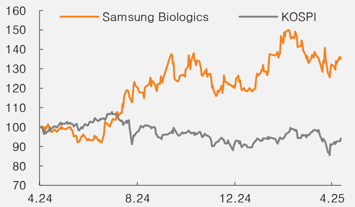
MIRAE ASSET Securities

Equity Research
April 24, 2025

(Maintain)	Buy
Target price	W1,350,000
Current price (4/23/25)	W1,066,000
Upside	26.6%

OP (25F, Wbn)	1,814
Consensus OP (25F, Wbn)	1,627
EPS growth (25F, %)	40.4
Market EPS growth (25F, %)	24.4
P/E (25F, x)	51.4
Market P/E (25F, x)	9.3
KOSPI	2,525.56
Market cap (Wbn)	75,871
Shares (mn)	71
Free float (%)	25.4
Foreign ownership (%)	13.0
Beta (12M)	0.44
52-week low (W)	727,000
52-week high (W)	1,185,000

(%)	1M	6M	12M
Absolute	-2.6	0.7	34.8
Relative	1.9	3.6	40.0



Mirae Asset Securities Co., Ltd.

Seung-min Kim
sm.kim.a@miraeasset.com

Se-eun Jo
seeun.jo@miraeasset.com

207940 KS · Pharma/Biotech

Samsung Biologics

Earnings surpass heightened expectations

Maintain Buy and TP of W1,350,000

Our valuation of Samsung Biologics represents the sum of the values of the CDMO business (W88tr) and Samsung Bioepis (biosimilars; W8.8tr). This year, we expect the firm to deliver CDMO revenue growth of 28% YoY and an EBITDA margin of 48%, outperforming global peers such as Lonza (guidance: CDMO growth of 20% YoY and EBITDA margin of 30%) and Fujifilm (consensus: negative CDMO growth and single-digit EBITDA margin). We believe this strong outlook justifies the stock's valuation premium. For reference, the global CDMO market is projected to expand at a CAGR of 8-10%.

Meanwhile, a potential concern is that the firm does not currently have a production base in the US (unlike Lonza and Fujifilm). However, the firm is closely monitoring policy shifts, and we think tariff concerns will ease if it secures additional contracts.

1Q25 review and 2025 outlook

For 1Q25, Samsung Biologics reported non-consolidated revenue of W999.5bn (+49% YoY; in line with the consensus), operating profit of W430.1bn (+85% YoY; 13% above the consensus), an OP margin of 43% (+8.3%p YoY), and an EBITDA margin of 51.4% (+5.9%p YoY). We attribute the strong results to the full operation of Plants 1, 2, 3, expanding operations at Plant 4 (full operation of the 60,000-liter facility and ramp-up of the 180,000-liter facility), and favorable FX. Notably, the gap between the USD/KRW rate at the time of revenue recognition and the rate applied to raw material purchases led to a sharp improvement in gross margin (+9.4%p YoY).

For 2025, we look for revenue of W4.49tr (+28% YoY) and operating profit of W1.81tr (+37% YoY). Reflecting the 1Q results, we revised up our operating profit forecast by 4%.

We expect the full utilization of Plants 1, 2, 3 to continue and the 180,000-liter facility at Plant 4 to run at full capacity in 2H25. The company reaffirmed its 2025 revenue growth guidance of 20–25%, based on a USD/KRW rate assumption of around 1,400.

Samsung Bioepis announced 1Q25 revenue of W400.6bn (+43% YoY), operating profit of W128bn (+236% YoY), and an OP margin of 31.9% (+18.3%p YoY), driven by strong sales of existing products and the launch of the high-margin Stelara biosimilar.

On a consolidated basis, 1Q25 revenue and operating profit beat the consensus by 7% and 37%, respectively, supported by: 1) Samsung Bioepis's solid results; 2) the deferral of some internal transactions from 1Q25 to 2Q25; and 3) the recognition of previously unrealized profits (from the sale of internal inventory to third parties).

(Dec.)	2023	2024	2025F	2026F	2027F
Revenue (Wbn)	2,939	3,497	4,485	5,123	6,316
OP (Wbn)	1,204	1,321	1,814	1,999	2,381
OP margin (%)	41.0	37.8	40.4	39.0	37.7
NP (Wbn)	946	1,051	1,476	1,660	1,958
EPS (W)	13,290	14,766	20,733	23,317	27,503
ROE (%)	12.2	12.0	14.7	14.3	14.6
P/E (x)	57.2	64.3	51.4	45.7	38.8
P/B (x)	6.6	7.3	7.1	6.1	5.3
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0

Notes: Under non-consolidated K-IFRS; NP is attributable to owners of the parent
Source: Company data, Mirae Asset Securities Research estimates

