



# Life Science Business

**AGC**

AGC Inc.

September 17, 2020

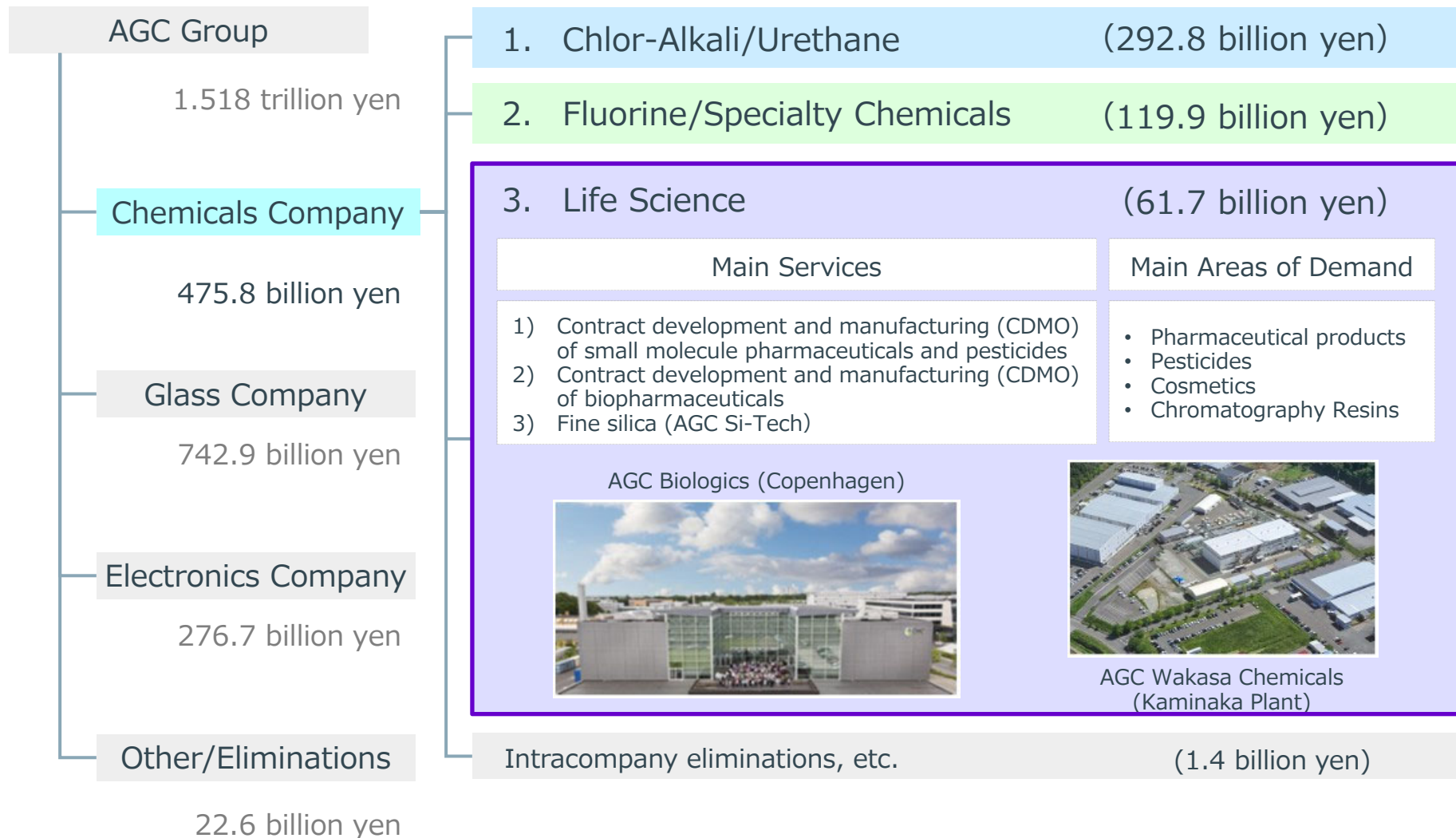
Your Dreams, Our Challenge

- **The Life Science Business within the Chemicals Company**
- **Pharmaceutical Market/Industry Trends**
- **Key Strengths of the CDMO Business and Business Expansion to Date**
- **Working on New Modalities**
- **Impact of COVID-19**

