each operating segment. The operating segment of the Group is recognized based on the method of organizing and generating income. As of December 31, 2020, the Group's segment consists of manufacturing and sales of biopharmaceutical medicines, chemical medicines and others.

Business objective of biopharmaceutical medicines segment is to develop, manufacture and sell various therapeutic proteins including oncology treatment drugs by bioengineering and mammalian cell-culture technology. Business objective of chemical medicines segment is to develop, manufacture and sell chemical medicines.

The Group assesses the performance of each operating segment based on operating profit, and there is no difference with the amounts reported on the consolidated statement of profit or loss, except for intergroup transactions.

(1) Segment information

The following table summarizes the results of financial performance of the Group by operating segments for the years ended December 31, 2022 and 2021 (Korean won in thousands):

December 31, 2022						
	Biopharma- ceutical medicines	Chemical medicines (*2)	Others	Total	Adjustment of intergroup transactions	Amount after adjustment
Revenue	₩ 1,937,469,297	₩ 653,518,949	₩ 3,877,132	₩ 2,594,865,378	₩ (310,897,898)	₩ 2,283,967,480
Depreciation	47,724,855	16,822,780	296,696	64,844,331	(120,744)	64,723,587
Amortization	127,569,580	34,279,638	-	161,849,218	(182,782)	161,666,436
Operating profit	617,590,372	34,612,735	294,312	652,497,419	(5,299,244)	647,198,175
Non-current assets (*1)	2,126,217,248	513,984,729	265,790	2,640,467,767	(11,103,868)	2,629,363,899

December 31, 2021						
	Biopharma- ceutical medicines	Chemical medicines (*2)	Others	Total	Adjustment of intergroup transactions	Amount after adjustment
Revenue	₩ 1,615,839,890	₩ 538,510,539	₩ 3,054,435	₩ 2,157,404,864	₩ (264,003,647)	₩ 1,893,401,217
Depreciation	46,108,280	15,834,259	280,636	62,223,175	(266,187)	61,956,988
Amortization	121,959,232	30,296,940	-	152,256,172	(53,425)	152,202,747
Operating profit	716,211,636	44,805,706	223,705	761,241,047	(17,064,197)	744,176,850
Non-current assets (*1)	1,908,520,569	538,729,428	505,659	2,447,755,656	(5,981,626)	2,441,774,030

(*1) The amount is the sum of property, plant and equipment and intangible assets.

(*2) Celltrion USA, Inc. classified as profit or loss from discontinued operation in the current year, its operating performance not included (See Note 38).

2.4 Segment reporting (cont'd)

(2) Regional Sales (based on location)

The following table summarizes the results of regional sales by location for the years ended December 31, 2022 and 2021 (Korean won in thousands):

December 31, 2022					
	Domestic	Americas(*)	Asia	Consolidation Adjustment	Total
Sales total	₩ 2,323,508,910	₩ 131,433,427	₩ 139,923,041	₩ (310,897,898)	₩ 2,283,967,480
Internal sales	(233,044,271)	-	(77,853,627)	310,897,898	-
Net Sales	2,090,464,639	131,433,427	62,069,414	-	2,283,967,480

December 31, 2021					
	Domestic	Americas(*)	Asia	Consolidation Adjustment	Total
Sales total	₩ 2,014,578,099	₩ 66,408,891	₩ 76,417,874	₩ (264,003,647)	₩ 1,893,401,217
Internal sales	(234,704,998)	-	(29,298,649)	264,003,647	-
Net Sales	1,779,873,101	66,408,891	47,119,225	-	1,893,401,217

(*) Celltrion USA, Inc. classified as profit or loss from discontinued operation in the current year, its operating performance not included (See Note 38).

(3) Regional non-current assets (*)

The following table summarizes the results of regional non-current assets by location for the years ended December 31, 2022 and 2021 (Korean won in thousands):

	2022	2021
Domestic sales	₩ 2,340,894,667	₩ 2,139,418,544
Asia	299,573,100	308,337,111
Consolidation adjustment	(11,103,868)	(5,981,625)
Total	₩ 2,629,363,899	₩ 2,441,774,030

(*) The amount is the sum of property, plant and equipment and intangible assets.

(4) Sales to Celltrion Healthcare that occupies more than 10 percent of total revenue of the Group is ₩ 1,565,063 million (2021: 1,340,794 million) (See Note 35(2)).

2.5 Foreign currency translation

2.5.1 Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which each entity operates (the functional currency). The consolidated financial statements are presented in Korean won, which is the Group's functional and presentation currency.

2.5.2 Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are re-measured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in profit or loss.

Exchange differences arising on non-monetary financial assets and liabilities such as financial assets measured at fair value through other profit or loss and financial assets measured at fair value through other comprehensive income are recognized in profit or loss and included in OCI, respectively, as part of the fair value gain or loss.

2.5.3 Translation into the presentation currency

The results and financial position of all Group entities that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period;
- income and expenses for each statement of income are translated at average exchange rates;
- equity is translated at the historical exchange rate; and
- all resulting exchange differences are recognized in OCI.

2.6 Financial assets

2.6.1 Initial recognition and measurement

Financial assets are classified, at initial recognition, as subsequently measured at amortized cost, fair value through other comprehensive income (OCI), and fair value through profit or loss.

The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them. With the exception of trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient, the Group initially measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs. Trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient are measured at the transaction price determined under KIFRS 1115.

In order for a financial asset to be classified and measured at amortized cost or fair value through OCI, it needs to give rise to cash flows that are 'solely payments of principal and interest (SPPI)' on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level.

The Group's business model for managing financial assets refers to how it manages its financial assets in order to generate cash flows. The business model determines whether cash flows will result from collecting contractual cash flows, selling the financial assets, or both.

Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace (regular way trades) are recognized on the trade date, i.e., the date that the Group commits to purchase or sell the asset.

2.6.2 Subsequent measurement

For purposes of subsequent measurement, financial assets are classified in four categories:

- Financial assets at amortized cost (debt instruments)
- Financial assets at fair value through OCI with recycling of cumulative gains and losses upon derecognition (debt instruments)
- Financial assets designated at fair value through OCI with no recycling of cumulative gains and losses upon derecognition (equity instruments)
- Financial assets at fair value through profit or loss

Financial assets at amortized cost (debt instruments)

This category is the most relevant to the Group. The Group measures financial assets at amortized cost if both of the following conditions are met:

- The financial asset is held within a business model with the objective to hold financial assets in order to collect contractual cash flows, and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding

Financial assets at amortized cost are subsequently measured using the effective interest (EIR) method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified or impaired.

Financial assets at fair value through OCI (debt instruments)

The Group measures debt instruments at fair value through OCI if both of the following conditions are met:

- The financial asset is held within a business model with the objective of both holding to collect contractual cash flows and selling, and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding

For debt instruments at fair value through OCI, interest income, foreign exchange revaluation and impairment losses or reversals are recognized in the statement of profit or loss and computed in the same manner as for financial assets measured at amortized cost. The remaining fair value changes are recognized in OCI. Upon derecognition, the cumulative fair value change recognized in OCI is recycled to profit or loss.

Financial assets designated at fair value through OCI (equity instruments)

Upon initial recognition, the Group can elect to classify irrevocably its equity investments as equity instruments designated at fair value through OCI when they meet the definition of equity under KIFRS 1032 *Financial Instruments: Presentation* and are not held for trading. The classification is determined on an instrument-by-instrument basis.

Gains and losses on these financial assets are never recycled to profit or loss. Dividends are recognized as other income in the statement of profit or loss when the right of payment has been established, except when the Group benefits from such proceeds as a recovery of part of the cost of the financial asset, in which case, such gains are recorded in OCI. Equity instruments designated at fair value through OCI are not subject to impairment assessment.

The Group may elect to classify irrevocably its non-listed equity investments under this category.

2.6.2 Subsequent measurement (cont'd)

Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition at fair value through profit or loss. Financial assets are classified as held for trading if they are acquired for the purpose of selling or repurchasing in the near term. Derivatives, including separated embedded derivatives, are also classified as held for trading unless they are designated as effective hedging instruments. Financial assets with cash flows that are not solely payments of principal and interest are classified and measured at fair value through profit or loss, irrespective of the business model. Notwithstanding the criteria for debt instruments to be classified at amortized cost or at fair value through OCI, as described above, debt instruments may be designated at fair value through profit or loss on initial recognition if doing so eliminates, or significantly reduces, an accounting mismatch.

Financial assets at fair value through profit or loss are carried in the statement of financial position at fair value with net changes in fair value recognized in the statement of profit or loss.

This category includes derivative instruments and listed equity instruments which the Group had not irrevocably elected to classify at fair value through other comprehensive income. Dividends on listed equity instruments are recognized in profit or loss when the right of payment has been established.

A derivative embedded in a hybrid contract, with a financial liability or non-financial host, is separated from the host and accounted for as a separate derivative if: the economic characteristics and risks are not closely related to the host; a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and the hybrid contract is not measured at fair value through profit or loss. Embedded derivatives are measured at fair value with changes in fair value recognized in profit or loss. Reassessment only occurs if there is either a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required or a reclassification of a financial asset out of the fair value through profit or loss category.

A derivative embedded within a hybrid contract containing a financial asset host is not accounted for separately. The financial asset host together with the embedded derivative is required to be classified in its entirety as a financial asset at fair value through profit or loss.

2.6.3 Impairment

The Group recognizes an allowance for expected credit losses (ECLs) for all debt instruments not held at fair value through profit or loss. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

ECLs are recognized in two stages. For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL).

For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date.

2.6.4 Derecognition

If the Group transfers a financial asset and the transfer does not result in de-recognition because the Group has retained substantially all risks and rewards of ownership of the transferred asset due to a recourse in the event the debtor defaults, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The related financial liability is classified as 'borrowings' in the consolidated statement of financial position.

2.6.5 Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the consolidated statements of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis to realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

2.7 Derivative instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value. Changes in the fair value of the derivatives that are not qualified for hedge accounting are recognized in the consolidated statement of profit or loss within other income (expenses) or finance income (costs) according to the nature of transactions.

2.8 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the gross average method.

2.9 Property, plant and equipment

All property, plant and equipment are stated at historical cost less depreciation and accumulated impairment loss. Historical cost includes expenditures directly attributable to the acquisition of the items.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives, as follows:

	Estimated Useful Lives
Buildings	30 - 40 years
Facilities	16 years
Structures	20 - 30 years
Machinery	5 - 15 years
Vehicles	5 years
Furniture	5 years
Right-of-use assets	1 - 5 Years

The depreciation method, residual values and useful lives of property, plant and equipment are reviewed at the end of each reporting period and, if appropriate, accounted for as changes in accounting estimates.

2.10 Borrowing costs

Borrowing costs incurred in the acquisition or construction of a qualifying asset are capitalized in the period when it is prepared for its intended use, and investment income earned on the temporary investment of borrowings made specifically for the purpose obtaining a qualifying asset is deducted from the borrowing costs eligible for capitalization during the period. Other borrowing costs are recognized as expense over the period of its occurrence.

2.11 Government grants

Government grants are recognized at their fair values when there is reasonable assurance that the grant will be received and the Group will comply with the conditions attached to it. Government grants related to assets are presented by deducting the grants in arriving at the Book value of the assets, and grants related to income are deferred and presented by deducting the related expenses for the purpose of the government grants.

2.12 Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses. Internally generated intangibles, excluding capitalized development costs, are not capitalized and the related expenditure is reflected in profit or loss in the period in which the expenditure is incurred.

The useful lives of intangible assets are assessed as either finite or indefinite. Intangible assets with finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset are reviewed at least at the end of each reporting period. If the modification of the amortization method are required due to changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset, then they are treated as changes in accounting estimates. The amortization expense on intangible assets is recognized in the statement of profit or loss in the expense category that is consistent with the function of the intangible assets.

Intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually, either individually or at the CGU level. The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Intangible assets with definite useful life that are amortized using the straight-line method over their estimated useful lives are as follows:

	Estimated Useful Lives
Software	5 years
Intellectual property	16 years
Development costs	10 - 15 years
Industrial property rights	4 - 5 years
Patents	4 - 5 years
License	4 - 10 Years

Research costs are recognized as an expense when it is incurred. Development costs which are individually identifiable and directly related to a new technology or to new products which carry probable future benefits are capitalized as intangible assets when the following criteria are met:

- it is technically feasible to complete the intangible assets so that it will be available for use;
- management intends to complete the intangible assets and use or sell it;
- there is an ability to use or sell the intangible assets;
- it can be demonstrated how the intangible assets will generate probable future economic benefits;
- adequate technical, financial and other resources to complete the development and to use or sell the intangible assets are available; and
- the expenditure attributable to the intangible assets during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognized as an expense as incurred. Development costs previously recognized as an expense are not recognized as an asset in a subsequent period.

2.12 Intangible assets (cont'd)

The Group's decisions on the recognition of intangible assets are as follows.

1) Internally generated

Development for new drugs are processed in a series of different phases; Discovery of compounds as potential candidates & identification of a promising compound, Preclinical research, Clinical research Phase I to III, Regulatory review & approval and Product launch & post-market monitoring. The Group generally recognizes as intangible assets the costs incurred after asset recognition criteria including technical feasibility and future economic benefit etc. has been satisfied during clinical research Phase III while research and development costs incurred prior to this phase are all expensed.

Development project for biopharmaceuticals is processed in a series of different phases; Process development, Preclinical research, Clinical research Phase I and III, Regulatory review & approval and Product launch & post-market monitoring. The Group generally recognizes as intangible assets the cost incurred after approval to commence with Phase I is obtained, including technical feasibility and future economic benefits, while research and development costs incurred prior to this phase are all expensed.

Development project for chemical drugs is processed in a series of different phases ; Process development, Test for bioequivalence, Regulatory review & approval and Product launch & post-market monitoring. The Group generally recognizes as intangible assets the costs incurred after test for bioequivalence including technical feasibility and future economic benefits, while research and development costs incurred prior to this phase are all expensed.

2) Externally acquired

The Group recognizes as intangible assets payments for a license agreement which the Group entered into with a third-party in relation to development of a new drug and transferring technology.

2.13 Investment properties

Properties owned by the Group for rental profit or return on investment are classified as investment properties. Investment properties are measured initially at cost and subsequent to initial recognition, they are carried at cost less accumulated depreciation and accumulated impairment loss. Investment properties, except land, are depreciated based on the straight-line method depending on the estimated useful life (5 - 40 years).

2.14 Impairment of non-financial assets

Intangible assets with indefinite useful lives and under development are not subject to amortization and are tested annually for impairment. An impairment loss is recognized for the amount by which the asset's Book value exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. Non-financial assets, other than goodwill, that suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

2.15 Financial liabilities

2.15.1 Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings, payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial liabilities are recognized initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs.

2.15.2 Subsequent measurement

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as of fair value through profit or loss.

Financial liabilities are classified as held for trading if they are incurred for the purpose of repurchasing in the near term. This category also includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by KIFRS 1109. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments. Gains or losses on liabilities held for trading are recognized in the consolidated statement of profit or loss.

Financial liabilities designated upon initial recognition at fair value through profit or loss are designated at the initial date of recognition, and only if the criteria in KIFRS 1109 are satisfied.

Loans and borrowings

After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortized cost using the EIR method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the EIR amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included as finance costs in the consolidated statement of profit or loss.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and presented as trade payables, borrowings, and other financial liabilities in the consolidated statement of financial position.

2.15.3 Derecognition

Financial liabilities are removed from the statement of financial position when it is extinguished, for example, when the obligation specified in the contract is discharged, cancelled or expired or when the terms of an existing financial liability are substantially modified.

2.16 Financial guarantee contract

Financial guarantees are initially measured at fair value on the date the guarantee was given. Subsequent to initial recognition, the Group's liabilities under such guarantees are measured at the higher of the amounts below and recognized as other financial liabilities.

- 1) amount calculated in accordance with KIFRS 1109 *Financial Instruments*;
or
- 2) the initial amount, less accumulated amortization recognized in accordance with KIFRS 1115 *Revenue from Contracts with Customers*.

2.17 Provisions

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation and the increase in the provision due to passage of time is recognized as interest expense.

The Group receives free emission rights as a result of emission trading schemes. The rights are received on an annual basis and, in return, the Group is required to remit rights equal to its actual emissions. The Group has adopted the net liability approach to the emission rights granted. Therefore, a provision is recognized only when actual emissions exceed the emission rights granted and still held. The emission costs are recognized as expenses.

2.18 Current and deferred tax

The tax expense for the period consists of current and deferred tax. Tax is recognized on the profit for the year in the statement of profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. The tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period.

Deferred tax is recognized for temporary differences arising between the tax bases of assets and liabilities and their Book values as expected tax consequences at the recovery or settlement of the Book values of the assets and liabilities. However, deferred tax assets and liabilities are not recognized if they arise from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss.

Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences can be utilized.

Deferred tax liability is recognized for taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, deferred tax asset is recognized for deductible temporary differences arising from such investments to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred taxes assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2.19 Employee benefits

2.19.1 Post-employment benefits

The Group has a defined contribution plan. A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate entity. The contributions are recognized as employee benefit expenses when an employee has rendered service.