Table 1. Valuation table (Wbn)

		Notes
Samsung Biologics (CDMO)	87,782	- Present value of 2029F EBITDA (W2.5tr; WACC of 7.5%); Plant 5 expected to start operating at full capacity in 2029 - Target EV/EBITDA of 35x (50% premium to Lonza's 5Y avg. EV/EBITDA) - Valuation premium reflects higher EBITDA growth and EBITDA margins vs. Lonza
Samsung Bioepis (biosimilars)	8,797	- 12MF EV/EBITDA - Target multiple of 21x (30% premium to Viatris at the time of its biosimilar asset sale) - Premium justified given that the firm is a leading biosimilar player
Net cash	440	
Fair value	97,018	
No. of shares ('000)	71,174	
Fair value/share (W)	1,363,117	- TP: 1,350,000
Current price (W)	1,066,000	
Upside	26.6%	

Source: Mirae Asset Securities Research

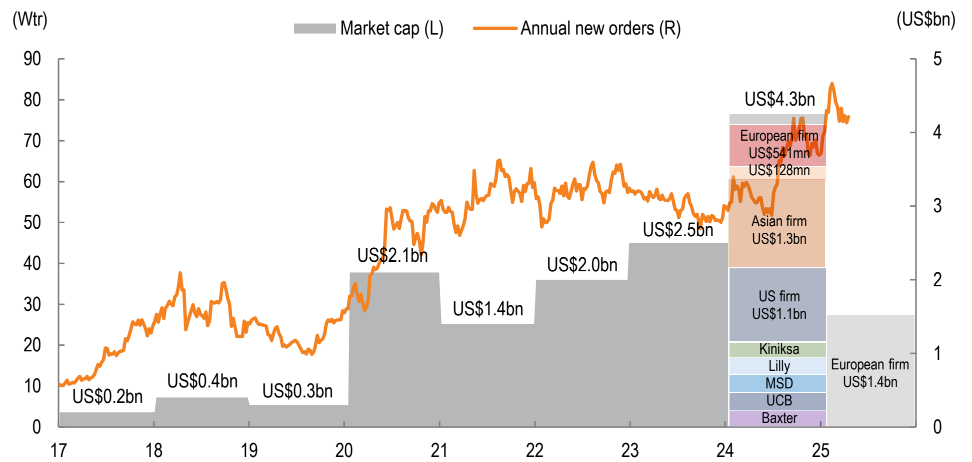
Table 2. 1Q25 review (Wbn, %, %p)

	1Q24	4Q24	1Q25P			Growth	
			Preliminary	Consensus	Diff.	YoY	QoQ
Revenue	669.5	950.4	999.5	1,012.2	-1.3	49.3	5.2
OP	232.7	314.7	430.1	379.9	13.2	84.8	36.7
OP margin	34.8	33.1	43.0	37.5	5.5	8.3	9.9
NP	183.6	271.3	331.4	312.7	6.0	80.5	22.2
Net margin	27.4	28.5	33.2	30.9	2.3	5.7	4.6

Note: Under non-consolidated K-IFRS

Source: QuantiWise, Mirae Asset Securities Research

Figure 1. Annual CMO order intake (new + revisions) and market cap



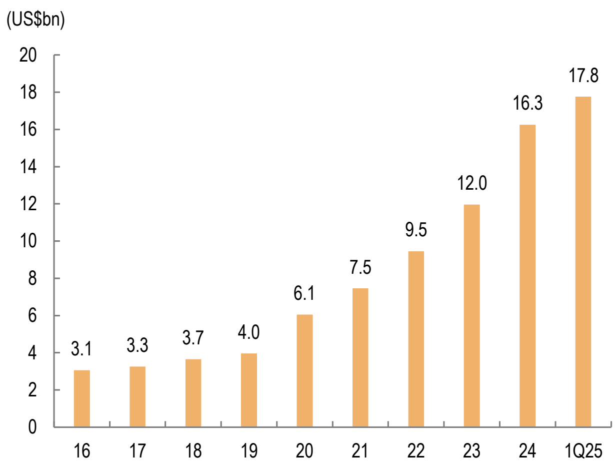
Source: Dart, Mirae Asset Securities Research

Table 3. Quarterly/annual earnings and forecasts (Wbn, %)