- **The Life Science Business within the Chemicals Company**
- Pharmaceutical Market/Industry Trends
- Key Strengths of the CDMO Business and Business Expansion to Date
- Working on New Modalities
- Impact of COVID-19

# Chemicals Company Sales

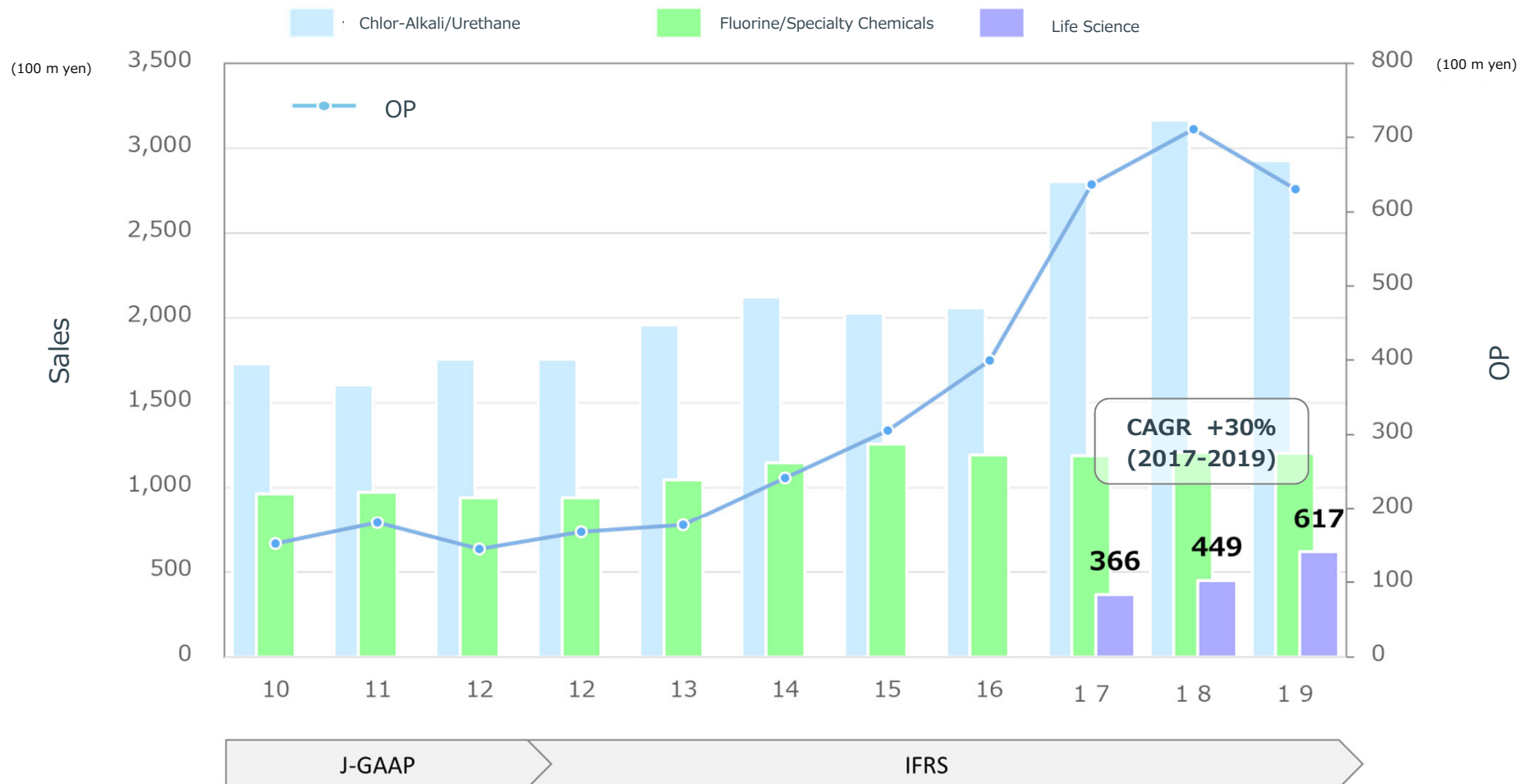
(for the December 2019 term)