2.19.2 Share-based payments

Equity-settled share-based payments granted to employees are estimated at fair value of equity instruments on the grant date and recognized as employee benefit expenses over the vesting period. The number of equity instruments expected to vest is remeasured with consideration to non-market vesting conditions at the end of the reporting period, with any changes from the original measurement recognized in the profit for the year and equity.

The net inflow, transaction costs directly related to issuance of new shares at the time of exercise of the stock options, is recognized as issued capital (nominal value) and share premium.

2.20 Revenue from contracts with customers

Revenue from contracts with customers is recognized when control of the goods or services are transferred to the customer at an amount based on the consideration stated in the contract with customer, excluding any consideration received on behalf of the third party.

2.20.1 Sales of goods and services

Revenue is recognized by applying a five-stage revenue recognition model (Identification of a contract with a customer → Identification of performance obligations in the contract → Determination of the transaction price → Allocation of the transaction price to the separate performance obligations in the contract → Recognition of revenue upon satisfying the performance obligations) to all of its contracts with customers.

Sales discounts, rebates, incentives, and price settlements related to the sale of goods are adjusted in revenue.

2.20.2 Contract balance

(1) Contract assets

A contract asset is the right to consideration in exchange for goods or services transferred to the customer. If the Group performs by transferring goods or services to a customer before the customer pays consideration or before payment is due, a contract asset is recognized for the earned consideration that is conditional.

(2) Trade receivables

A receivable represents the Group's right to an amount of consideration that is unconditional (i.e., only the passage of time is required before payment of the consideration is due). Refer to accounting policies of financial assets in the Note 2.6.

(3) Contract liabilities

A contract liability is the obligation to transfer goods or services to a customer for which the Group has received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before the Group transfers goods or services to the customer, a contract liability is recognized when the payment is made or the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when the Group performs under the contract.

2.21 Approval of consolidated financial statements

The consolidated financial statements for the year ended December 31, 2022 were approved at the Board of Directors' meeting on March 3, 2023 and final approval at the Company's annual shareholders' meeting held on March 28, 2023.

2.22 Dividend distribution

Dividend distribution to the Group's shareholders is recognized as a liability in the financial statements in the period in which the dividends are approved at the annual meeting of shareholders.

3. Critical accounting estimates and assumptions

The Group makes estimates and assumptions concerning the future. The estimates and assumptions are continuously evaluated with consideration to factors such as events reasonably predictable in the foreseeable future within the present circumstance according to historical experience. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the Book values of assets and liabilities within the next financial year are addressed below.

3.1 Income taxes

The Group is subject to income taxes based on tax laws and interpretations of tax authorities. There are many transactions and calculations for which the ultimate tax determination is uncertain.

In addition, The Group shall pay an additional surtax where the use of corporate earnings on qualifying investments, wage increase and dividend payments fall below a certain portion of its taxable income. As the Group considers the surtax on its undistributed earnings when computing its corporate income tax, the Group's income tax may change depending on changes in investment, wage growth, or dividend payouts.

3.2 Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period.

3.3 Share-based payments

The Group measures the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date at which they are granted. Estimating fair value for share-based payment transactions requires determination of the most appropriate valuation model, which depends on the terms and conditions of the grant. This estimate also requires determination of the most appropriate inputs to the valuation model including the expected life of the stock option, volatility and dividend yield and making assumptions about them. The assumptions and models used for estimating fair value for share-based payment transactions are disclosed in Note 25.

3.4 Impairment of development costs

In order to determine whether an impairment has arisen, the development costs is reviewed based on the accounting policy of the Group to determine whether there are external indications and internal indications that the asset is impaired. The Group are expected to make a best estimate of the future recoverable amount based on important market conditions as of the end of the reporting period.

3.5 Estimating variable consideration for transaction prices

The Group estimates variable consideration at the post-sale transaction price related to the contract with the customer. The Group revises the estimate of variable consideration for the expected selling price every quarter, and the contract assets are also adjusted. The expected unit price is sensitive to the Group's past unit price trend and changes in the environment and may not reflect the customer's actual selling price and settlement amount in the future. As of December 31, 2022 the projected contract asset for unit price settlement is ₩ 28,819 million (2021: none), and the projected contract liability is ₩ 67,216 million (2021: ₩ 26,229 million)

3.6 Allowance for Inventories

Inventories are valued at lower of cost or net realizable value. Estimates of net realizable value are based on the most reliable evidence available at the time the estimates are made, of the amount the inventories are expected to be realized for. The Group periodically assesses future demand that could potentially give rise to material fluctuations to the allowance and recognizes an allowance for excess and obsolete inventories and decreases in market value. The valuation loss of inventories is recognized in cost of sales.

3.7 Allowance for Doubtful Debts

For trade receivable and contract assets, the Group recognizes allowance for doubtful debts by using a simplified approach. For individual receivables, where indications of impairment exist, allowance for doubtful debts are recognized after taking into consideration reasonable estimates.

4. Financial risk management

4.1 Financial risk factors

The Group's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. The Group's risk management policies focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Group's financial performance.

Risk management is carried out by the Company's finance and accounting department which establishes management policies identifies, evaluates and hedges financial risks.

4.1.1 Market risk

4.1.1.1 Foreign exchange risk

The Group is exposed to foreign exchange risks arising from the usual transactions. Most of this risk arises from purchases traded in currencies other than the functional currency. Major currencies which the Group is exposed to foreign exchange risk are the US dollar, Euro and GBP.

The Group manages foreign exchange risk in advance to minimize currency risk. Basic strategy for foreign exchange management is to reduce volatility of gain (loss). Since the risk mostly arises from payments denominated in foreign currency for imports, finance and accounting department reduces currency risk by Lead and Lag method of monitoring foreign exchange market with reference to foreign exchange market trends issued by authorities.

As of December 31, 2022, if the foreign exchange rate of the Korean won fluctuated by 12% (December 31, 2021: 5%) while other variables were fixed, the effects on income before tax would be as follows (Korean won in thousands):

	2022		2021	
	12% increase	12% decrease	5% increase	5% decrease
USD	₩ 11,129,513	₩ (11,129,513)	₩ 9,670,005	₩ (9,670,005)
EUR	(1,875,324)	1,875,324	312,526	(312,526)
GBP	(106,932)	106,932	(23,563)	23,563
JPY	(99,211)	99,211	(14,887)	14,887
CHF	(118,529)	118,529	(65,243)	65,243
	₩ 8,929,517	₩ (8,929,517)	₩ 9,878,838	₩ (9,878,838)

4.1.1.2 Price risk

The Group is exposed to equity securities price risk because of investments held by the Group and classified on the consolidated statement of financial position as financial assets at fair value through other comprehensive income. The Group is not exposed to commodity price risk. To manage its price risk arising from investments in equity securities, the Group diversifies its portfolio. The portfolio is diversified in accordance with the policies set by the Group.

Stocks owned by the Group entity are traded in the Korea Exchange, and stock price is included in KODAQ index.

The effect on the equity and after-tax profit by price fluctuations of listed equities index and unlisted stock as of December 31, 2022 and 2021 are as follows (Korean won in thousands). The analysis is based on the assumption that the price of listed stock held by the Group had increased/decreased by 23% (2021: 9%) with all other variables held constant and all the Group's equity instruments moved according to the historical correlation with the index, but the unlisted equity instruments that have significantly deviating estimated cash flows, and various estimates' occurrence probability cannot be reliably evaluated. Thus, the unlisted equity instruments are excluded from the analysis.

	Impact on post-tax profit			
	2022		2021	
	23% increase	23% decrease	9% increase	9% decrease
KOSDAQ	₩ -	₩ -	₩ -	₩ -

	Effect on the equity			
	2022		2021	
	23% increase	23% decrease	9% increase	9% decrease
KOSDAQ	₩ 2,758,682	₩ (2,758,682)	₩ 1,834,904	₩ (1,834,904)

4.1.1.3 Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rate. The interest rate risk mainly arises through floating rate deposits and borrowings. The objective of interest rate risk management lies in maximizing corporate value by minimizing uncertainty caused by fluctuations in interest rates and minimizing net interest expense.

Based on the simulations performed, the impact on the profit of 120 bp (2021: 30bps) shift would be as follows (Korean won in thousands):

	Impact on post-tax profit			
	2022		2021	
	120bp increase	120bp decrease	30bp increase	30bp decrease
Interest expenses	₩ (6,347,275)	₩ 6,347,275	₩ (1,385,916)	₩ 1,385,916

	Effect on the equity			
	2022		2021	
	120bp increase	120bp decrease	30bp increase	30bp decrease
Interest expenses	₩ (6,347,275)	₩ 6,347,275	₩ (1,385,916)	₩ 1,385,916

4.1.2 Credit risk

Credit risk arises when the customer or counter party to the transaction fails to perform contractual obligations in transactions and investment. Credit risk arises from cash and cash equivalents, derivative financial instruments and deposits with banks and financial institutions, as well as credit exposures to wholesale and retail customers, including outstanding receivables and committed transactions.

The Group has deposited its cash and cash equivalents in several financial institutions such as Korea Development Bank and Woori Bank. The Group maintains business relationship with those financial institutions with high credit ratings evaluated by independent credit rating institutions and accordingly, credit risks associated with these financial institutions are limited. Customers with high credit that are expected to have stable and long-term relationship are selected and entered into exclusive distributorship rights.

The maximum exposure to credit risk as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Cash and cash equivalents (*)	₩ 551,181,714	₩ 1,188,321,292
Short-term financial assets	43,277,100	31,575,000
Trade receivables	1,684,778,016	1,101,089,342
Other receivables	123,353,856	75,784,396
Financial guarantee contracts	77,588,474	150,589,273

(*) The difference between cash and cash equivalents on consolidated statements of financial position is cash on hand.

4.1.3 Liquidity risk

Maintaining optimal liquidity is very important due to the characteristic of the business which requires significant investment on product development. The Group monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Group does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. Such forecasting takes into consideration the Group's debt financing plans, covenant compliance, compliance with internal statement of financial position ratio targets and currency, if applicable external regulatory or legal requirements.

Finance and accounting department invests surplus cash in interest bearing current accounts, time deposits, money market deposits and marketable securities, choosing instruments with appropriate maturities or sufficient liquidity to provide sufficient head-room as determined by the above mentioned forecasts.

The Group secures credit lines for trade finance and bank overdraft. In case of significant facility investments, liquidity risk is reduced as maturities are matched by using internally held funds and long-term borrowings.

4.1.3 Liquidity risk (cont'd)

The analysis of the Group's liquidity risk as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022				
	6 months and less	Over 6 months ~ 1 year	Over 1 ~ 5 years	Over 5 years	Total
Borrowings	₩ 305,649,024	₩ 353,402,800	₩ 156,775,727	₩ -	₩ 815,827,551
Trade payables	50,270,474	-	-	-	50,270,474
Other payables	320,244,362	-	3,405,141	4,170,696	327,820,199
Lease Liabilities	1,469,381	1,302,647	3,014,174	-	5,786,202
Financial guarantee contracts	77,588,474	-	-	-	77,588,474
Financial liabilities at fair value through profit or loss	21,991,604	5,156,594	-	-	27,148,198

	2021				
	6 months and less	Over 6 months ~ 1 year	Over 1 ~ 5 years	Over 5 years	Total
Borrowings	₩ 246,508,126	₩ 332,055,813	₩ 178,454,144	₩ -	₩ 757,018,083
Trade payables	79,025,633	1,697,447	-	-	80,723,080
Other payables	224,638,822	3,780,157	13,023,078	961,669	242,403,726
Lease Liabilities	1,608,688	1,468,490	4,575,064	-	7,652,242
Financial guarantee contracts	150,589,273	-	-	-	150,589,273

4.2 Capital risk management

The Group's capital objectives are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, make borrowings, issue new shares or sell assets to increase and reduce debt.

Consistent with others in the industry, the Group monitors capital on the basis of the gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is calculated as total borrowings less cash and cash equivalents. Total capital is calculated as 'equity' as shown in the consolidated statement of financial position plus net debt.

Gearing ratios as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Total borrowings (a)	₩ 786,715,771	₩ 736,971,511
Less: cash and cash equivalents (b)	(551,186,670)	(1,188,325,852)
Net debt (c)=(a) -(b)	235,529,101	(451,354,341)
Total liabilities (d)	1,617,448,041	1,623,747,846
Total equity(e)	4,274,204,270	4,050,374,687
Total capital (f)=(c) +(e)	4,509,733,371	3,599,020,346
Gearing ratio (c)/(f)	5.22%	(12.54%)
Debt to equity ratio (d)/(e)	37.84%	40.09%

5. Fair value

5.1 Fair value of financial instruments by category

Book value and fair value of financial instruments by category as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022		2021	
	Book value	Fair value	Book value	Fair value
Financial assets				
Cash and cash equivalents	₩ 551,186,670	₩ 551,186,670	₩ 1,188,325,852	₩ 1,188,325,852
Short-term financial instruments	43,277,100	43,277,100	31,575,000	31,575,000
Financial assets at fair value through other comprehensive income	20,451,288	20,451,288	14,971,689	14,971,689
Financial assets at fair value through profit or loss	8,822,815	8,822,815	8,760,978	8,760,978
Trade receivables	1,684,778,016	1,684,778,016	1,101,089,342	1,101,089,342
Other receivables	123,353,856	123,210,747	75,784,396	75,755,147
Long-term financial instruments	-	-	702,100	702,100
	₩ 2,431,869,745	₩ 2,431,726,636	₩ 2,421,209,357	₩ 2,421,180,108
Financial liabilities				
Trade payables	₩ 50,270,474	₩ 50,270,474	₩ 80,723,080	₩ 80,723,080
Borrowings	786,715,771	784,124,091	736,971,511	736,835,155
Lease liabilities	5,616,153	5,616,153	7,384,189	7,384,189
Financial liabilities at fair value through profit or loss	27,148,198	27,148,198	-	-
Other payables	327,820,199	327,820,199	242,403,726	242,403,726
	₩ 1,197,570,795	₩ 1,194,979,115	₩ 1,067,482,506	₩ 1,067,346,150

5.2 Fair value hierarchy

Assets measured at fair value or for which the fair value is disclosed are categorized within the fair value hierarchy, and the defined levels are as follows:

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices)
- Level 3: Inputs for the assets or liabilities that are not based on observable market data (that is, unobservable inputs)

5.2 Fair value hierarchy (cont'd)

Fair value hierarchy classifications of the financial assets and financial liabilities that are measured at fair value or its fair value is disclosed as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			
	Level 1	Level 2	Level 3	Total
Financial assets and liabilities measured at fair value:				
Financial assets at fair value through other comprehensive income	₩ 13,277,431	₩ -	₩ 7,173,857	₩ 20,451,288
Financial assets at fair value through profit or loss	-	-	8,822,815	8,822,815
Financial liabilities at fair value through profit or loss	-	27,148,198	-	27,148,198
Financial assets and liabilities not measured at fair value:				
Borrowings	-	784,124,091	-	784,124,091

	2021			
	Level 1	Level 2	Level 3	Total
Financial assets and liabilities measured at fair value:				
Financial assets at fair value through other comprehensive income	₩ 13,081,695	₩ -	₩ 1,889,994	₩ 14,971,689
Financial assets at fair value through profit or loss	-	-	8,760,978	8,760,978
Financial assets and liabilities not measured at fair value:				
Borrowings	-	736,835,155	-	736,835,155

6. Financial instruments by category

6.1 Book values of financial instruments by category

Categorizations of financial instruments as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

		2022					
	Financial assets at fair value through profit or loss		Financial assets at fair value through other comprehensive income	Financial assets at amortized cost	Total		
Current assets							
Cash and cash equivalents	₩	-	₩	-	₩ 551,186,670	₩ 551,186,670	
Short-term financial instruments		-		-	43,277,100	43,277,100	
Trade receivables		-		-	1,621,890,148	1,621,890,148	
Other receivables		-		-	32,200,135	32,200,135	
	₩	-	₩	-	₩ 2,248,554,053	₩ 2,248,554,053	
Non-current assets							
Long-term financial instruments	₩	8,822,815	₩	20,451,288	₩	-	₩ 29,274,103
Trade receivables		-		-	62,887,868	62,887,868	
Other receivables		-		-	91,153,721	91,153,721	
	₩	8,822,815	₩	20,451,288	₩	154,041,589	₩ 183,315,692
	₩	8,822,815	₩	20,451,288	₩	2,402,595,642	₩ 2,431,869,745

		2022			
	Financial liabilities at fair value through profit or loss		Financial liabilities at amortized cost	Total	
Current liabilities					
Short-term financial liabilities	₩	27,148,198	₩	635,135,845	₩ 662,284,043
Lease liabilities		-		2,728,230	2,728,230
Trade payables		-		50,270,474	50,270,474
Other payables		-		320,244,362	320,244,362
	₩	27,148,198	₩	1,008,378,911	₩ 1,035,527,109
Non-current liabilities					
Long-term financial liabilities	₩	-	₩	151,579,926	₩ 151,579,926
Lease liabilities		-		2,887,923	2,887,923
Other payables		-		7,575,837	7,575,837
	₩	-	₩	162,043,686	₩ 162,043,686
	₩	27,148,198	₩	1,170,422,597	₩ 1,197,570,795