	1Q24	2Q24	3Q24	4Q24	1Q25P	2Q25F	3Q25F	4Q25F	2023	2024	2025F	2026F
Revenue	669.5	810.2	1,067.1	950.4	999.5	1,133.7	1,194.6	1,157.4	2,938.8	3,497.2	4,485.2	5,123.5
YoY	13.3	27.2	20.9	14.8	49.3	39.9	11.9	21.8	20.6	19.0	28.3	14.2
Plant 1	85.2	88.2	99.5	99.5	106.8	118.1	111.1	107.3	388.8	394.0	443.8	462.5
Plant 2	218.1	248.0	292.5	260.5	270.4	303.2	303.2	275.8	1,023.1	1,071.5	1,175.1	1,198.5
Plant 3	223.4	286.2	368.8	327.8	320.1	335.4	343.5	312.1	1,169.1	1,302.9	1,322.6	1,310.1
Plant 4	50.6	48.0	129.8	220.8	263.0	317.0	376.7	402.2	153.9	661.6	1,498.0	1,740.0
Plant 5												282.6
Services	28.7	24.8	27.2	30.6	50.0	60.0	60.0	60.0	278.7	111.3	230.0	320.0
GP	300.4	405.4	521.7	485.5	542.0	589.5	597.3	567.1	1,490.4	1,713.0	2,295.9	2,627.2
YoY	2.4	28.8	14.9	13.3	80.4	45.4	14.5	16.8	24.2	14.9	34.0	14.4
Gross margin	44.9	50.0	48.9	51.1	54.2	52.0	50.0	49.0	50.7	49.0	51.2	51.3
OP	232.7	329.2	444.7	314.7	430.1	460.6	477.8	445.1	1,204.2	1,321.4	1,813.6	1,999.3
YoY	-0.7	29.6	16.5	-5.8	84.8	39.9	7.4	41.4	24.4	9.7	37.2	10.2
OP margin	34.8	40.6	41.7	33.1	43.0	40.6	40.0	38.5	41.0	37.8	40.4	39.0
EBITDA	304.5	401.7	526.2	388.1	507.1	538.3	565.1	523.8	1,459.1	1,620.5	2,134.3	2,286.2
YoY	5.6	27.8	16.9	-4.4	66.5	34.0	7.4	35.0	27.0	11.1	31.7	7.1
EBITDA margin	45.5	49.6	49.3	40.8	50.7	47.5	47.3	45.3	49.6	46.3	47.6	44.6
NP	183.6	272.6	323.5	271.3	331.4	387.4	385.6	371.3	945.9	1,051.0	1,475.7	1,659.5
YoY	0.7	40.9	14.3	-5.5	80.5	42.1	19.2	36.8	37.7	11.1	40.4	12.5
Net margin	27.4	33.6	30.3	28.5	33.2	34.2	32.3	32.1	32.2	30.1	32.9	32.4

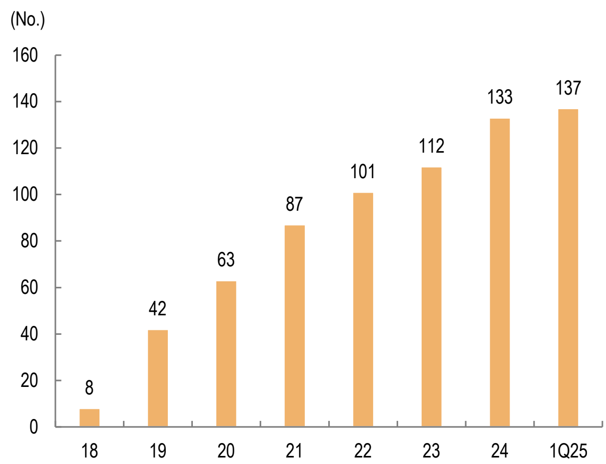
Notes: Under non-consolidated K-IFRS; revenue figures by plant are not disclosed by the company and are therefore estimates.
Source: Mirae Asset Securities Research

Figure 2. Cumulative CMO order value



Source: Company data, Mirae Asset Securities Research

Figure 3. Cumulative CDO orders (no. of products)