# Historical Sales Figures by Segment

The three segments, Chlor-Alkali/Urethane, Fluorine/Specialty Chemicals and Life Science, are all generally on a growth trajectory.

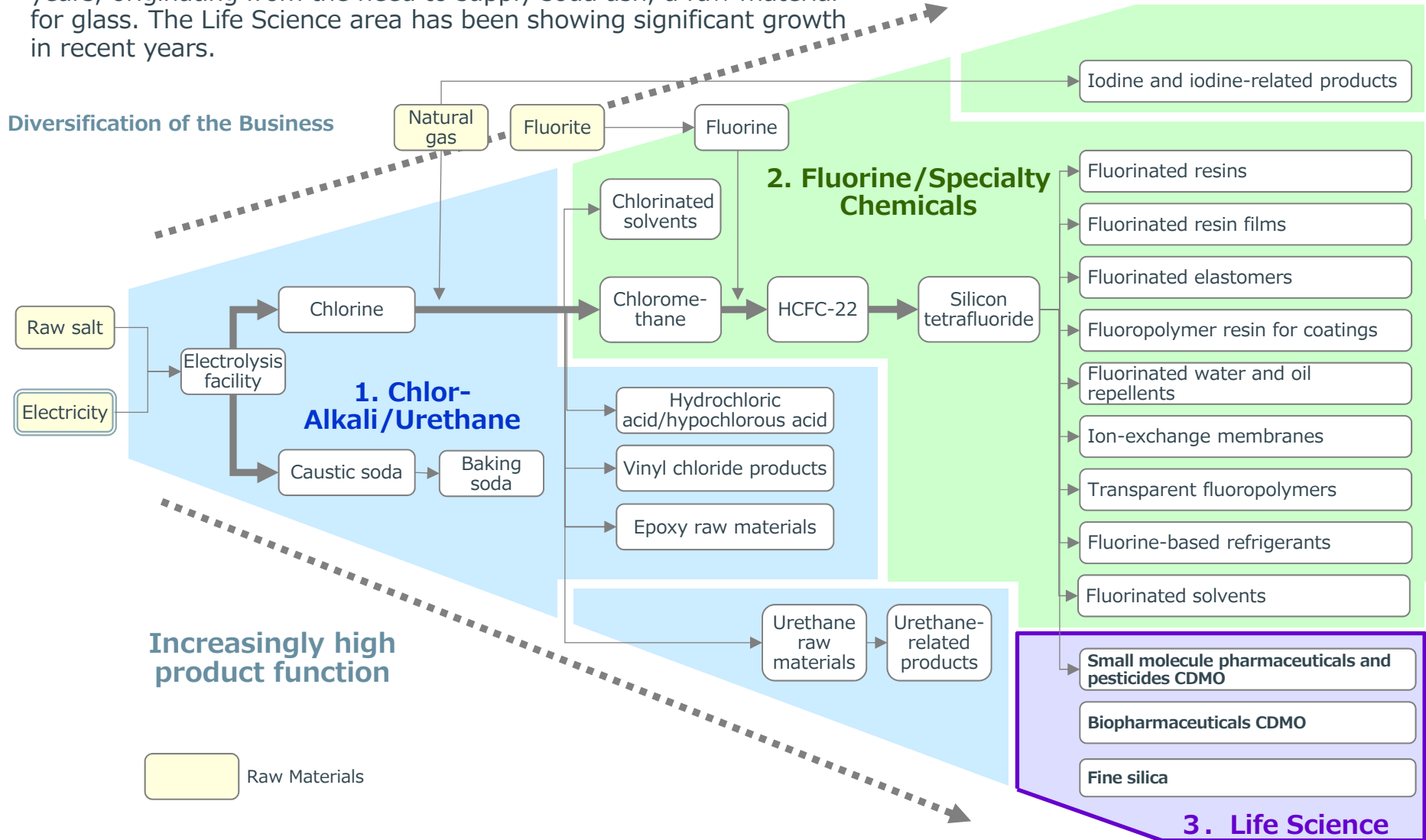
Sales in the Life Science business is rapidly growing as a result of active investments increasing its global manufacturing footprint.