6.1 Book values of financial instruments by category (cont'd)

		2021				
		Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Financial assets at amortized cost	Total	
Current assets						
Cash and cash equivalents	₩	-	₩	-	₩ 1,188,325,852	₩ 1,188,325,852
Short-term financial instruments		-		-	31,575,000	31,575,000
Trade receivables		-		-	1,101,089,342	1,101,089,342
Other receivables		-		-	63,293,766	63,293,766
	₩	-	₩	-	₩ 2,384,283,960	₩ 2,384,283,960
Non-current assets						
Long-term financial instruments	₩	8,760,978	₩	14,971,689	₩ 702,100	₩ 24,434,767
Other receivables		-		-	12,490,630	12,490,630
	₩	8,760,978	₩	14,971,689	₩ 13,192,730	₩ 36,925,397
	₩	8,760,978	₩	14,971,689	₩ 2,397,476,690	₩ 2,421,209,357

		Financial liabilities at amortized cost	Total
Current liabilities			
Short-term financial liabilities	₩	566,588,374	₩ 566,588,374
Lease liabilities		3,009,932	3,009,932
Trade payables		80,723,080	80,723,080
Other payables		228,418,979	228,418,979
	₩	878,740,365	₩ 878,740,365
Non-current liabilities			
Long-term financial liabilities	₩	170,383,137	₩ 170,383,137
Lease liabilities		4,374,257	4,374,257
Other payables		13,984,747	13,984,747
	₩	188,742,141	₩ 188,742,141
	₩	1,067,482,506	₩ 1,067,482,506

6.2 Gain or loss by category of financial instruments

Gain or loss of financial instruments by category for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022		
	Gain (loss) on valuation	Gain (loss) on valuation of other comprehensive income (loss)	Interest income (expenses) (*)
Financial assets			
Financial assets at fair value through profit or loss	₩ (870,272)	₩ -	₩ 80,005
Financial assets at fair value through other comprehensive income	-	191,451	-
Financial assets at amortized cost	-	-	14,138,300
	₩ (870,272)	₩ 191,451	₩ 14,218,305
Financial liabilities			
Financial liabilities at fair value through profit or loss	(27,148,198)	-	-
Financial liabilities at amortized cost	-	-	(7,507,535)
	₩ (27,148,198)	₩ -	₩ (7,507,535)
	₩ (28,018,470)	₩ 191,451	₩ 6,710,770

	2022		
	Dividends income	Gain (loss) on disposal	Impairment
Financial assets			
Financial assets at fair value through profit or loss	₩ 227,506	₩ 1,707,930	₩ -
Financial assets at fair value through other comprehensive income	5,141	-	-
Financial assets at amortized cost	-	-	(7,511,291)
	₩ 232,647	₩ 1,707,930	₩ (7,511,291)
Financial liabilities			
Financial liabilities at amortized cost	-	-	-
	₩ -	₩ -	₩ -
	₩ 232,647	₩ 1,707,930	₩ (7,511,291)

6.2 Gain or loss by category of financial instruments (cont'd)

	2021		
	Gain (loss) on valuation	Gain (loss) on valuation of other comprehensive income (loss)	Interest income (expenses) (*)
Financial assets			
Financial assets at fair value through profit or loss	₩ 1,034,319	₩ -	₩ 2,339
Financial assets at fair value through other comprehensive income	-	(8,077,304)	-
Financial assets at amortized cost	-	-	4,393,816
	₩ 1,034,319	₩ (8,077,304)	₩ 4,396,155
Financial liabilities			
Financial liabilities at amortized cost	-	-	(8,231,076)
	₩ -	₩ -	₩ (8,231,076)
	₩ 1,034,319	₩ (8,077,304)	₩ (3,834,921)

	2021		
	Dividends income	Gain (loss) on disposal	Impairment
Financial assets			
Financial assets at fair value through profit or loss	₩ 2,232,370	₩ 8,963,947	₩ -
Financial assets at fair value through other comprehensive income	6,612	-	-
Financial assets at amortized cost	-	-	218,823
	₩ 2,238,982	₩ 8,963,947	₩ 218,823
Financial liabilities			
Financial liabilities at amortized cost	-	-	-
	₩ -	₩ -	₩ -
	₩ 2,238,982	₩ 8,963,947	₩ 218,823

(*) Celltrion USA, Inc. classified as profit or loss from discontinued operation in the current year, interest income and expense not included (See Note 38).

7. Cash and cash equivalents

Details of cash and cash equivalents as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Cash on hand	₩ 4,956	₩ 4,560
Bank deposits and others	551,181,714	1,188,321,292
	₩ 551,186,670	₩ 1,188,325,852

8. Financial assets

Details of financial assets as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	<u>2022</u>	<u>2021</u>
Current assets		
Short-term financial instruments (*)	43,277,100	31,575,000
Non-current assets		
Long-term financial instruments	-	702,100
Financial assets at fair value through other comprehensive income	20,451,288	14,971,689
Financial assets at fair value through profit or loss	8,822,815	8,760,978
	<u>₩ 72,551,203</u>	<u>₩ 56,009,767</u>

(*) As of December 31, 2022, the Group has provided Korea Securities Finance Corporation a deposit of ₩20,575 million (December 31, 2021: ₩13,516 million) as collateral related to the Employee Stock Ownership Association. The use of such deposit is restricted (See Note 34(2)).

Financial assets at fair value through other comprehensive income as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	<u>2022</u>	<u>2021</u>
Marketable securities	₩ 13,277,431	₩ 13,081,695
Non-marketable securities	7,173,857	1,889,994
	<u>₩ 20,451,288</u>	<u>₩ 14,971,689</u>

9. Trade and other receivables

Details of trade receivables as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022		
	Trade receivables	Allowance for doubtful accounts	Book value
Current trade receivables	₩ 1,623,423,656	₩ (1,533,508)	₩ 1,621,890,148
Non-current trade receivables	70,526,442	(7,638,574)	62,887,868
	<u>₩ 1,693,950,098</u>	<u>₩ (9,172,082)</u>	<u>₩ 1,684,778,016</u>

	2021		
	Trade receivables	Allowance for doubtful accounts	Book value
Current trade receivables	₩ 1,102,448,186	₩ (1,358,844)	₩ 1,101,089,342
Non-current trade receivables	300,261	(300,261)	-
	<u>₩ 1,102,748,447</u>	<u>₩ (1,659,105)</u>	<u>₩ 1,101,089,342</u>

Details of other receivables as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	Current			
	Account receivables	Loans	Accrued income	Sub-total
2022				
Costs	₩ 10,043,891	₩ 23,622,803	₩ 3,641,918	₩ 37,308,612
Present value discount	-	-	-	-
Allowance for doubtful accounts	(536,861)	(4,571,616)	-	(5,108,477)
Book value	<u>₩ 9,507,030</u>	<u>₩ 19,051,187</u>	<u>₩ 3,641,918</u>	<u>₩ 32,200,135</u>

	Non-current					
	Account receivables	Loans	Deposits	Accrued income	Sub-total	Total
2022						
Costs	₩ 79,535,906	₩ 535,816	₩ 12,393,015	₩ 80,005	₩ 92,544,742	₩ 129,853,354
Present value discount	-	-	(838,355)	-	(838,355)	(838,355)
Allowance for doubtful accounts	-	(405,142)	(147,524)	-	(552,666)	(5,661,143)
Book value	<u>₩ 79,535,906</u>	<u>₩ 130,674</u>	<u>₩ 11,407,136</u>	<u>₩ 80,005</u>	<u>₩ 91,153,721</u>	<u>₩ 123,353,856</u>

9. Trade and other receivables (cont'd)

	Current			
	Account receivables	Loans	Accrued income	Sub-total
2021				
Costs	₩ 20,833,183	₩ 47,041,040	₩ 529,715	₩ 68,403,938
Present value discount	-	-	-	-
Allowance for doubtful accounts	(538,556)	(4,571,616)	-	(5,110,172)
Book value	₩ 20,294,627	₩ 42,469,424	₩ 529,715	₩ 63,293,766

	Non-current					Total
	Account receivables	Loans	Deposits	Accrued income	Sub-total	
2021						
Costs	₩ -	₩ 405,142	₩ 13,052,345	₩ 2,339	₩ 13,459,826	₩ 81,863,764
Present value discount	-	-	(416,530)	-	(416,530)	(416,530)
Allowance for doubtful accounts	-	(405,142)	(147,524)	-	(552,666)	(5,662,838)
Book value	₩ -	₩ -	₩ 12,488,291	₩ 2,339	₩ 12,490,630	₩ 75,784,396

Changes in the allowance for doubtful accounts for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Beginning	₩ 7,321,943	₩ 7,540,767
Increase(reversal)	7,511,282	(218,824)
Ending	₩ 14,833,225	₩ 7,321,943

The Group does not hold any collateral for trade and other receivables as of December 31, 2022.

10. Inventories

Details of inventories as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			2021		
	Acquisition costs	Allowance for valuation losses	Book value	Acquisition costs	Allowance for valuation losses	Book value
Finished product	₩ 319,692,142	₩ (70,890,381)	₩ 248,801,761	₩ 315,929,768	₩ (53,367,385)	₩ 262,562,383
Work in process	48,307,518	(4,041,468)	44,266,050	39,703,856	(2,578,205)	37,125,651
Raw materials	258,803,021	(3,183,128)	255,619,893	216,305,065	(4,107,771)	212,197,294
Sub-materials	17,146,958	(1,518,618)	15,628,340	14,649,804	(1,177,970)	13,471,834
Merchandise	45,414,463	(22,671,572)	22,742,891	42,614,909	(4,891,515)	37,723,394
Supplies	19,418,720	(1,636,207)	17,782,513	13,680,298	(902,476)	12,777,822
Others	11,510,904	-	11,510,904	2,198,476	-	2,198,476
	₩ 720,293,726	₩ (103,941,374)	₩ 616,352,352	₩ 645,082,176	₩ (67,025,322)	₩ 578,056,854

The cost of inventories recognized as expense and included in cost of sales amounted to ₩ 1,106,742 million (2021: ₩ 627,673 million). Loss on valuation of inventories amounting to ₩ 67,330 million (2021: ₩ 45,922 million) were recognized during the year ended December 31, 2022.

11. Investments in associates

Details of investments in associates of the Group as of December 31, 2022 are as follows:

Associates	Equity interest	Country of domicile	Year-end
2014 Growth Ladder-IMM Venture Fund	20.00%	Republic of Korea	December, 31
Mirae Asset Celltrion New Growth Investment Association No.1	50.00%	Republic of Korea	December, 31
CTB-Biomedics	50.00%	Republic of Korea	December, 31
Iksuda Therapeutics Limited (*1)	16.33%	United Kingdom	December, 31
Mirae Asset Celltrion Bio Ecosystem Growth Fund (*2)	38.46%	Republic of Korea	December, 31
Aju-Solasta Life Science 4.0 Fund (*3)	44.25%	United States	December, 31

(*1) The entity was acquired in 2021 and added to the Group's associates as the Group may exert significant influence upon acquisition (See Note 34(10)).

(*2) The entity was acquired in 2021 and added to the Group's associates in the current year (See Notes 34(5), 35(6)).

(*3) The entity was newly acquired in the current year and added to the Group's associates in the current year (See Notes 34(5), 35(6)).

11. Investments in associates (cont'd)

Details of changes of investments in associates under the equity method for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

Associates	2022					
	January 1	Acquisitions	Disposals	Share of profit or loss	Changes of capital in equity method	December 31
2014 Growth Ladder-IMM Venture Fund	₩ 801,213	₩ -	₩ (51,200)	₩ (81,846)	₩ -	₩ 668,167
Mirae Asset Celltrion New Growth Investment Association No.1	52,299,740	4,000,000	(8,500,000)	11,556,232	-	59,355,972
CTB-Biomedics	70,185	-	-	(6,173)	-	64,012
Iksuda Therapeutics Limited	6,673,615	-	140,849	(3,162,081)	1,047,968	4,700,351
Mirae Asset Celltrion Bio Ecosystem Growth Fund	4,996,708	7,500,000	-	(493,838)	-	12,002,870
Aju-Solasta Life Science 4.0 Fund	-	12,500,000	-	(756,243)	-	11,743,757
	<u>₩ 64,841,461</u>	<u>₩ 24,000,000</u>	<u>₩ (8,410,351)</u>	<u>₩ 7,056,051</u>	<u>₩ 1,047,968</u>	<u>₩ 88,535,129</u>
Associates	2021					
	January 1	Acquisitions	Disposals	Share of profit or loss	Changes of capital in equity method	December 31
Boston Incubation Investment Association	₩ 82,398	₩ -	₩ (79,368)	₩ (3,030)	₩ -	₩ -
2014 Growth Ladder-IMM Venture Fund	1,766,569	-	(832,000)	(17,400)	(115,956)	801,213
Mirae Asset Celltrion Investment Association No.1	46,101,119	18,750,000	(11,000,000)	(1,551,379)	-	52,299,740
CTB-Biomedics	76,488	-	-	(6,303)	-	70,185
Iksuda Therapeutics Limited	-	9,031,863	(199,659)	(2,004,210)	(154,379)	6,673,615
Mirae Asset Celltrion Bio Ecosystem Growth Fund	-	5,000,000	-	(3,292)	-	4,996,708
	<u>₩ 48,026,574</u>	<u>₩ 32,781,863</u>	<u>₩ (12,111,027)</u>	<u>₩ (3,585,614)</u>	<u>₩ (270,335)</u>	<u>₩ 64,841,461</u>

11. Investments in associates (cont'd)

Summarized financial information of associates as of December 31, 2022 and 2021 and for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

Associate	2022			
	Current assets	Non-current assets	Current liabilities	Non-current liabilities
2014 Growth Ladder-IMM Venture Fund	₩ 7,926	₩ 3,333,123	₩ 214	₩ -
Mirae Asset Celltrion New Growth Investment Association No.1	6,208,993	112,751,110	248,158	-
CTB-Biomedics	127,139	1,132	248	-
Iksuda Therapeutics Limited	16,083,741	2,377,505	3,531,836	22,697,542
Mirae Asset Celltrion Bio Ecosystem Growth Fund	17,281,612	14,318,386	392,536	-
Aju-Solasta Life Science 4.0 Fund	22,692,289	5,069,199	1,220,596	-
	₩ 62,401,700	₩ 137,850,455	₩ 5,393,588	₩ 22,697,542

Associate	2022		
	Revenue	Profit (loss) for the year	Total comprehensive income (loss) for the year
2014 Growth Ladder-IMM Venture Fund	₩ 360	₩ (409,229)	₩ (409,229)
Mirae Asset Celltrion New Growth Investment Association No.1	36,343,536	23,112,464	23,112,464
CTB-Biomedics	-	(12,345)	(12,345)
Iksuda Therapeutics Limited	-	(18,154,608)	(17,853,196)
Mirae Asset Celltrion Bio Ecosystem Growth Fund	284,849	(1,283,978)	(1,283,978)
Aju-Solasta Life Science 4.0 Fund	107,262	(1,709,108)	(1,709,108)
	₩ 36,736,007	₩ 1,543,196	₩ 1,844,608

Associate	2021			
	Current assets	Non-current assets	Current liabilities	Non-current liabilities
Boston Incubation Investment Association	₩ -	₩ -	₩ -	₩ -
2014 Growth Ladder-IMM Venture Fund	172,933	3,833,130	-	-
Mirae Asset Celltrion New Growth Investment Association No.1	13,351,333	91,497,040	248,893	-
CTB-Biomedics	138,231	2,137	-	-
Iksuda Therapeutics Limited	18,630,485	1,839,533	2,023,227	14,483,645
Mirae Asset Celltrion Bio Ecosystem Growth Fund	12,991,440	-	-	-
	₩ 45,284,422	₩ 97,171,840	₩ 2,272,120	₩ 14,483,645

Associate	2021		
	Revenue	Profit (loss) for the year	Total comprehensive income (loss) for the year
Boston Incubation Investment Association	₩ (391,012)	₩ (12,121)	₩ (12,121)
2014 Growth Ladder-IMM Venture Fund	2,833,170	(87,001)	(666,783)
Mirae Asset Celltrion New Growth Investment Association No.1	14,162,278	(3,102,757)	(3,102,757)
CTB-Biomedics	-	(12,605)	(12,605)
Iksuda Therapeutics Limited	-	(16,351,756)	(17,259,360)
Mirae Asset Celltrion Bio Ecosystem Growth Fund	-	(8,560)	(8,560)
	₩ 16,604,436	₩ (19,574,800)	₩ (21,062,186)

11. Investments in associates (cont'd)

Details of adjustments from financial information of associates to the book value of investments in associates for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

Associate	2022			
	Net assets	Share of net assets	Goodwill	Carrying Amount
2014 Growth Ladder-IMM Venture Fund	₩ 3,340,835	₩ 668,167	₩ -	₩ 668,167
Mirae Asset Celltrion New Growth Investment Association No.1	118,711,945	59,355,972	-	59,355,972
CTB-Biomedics	128,023	64,012	-	64,012
Iksuda Therapeutics Limited	(7,768,132)	(1,268,220)	5,968,571	4,700,351
Mirae Asset Celltrion Bio Ecosystem Growth Fund	31,207,462	12,002,870	-	12,002,870
Aju-Solasta Life Science 4.0 Fund	26,540,892	11,743,757	-	11,743,757
	₩ 172,161,025	₩ 82,566,558	₩ 5,968,571	₩ 88,535,129