Source: Company data, Mirae Asset Securities Research

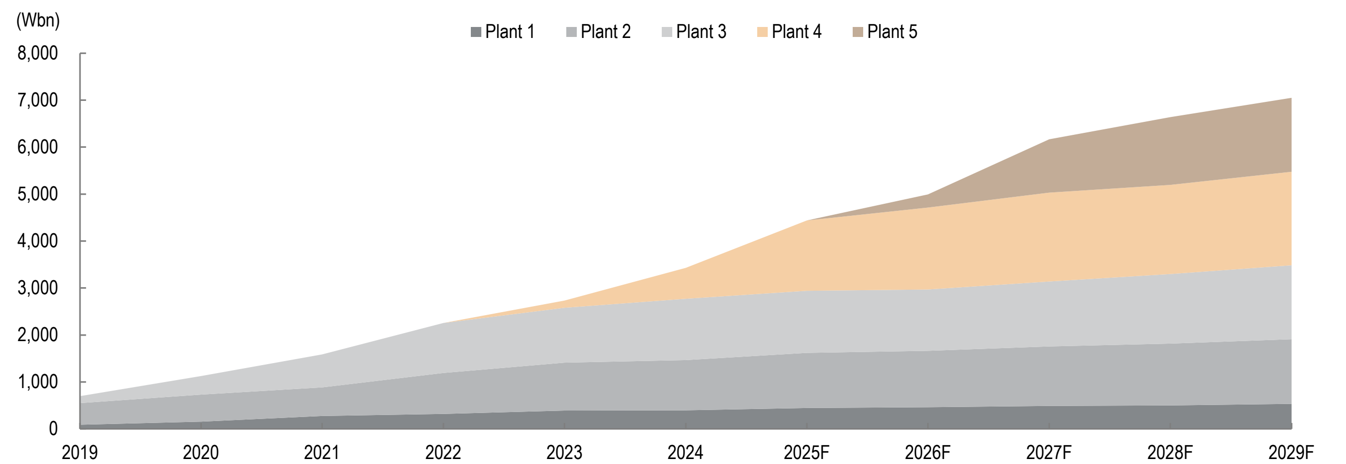
Table 4. Annual earnings and forecasts (Wbn, %)

	2019	2020	2021	2022	2023	2024	2025F	2026F	2027F	2028F	2029F
Revenue	702	1,165	1,568	2,437	2,939	3,497.2	4,485	5,123	6,316	6,984	7,421
YoY	30.9	66.0	34.6	55.4	20.6	19.0	28.3	14.2	23.3	10.6	6.3
Plant 1	87	156	273	318	389	394	444	462	491	502	533
Utilization	75%	80%	83%	86%	86%	80%	80%	80%	80%	80%	80%
Plant 2	464	575	613	873	1,023	1,071	1,175	1,199	1,266	1,312	1,378
Utilization	73%	80%	80%	75%	85%	84%	83%	81%	82%	84%	84%
Plant 3	149	396	701	1,065	1,169	1,303	1,323	1,310	1,381	1,483	1,573
Utilization	23%	46%	76%	83%	83%	82%	83%	82%	81%	85%	85%
Plant 4					154	662	1,498	1,740	1,894	1,898	1,993
Utilization					13%	36%	75%	85%	85%	84%	84%
Plant 5								283	1,135	1,442	1,571
Utilization								15%	33%	65%	83%
Services	53	62	126	176	279	111	230	320	380	420	460
OP	92	293	536	968	1,204	1,321	1,814	1,999	2,381	2,783	2,984
YoY		218.9	83.4	80.4	24.4	9.7	37.3	10.2	19.1	16.9	7.3
OP margin	13.1	25.1	34.2	39.7	41.0	37.8	40.4	39.0	37.7	39.8	40.2
EBITDA	225	436	697	1,149	1,459	1,620	2,134	2,286	2,683	3,092	3,308
YoY	52.7	94.2	59.7	64.9	27.0	11.1	31.7	7.1	17.3	15.3	7.0
EBITDA margin	32.0	37.4	44.4	47.1	49.6	46.3	47.6	44.6	42.5	44.3	44.6

Notes: Under non-consolidated K-IFRS; revenue figures by plant are not disclosed by the company and are therefore estimates.

Source: Mirae Asset Securities Research

Figure 4. Revenue estimates by plant



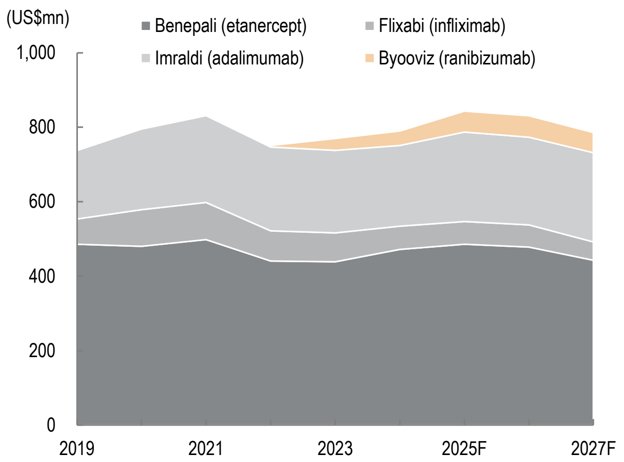
Source: Mirae Asset Securities Research

Table 5. Samsung Bioepis: Earnings and forecasts (US$mn, Wbn, %)