\*Segment information (sales) for Life Science after 2017 is shown

# Product Flow in the Chemicals Company

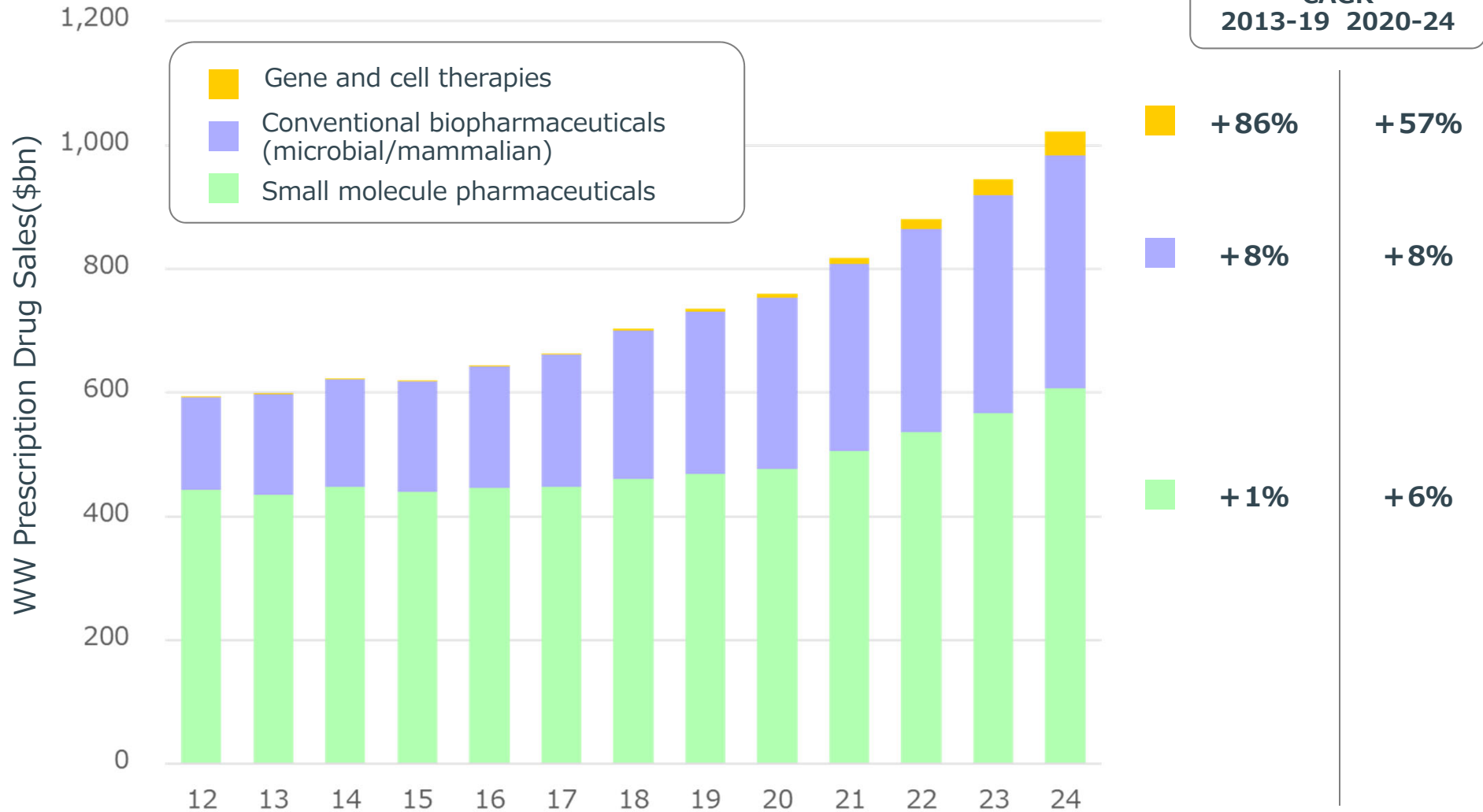
Our current proprietary chemical chain formed over the past 100 years, originating from the need to supply soda ash, a raw material for glass. The Life Science area has been showing significant growth in recent years.