Associate	2021			
	Net assets	Share of net assets	Goodwill	Carrying Amount
Boston Incubation Investment Association	₩ -	₩ -	₩ -	₩ -
2014 Growth Ladder-IMM Venture Fund	4,006,063	801,213	-	801,213
Mirae Asset Celltrion New Growth Investment Association No.1	104,599,480	52,299,740	-	52,299,740
CTB-Biomedics	140,368	70,185	-	70,185
Iksuda Therapeutics Limited	3,963,146	705,044	5,968,571	6,673,615
Mirae Asset Celltrion Bio Ecosystem Growth Fund	12,991,440	4,996,708	-	4,996,708
	₩ 125,700,497	₩ 58,872,890	₩ 5,968,571	₩ 64,841,461

12. Property, plant and equipment

Changes in the Book values of property, plant and equipment for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022							Accumulated depreciation
	January 1	Acquisitions	Transfers	Disposals	Depreciation	Others	December 31	
Land	₩ 301,819,130	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 301,819,130	₩ -
Buildings	267,882,414	342,000	99,000	861,813	10,435,115	-	257,026,486	(100,421,478)
Buildings-Right-of-use Assets (*)	5,639,448	964,901	-	151,564	2,336,296	8,238	4,124,727	(5,072,250)
Facilities	158,324,815	435,381	-	330	25,118,156	-	133,641,710	(273,158,829)
Structures	8,492,738	579,110	-	-	769,058	(730)	8,302,060	(7,391,404)
Machinery	142,892,032	10,593,224	2,253,537	3,705	24,054,448	-	131,680,640	(124,322,777)
Vehicles	286,529	38,399	-	4	98,865	-	226,059	(577,063)
Vehicles-Right-of-use assets(*)	1,462,368	629,330	-	205,527	648,560	1,862	1,239,473	(1,336,748)
Furniture	12,344,516	2,856,204	231,285	47,287	3,903,823	(878)	11,480,017	(24,509,433)
Furniture-Right-of-use assets(*)	2,126	-	-	1,105	1,106	85	-	-
Construction-in-progress	51,265,648	109,006,310	(2,774,605)	-	-	-	157,497,353	-
	₩ 950,411,764	₩ 125,444,859	₩ (190,783)	₩ 1,271,335	₩ 67,365,427	₩ 8,577	₩ 1,007,037,655	₩ (536,789,982)

12. Property, plant and equipment (cont'd)

	2021							Accumulated depreciation
	January 1	Acquisitions	Transfers	Disposals	Depreciation	Others	December 31	
Land	₩ 301,762,599	₩ -	₩ 56,531	₩ -	₩ -	₩ -	₩ 301,819,130	₩ -
Buildings	277,421,165	1,104,664	-	188,763	10,454,652	-	267,882,414	(90,273,853)
Buildings- Right-of-use Assets (*)	3,844,547	4,027,498	-	85,163	2,180,953	33,519	5,639,448	(4,267,281)
Facilities	182,202,120	1,824,897	385,358	31,537	26,056,023	-	158,324,815	(248,050,080)
Structures	9,241,175	9,200	-	-	757,637	-	8,492,738	(6,622,442)
Machinery	113,569,612	18,545,227	31,699,838	70,701	20,851,944	-	142,892,032	(100,919,325)
Vehicles	307,085	76,984	-	-	97,540	-	286,529	(494,684)
Vehicles- Right-of-use assets(*)	1,475,836	859,725	-	218,007	655,186	-	1,462,368	(1,117,905)
Furniture	11,588,146	4,169,234	82,430	7,781	3,495,530	8,017	12,344,516	(21,085,805)
Furniture- Right-of-use assets(*)	5,854	-	-	-	4,105	377	2,126	(10,631)
Construction-in- progress	44,862,121	39,178,034	(32,774,507)	-	-	-	51,265,648	-
	₩ 946,280,260	₩ 69,795,463	₩ (550,350)	₩ 601,952	₩ 64,553,570	₩ 41,913	₩ 950,411,764	₩ (472,842,006)

(*) The Group applied the recognition exemption for short-term leases and low-value asset leases. During the year ended December 31, 2022, lease payment of ₩ 705 million (2021: ₩ 653 million) from short-term lease, and lease payment of ₩ 285 million (2021: ₩ 296 million) from low-value asset leases were recognized as expenses. During the year ended December 31, 2022, cash expenditure related to short-term leases is ₩ 699 million (2021: ₩ 656 million), and cash expenditure related to low value asset leases is ₩ 285 million (2021: ₩ 307 million). In addition, regarding sublease of right-of-use asset of the above lessee, the lease revenue recognized in the current year is ₩ 11 million (previous period: none).

Depreciation of property, plant and equipment for the years ended December 31, 2022 and 2021 are allocated as follows (Korean won in thousands):

	2022	2021
Cost of sales	₩ 57,025,928	₩ 55,383,567
Selling and administrative expenses (*)	7,697,661	6,568,895
Development costs	2,641,838	2,601,108
	₩ 67,365,427	₩ 64,553,570

(*) Includes ₩ 64 million (previous period: ₩ 117 million) related to revenue from discontinued operation (See Note 38).

The Book values of property, plant and equipment that are provided as collateral as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

Collateral (*)	2022	2021
Land	₩ 294,401,553	₩ 294,401,553
Buildings	245,940,506	255,386,039
Facilities	123,007,695	146,872,059
Machinery	72,100,207	80,030,663

(*) Property, plant and equipment are provided as collateral for borrowings and payment guarantees.

Details of borrowings and payment guarantees for which property, plant and equipment is provided as collateral as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

12. Property, plant and equipment (cont'd)

Creditor	2022	
	Borrowing amount	Collateral value
Shinhan Bank	₩ 230,096,521	₩ 279,784,000
Woori Bank	20,000,000	47,300,000
Korea Development Bank	227,000,000	277,000,000
Korea EXIM Bank	48,575,710	89,300,000

Creditor	2021	
	Borrowing amount	Collateral value
Shinhan Bank	₩ 209,978,708	₩ 284,184,000
Woori Bank	30,000,000	59,300,000
Korea Development Bank	224,691,636	331,000,000
Nonghyup Bank	1,875,000	18,000,000
Korea EXIM Bank	12,933,280	89,300,000

As of December 31, 2022, the Group carries comprehensive property insurance at Hyundai Marine & Fire Insurance Group for tangible assets. Insurance benefits of tangible assets provided as collateral for borrowings and others include ₩171,884 million in Shinhan Bank (December 31, 2021: ₩173,893 million), ₩284,000 million in Korea Development Bank (December 31, 2021: ₩284,000 million), ₩12,000 million in Woori Bank(December 31, 2021: ₩11,000 million) as the establishment of the right of pledge. Nonghyup Bank has ₩18,000 million of the previous period as the establishment of the right of pledge.

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13. Intangible assets

Changes in the Book values of intangible assets for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

2022											
	January 1	Internally generated	Acquisitions	Transfers	Disposals (*)	Impairment loss	Amortization	Changes of foreign exchange rate	December 31	Accumulated amortization	Accumulated impairment losses
Goodwill	₩ 33,010,683	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 2,147,976	₩ 35,158,659	₩ -	₩ (2,013,066)
Software	12,179,146	-	732,817	190,783	-	-	4,556,407	-	8,546,339	(21,114,351)	-
Intellectual property	2,082,827	-	-	-	-	-	2,082,826	-	1	(38,999,999)	-
Development costs	1,172,041,130	270,708,283	-	-	-	2,633,876	119,773,054	1,860,740	1,322,203,223	(715,066,121)	(62,424,070)
Other intangible assets	261,290,466	-	8,604,920	779,148	2,541	7,988,162	35,486,608	17,817,717	245,014,940	(86,098,058)	(13,909,586)
Facility usage rights	10,966,722	-	436,360	-	-	-	-	-	11,403,082	-	-
	₩ 1,491,570,974	₩ 270,708,283	₩ 9,774,097	₩ 969,931	₩ 2,541	₩ 10,622,038	₩ 161,898,895	₩ 21,826,433	₩ 1,622,326,244	₩ (861,278,529)	₩ (78,346,722)

(*) Contains ₩ 1 million of trademark rights sold to Celltrion Skincare (See Notes 28 and 35 (2)).

2021											
	January 1	Internally generated	Acquisitions	Transfers	Disposals	Impairment loss	Amortization	Changes of foreign exchange rate	December 31	Accumulated amortization	Accumulated impairment losses
Goodwill	₩ 62,923,540	₩ -	₩ -	₩ (32,952,607)	₩ 1,145,056	₩ -	₩ -	₩ 4,184,806	₩ 33,010,683	₩ -	₩ (2,013,066)
Software	13,759,446	-	2,197,682	550,349	986	-	4,327,345	-	12,179,146	(16,557,943)	-
Intellectual property	4,582,218	-	-	-	-	-	2,499,391	-	2,082,827	(36,917,174)	-
Development costs	1,066,253,785	270,127,872	-	-	-	53,260,206	113,150,294	2,069,973	1,172,041,130	(593,752,605)	(59,790,194)
Other intangible assets	245,702,875	-	1,955,595	33,423,623	3,657,159	3,972,757	32,468,434	20,306,723	261,290,466	(48,980,728)	(5,921,424)
Facility usage rights	10,966,722	-	-	-	-	-	-	-	10,966,722	-	-
	₩ 1,404,188,586	₩ 270,127,872	₩ 4,153,277	₩ 1,021,365	₩ 4,803,201	₩ 57,232,963	₩ 152,445,464	₩ 26,561,502	₩ 1,491,570,974	₩ (696,208,450)	₩ (67,724,684)

(*) Contains ₩ 116 million of trademark rights sold to Celltrion Holdings.

The details of major intangible assets as of December 31, 2022 are as follows:

Details of other intangible assets as of December 31, 2022 are as follows:

	Description	Residual useful lives
Software	ERP and other operating support software	1 ~ 5 years
Intellectual property	Rights to manufacture biomedicine and antigen and usage of mass production technology	Finished
Other intangible assets	Patents, industrial property rights, licenses	1 ~ 10 years
Facility usage rights	Condominium, golf club membership	Indefinite

13. Intangible assets (cont'd)

Details of development costs as of December 31, 2022 are as follows (Korean won in thousands):

Classification	Purpose	Status	Phase I (*5)	Phase III	Regulatory approval	Book value before impairment loss	Accumulated impairment losses	Book value	Remaining useful lives (*6)
Bio- Pharmaceuticals medicines	Treatment for immune diseases (*1)	Under development	₩ 96,993,303	₩ 408,745,671	₩ 38,952,913	₩ 544,691,887	₩ -	₩ 544,691,887	-
		Under amortization	86,960,020	121,435,392	41,563,808	249,959,220	-	249,959,220	10 years
	Cancer treatment (*2)	Under amortization	63,725,839	324,205,673	72,833,883	460,765,395	-	460,765,395	9 years
		Treatment for other diseases (*3)	Under development	-	63,201,243	3,240,417	66,441,660	(6,471,307)	59,970,353
	Chemical medicines (*4)		Under amortization	-	34,333,490	2,416,776	36,750,266	(36,750,266)	-
		Under development	3,015,953	4,831,339	1,223,149	9,070,441	(3,086,348)	5,984,093	-
		Under amortization	6,700,835	-	10,247,589	16,948,424	(16,116,149)	832,275	6 years
			₩ 257,395,950	₩ 956,752,808	₩ 170,478,535	1,384,627,293	₩ (62,424,070)	₩ 1,322,203,223	

Details of development costs as of December 31, 2021 are as follows (Korean won in thousands):

Classification	Purpose	Status	Phase I (*5)	Phase III	Regulatory approval	Book value before impairment loss	Accumulated impairment losses	Book value	Remaining useful lives (*6)
Bio- Pharmaceuticals medicines	Treatment for immune diseases (*1)	Under development	₩ 53,863,297	₩ 261,822,638	₩ 21,427,544	₩ 337,113,479	₩ -	₩ 337,113,479	-
		Under amortization	98,763,264	137,918,040	47,205,347	283,886,651	-	283,886,651	11 years
	Cancer treatment (*2)	Under development	17,142,357	134,083,746	7,823,514	159,049,617	-	159,049,617	-
		Under amortization	55,948,981	226,700,868	74,014,696	356,664,545	-	356,664,545	6 years
	Treatment for other diseases (*3)	Under development	-	32,580,693	1,923,872	34,504,565	(6,471,307)	28,033,258	-
		Under amortization	-	34,333,490	2,416,776	36,750,266	(36,750,266)	-	-
Chemical medicines (*4)	Under development	3,082,918	2,771,030	1,625,101	7,479,049	(1,694,080)	5,784,969	-	
	Under amortization	6,433,652	-	9,949,501	16,383,153	(14,874,542)	1,508,611	8 years	
			₩ 235,234,469	₩ 830,210,505	₩ 166,386,351	1,231,831,325	₩ (59,790,195)	₩ 1,172,041,130	

(*1) Remsima and Yuflyma etc. are monoclonal antibody (mAb) biopharmaceuticals, which is a treatment for immune diseases.

(*2) Herzuma, Truxima and Vegzelma etc. are monoclonal antibody (mAb) biopharmaceuticals, which is a treatment for cancer.

(*3) a biopharmaceutical related to other diseases such as infectious diseases and ophthalmic diseases

(*4) Chemical medicines for cardiovascular diseases, nervous system diseases, HIV, etc.

(*5) Chemical medicine includes bioequivalence test.

(*6) As the amortization period differs for each project, the remaining useful lives of the development costs are weighted average at the end of the reporting period.

Material expenditures that are not recognized as assets because the Group does not exercise control, but from which future economic benefits are expected, for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Advertisement costs	₩ 14,557,581	₩ 12,847,675
Training costs	800,108	655,220

13. Intangible assets (cont'd)

Amortization of intangible assets for the years ended December 31, 2022 and 2021 are allocated as follows (Korean won in thousands):

	2022		2021
Cost of sales	₩ 123,863,072	₩	117,611,638
Selling and administrative expenses	37,803,364		34,588,977
Development costs (*)	215,430		238,254
Construction in progress (*)	17,029		6,595
	<u>₩ 161,898,895</u>	₩	<u>152,445,464</u>

(*) The amount only includes amortization of software.

Capitalized borrowing costs which is included in the acquisition of intangible assets and property, plant and equipment for the year ended December 31, 2022 are ₩14,280 million (2021: ₩7,483 million) and ₩2,105 million (2021: ₩642 million), respectively. Borrowing costs were capitalized using the weighted average interest rate of its general borrowings of 3.00% in 2022 (2021: 1.93%).

Research and development expenses recognized as expenses for the year ended December 31, 2022 are ₩139,714 million (2021: ₩125,769 million).

The Group conducted an impairment test development cost and other intangible assets. As a reliable valuation of fair value of the development cost and other intangible assets is impossible, the recoverable amount was measured based on value in use. The future cash flow for the value in use measurement was estimated based on future business plan of the Group and reliable data source from outside of the Group. The discount rate for measuring the value in use was estimated at 11.76% (2020: 13.1%) (weighted average cost of capital adjusted to reflect the inherent risk of the asset), and no permanent growth rate was applied. As a result of carrying out impairment tests on development expenses and other intangible assets during the year ended December 31, 2022, the total impairment loss recognized by the Group was ₩ 10,622 million (December 31, 2021: ₩ 57,233 million), none (2021: 43,222) in development expenses are related to other disease treatment, ₩ 2,634 million (2021: 10,039 million) in development expenses are related to chemicals and ₩ 7,988 million (2021: 3,972 million) are for other intangible assets.

13. Intangible assets (cont'd)

Impairment loss recognized on development costs and other intangible assets for the year ended December 31, 2022 and December 31, 2021 is as follows. (Korean won in thousands):

	Book value before recognition of impairment loss	2022	
		Impairment loss	Accumulated amount
Chemical medicines (*1)	₩ 26,018,865	₩ (2,633,876)	₩ (19,202,497)
Other intangible assets (*2)	253,003,101	(7,988,162)	(13,909,586)

	Book value before recognition of impairment loss	2021	
		Impairment loss	Accumulated amount
Chemical medicines (*1)	₩ 23,862,202	₩ (10,038,634)	₩ (16,568,622)
Other intangible assets (*2)	265,263,223	(3,972,757)	(5,921,424)
Other disease treatment (*3)	71,254,831	(43,221,573)	(43,221,573)

(*1) Treatments for circulatory and nervous system, and anti-HIV. As a result of performing an impairment test due to changes in the competitive environment and business feasibility of the development project, the related Book value was reduced.

(*2) As a result of performing an impairment test, changing business feasibility in the market for sales of marketing rights of chemical drugs, including psychotic disorder drugs, reduced their book value.

(*3) A biopharmaceutical related to other diseases such as infectious diseases and ophthalmic diseases. As a result of the impairment test, the related Book value was reduced due to changes in business feasibility according to the market environment.

As of December 31, 2022 and 2021, when all other variables are held constant and the discount rate changes by 1% point, there is no impact on the impairment loss amount of development expenses.