	2019	2020	2021	2022	2023	2024	2025F	2026F
Benepali (etanercept)	486	481	498	441	439	472	486	478
Flixabi (infliximab)	68	98	99	81	77	62	61	60
Imraldi (adalimumab)	184	217	233	225	222	217	240	235
Byooviz (ranibizumab)				4	32	39	56	58
Renflexis (infliximab)	97	152	186	226	278	285	290	305
Ontruzant (trastuzumab)	83	134	126	122	155	160	140	135
Brenzys (etanercept)	73	66	63	75	73	90	85	80
Aybintio (bevacizumab)			36	39	43	35	36	37
Hadlima (adalimumab)			15	19	44	140	175	200
Pyzchiva (ustekinumab)						5	60	120
Epysqli (eculizumab)						6	50	80
Partner revenue (total)	991	1,127	1,256	1,262	1,363	1,511	1,679	1,788
Samsung Bioepis revenue	766	777	846	946	1,020	1,538	1,541	1,616
YoY	107.7	1.5	8.8	11.8	7.8	50.7	0.2	4.8
OP	123	145	192	232	205	435	341	363
YoY	-219.5	18.1	32.3	20.7	-11.3	112.0	-21.6	6.2
OP margin	16.0	18.7	22.7	24.5	20.1	28.3	22.1	22.4
EBITDA	177	203	257	278	255	489	398	423
YoY	-396.1	15.1	26.3	8.2	-8.1	91.7	-18.7	6.3
EBITDA margin	23.1	26.1	30.3	29.3	25.0	31.8	25.8	26.2

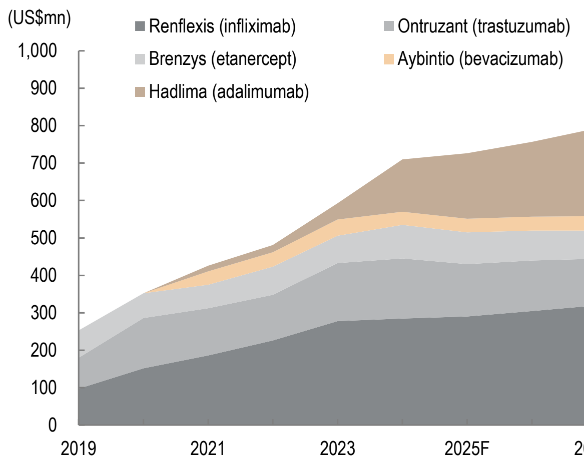
Source: FactSet, Mirae Asset Securities Research

Figure 5. Organon (partner of Samsung Bioepis): Biosimilar revenue forecasts



Source: Bloomberg, Mirae Asset Securities Research

Figure 6. Biogen (partner of Samsung Bioepis): Biosimilar revenue forecasts



Source: Bloomberg, Mirae Asset Securities Research

Samsung Biologics (207940 KS)

Income statement (summarized)

(Wbn)	2024	2025F	2026F	2027F
Revenue	**3,497**	**4,485**	**5,123**	**6,316**
Cost of revenue	**1,784**	**2,189**	**2,496**	**3,072**
GP	**1,713**	**2,296**	**2,627**	**3,244**
SG&A expenses	**392**	**482**	**628**	**864**
OP (adj.)	**1,321**	**1,814**	**1,999**	**2,381**
OP	**1,321**	**1,814**	**1,999**	**2,381**
Non-operating profit	**81**	**31**	**75**	**119**
Net financial income	20	31	75	119
Net income from associates	0	0	0	0
Pretax profit	1,402	1,845	2,074	2,500
Income tax	351	369	415	542
Profit from continuing operations	1,051	1,476	1,660	1,958
Profit from discontinued operations	0	0	0	0
NP	**1,051**	**1,476**	**1,660**	**1,958**
Attributable to owners	1,051	1,476	1,660	1,958
Attributable to minority interests	0	0	0	0
Total comprehensive income	**1,042**	**1,476**	**1,660**	**1,958**
Attributable to owners	1,042	1,476	1,660	1,958
Attributable to minority interests	0	0	0	0
EBITDA	1,620	2,134	2,286	2,667
FCF	86	1,853	1,983	2,313
EBITDA margin (%)	46.3	47.6	44.6	42.2
OP margin (%)	37.8	40.4	39.0	37.7
Net margin (%)	30.1	32.9	32.4	31.0

Balance sheet (summarized)