- The Life Science Business within the Chemicals Company
- **Pharmaceutical Market/Industry Trends**
- Key Strengths of the CDMO Business and Business Expansion to Date
- Working on New Modalities
- Impact of COVID-19

# The Global Pharmaceutical Market

➤ The global pharmaceutical market in US dollars from 2012, and forecast to 2024





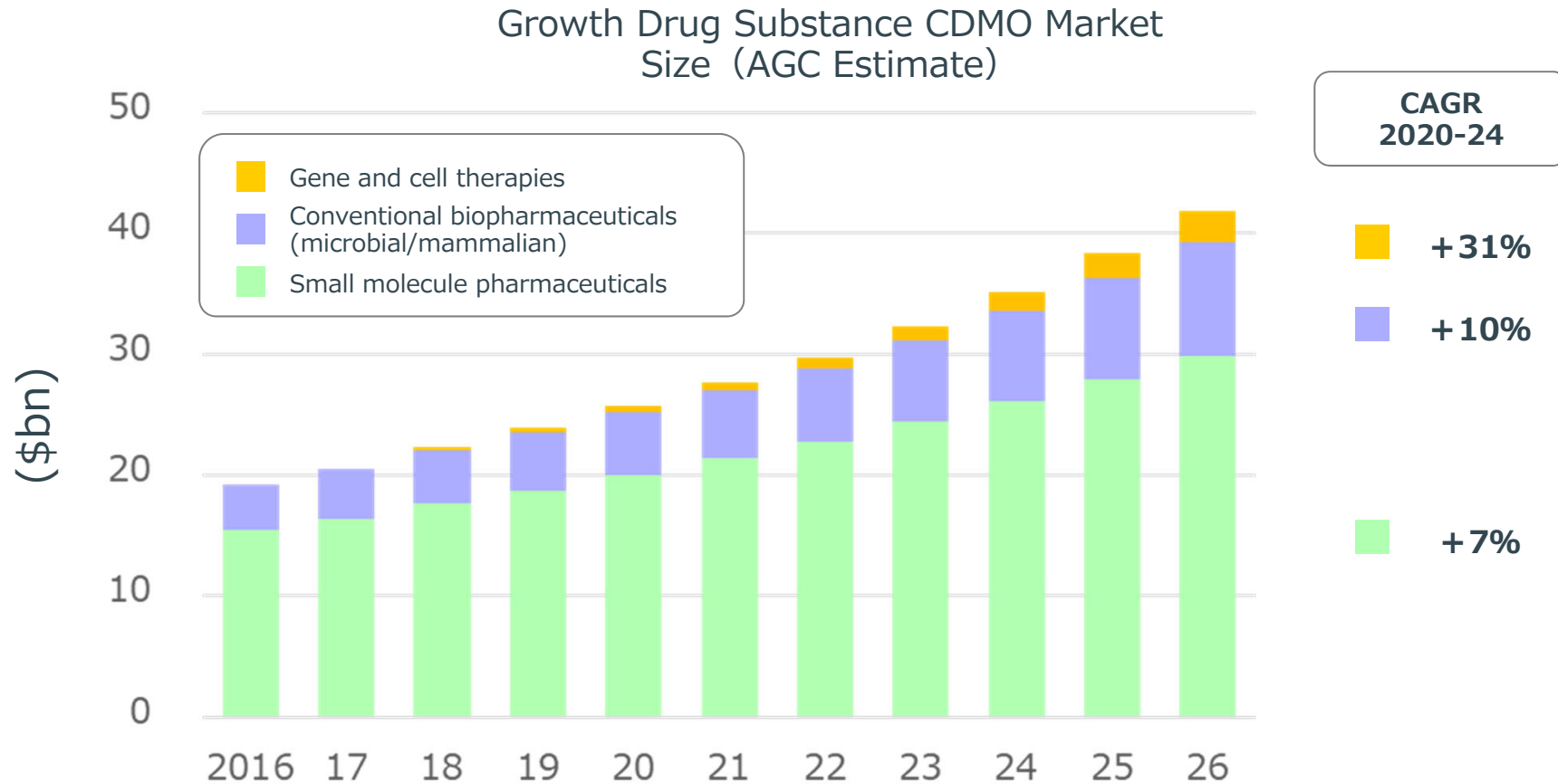
# Pharmaceutical Industry Trends

- Both in Japan and overseas, manufacturing plants continue to be divested by pharmaceutical companies. There has also been a trend to divest other outsource-able divisions such as logistics functions.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Plants	<ul style="list-style-type: none"> <li>▷ <b>May 2011</b> Nippon Shinyaku Chiba Synthetic Plant <b>Sold</b></li> </ul>	<ul style="list-style-type: none"> <li>▷ <b>August 2013</b> ▷ Mitsubishi Tanabe Pharma Ashikaga Plant <b>Sold</b></li> </ul>	<ul style="list-style-type: none"> <li>▷ <b>September 2013</b> Astellas Pharma Fuji Plant <b>Sold</b></li> <li>▷ <b>December 2013</b> Eisai Misato Plant <b>Sold</b></li> </ul>	<ul style="list-style-type: none"> <li>▷ <b>July 2014</b> Mitsubishi Tanabe Pharma Kashima Plant <b>Sold</b></li> <li>▷ <b>August 2014</b> Daiichi Sankyo Akita Plant <b>Sold</b></li> </ul>	<ul style="list-style-type: none"> <li>▷ <b>October 