14. Other assets

Details of other assets as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Current		
Advanced payments	₩ 22,641,071	₩ 99,455,060
Prepaid expenses	13,425,988	11,304,060
Contract assets (*)	28,819,000	-
Others	-	1,370,680
Sub total	₩ 64,886,059	₩ 112,129,800
Non-current		
Advanced payments	₩ 18,211,401	₩ 10,513,193
Prepaid expenses	10,249,824	8,434,678
Income tax refund receivables	-	8,330,971
Sub total	₩ 28,461,225	₩ 27,278,842
Total	₩ 93,347,284	₩ 139,408,642

(*) Consists of estimated amount of variable consideration after the current year related to the contract with the customer (see Notes 26(3), 34(1), 35(2) and 35(3)).

15. Trade and other payables

Details of trade payables as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Trade payables	₩ 50,270,474	₩ 80,723,080

Details of other payables as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Current		
Non-trade payables	₩ 140,598,883	₩ 69,002,614
Accrued expenses	157,223,944	139,415,834
Value added tax withheld	22,398,829	19,994,857
Dividends payable	22,706	5,674
Sub total	₩ 320,244,362	₩ 228,418,979
Non-current		
Non-trade payables	₩ 4,221,323	₩ 13,984,746
Provision for post-employment benefits	3,354,514	-
Sub total	₩ 7,575,837	₩ 13,984,746
Total	₩ 327,820,199	₩ 242,403,725

16. Financial liabilities

Details of financial liabilities as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Current		
Short-term borrowings	₩ 553,706,634	₩ 512,107,570
Current portion of long-term borrowings	81,429,211	54,480,804
Current portion of lease liabilities	2,728,230	3,009,932
Financial liabilities at fair value	27,148,198	-
Subtotal	₩ 665,012,273	₩ 569,598,306
Non-current		
Long-term borrowings	₩ 151,579,926	₩ 170,383,137
Lease liabilities	2,887,923	4,374,257
Sub total	154,467,849	174,757,394
Total	₩ 819,480,122	₩ 744,355,700

Details of borrowings as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	Creditor	Latest maturity date	Annual interest rate (%)	Book value	
				2022	2021
Current liabilities					
Short-term borrowings					
General term loans					
	Shinhan Bank	August 2, 2023	CD Interest rate (3 Months) +1.31%	₩ 20,000,000	₩ 20,000,000
	Shinhan Bank	-	-		15,000,000
	Shinhan Bank	-	-		10,000,000
	Shinhan Bank	November 30, 2023	Financial Bond (1 Year 4.87%) +1.20%	2,000,000	2,000,000
	Shinhan Bank	July 7, 2023	Financial Bond (6 Months 2.80%) +1.63%	15,000,000	15,000,000
	Shinhan Bank	April 12, 2023	Financial Bond (1 Year) +1.16%	64,000,000	64,000,000
	Shinhan Bank	March 7, 2023	Financial Bond (1 Year) +1.16%	25,000,000	-
	Woori Bank	March 30, 2023	Bank Offered Rate (6 Months) +1.32%	20,000,000	20,000,000
	Woori Bank	November 7, 2023	Financial Bond (1 Year 5.04%) +2.00%	10,000,000	10,000,000
	Korea Development Bank	September 23, 2023	Industrial Financial Debentures (1 Year) +0.80%	30,000,000	30,000,000
	Korea Development Bank	May 17, 2023	Industrial Financial Debentures (6 Months) +0.95%	40,000,000	40,000,000
	Korea Development Bank	October 15, 2023	Industrial Financial Debentures (1 Year) +0.75%	25,000,000	25,000,000
	Korea Development Bank	March 8, 2023	Industrial Financial Debentures (1.87%) +1.21%	10,000,000	10,000,000
	Korea Development Bank	June 21, 2023	Industrial Financial Debentures (6 Months 4.22%) +1.35%	20,000,000	20,000,000
	Korea Development Bank	November 7, 2023	Industrial Financial Debentures (1 Year 4.94%) +1.05%	40,000,000	40,000,000
	Korea Development Bank	June 29, 2023	Industrial Financial Debentures (6 Months 4.13%) +1.35%	20,000,000	20,000,000
	Korea Development Bank	May 25, 2023	Industrial Financial Debentures (6 Months) +1.05%	30,000,000	-

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16. Financial liabilities (cont'd)

	Creditor	Latest maturity date	Annual interest rate (%)	Book value	
			2022	2022	2021
Facility loans	Kookmin Bank	July 29, 2023	Base rate (6 Months 2.73%) +1.6%	4,000,000	4,000,000
	Nonghyup Bank	April 15, 2023	Base rate (6 Months) +1.26%	20,000,000	-
	Korea Development Bank	-	-	-	20,153,500
	Singapore branch Citi bank-	-	-	-	-
	Singapore branch	January 30, 2023	5.137%	10,138,400	118,550
	Shinhan Bank	November 20, 2023	CD Interest rate (3 Months) +1.25%	30,000,000	30,000,000
	Woori Bank	October 17, 2023	Bank Offered Rate (1 Year) +0.95%	30,000,000	30,000,000
	Korea EXIM Bank	July 3, 2023	EXIM financial bond (3 Months) +0.72%	80,000,000	80,000,000
	DA/DP	Industrial Bank	-	-	220,837
	Shinhan Bank	September 20, 2023	Term SOFR (6 Months) +0.95%	238,454	-
Usance	Shinhan Bank	May 8, 2023	4.33% ~ 5.23%	8,329,780	6,528,907
	Korea Development Bank	-	-	-	85,776
				₩	₩
				553,706,634	512,107,570
Current portion of long-term borrowings					
Facility loans	Korea Development Bank	October 16, 2023	Industrial Financial debentures (6 Months) +1.04%	14,000,000	14,000,000
	Korea Development Bank	-	-	-	3,750,000
	Korea Development Bank	-	-	-	1,250,000
	Korea Development Bank	November 20, 2023	Industrial Financial debentures (6 Months) +1.04%	30,000,000	-
	Nonghyup Bank	-	-	-	1,875,000
Financing for overseas investment	Shinhan Bank	September 14, 2023	Financial Bond (3 Year 2.52%) +1.05%	17,333,259	12,999,944
	Korea EXIM Bank	October 30, 2023	EXIM financial bond (3 Months) +1.12%	12,000,000	12,000,000
	Korea Development Bank	-	-	-	3,900,000
R&D financing	Korea Development Bank	-	-	-	2,823,520
	Korea Development Bank	-	-	-	1,882,340
Financing for export promotion	Korea EXIM Bank	December 15, 2023	1.53%	8,095,952	-
				₩	₩
				81,429,211	54,480,804

16. Financial liabilities (cont'd)

	Creditor	Latest	Annual interest rate (%)	Book value	
		maturity date	2022	2022	2021
Non-current liabilities					
Long-term borrowings					
Facility loans	Korea Development Bank	October 15, 2025	Industrial Financial debentures (6 months) +1.04%	28,000,000	42,000,000
	Korea Development Bank	-	-	-	30,000,000
	Shinhan Bank	March 14, 2025	Financial Bond (3 Years 2.52%) +1.05%	21,666,574	38,999,834
	Shinhan Bank	September 7, 2024	Financial Bond (6 Months) +1.04%	37,433,593	10,450,023
Financing For overseas Investment	Korea EXIM Bank	October 30, 2025	EXIM financial bond (3 Months) +1.12%	24,000,000	36,000,000
Financing for export promotion	Korea EXIM Bank	June 15, 2026	1.53%	40,479,759	12,933,280
				₩ 151,579,926	₩ 170,383,137
				₩ 786,715,771	₩ 736,971,511

Some of the Group's tangible assets are provided as collateral in relation to long-and short-term borrowings from Korea Development Bank and three other financial institutions (see Note 12).

As of December 31, 2022, The Group does not receive payment guarantee for the above long/short term loans payable (See Note 35).

Changes in the financial liabilities at fair value through profit or loss for the year ended December 31, 2022 are as follows (Korean won in thousands):

	2022			
	January 1	Evaluation	Payments	December 31
Forward exchange contract ₩	-	₩ 27,148,198	₩ -	₩ 27,148,198

	2021			
	January 1	Evaluation	Payments	December 31
Forward exchange contract ₩	₩ 24,339,547	₩ -	₩ (24,339,547)	₩ -

17. Provisions

The Group recognizes provisions for sales returns, and changes in provisions for sales returns for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			
	January 1	Increase	Decrease	December 31
Provisions for sales returns	₩ 3,849,364	₩ -	₩ (2,362,395)	₩ 1,486,969

	2021			
	January 1	Increase	Decrease	December 31
Provisions for sales returns	₩ 2,616,896	₩ 1,263,477	₩ (31,009)	₩ 3,849,364

18. Greenhouse gas emission liabilities

(1) Emission Permits

As of the end of the current year, the number of free allocations per years in the 3rd planning period (2022-2025) is as follows:

	(Unit: metric ton (tCO ₂ -eq))				
	2022	2023	2024	2025	Total
Free Allocation	₩ 50,235	₩ 50,235	₩ 49,765	₩ 49,765	₩ 200,000

(2) The Group's estimated greenhouse gas emissions for the year ended December 31, 2022 was 56,901 tons (tCO₂-eq) (2021: 55,369 tons (tCO₂-eq)).

(3) Changes in the amount of emission permits for the year ended December 31, 2022 and 2021 are as follows:

① December 31, 2022

	(Unit: metric ton (tCO ₂ -eq))										
	2021		2022		2023		2024		2025		Total
Basic&Free Allocation	₩	50,235	₩	50,235	₩	50,235	₩	49,765	₩	49,765	₩ 250,235
Additional Allocation		-		-		-		-		-	-
Carry-over		-		-		-		-		-	-
Purchase (Sale)		4,380		-		-		-		-	4,380
Govt.Submission		(54,615)		-		-		-		-	(54,615)
Total	₩	-	₩	50,235	₩	50,235	₩	49,765	₩	49,765	₩ 200,000

② December 31, 2021

	(Unit: metric (tCO ₂ -eq))						
	2020	2021	2022	2023	2024	2025	Total
Basic&Free Allocation	₩ 42,290	₩ 50,235	₩ 50,235	₩ 50,235	₩ 49,765	₩ 49,765	₩ 292,525
Additional Allocation	5,259	-	-	-	-	-	5,259
Carry-over	345	-	-	-	-	-	345
Purchase (Sale)	4,708	-	-	-	-	-	4,708
Govt.Submission	(52,602)	-	-	-	-	-	(52,602)
Total	₩ -	₩ 50,235	₩ 50,235	₩ 50,235	₩ 49,765	₩ 49,765	₩ 250,235

(4) The book value of free allocation is 0.

(5) There were currently no emission permits provided as collateral for the year ended December 31, 2022 and 2021.

18. Greenhouse gas emission liabilities (cont'd)

(6) Increase and decrease of the emission liabilities for the year ended December 31, 2022 and 2021 are as follows (Korean won in thousands)

	January 1, 2022	Accrual	Reversal	December 31, 2022
Emission liability	₩ 180,212	₩ 106,656	₩ (180,212)	₩ 106,656

	January 1, 2021	Accrual	Reversal	December 31, 2021
Emission liability	₩ 224,411	₩ 180,212	₩ (224,411)	₩ 180,212

19. Other liabilities

Details of other liabilities as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

		2022	2021
Current	Advance received (*)	₩ 94,181,671	₩ 118,212,013
	Unearned revenue (*)	3,768,859	3,575,275
	Government grants	3,000,000	-
	Deposit received	212,657	321,430
	Contract liabilities	67,215,819	26,229,000
		₩ 168,379,006	₩ 148,337,718
Non-current	Long-term advance received (*)	₩ 137,192,610	₩ 174,716,324
	Long-term unearned revenue (*)	23,008,979	25,234,141
	Government grants	-	3,000,000
		₩ 160,201,589	₩ 202,950,465
		₩ 328,580,595	₩ 351,288,183

(*) Includes details of consideration received before transferring goods or services to customers for the fiscal years ended December 31, 2022 and 2021 (See Note 26).

20. Government grants

Details of on-going projects among government grants received projects for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022		
	Received	Refundable(*)	Non-Refundable
Development of monoclonal antibodies for COVID-19 variant virus treatment	78,622	31,449	47,173
	₩ 78,622	₩ 31,449	₩ 47,173
	2021		
	Received	Refundable(*)	Non-Refundable
Therapeutic antibody development for MERS corona virus	₩ 598,846	₩ 119,769	₩ 479,077
Development of complex compound with organic and inorganic material and functional cosmetics technology	118,930	23,786	95,144
Development of monoclonal antibodies for COVID-19 treatment	39,622,379	7,924,476	31,697,903
Development of automatic pre-filled pen type device for bio pharmaceuticals	129,624	25,925	103,699
Development of monoclonal antibodies for COVID-19 variant virus treatment	171,304	68,522	102,782
	₩ 40,641,083	₩ 8,162,478	₩ 32,478,605

(*) Refundable government grants are the amounts that is expected to be refunded and presented as other long-term payables among total government grants of the projects that the group is selected as a main research institution to (See Note 15).

Changes in refundable government grants for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			
	January 1	Increase	Decrease	December 31
Project of trans-governmental enterprise for pandemic influenza in Korea	₩ 900,000	₩ -	₩ -	₩ 900,000
Therapeutic antibody development for MERS corona virus	160,048		-	160,048
Development of complex compound with organic and inorganic material and functional cosmetics technology	51,366		51,365	-
Development of monoclonal antibodies for COVID-19 treatment	8,963,089		8,963,089	-
Development of automatic pre-filled pen type device for bio pharmaceuticals	34,853		137	34,716
Development of monoclonal antibodies for COVID-19 variant virus treatment	68,522	31,449	-	99,971
	₩ 10,177,878	₩ 31,449	₩ 9,014,592	₩ 1,194,735

20. Government grants (cont'd)

	2021		
	January 1	Increase	December 31
Project of trans-governmental enterprise for pandemic influenza in Korea	₩ 900,000	₩ -	₩ 900,000
Therapeutic antibody development for MERS corona virus	40,279	119,769	160,048
Development of complex compound with organic and inorganic material and functional cosmetics technology	27,580	23,786	51,366
Development of monoclonal antibodies for COVID-19 treatment	1,038,613	7,924,476	8,963,089
Development of automatic pre-filled pen type device for bio pharmaceuticals	8,928	25,925	34,853
Development of monoclonal antibodies for COVID-19 variant virus treatment	-	68,522	68,522
	<u>₩ 2,015,400</u>	<u>₩ 8,162,478</u>	<u>₩ 10,177,878</u>

the amounts that is expected to be refunded and presented as other payables and other long-term payables among total government grants of the projects that the group is selected as a main research institution to (See Note 15).

Changes in non-refundable government grants for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			
	January 1	Increase	Decrease (*)	December 31
Investment attraction subsidy from Chung-ju City	3,000,000	-	-	3,000,000
Development of monoclonal antibodies for COVID-19 variant virus treatment	-	47,173	47,173	-
	<u>₩ 3,000,000</u>	<u>₩ 32,478,605</u>	<u>₩ 32,478,605</u>	<u>₩ 3,000,000</u>

	2021			
	January 1	Increase	Decrease (*)	December 31
Therapeutic antibody development for MERS corona virus	₩ -	₩ 479,077	₩ 479,077	₩ -
Development of complex compound with organic and inorganic material and functional cosmetics technology	-	95,144	95,144	-
Development of monoclonal antibodies for COVID-19 treatment	-	31,697,903	31,697,903	-
Development of automatic pre-filled pen type device for bio pharmaceuticals	-	103,699	103,699	-
Investment attraction subsidy from Chung-ju City	3,000,000	-	-	3,000,000
Development of monoclonal antibodies for COVID-19 variant virus treatment	-	102,782	102,782	-
	<u>₩ 3,000,000</u>	<u>₩ 32,478,605</u>	<u>₩ 32,478,605</u>	<u>₩ 3,000,000</u>

(*) The amount represents net expenditure after deduction of interest income.

21. Income tax expense and deferred tax

Income tax expense for the years ended December 31, 2022 and 2021 consists of the following (Korean won in thousands):

	2022(*)	2021
Current tax:		
Current income tax	₩ 126,068,568	₩ 215,018,992
Deferred tax:		
Temporary differences	₩ (29,850,499)	₩ (64,433,847)
Tax credit carryforwards	2,277,758	1,807,142
Sub-total	₩ (27,572,741)	₩ (62,626,705)
Current and deferred taxes recognized directly to equity	586,529	3,138,147
Income tax expense	₩ 99,082,356	₩ 155,530,434

(*) Includes ₩4,255 million of income tax expense, classified as discontinued operation due to the sale of Celltrion USA, Inc.