(Wbn)	2024	2025F	2026F	2027F
Current assets	**3,992**	**5,997**	**7,899**	**10,059**
Cash & equivalents	300	1,261	2,489	0
AR & other receivables	0	0	0	0
Inventory	1,883	2,415	2,759	3,401
Other current assets	1,809	2,321	2,651	6,658
Non-current assets	**9,325**	**9,673**	**9,998**	**10,855**
Investments in associates	3,328	4,269	4,876	6,011
PP&E	5,048	4,742	4,472	4,202
Intangible assets	65	50	33	17
Total assets	**13,317**	**15,671**	**17,897**	**20,914**
Current liabilities	**2,679**	**3,436**	**3,925**	**4,839**
AP & other payables	852	1,093	1,248	1,539
Short-term financial liabilities	137	176	201	248
Other current liabilities	1,690	2,167	2,476	3,052
Non-current liabilities	**1,357**	**1,478**	**1,556**	**1,701**
Long-term financial liabilities	930	930	930	930
Other non-current liabilities	427	548	626	771
Total liabilities	**4,036**	**4,914**	**5,481**	**6,540**
Equity attributable to owners	**9,281**	**10,757**	**12,416**	**14,374**
Capital stock	178	178	178	178
Capital surplus	5,672	5,672	5,672	5,672
Retained earnings	3,450	4,926	6,585	8,543
Minority interests	**0**	**0**	**0**	**0**
Shareholders' equity	**9,281**	**10,757**	**12,416**	**14,374**

Cash flow statement (summarized)

(Wbn)	2024	2025F	2026F	2027F
Operating cash flow	**1,383**	**1,853**	**1,983**	**2,313**
NP	1,051	1,476	1,660	1,958
Non-cash income/expenses	641	659	627	710
Depreciation	286	306	270	270
Amortization	13	15	17	17
Other	342	338	340	423
Chg. in working capital	-65	57	37	69
Chg. in AR & other receivables	-367	0	0	0
Chg. in inventory	-261	-532	-344	-642
Chg. in AP & other payables	210	49	32	59
Income tax	-277	-369	-415	-542
Cash flow from investing activities	**-1,181**	**-268**	**-173**	**-323**
Chg. in PP&E	-1,297	0	0	0
Chg. in intangible assets	-27	0	0	0
Chg. in financial assets	761	-268	-173	-323
Other	-618	0	0	0
Cash flow from financing activities	**-154**	**39**	**25**	**47**
Chg. in financial liabilities	-164	39	25	47
Chg. in equity	0	0	0	0
Dividends	0	0	0	0
Other	10	0	0	0
Chg. in cash	**69**	**962**	**1,228**	**902**
Beginning balance	231	300	1,261	2,489
Ending balance	300	1,261	2,489	3,390

Key valuation metrics/ratios

	2024	2025F	2026F	2027F
P/E (x)	64.3	51.4	45.7	38.8
P/CF (x)	39.9	35.5	33.2	28.4
P/B (x)	7.3	7.1	6.1	5.3
EV/EBITDA (x)	41.6	34.9	32.0	27.0
EPS (W)	14,766	20,733	23,317	27,503
CFPS (W)	23,773	29,988	32,121	37,478
BPS (W)	130,397	151,131	174,447	201,951
DPS (W)	0	0	0	0
Dividend payout ratio (%)	0.0	0.0	0.0	0.0
Dividend yield (%)	0.0	0.0	0.0	0.0
Revenue growth (%)	19.0	28.3	14.2	23.3
EBITDA growth (%)	11.1	31.7	7.1	16.7
OP growth (%)	9.7	37.2	10.2	19.1
EPS growth (%)	11.1	40.4	12.5	18.0
AR turnover (x)	0.0	0.0	0.0	0.0
Inventory turnover (x)	2.0	2.1	2.0	2.1
AP turnover (x)	10.3	11.0	10.5	10.8
ROA (%)	8.4	10.2	9.9	10.1
ROE (%)	12.0	14.7	14.3	14.6
ROIC (%)	19.7	25.5	29.4	35.8
Debt-to-equity ratio (%)	43.5	45.7	44.1	45.5
Current ratio (%)	149.0	174.5	201.2	207.9
Net debt-to-equity ratio (%)	-1.7	-12.5	-21.8	-27.0
Interest coverage ratio (x)	38.8	56.3	60.3	69.6

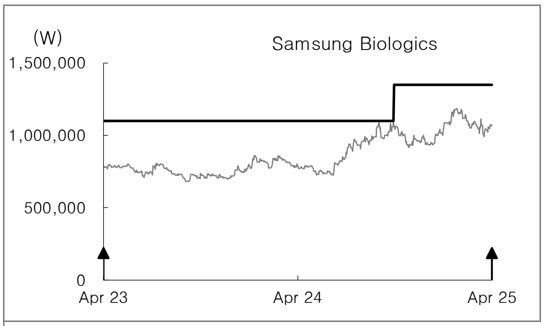
Source: Company data, Mirae Asset Securities Research estimates

Appendix 1

Important disclosures and disclaimers

Two-year rating and TP history

Company	Date	Rating	TP (W)
Samsung Biologics (207940)	10/22/24	Buy	1,350,000
	01/30/24	One year	1,100,000
	01/30/23	Buy	1,100,000