The reconciliation between income tax expense and profit before income tax for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Profit before income tax	₩ 641,648,590	₩ 751,309,873
Tax calculated based on applicable tax rate	166,091,362	196,248,215
Adjustments for:		
Expenses (income) not deductible (subject) for tax purposes	(29,509)	(9,277,511)
Recognized deferred tax for tax credit	(39,143,254)	(19,695,086)
Tax returns	(17,536,114)	-
Effect of unrecognized deferred tax	(6,148,830)	-
Others (reflux taxes on undistributed profits, tax rate differences, additional income taxes for prior years and others)	(4,151,299)	(11,745,184)
Income tax expense	₩ 99,082,356	₩ 155,530,434
Effective tax rate (Income tax expense / profit before income tax)	15.44%	20.70%

The analysis of deferred tax assets and deferred tax liabilities as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Deferred tax assets		
Deferred tax asset to be recovered after 12 months	₩ 104,658,205	₩ 71,188,127
Deferred tax asset to be recovered within 12 months	52,146,595	22,130,736
Subtotal	₩ 156,804,800	₩ 93,318,863
Deferred tax liabilities		
Deferred tax liability to be recovered after 12 months	₩ (122,860,866)	₩ (84,572,782)
Deferred tax liability to be recovered within 12 months	(2,865,063)	(1,698,177)
Subtotal	₩ (125,725,929)	₩ (86,270,959)
Net deferred tax assets (liabilities)	₩ 31,078,871	₩ 7,047,904

21. Income tax expense and deferred tax (cont'd)

Changes in the Book value of deferred tax assets (liabilities) for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Beginning balance	₩ 7,047,904	₩ (57,217,486)
Charged (credited) to the statement of profit or loss	23,444,438	61,127,243
Charged (credited) to other comprehensive income	(257,736)	3,138,147
Income tax reflected in other capital	844,265	-
Ending balance	₩ 31,078,871	₩ 7,047,904

Changes in deferred tax assets and liabilities for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

2022				
	Beginning balance	Charged (credited) to the statement of profit or loss	Charged (credited) to other comprehensive income	Ending balance
Effect of changes in temporary differences				
Accrued expenses	₩ 4,107,642	₩ 1,804,090	₩ -	₩ 5,911,732
Inventory valuation loss	18,023,093	9,247,512	-	27,270,605
Valuation of fair value	(1,268,417)	13,163	19,976	(1,235,278)
Development costs	40,708,102	(5,469,596)	-	35,238,506
Land				
(Revaluation gain)	(56,437,607)	2,052,277	-	(54,385,330)
Property, plant and equipment	(4,771,683)	12,528	-	(4,759,155)
Depreciation	(23,645,743)	4,848,585	-	(18,797,158)
Stock options	-	8,912,597	844,265	9,756,862
Others	24,426,741	4,301,040	(277,712)	28,450,069
Subtotal	₩ 1,142,128	₩ 25,722,196	₩ 586,529	₩ 27,450,853
Tax credit carryforwards	5,905,776	(2,277,758)	-	3,628,018
Total	₩ 7,047,904	₩ 23,444,438	₩ 586,529	₩ 31,078,871

2021				
	Beginning balance	Charged (credited) to the statement of profit or loss	Charged (credited) to other comprehensive income	Ending balance
Effect of changes in temporary differences				
Accrued expenses	₩ 2,744,012	₩ 1,363,630	₩ -	₩ 4,107,642
Inventory valuation loss	7,416,826	10,606,267	-	18,023,093
Valuation of fair value	(4,342,798)	(136,931)	3,211,312	(1,268,417)
Development costs	19,756,507	20,951,595	-	40,708,102
Land				
(Revaluation gain)	(56,437,607)	-	-	(56,437,607)
Property, plant and equipment	(4,946,988)	175,305	-	(4,771,683)
Depreciation	(28,907,141)	5,261,398	-	(23,645,743)
Others	(213,215)	24,713,121	(73,165)	24,426,741
Subtotal	₩ (64,930,404)	₩ 62,934,385	₩ 3,138,147	₩ 1,142,128
Tax credit carryforwards	7,712,918	(1,807,142)	-	5,905,776
Total	₩ (57,217,486)	₩ 61,127,243	₩ 3,138,147	₩ 7,047,904

21. Income tax expense and deferred tax (cont'd)

The realizability of deferred tax assets depends on the various factors such as ability of the Group to generate taxable profit during the period the temporary difference can be utilized, the economic environment and the prospect of the industry. The Group considers those factors periodically. Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilized, excluding deductible temporary differences related to financial assets at fair value through other comprehensive income amounting to ₩25,932 million (2021: ₩2,560 million). In addition, deferred tax liabilities for temporary differences of goodwill amounting to ₩1,881 million (2021: ₩1,881 million) are not recognized.

The income tax charged (credited) directly to equity for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			2021		
	Before tax	Tax effect	After tax	Before tax	Tax effect	After tax
Change in value of financial assets at fair value through other comprehensive income	₩ 171,475	₩ 19,976	₩ 191,451	₩ (11,677,497)	₩ 3,211,312	₩ (8,466,185)
Gain on disposal of financial assets at fair value through other comprehensive income	-	-	-	536,388	(147,507)	388,881
Equity adjustment in equity method investments	1,047,968	(277,712)	770,256	(270,335)	74,342	(195,993)
Stock options	-	844,265	844,265	-	-	-
	<u>₩ 1,219,443</u>	<u>₩ 586,529</u>	<u>₩ 1,805,972</u>	<u>₩ (11,411,444)</u>	<u>₩ 3,138,147</u>	<u>₩ (8,273,297)</u>

The expiry of tax credit carryforwards is as follows (Korean won in thousands):

	2022	2021
Within 1 year	₩ -	₩ -
Within 2 years	-	-
Within 3 years	584,328	-
Over 3 years	3,043,690	5,905,776
	<u>₩ 3,628,018</u>	<u>₩ 5,905,776</u>

22. Capital stock

The Company is authorized to issue 400,000,000 shares (₩1,000 per share), of which 140,805,210 ordinary shares have been issued as of December 31, 2022.

Changes in capital stock for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands, except number of shares):

	Number of shares		Issued capital		Share premium		Total
As of January 1, 2021	134,997,805	₩	134,997,805	₩	812,155,732	₩	947,153,537
Stock dividends	2,675,697		2,675,697		-		2,675,697
Exercise of stock options	273,626		273,626		28,181,482		28,455,108
As of December 31, 2021	137,947,128	₩	137,947,128	₩	840,337,214	₩	978,284,342
As of January 1, 2022	137,947,128	₩	137,947,128	₩	840,337,214	₩	978,284,342
Stock dividends	2,732,479		2,732,479		-		2,732,479
Exercise of stock options	125,603		125,603		12,834,579		12,960,182
As of December 31, 2022	140,805,210	₩	140,805,210	₩	853,171,793	₩	993,977,003

23. Retained earnings

Retained earnings as of December 31, 2022 and 2021 consist of the following (Korean won in thousands):

	2022	2021
Legal reserves		
Legal appropriated retained earnings (*1)	₩ 12,528,196	₩ 2,281,397
Voluntary reserves (*2)		
Reserve for R&D	2,837,555,883	2,381,002,793
Reserve for facilities	160,117,928	160,117,927
Reserve for surtax on income tax	50,000,000	50,000,000
Unappropriated retained earnings	424,907,531	459,072,330
	₩ 3,485,109,538	₩ 3,052,474,447

(*1) The Commercial Code of the Republic of Korea requires the Company to appropriate, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued capital stock. The reserve is not available for the payment of cash dividends but may be transferred to capital stock or used to reduce accumulated deficit, if any, with the ratification of the Company's majority shareholders.

(*2) Voluntary reserves are available to be distributed by the shareholders' approval.

The cash dividend, amounting ₩102,468 million and the stock dividend, amounting ₩2,732 million (number of outstanding common stocks: 2,732,479), proposed in the year ended December 31, 2021 was transferred to issued capital on March 25, 2022.

The cash dividend, amounting 51,672 million and the stock dividend, amounting ₩5,512 million (number of outstanding common stocks: 5,511,708), proposed in the year ended December 31, 2022 is expected to be proposed at the Company's annual shareholders' meeting on March 28, 2023. The dividend is not included in the consolidated financial statements of the Group.

24. Accumulated other comprehensive income and other components of equity

Changes in accumulated other comprehensive income for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022		
	Beginning balance	Increase (decrease)	Ending balance
Financial assets at fair value through other comprehensive income - equity instruments	₩ 5,028,460	₩ 191,451	₩ 5,219,911
Equity adjustment in equity method investments	(111,925)	770,257	658,332
Currency translation differences	20,070,589	22,797,041	42,867,630
	₩ 24,987,124	₩ 23,758,749	₩ 48,745,873

	2021		
	Beginning balance	Increase (decrease)	Ending balance
Financial assets at fair value through other comprehensive income - equity instruments	₩ 13,494,645	₩ (8,466,185)	₩ 5,028,460
Equity adjustment in equity method investments	84,068	(195,993)	(111,925)
Currency translation differences	(7,280,294)	27,350,883	20,070,589
	₩ 6,298,419	₩ 18,688,705	₩ 24,987,124

Changes in accumulated other comprehensive income represent net of tax effect amounts.

Other components of equity as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Treasury stock	₩ (501,689,374)	₩ (225,716,732)
Stock options	95,285,939	71,239,165
Other capital surplus	17,931,021	15,969,447
	₩ (388,472,414)	₩ (138,508,120)

Changes in treasury stock for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands, except shares):

	Number of shares	Amount
January 1, 2021	1,212,915	₩ 191,825,374
Acquisition of treasury stock	110,215	33,891,358
December 31, 2021	1,323,130	₩ 225,716,732
January 1, 2022	1,323,130	₩ 225,716,732
Acquisition of treasury stock	1,689,373	275,972,642
December 31, 2022	3,012,503	₩ 501,689,374

25. Share-based payment

Stock options are granted to the Company's directors and employees as follows:

Stocks issued through stock options: registered common stock

Grant method: new shares of common stock

Vesting period: options are conditional on the Company's director and employee completing a three-year service after the grant date. The options have a contractual option term of five years at the rate of 20% per annum.

Changes in the number of stock options outstanding and their weighted average exercise prices for the year ended December 31, 2022 are as follows (Korean won, except number of shares):

	Number of options (unit: share) (*)	Weighted average exercise price per share option (*)
Beginning	2,262,037	₩ 192,566
Grant	510,164	165,500
Exercise	(125,603)	71,525
Forfeited	(30,815)	-
Ending	2,615,783	₩ 192,682

(*) It is adjusted to reflect the effects of stock dividends during the current year.

Out of the 2,615,783 outstanding options (2021: 2,219,046 options), 397,152 options (2021: 146,189 options) were exercisable as of December 31, 2022. Options exercised in 2022 resulted in 125,603 shares (2021: 273,626 shares) being issued at a weighted average exercise price of ₩71,525 (2021: ₩74,991). The related weighted average share price at the time of exercise was ₩167,835 (2021: ₩280,328) per share.

The weighted average fair value of options granted during the period using binomial model as of December 31, 2022 and 2021 were determined as follows (Korean won, except per shares):

	22th (2022)	21th (2021)
Share price at the grant date	₩ 165,500	₩ 314,000
Exercise price (*)	₩ 165,500	₩ 307,920
Number of shares (*)	510,164	321,630
Risk-free interest rate	2.84%~2.86%	1.78%~1.95%
Expected volatility	38.00%	38.30%
Grant date	2022-03-25	2021-03-26
Assessment date	2022-03-25	2021-03-26
Maturity	2032-03-24	2031-03-25

(*) It is adjusted to reflect the effects of stock dividends during the current year.

Changes in stock options for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Beginning	₩ 71,239,165	₩ 55,188,428
Expense	28,017,493	23,964,672
Exercised and forfeited	(3,970,719)	(7,913,935)
Ending	₩ 95,285,939	₩ 71,239,165

26. Revenue and cost of sales

Details of revenue for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021(*3)
Timing of transfer of goods or services:		
Recognition at a point in time (*1)	₩ 2,143,425,571	₩ 1,665,626,157
Recognition over time (*2)	140,541,909	227,775,060
	<u>₩ 2,283,967,480</u>	<u>₩ 1,893,401,217</u>
Geographical market:		
Domestic market	₩ 1,688,643,208	₩ 1,604,683,045
Overseas market	595,324,272	288,718,172
	<u>₩ 2,283,967,480</u>	<u>₩ 1,893,401,217</u>

(*1) Revenue from the sale of goods and etc.

(*2) Revenue from the services and etc.

(*3) The amount excludes sales generated from Celltrion USA, Inc., classified as profit or loss from discontinued operation in the current year (See Note 38).

Details of cost of sales for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Recognition at a point in time	₩ 1,106,741,511	₩ 627,673,196
Recognition over time	144,528,664	178,133,756
	<u>₩ 1,251,270,175</u>	<u>₩ 805,806,952</u>

26. Revenue and cost of sales (cont'd)

Details of receivables, contract assets, contract liabilities from contracts with customers for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

		2022				
		Beginning balance	Increase (*2)	Decrease (*2)	Variable consideration estimate (*3)	Ending balance
Contract asset	₩	-	₩ -	₩ -	₩ 28,819,000	₩ 28,819,000
Contract liability(*1)		351,797,935	72,476,415	(137,376,131)	39,263,690	326,161,909
		2021				
		Beginning balance	Increase (*2)	Decrease (*2)	Variable consideration estimate (*3)	Ending balance
Contract asset	₩	88,590,323	₩ -	₩ -	₩ (88,590,323)	₩ -
Contract liability(*1)		287,929,044	135,108,548	(98,701,125)	27,461,468	351,797,935

(*1) It consists of advance received and unearned revenue related to the consideration received before the transfer of goods or services to the customer, the estimated price settlement under the contract with the customer, and provisions for returns for the years ended December 31, 2022 and 2021 (See notes 17 and 19).

(*2) Reductions in contract liabilities not related to estimates of variable consideration and were recognized as revenue for the years ended December 31, 2022 and 2021 .

(*3) The contract assets in the current year are the estimate of the estimated price settlement after the current year based on an agreement with the customer, and consists of ₩ 28,819 million recognized as revenue in the current year. Contract liabilities in the current year consist of ₩ 26,229 million replaced with trade receivable and accounts payable confirmed in the current year out of recognized amount of the previous period, ₩ (-)67,216 million reflected as deducted revenue in the current year as estimate of the estimated price settlement after the current year based on an agreement with the customer, and ₩ 1,723 million of net increase/decrease of returned product provisions. Contract assets of the previous period are estimates based on an agreement with the customer and of which the contract assets of the early previous period are confirmed in the previous period and ₩ (-)88,590 million is replaced with trade receivable. Contract liabilities of the previous period are estimates of the estimated price settlement after the current year based on an agreement with the customer and are recognized as reduction of revenue in the previous period (see Notes 34(1), 35(2) and 35(3)).

The amount recognized as revenue for the year ended December 31, 2022 that was included in contract liabilities as of December 31, 2021 is ₩ 137,376 million (2021: ₩98,701 million).

27. Selling and administrative expenses

Details of selling and administrative expenses for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022(*)	2021(*)
Wages, salaries and severance benefits	₩ 66,281,812	₩ 65,516,515
Welfare expense	6,970,210	6,095,727
Depreciation	3,460,212	2,677,903
Amortization	37,351,734	34,254,085
Rents	345,381	336,615
Travel	2,560,550	2,092,012
Commission	44,574,626	36,735,840
Service fees	3,101,688	22,635,997
Entertainment	2,035,213	1,291,836
Advertising	15,092,917	12,765,912
Share-based payment	11,233,321	9,460,783
Research and development expense	139,714,341	125,769,269
Training	201,741	167,077
Others	52,575,385	23,617,844
	₩ 385,499,131	₩ 343,417,415

(*) The amount excludes selling, general, and administrative expenses generated from Celltrion USA, Inc., classified as profit or loss from discontinued operation in the current year (See Note 38).

28. Other income and expenses

Details of other income and expenses for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022(*1)	2021(*1)
Other income		
Rental income	₩ 666,203	₩ 585,510
Gain on disposal of plant, property and equipment	12,459	14,290
Gain on disposal of intangible assets (*2)	9,591	26,689,796
Gain on foreign exchange translation	10,411,345	2,149,764
Gain on foreign currency transactions	27,203,874	7,094,011
Dividend income	232,647	2,238,982
Gain on valuation of financial assets at fair value through profit or loss	-	1,151,625
Gain on disposal of financial assets at fair value through profit or loss	5,497,430	8,963,947
Reversal of other allowance for doubtful accounts	1,694	1,694
Gain on disposal of investments in related parties and subsidiaries	291,356	6,392
Miscellaneous gain	3,197,223	4,603,623
	₩ 47,523,822	₩ 53,499,634
Other expenses		
Donations	₩ 2,431,907	₩ 1,736,882
Loss on disposal of property, plant and equipment	900,185	261,463
Impairment loss of intangible assets	10,622,037	57,232,963
Loss on disposal of intangible assets	1,916	2,523,900
Other bad debt expenses	8	16,000
Loss on foreign exchange translation	1,644,512	1,913,004
Loss on foreign currency transactions	23,704,271	7,751,877
Loss on valuation of financial assets at fair value through profit or loss	870,272	117,306
Loss on valuation of financial liabilities at fair value through profit or loss	27,148,198	-
Loss on disposal of financial assets at fair value through profit or loss	3,789,500	-
Loss on disposal of investment in subsidiaries and associates	-	1,393,283
Miscellaneous loss	15,930,604	12,017,557
	₩ 87,043,410	₩ 84,964,235
Net other income (expenses)	₩ (39,519,588)	₩ (31,464,601)

(*1) The amount excludes other profit or loss generated from Celltrion USA, Inc., classified as profit or loss from discontinued operation in the current year (See Note 38).