Stock ratings		Sector ratings	
Buy	Expected 12-month performance: +20% or greater	Overweight	Expected to outperform the market over 12 months
Trading Buy	Expected 12-month performance: +10% to +20%	Neutral	Expected to perform in line with the market over 12 months
Hold	Expected 12-month performance: -10% to +10%	Underweight	Expected to underperform the market over 12 months
Sell	Expected 12-month performance: -10% or worse		

Rating and TP history: Share price (─), TP (▬), Not Rated (■), Buy (▲), Trading Buy (■), Hold (●), Sell (♦)
* Our investment rating is a guide to the expected return of the stock over the next 12 months.
* Outside of the official ratings of Mirae Asset Securities Co., Ltd., analysts may call trading opportunities should technical or short-term material developments arise.
* The TP was determined by the research analyst through valuation methods discussed in this report, in part based on estimates of future earnings.
* TP achievement may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

Ratings distribution and investment banking services

	Buy	Trading Buy	Hold	Sell
Ratings distribution	83.98%	6.63%	8.84%	0.55%
Investment banking services	88.24%	0%	11.76%	0%

* Based on recommendations in the last 12-months (as of March 31, 2025)

Disclosures
As of the publication date, Mirae Asset Securities Co., Ltd. has acted as a liquidity provider for equity-linked warrants backed by shares of Samsung Biologics as an underlying asset; other than this, Mirae Asset Securities has no other special interests in the covered companies.

Analyst certification
The research analysts who prepared this report (the “Analysts”) are registered with the Korea Financial Investment Association and are subject to Korean securities regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws or regulations thereof. Each Analyst responsible for the preparation of this report certifies that (i) all views expressed in this report accurately reflect the personal views of the Analyst about any and all of the issuers and securities named in this report and (ii) no part of the compensation of the Analyst was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report. Mirae Asset Securities Co., Ltd. (“Mirae Asset Securities”) policy prohibits its Analysts and members of their households from owning securities of any company in the Analyst’s area of coverage, and the Analysts do not serve as an officer, director, or advisory board member of the subject companies. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. Like all employees of Mirae Asset Securities, the Analysts receive compensation that is determined by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading, and private client divisions. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or Mirae Asset Securities except as otherwise stated herein.

Disclaimers
This report was prepared by Mirae Asset Securities, a broker-dealer registered in the Republic of Korea and a member of the Korea Exchange. Information and opinions contained herein have been compiled in good faith and from sources believed to be reliable, but such information has not been independently verified and Mirae Asset Securities makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness, or correctness of the information and opinions contained herein or of any translation into English from the Korean language. In case of an English translation of a report prepared in the Korean language, the original Korean language report may have been made available to investors in advance of this report.
The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws, and accounting principles, and no person whose receipt or use of this report would violate any laws or regulations or subject Mirae Asset Securities or any of its affiliates to registration or licensing requirements in any jurisdiction shall receive or make any use hereof.
This report is for general information purposes only and is not and shall not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The report does not constitute investment advice to any person, and such person shall not be treated as a client of Mirae Asset Securities by virtue of receiving this report. This report does not take into account the particular investment objectives, financial situations, or needs of individual clients. The report is not to be relied upon in substitution for the exercise of independent judgment. Information and opinions contained herein are as of the date hereof and are subject to change without notice. The price and value of the investments referred to in this report and the income from them may depreciate or appreciate, and investors may incur losses on investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. Mirae Asset Securities, its affiliates, and their directors, officers, employees, and agents do not accept any liability for any loss arising out of the use hereof.

Mirae Asset Securities may have issued other reports that are inconsistent with, and reach different conclusions from, the opinions presented in this report. The reports may reflect different assumptions, views, and analytical methods of the analysts who prepared them. Mirae Asset Securities may make investment decisions that are inconsistent with the opinions and views expressed in this research report. Mirae Asset Securities, its affiliates, and their directors, officers, employees, and agents may have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. Mirae Asset Securities and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making, or other financial services as are permitted under applicable laws and regulations.
No part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of Mirae Asset Securities. For further information regarding company-specific information as it pertains to the representations and disclosures in this Appendix 1, please contact compliance@miraeasset.us.com or +1 (212) 407-1000.

Distribution
United Kingdom: This report is being distributed by Mirae Asset Securities (UK) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the “Order”), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as “Relevant Persons”). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.
United States: Mirae Asset Securities is not a registered broker-dealer in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This report is distributed in the U.S. by Mirae Asset Securities (USA) Inc., a member of FINRA/SIPC, to “major U.S. institutional investors” in reliance on the exemption from registration provided by Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934, as amended. All U.S. persons that receive this document by their acceptance hereof represent and warrant that they are a major U.S. institutional investor and have not received this report under any express or implied understanding that they will direct commission income to Mirae Asset Securities or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Mirae Asset Securities (USA) Inc. Mirae Asset Securities (USA) Inc. accepts responsibility for the contents of this report in the U.S., subject to the terms hereof, to the extent that it is delivered to a U.S. person other than a major U.S. institutional investor. Under no circumstances should any recipient of this research report effect any transaction to buy or sell securities or related financial instruments through Mirae Asset Securities. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.
Hong Kong: This report is distributed in Hong Kong by Mirae Asset Securities (HK) Limited, which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong (Cap. 571, Laws of Hong Kong) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong to any person.
India: This report is being distributed by Mirae Asset Capital Markets (India) Private Limited (“MACM”) in India to the customers based in India and is personal information only for those authorised recipient(s). MACM is inter alia a Securities and Exchange Board of India (“SEBI”) registered Research Analyst in India and is not registered outside India. MACM and Mirae Asset, Korea are group entities. MACM makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein. The user assumes the entire risk of any use made of this information. This report has been provided for assistance only and is not intended to be and must not alone be taken as the basis for an investment decision. Recipient must read the entire Appendix 1 to the report carefully for Important Disclosures & Disclaimers.
All other jurisdictions: Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact Mirae Asset Securities or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject Mirae Asset Securities and its affiliates to any registration or licensing requirement within such jurisdiction.

Mirae Asset Securities International Network

Mirae Asset Securities Co., Ltd. (Seoul)
One-Asia Equity Sales Team
Mirae Asset Center 1 Building
26 Eulji-ro 5-gil, Jung-gu, Seoul 04539
Korea

Tel: 82-2-3774-2124

Mirae Asset Securities (HK) Ltd.
Units 8501, 8507-8508, 85/F
International Commerce Centre
1 Austin Road West
Kowloon
Hong Kong
Tel: 852-2845-6332

Mirae Asset Securities (UK) Ltd.
41st Floor, Tower 42
25 Old Broad Street,
London EC2N 1HQ
United Kingdom

Tel: 44-20-7982-8000

Mirae Asset Securities (USA) Inc.
810 Seventh Avenue, 37th Floor
New York, NY 10019
USA

Tel: 1-212-407-1000

Mirae Asset Wealth Management (Brazil) CCTVM
Rua Funchal, 418, 18th Floor, E-Tower Building
Vila Olimpia
Sao Paulo - SP
04551-060
Brazil
Tel: 55-11-2789-2100

PT. Mirae Asset Sekuritas Indonesia
District 8, Treasury Tower Building Lt. 50
Sudirman Central Business District
Jl. Jend. Sudirman, Kav. 52-54
Jakarta Selatan 12190
Indonesia
Tel: 62-21-5088-7000

Mirae Asset Securities (Singapore) Pte. Ltd.
6 Battery Road, #11-01
Singapore 049909
Republic of Singapore

Tel: 65-6671-9845

Mirae Asset Securities (Vietnam) LLC
7F, Saigon Royal Building
91 Pasteur St.
District 1, Ben Nghe Ward, Ho Chi Minh City
Vietnam

Tel: 84-8-3911-0633 (ext.110)

Mirae Asset Securities Mongolia UTsK LLC
#406, Blue Sky Tower, Peace Avenue 17
1 Khoroo, Sukhbaatar District
Ulaanbaatar 14240
Mongolia

Tel: 976-7011-0806

Mirae Asset Investment Advisory (Beijing) Co., Ltd
2401B, 24th Floor, East Tower, Twin Towers
B12 Jianguomenwai Avenue, Chaoyang District
Beijing 100022
China

Tel: 86-10-6567-9699

Beijing Representative Office
2401A, 24th Floor, East Tower, Twin Towers
B12 Jianguomenwai Avenue, Chaoyang District
Beijing 100022
China

Tel: 86-10-6567-9699 (ext. 3300)

Shanghai Representative Office
38T31, 38F, Shanghai World Financial Center
100 Century Avenue, Pudong New Area
Shanghai 200120
China

Tel: 86-21-5013-6392

Ho Chi Minh Representative Office
7F, Saigon Royal Building
91 Pasteur St.
District 1, Ben Nghe Ward, Ho Chi Minh City
Vietnam

Tel: 84-8-3910-7715

Mirae Asset Capital Markets (India) Pvt Ltd
1st Floor, Tower 4, Equinox Business Park,
LBS Marg, Off BKC, Kurla (West), Mumbai - 400 070
India

Tel: 91-22-62661300 / 48821300