(*2) Other revenues related to trademark rights, sold to Celltrion Skincare in the current year and trademark rights sold to Celltrion Holdings in the previous period (See Notes 13(1), 35(2)).

29. Finance income and costs

Details of finance income and costs for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022 (*1)	2021 (*1)
Finance income		
Interest income (*2)	₩ 14,218,305	₩ 4,396,155
Gain on foreign exchange translation	9,763,140	15,392,618
Gain on foreign currency transactions	963,983	22,505,618
	₩ 24,945,428	₩ 42,294,391
Finance costs		
Interest expenses (*3)	₩ 7,507,535	₩ 8,231,076
Loss on foreign exchange translation	736,847	128,653
Loss on foreign currency transactions	5,262,307	4,437,867
	₩ 13,506,689	₩ 12,797,596
Net finance income (costs)	₩ 11,438,739	₩ 29,496,795

(*1) The amount excludes finance income or loss generated from Celltrion USA, Inc., classified as profit or loss from discontinued operation in the current year (See Note 38).

(*2) Details of interest income included in finance income are as follows (Korean won in thousands):

	2022	2021
Other loans and receivables	₩ 14,218,305	₩ 4,396,155

(*3) Details of interest expenses included in finance costs are as follows (Korean won in thousands):

	2022	2021
Interest on bank overdraft and borrowings	₩ 23,892,297	₩ 16,356,181
Capitalized interest for qualifying assets	(16,384,762)	(8,125,105)
	₩ 7,507,535	₩ 8,231,076

30. Expenses by nature

Details of expenses by nature for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022 (*1)	2021 (*2)
Changes in inventories	₩ 170,062,582	₩ (125,376,649)
Cost of raw materials	238,575,485	227,727,760
Employee benefit expense	276,427,543	252,822,589
Purchase of reagent and supplies	48,788,556	35,159,616
Service fees	430,615,667	370,598,302
Bad debt expense	7,512,978	-
Commission expenses	58,965,252	44,419,006
Taxes and dues	7,223,417	6,821,747
Depreciation	64,723,587	61,956,988
Amortization	161,666,436	152,202,747
Other expenses	182,742,934	128,412,050
Total (*2)	₩ 1,647,304,437	₩ 1,154,744,156

(*1) Includes the amount related to discontinued operation in the current and previous periods (See Note 38).

(*2) The amount is the sum of cost of sales, and selling and administrative expenses on the consolidated statements of profit or loss.

31. Employee benefit expense

Details of employee benefit expense for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022		2021
Wages and salaries	₩ 231,369,567	₩	209,149,088
Post-employment benefit	15,295,369		19,200,946
Share based payment expense	29,453,822		24,927,423
Welfare expenses	36,657,485		32,295,544
Reclassification of development costs	(33,305,381)		(32,357,468)
Reclassification of construction in progress	(3,043,319)		(1,293,354)
	<u>₩ 276,427,543</u>	₩	<u>251,922,179</u>

32. Earnings per share

Basic earnings per share is calculated by dividing the profit attributable to owners of the Company by the weighted average number of ordinary shares issued during the year excluding ordinary shares purchased by the Company and held as treasury shares.

Basic earnings per share for the years ended December 31, 2022 and 2021 are as follows (Korean won, except number of shares):

	2022		2021(*)
Profit attributable to ordinary shares (the ownership of the Company)	₩ 537,835,568,483	₩	579,464,583,818
Profit from continuing operations	526,616,038,967		569,488,023,721
Profit from discontinued operations	11,219,529,516		9,976,560,097
Weighted average number of ordinary shares outstanding (*)	138,101,870		139,291,629
Basic earnings per share	₩ 3,894	₩	4,160
Earnings per share for continuing operations	3,813		4,088
Earnings per share for discontinued operations	81		72

(*) It is adjusted to reflect the effects of stock dividends during the current year.

32. Earnings per share (cont'd)

The basis for calculating the weighted average number of common shares outstanding for calculating earnings per share is as follows.

		2022
	Number of ordinary shares	Weighted average number of ordinary shares outstanding
Beginning	137,947,128	137,947,128
Stock dividend	2,732,479	2,732,479
Treasury stock at beginning	(1,323,130)	(1,323,130)
Treasury stock acquisition	(1,689,373)	(1,329,811)
Stock options	125,603	75,204
Ending	137,792,707	138,101,870

		2021
	Number of ordinary shares	Weighted average number of ordinary shares outstanding
Beginning	137,697,761	137,697,761
Stock dividend	2,729,211	2,729,211
Treasury stock at beginning	(1,212,915)	(1,212,915)
Treasury stock acquisition	(110,215)	(110,215)
Stock options	279,099	187,787
Ending	139,382,941	139,291,629

Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding assuming conversion of all dilutive potential ordinary shares. The Group has dilutive potential ordinary shares: stock options. For stock options, a calculation is done to determine the number of shares that could owned at fair value (determined as the average annual market share price of the Group's shares) based on the monetary value of the subscription rights attached to outstanding stock options. The number of shares calculated above is compared with the number of shares that would have been issued assuming the exercise of the stock options.

Diluted earnings per share for the years ended December 31, 2022 and 2021 are as follows (Korean won, except number of shares):

	2022	2021(*)
Dilutive profit attributable to ordinary shares (the ownership of the Company)	₩ 537,835,568,483	₩ 579,464,583,818
Profit from continuing operations	526,616,038,967	569,488,023,721
Profit from discontinued operations	11,219,529,516	9,976,560,097
Weighted average number of ordinary shares issued (shares)	138,101,870	139,291,629
Adjustment for:		
Stock options	216,987	650,834
Weighted average number of ordinary shares for diluted earnings per share	138,318,857	139,942,463
Dilutive Basic earnings per share	₩ 3,888	₩ 4,141
Earnings per share for continuing operations	3,807	4,070
Earnings per share for discontinued operations	81	71

(*) It is adjusted to reflect the effects of stock dividends during the current year.

33. Supplementary cash flow information

Details of adjustments for cash generated from operations and changes in net working capital for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
	₩	₩
Profit for the year	542,566,233	595,779,439
Adjustments for:		
Income tax expenses	99,082,356	155,530,434
Loss on valuation of inventories	67,330,193	45,921,946
Share-based payment	25,725,970	22,046,019
Depreciation	64,723,587	61,956,988
Amortization	161,666,436	152,202,747
Bad debt expenses	7,511,283	(234,823)
Other bad debt expenses	8	16,000
Loss on relation of foreign currency	2,381,359	2,041,657
Gain on relation of foreign currency	(20,174,485)	(17,542,382)
Gain on valuation of financial assets at fair value through profit or loss	-	(1,151,625)
Loss on valuation of financial assets at fair value through profit or loss	870,272	117,306
Loss on valuation of financial liabilities at fair value through profit or loss	27,148,198	-
Gain on disposal of financial assets at fair value through profit or loss	(5,497,430)	(8,963,947)
Loss on disposal of financial assets at fair value through profit or loss	3,789,500	-
Gain on disposal of investments in subsidiaries and associates	(8,625,927)	(6,392)
Loss on disposal of investments in subsidiaries and associates	-	1,393,283
Share of profit or loss of associates, net	(7,056,051)	3,585,614
Interest expenses	7,509,860	8,237,638
Interest income	(14,218,309)	(4,396,164)
Dividend income	(232,647)	(2,238,982)
Gain on disposal of property, plant and equipment	(12,459)	(14,290)
Loss on disposal of property, plant and equipment	900,185	261,463
Gains on disposal of intangible assets	(9,591)	(26,689,796)
Loss on disposal of intangible assets	1,916	2,523,900
Impairment loss on intangible assets	10,622,037	57,232,963
Post-employment benefits	71,890	
Miscellaneous gains	(31,460)	(115,498)
Total adjustments	₩ 423,476,691	₩ 451,714,059

33. Supplementary cash flow information (cont'd)

	2022	2021
Change in net working capital		
Trade receivables	₩ (682,925,801)	₩ 109,325,048
Other receivables	40,789,228	66,539,713
Inventories	(214,975,863)	(267,774,635)
Other current assets	(6,327,587)	16,158,462
Other non-current assets	(9,399,998)	(1,378,729)
Trade payables	53,568,933	44,082,343
Other payables	67,460,683	(63,077,372)
Long-term other payables	(9,014,455)	-
Other current liabilities	10,626,259	62,303,686
Other non-current liabilities	1,667,101	32,231,079
Provisions	392,719	1,199,745
Total change in net working capital	(748,138,781)	(390,660)
Cash generated from operations	₩ 217,904,143	₩ 1,047,102,838

The significant non-cash transactions for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022	2021
Transfer of construction-in-progress to property, plant and equipment	₩ 2,774,605	₩ 32,774,507
Reclassification of current portion of long-term borrowings	81,429,211	54,480,804
Transfer of equity of stock dividends	2,732,479	2,675,697
Reclassification of current portion of long-term advance received	91,664,786	73,272,051

Changes in liabilities arising from financing activities for the year ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	Non-cash flow					
	January 1, 2022	Cash flow	Exchange rate fluctuation	Interest expenses	Reclassification and others	December 31, 2022
Accrued expenses (*)	₩ 946,998	₩ (22,667,490)	₩ -	₩ 23,764,166	₩ -	₩ 2,043,674
Short-term borrowings	512,107,570	40,639,499	959,565	-	-	553,706,634
Current portion of long-term borrowings	54,480,805	(54,480,805)	-	-	81,429,211	81,429,211
Long-term borrowings	170,383,137	62,626,000	-	-	(81,429,211)	151,579,926
Lease liabilities	7,255,846	(3,162,872)	(5,934)	156,814	1,372,359	5,616,153
Dividends payable	5,674	(102,450,966)	-	-	102,467,998	22,706
	<u>₩ 745,180,030</u>	<u>₩ (79,496,634)</u>	<u>₩ 953,571</u>	<u>₩ 23,920,980</u>	<u>₩ 103,840,357</u>	<u>₩ 794,398,304</u>

(*) There are no prepaid interest expenses.

33. Supplementary cash flow information (cont'd)

	Non-cash flow						
	January 1, 2021	Cash flow	Exchange rate fluctuation	Interest expenses	Reclassification and others	December 31, 2021	
Accrued expenses (*)	₩ 842,336	₩ (15,562,744)	₩ -	₩ 15,667,434	₩ -	₩ 947,026	
Short-term borrowings	436,977,488	74,407,550	722,532	-	-	512,107,570	
Current portion of long-term borrowings	132,043,240	(132,043,240)	-	-	54,480,804	54,480,804	
Long-term borrowings	199,869,876	24,994,065	-	-	(54,480,804)	170,383,137	
Lease liabilities	5,512,344	(2,950,746)	36,725	191,568	4,594,297	7,384,188	
Dividends payable	10,846	(3,781)	-	-	(1,391)	5,674	
	₩ 775,256,130	₩ (51,158,896)	₩ 759,257	₩ 15,859,002	₩ 4,592,906	₩ 745,308,399	

(*) Prepaid interest expenses in 2021 amounted to ₩459 million.

34. Contingencies and commitments

As of December 31, 2022, the Group has the exclusive sales and distribution rights agreement and the product supply agreement with Celltrion Healthcare Co., Ltd., a related party as of December 31, 2022, on the products that the Group is currently developing and will develop in the future. The Group has received a performance deposit from Celltrion Healthcare Co., Ltd., pursuant to the agreement, which will be deducted from future product sales proceeds. In addition, for each product, the Group signed product supply agreement and fill & finish service agreement. Regarding the product supply agreement, there are provisions on price settlement and confidentiality in the contract. Regarding the fill & finish service agreement, there are provisions on yield settlement and confidentiality. The Group is responsible for product development and supply in accordance with the Master Service Agreement signed with Celltrion Healthcare Co., Ltd., and its marketing partners. In addition, there are conditional commitment and responsibility for indemnification for future changes in operating performance of Celltrion USA, Inc. based on sales and purchase agreement signed in the current year.

The Group sold and supplied ₩1,565,063 million(2021: ₩1,340,794 million), of products and services in accordance with the above agreements for the year ended December 31, 2022. Related trade receivables from Celltrion Healthcare Co., Ltd. are ₩1,317,562 million as of December 31, 2022 (December 31, 2021: ₩795,121 million) (See Note 35(2)(3)).

On request of Celltrion Healthcare Co., Ltd., in accordance with the exclusive sales and distribution rights agreement between Celltrion Healthcare Co., Ltd. and the Group, the Company is to store most of the products sold to Celltrion Healthcare Co., Ltd., at the Company's warehouse having specifically-designed refrigeration units, approved by safety regulators. These products have been separately partitioned from the Company's inventories.

In addition, the Group has entered into commitments to provide additional collateral to Korea Securities Finance Corporation in case of shortage of collateral for borrowings from the Employee Stock Ownership Association and Employee Stock Ownership members Korea Securities Finance Corporation which have employees' stockholding as collateral, and the related joint surety of ₩34,849 million are provided to Korea Securities Finance Corporation (December 31, 2021: ₩38,270 million to Korea Securities Finance Corporation). Also, the Group has provided Korea Securities Finance Corporation a deposit of ₩20,575 million(December 31, 2021: ₩13,516 million) as collateral related to the Employee Stock Ownership Association (See Note 8).

As of December 31, 2022, the Group was provided with a ₩33,976 million (December 31, 2021: ₩42,580 million) guarantee from Seoul Guarantee Insurance Co., Ltd. related to the refund of the support fund for childcare facilities for employees.

34. Contingencies and commitments (cont'd)

As of December 31, 2022, the Group has entered into loan commitments with Shinhan Bank, Korea Development Bank and others and was provided with a guarantee from financial institutions related to the issuance of letter of credit and letter of guarantee from financial institutions. Commitments for which unused amounts are outstanding as of December 31, 2022 are as follows (Korean won in thousands and USD):

2022				
Financial institutions	Descriptions of commitments	Currency	Limited amounts	Amount used
Shinhan Bank	L/C Usance	USD	30,000,000	6,572,856
	Bank overdraft	KRW	20,000,000	-
	Facility loan	KRW	100,000,000	37,433,593
	D/A	USD	1,000,000	188,159
	Discounting notes	KRW	10,000,000	-
	Facility loan	KRW	52,000,000	38,999,833
Korea EXIM Bank	Export financing	KRW	77,600,000	48,575,710
Korea Development Bank	L/C USANCE	USD	10,000,000	-
	General facility loan	USD	10,000,000	-
Citi Bank	General working capital loan	USD	18,000,000	8,000,000
2021				
Financial institutions	Descriptions of commitments	Currency	Limited amounts	Amount used
Shinhan Bank	L/C Usance	USD	30,000,000	5,507,303
	Bank overdraft	KRW	20,000,000	-
	Facility loan	KRW	100,000,000	10,450,023
	D/A	USD	500,000	-
	Facility loan	KRW	52,000,000	51,999,778
Korea EXIM Bank	Export financing	KRW	77,600,000	12,933,280
Korea Development Bank	L/C USANCE	USD	10,000,000	72,354
	General facility loan	KRW	40,000,000	5,000,000
Industrial Bank of Korea	Non L/C Basis (D/A)	USD	500,000	186,282
Nonghyup Bank	General facility loan	KRW	15,000,000	1,875,000

The Group has entered into an investment commitment of ₩75,000 million with its associate, Mirae Asset Celltrion New Growth Investment Association 1. The uninvested amount as of December 31, 2022 is ₩2,250 million (December 31, 2021: ₩6,250 million). Also, the Group has entered into an investment commitment of ₩50,000 million with its associate, Mirae Asset Celltrion Bio Ecosystem Growth Fund. The uninvested amount as of December 31, 2022 is ₩37,500 million (December 31, 2021: ₩45,000 million). Also, the Group has entered into an investment commitment of ₩50,000 million with its associate, Aju-Solasta Life Science 4.0 Fund. The uninvested amount as of December 31, 2022 is ₩37,500 million (December 31, 2021: None).

In addition, the Group has entered into an investment commitment of ₩5,000 million with its a, Premier Global Innovation Investment Association No.1. The uninvested amount as of December 31, 2022 is ₩335 million (December 31, 2021: ₩628 million). Also, the Group has entered into an investment commitment of ₩5,000 million with its a, Premier Global Innovation Investment Association No.2. The uninvested amount as of December 31, 2022 is ₩1,300 million (December 31, 2021: ₩2,515 million) (See Note 11(1)).

34. Contingencies and commitments (cont'd)

As of December 31, 2021, the Group is a defendant in two lawsuits involving claims for infringement of patent and others. As of the reporting date, the outcome of the pending litigations cannot be reasonably estimated.

As of December 31, 2022, Celltrion Pharm, Inc., a subsidiary of the Company, was imposed with additional corporate income tax amounting to ₩10,991 million for the omission of goodwill that is attributable to the taxation year 2009 when the merger occurred. Celltrion Pharm, Inc. claimed tax appeal and won the third trial on October 27, 2022.

As of December 31, 2022, the land owned by the Group for the construction of the R&D center is the land acquired from the Incheon City. The land acquisition contract provides a clause that the Group must complete the groundbreaking and construction within the development period set in the contract, and a clause that prohibits the provision of collateral or resale of the land for purposes other than the purpose of the business for five years from the effective date of the contract. It stipulates that if these matters are not satisfied, the Incheon City may cancel the sales contract.

On June 29, 2018, the Group purchased sales rights to Korea from Celltrion Healthcare Co., Ltd., to improve domestic sales efficiency by streamlining the transaction structure.

The Group made an equity investment of USD 8,000 thousand in Iksuda Therapeutics Limited for the year ended December 31, 2021, and thereafter entered into a contract to make additional investments when the contractual conditions are satisfied (See Note 11(1)).

The Group has binding contract of minimum purchase amount regarding services including fill and finish service. If the Group's order amount is below the minimum level, the Group must reimburse order shortage amount.

35. Related parties

Details of the Group and its related parties as of December 31, 2022 and 2021 are as follows:

Category	2022	2021
Chief Executive Officers	Woo Sung Kee	Woo Sung Kee
Entity with significant influence on the Group	Celltrion Holdings Co., Ltd.	Celltrion Holdings Co., Ltd.
	2014 growth-ladder-IMM venture fund	2014 growth-ladder-IMM venture fund
	Mirae Asset Celltrion New Growth Investment Association 1	Mirae Asset Celltrion New Growth Investment Association 1
Associates	CTB Biomedics Inc.	CTB Biomedics Inc.
	Iksuda Therapeutics Limited(*1)	Iksuda Therapeutics Limited(*1)
	Mirae Asset Celltrion Bio	Mirae Asset Celltrion Bio
	Ecosystem Growth Fund(*1)	Ecosystem Growth Fund(*1)
	Aju-Solasta Life Science 4.0 Fund(*2)	-
	Celltrion Healthcare Co., Ltd.	Celltrion Healthcare Co., Ltd.
	Celltrion Skincare Co., Ltd.	Celltrion Skincare Co., Ltd.
Other related parties	Celltrion USA Inc(*3)	Celltrion Healthcare Hungary
	Celltrion Healthcare Hungary	Others
	Others	

(*1) The entity was acquired and added to the Group's associates in 2021.

(*2) The entity was newly acquired and added to the Group's associates in the current year.

(*3) Converted to other related parties due to sale of shares in the current year.

35. Related parties (cont'd)

Significant transactions, which occurred in the normal course of business with related parties for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022				
	Sales	Other income	Interest	Purchase	Other expense
Entity which exercises significant influence on the Group					
Celltrion Holdings Co., Ltd.	₩ -	₩ 166,509	₩ -	₩ 3,933,693	₩ -
Other related parties					
Celltrion Healthcare Co., Ltd. (*1)	1,565,063,277	1,161,926	-	686,114	-
Celltrion Skincare Co., Ltd. (*2)	652,396	90,822	-	870,213	-
Celltrion Healthcare Hungary	27,770,266	507,781	-	604,389	-
Celltrion USA Inc (*3)	214,124,917	625,411	-	-	-
TS E&C	-	2,136	-	9,593,932	-
Celltrion Welfare Foundation	-	12,006	-	-	1,200,000
Celltrion Healthcare Taiwan Ltd	12,043,251	-	218,179	-	-
Celltrion Healthcare (Thailand) Co., Ltd.	28,396,407	-	747,029	39,709	-
Celltrion Healthcare Hong Kong Limited	15,386,730	-	78,345	-	-
Celltrion Healthcare Japan	-	16,308	-	2,102,703	-
Others	1,691,134	31,496	33,031	826,861	-
	<u>₩ 1,865,128,378</u>	<u>₩ 2,614,395</u>	<u>₩ 1,076,584</u>	<u>₩ 18,657,614</u>	<u>₩ 1,200,000</u>

35. Related parties (cont'd)

	2021				
	Sales	Other income	Interest	Purchase	Other expense
Entity which exercises significant influence on the Group					
Celltrion Holdings Co., Ltd.	₩ -	₩ 26,949,743	₩ -	₩ 1,725,982	₩ -
Other related parties					
Celltrion Healthcare Co., Ltd. (*1)	1,340,794,433	1,318,970	163,802	226,380	-
Celltrion Skincare Co., Ltd.	1,368,409	277,217	-	750,293	-
Celltrion Healthcare Hungary	54,078,689	392,686	2,260	4,739,039	-
Celltrion USA Inc					
TS E&C	-	2,136	-	9,595,155	-
Celltrion Welfare Foundation	-	11,026	-	-	1,000,000
Celltrion Healthcare Taiwan Ltd	1,231,873	-	-	1,372,970	-
Celltrion Healthcare (Thailand) Co., Ltd.	3,412,901	-	-	4,038,021	-
Celltrion Healthcare Hong Kong Limited	3,020,251	50	-	212,186	-
Celltrion Healthcare Japan	-	-	-	1,625,942	-
Others	955,991	31,648	-	979,859	-
Associate					
Boston Incubation Investment Association	-	-	48,570	-	-
	₩ 1,404,862,547	₩ 28,983,476	₩ 214,632	₩ 25,265,827	₩ 1,000,000

(*1) The Group provides products and services based on the exclusive sales and distribution rights agreement, the product supply agreement, fill & finish service agreement, etc. In relation to this transaction, the consideration has been measured at the fair value of the consideration received or receivable, net of sales discounts and volume discounts. In addition, the Group signed a sale and purchase agreement for 100% of Celltrion USA, Inc. shares through a Board of Directors resolution on August 5, 2022 (see Note 38). Aside from this, there was an exchange between inventories owned by Celltrion Healthcare and part of the inventories owned by the Group for the Group's development and regulatory approval purposes. The exchange had no impact on the Group's consolidated financial statements.

(*2) Includes ₩10 million of other revenue related to trademark rights sold to Celltrion Skincare (See Notes 13(1), 28).

(*3) 100% of the shares were sold to Celltrion Healthcare in the current year and thus it is converted to other related parties. (*1) The transaction details include the transaction amount prior to the sale (see Note 38).

35. Related parties (cont'd)

Balances of receivables from and payables to related parties as of December 31, 2022 and 2021 are as follows (Korean won in thousands):

	2022			
	Trade receivables	Loan assets (*3)	Other receivables	Other payables
Entity which exercises significant influence on the Group				
Celltrion Holdings Co., Ltd.	₩ -	₩ -	₩ 4,889	₩ 2,563,688
Other related parties				
Celltrion Healthcare Co., Ltd. (*1)	1,317,562,311	-	29,131,643	331,733,765
Celltrion Skincare Co., Ltd.	17,651	-	62,749	31,618
Celltrion Healthcare Hungary	18,760,241	-	163,536	13,383
Celltrion USA Inc (*2)	132,636,476	-	845,650	7,472,819
TS E&C	-	-	587	18,872
Celltrion Welfare Foundation	-	-	1,094	-
Celltrion Healthcare Taiwan Ltd	7,598,028	1,546,106	902,754	1,114,223
Celltrion Healthcare (Thailand) Co., Ltd.	19,523,204	16,226,509	2,445,136	32,100
Celltrion Healthcare Hong Kong Limited	7,563,826	-	73,628	-
Celltrion Healthcare Japan	-	-	-	490,815
Others	143,196	144,472	42,418	3,320
Associate				
Iksuda Therapeutics Limited	-	-	8,879,530	-
	₩ 1,503,804,933	₩ 17,917,087	₩ 42,553,614	₩ 343,474,603

35. Related parties (cont'd)

	2021			
	Trade receivables	Loan assets (*3)	Other receivables	Other payables
Entity which exercises significant influence on the Group				
Celltrion Holdings Co., Ltd.	₩ -	₩ -	₩ 3,049	₩ 615,491
Other related parties				
Celltrion Healthcare Co., Ltd. (*1)	795,120,523	-	14,466,287	274,368,843
Celltrion Skincare Co., Ltd.	217,653	-	62,632	41,480
Celltrion Healthcare Hungary	25,351,741	-	-	5,225,251
TS E&C	-	-	587	17,327
Celltrion Welfare Foundation	-	-	1,002	-
Celltrion Healthcare Taiwan Ltd	1,302,839	11,641,610	560,742	1,028,878
Celltrion Healthcare (Thailand) Co., Ltd.	3,359,181	24,663,142	1,616,092	3,232,241
Celltrion Healthcare Hong Kong Limited	3,016,220	4,156,559	401,661	357,926
Celltrion Healthcare Japan	-	-	-	279,005
Others	251,354	1,550,114	107,276	199,569
	₩ 828,619,511	₩ 42,011,425	₩ 17,219,328	₩ 285,366,011

(*1) As of December 31, 2022, contract assets of ₩ 28,819 million(as of December 31,2021: None) on other receivables with Celltrion Healthcare Co., Ltd., existed and as of December 31, 2022, contract liabilities (performance deposit) of ₩ 288,584 million(as of December 31, 2021: ₩274,368 million) arising from the basic contract of sales rights are included.

(*2) It is reclassified as other related parties as 100% of the shares were sold to Celltrion Healthcare in the current year and the transaction amount prior to the sale is included. In addition, the contract liability of ₩7,473 million (previous period: none) generated from the contract in other payables is included.

(*3) Specific details of loan assets are described in Note 35(5).

The Group does not receive payment guarantee for the loans payable from a company that exercises significant impact on the Group regarding part of loans payable as of the current last day of the reporting period (as of December 31, 2021: ₩10,327 million) and collateral amounting ₩72,000 million (December 31, 2021: ₩72,000 million) from the entity which exercises significant influence on the Group regarding certain borrowings. In addition, it does not receive any payment guarantee for the loans payable from the largest shareholder of the company (previous period: ₩ 66,000 million).

35. Related parties (cont'd)

Changes in loans with related parties for the current reporting period are as follows (Korean won in thousands):

2022					
	January 1	Loans	Change of Foreign exchange rate	December 31	
Celltrion Healthcare Taiwan Ltd	₩ 11,641,610	₩ (10,725,170)	₩ 629,666	₩ 1,546,106	
Celltrion Healthcare (Thailand) Co., Ltd.	24,663,142	(9,951,200)	1,514,567	16,226,509	
Celltrion Healthcare Australia Pty Ltd	143,807	(144,402)	595	-	
Celltrion Healthcare Hong Kong Limited	4,156,559	(4,266,793)	110,234	-	
Celltrion Healthcare Malaysia Sdn Bhd	135,147	-	9,325	144,472	
Celltrion Healthcare Philippines, Inc.	523,806	(582,770)	58,964	-	
Celltrion Healthcare Singapore Private Limited	747,354	(819,914)	72,560	-	
	₩ 42,011,425	₩ (26,490,249)	₩ 2,395,911	₩ 17,917,087	

2021					
	January 1	Loans	Change of Foreign exchange rate	December 31	
Celltrion Healthcare Taiwan Ltd	₩ -	₩ 11,221,348	₩ 420,262	₩ 11,641,610	
Celltrion Healthcare (Thailand) Co., Ltd.	-	23,887,403	775,739	24,663,142	
Celltrion Healthcare Australia Pty Ltd	-	139,889	3,918	143,807	
Celltrion Healthcare Hong Kong Limited	-	4,057,511	99,048	4,156,559	
Celltrion Healthcare Malaysia Sdn Bhd	-	131,043	4,104	135,147	
Celltrion Healthcare Philippines, Inc.	-	508,209	15,597	523,806	
Celltrion Healthcare Singapore Private Limited	-	724,659	22,695	747,354	
	₩ -	₩ 40,670,062	₩ 1,341,363	₩ 42,011,425	

During the current year, the Group collected ₩ 51 million(2021: ₩832 million) as principal to the associate, 2014 Growth Ladder-IMM Venture Fund. Also, the Group made a cash investment of ₩ 4,000 million (2021: ₩18,750 million) to the associate, Mirae Asset Celltrion New Growth Investment Association 1 and collected ₩ 8,500 million (2021: ₩11,000 million) as principal. Also, the Group made a cash investment of ₩7,500 million (2021: ₩5,000 million) to the associate, Mirae Asset Celltrion Bio Ecosystem Fund and ₩12,500 million to the associate, Aju-Solasta Life Science 4.0 Fund. During the year ended December 31, 2021, the Group made a cash investment of ₩ 9,032 million in Iksuda Therapeutics Limited, an associate and the Boston Incubation Investment Association, an associate, was liquidated and the principal amount of ₩ 31 million was collected (see Note 11).

Payment guarantees and agreements to related parties are described in Note 34.

35. Related parties (cont'd)

The compensations paid or payable to key management personnel for employee services for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

Key management personnel include directors (standing and non-standing) and audit committee members who have significant control and responsibilities on the Group's operation and business.

	2022		2021
Salaries and other short-term employee benefits	₩ 27,835,725	₩	19,349,010
Post-employment benefit	2,226,318		6,502,307
Share-based payment	5,946,866		5,267,827
Total	<u>₩ 36,008,909</u>	₩	<u>31,119,144</u>

36. Non-controlling interests

Changes in non-controlling interests for the years ended December 31, 2022 and 2021 are as follows (Korean won in thousands):

Accumulated amount as of January 1, 2022	₩ 133,136,893
Profit for the year distributed to non-controlling interests	4,730,665
Other comprehensive income distributed to non-controlling interests	80,485
Others (*)	<u>(3,103,774)</u>
Accumulated amount as of December 31, 2022	<u>₩ 134,844,269</u>
Accumulated amount as of January 1, 2021	₩ 119,903,309
Profit for the year distributed to non-controlling interests	16,314,855
Other comprehensive income distributed to non-controlling interests	121,022
Others (*)	<u>(3,202,293)</u>
Accumulated amount as of December 31, 2021	<u>₩ 133,136,893</u>

(*) Others represent the change in amount of shares owned due to the exercise of stock options granted by Celltrion Pharm, Inc., a subsidiary of the Group, and also represent the change in amount of net assets in accordance with the recognition of stock options and acquisition of treasury stocks.

37. Uncertainties of the impact of COVID-19

Various prevention and control measures, including travel restrictions are being implemented worldwide to block the spread of COVID-19, and as a result, the global economy has been widely affected. Governments around the world are announcing different forms of support policies to address COVID-19.

Items affected by Covid-19 are mainly Recoverability of Trade Receivables (see Note 9), Assessment of Inventory (see Note 10) and impairment of tangible and intangible assets (see Note 12, 13). The Group has prepared the financial statements by reasonably estimating the impact of Covid-19 on the Group. The further spread or end of COVID-19 in the future may affect our estimates and assumptions. However, the impact cannot be reasonably estimated at this time.

38. Discontinued operation

The Group sold the entire shares of Celltrion USA, Inc. owned by the parent company for ₩17,488 million to Celltrion Healthcare upon the Board of Directors resolution on August 5, 2022 and recognized ₩8,335 million of gain on disposal from discontinued operation in the current year. The Group reflected operating performance, directly attributable to Celltrion USA, Inc., out of the performance until the sale in discontinued operation, as it maintains transaction relationships even after the disposal. The statement of comprehensive income of the prior year presented for comparative purposes were restated in order to separately disclose discontinued operations from continuing operations.

Profit or loss from discontinued operation are as follows (Korean won in thousands):

	2022		2021
	(Before the sale)		
Revenue	₩ 18,972,026	₩	18,200,046
Operating profit	8,436,895		12,680,257
Profit or loss before income tax	7,140,642		12,686,443
Income tax expense	(1,963,677)		(2,709,882)
Profit or loss after income tax	5,176,965		9,976,561
Gain on disposal of discontinued operation	8,334,571		-
Income tax expense for gain on disposal of discontinued operation	(2,292,006)		-
Net profit in the current year	11,219,530		9,976,561

Cash flows before elimination of intercompany transactions, generated from discontinued operations (Korean won in thousands):

	2022		2021
	(Before the sale)		
Net cash flow from operating activities	(7,595,097)		8,490,445
Net cash flow from investing activities	(3,488,803)		9
Net cash flow from financing activities	(82,472)		(118,897)
Net cash flow from discontinued operation	(11,166,372)		8,371,557

39. Events after the reporting period

The following is a pending event involving the Group as a plaintiff and defendant after the reporting year and the final outcome of this lawsuit cannot be predicted at this stage (Korean won in thousands):

Court	Plaintiff	Defendant	Claim	Amount of lawsuit	Status
Incheon District Court	The Group	Humasis Co., Ltd.	Claim for damages, etc.	60,157	1st trial (in progress)
Anyang Branch of Suwon District Court	Humasis Co., Ltd.	The Group	Price for goods, etc.	120,609	1st trial (in progress)

The Group voted for the acquisition of ₩ 100,000 million of treasury shares at board of directors meetings on February 1, 2023 and March 3, 2023.

The Group paid USD 7,000 thousand for equity investment on December 29, 2022 as per the agreement with Iksuda Therapeutics Limited and recognized the amount as a long-term advanced payment, which was subsequently reclassified as investment in subsidiaries on January 13, 2023.

On March 14, 2023 The Group signed an research and development (“R&D”) project agreement (payment fee: ₩1,000 million) with Genuv, a company that specializes in antibody discovery, to develop up to 2 types of antibodies and secured the right to conduct joint R&D for the antibodies depending on the outcome of the R&D project. Both parties will share the R&D cost at 50:50 ratio. The maximum amount per development milestone based on the research results is ₩ 33,000 million per antibody and up to ₩ 900,000 million of sales milestone or royalty may arise depending on sales upon commercialization.