2015</b> Astellas Pharma Kiyosu Plant <b>Sold</b></li> </ul>			<ul style="list-style-type: none"> <li>▷ <b>April 2019</b> ▷ Mitsubishi Tanabe Pharma Yoshiki Plant <b>Sold</b></li> <li>▷ <b>June 2019</b> ▷ Astellas Pharma Nishine Plant <b>Sold</b></li> <li>▷ <b>October 2019</b> ▷ Daiichi Sankyo Takatsuki Plant <b>Sold</b></li> </ul>	
Logistics	<ul style="list-style-type: none"> <li>▷ <b>January 2011</b> Shionogi</li> <li>▷ <b>Total outsourcing</b> of logistics</li> </ul>	<ul style="list-style-type: none"> <li>▷ <b>October 2012</b> Mitsubishi Tanabe Pharma <b>Total outsourcing</b> of logistics operations conducted by MP Logistics</li> </ul>			<ul style="list-style-type: none"> <li>▷ <b>March 2016</b> ▷ Daiichi Sankyo Company's Tokyo distribution center <b>Sold</b></li> </ul>	<ul style="list-style-type: none"> <li>▷ <b>February 2017</b> ▷ Kyowa Kirin Plus Kyowa Hakko Kirin logistics subsidiary <b>Sold</b></li> </ul>			

# Global CDMO Market

- The global drug substance CDMO market is expected to grow at approximately 8% CAGR, from USD 25.7bn in 2020 to USD 35.2bn by 2024.
- The CAGR for small molecule pharmaceuticals is approximately +7%, while the CAGR for biopharmaceuticals is approximately +10%, showing strong growth respectively.
- The gene and cell therapy CDMO market is expected to show dramatic growth.

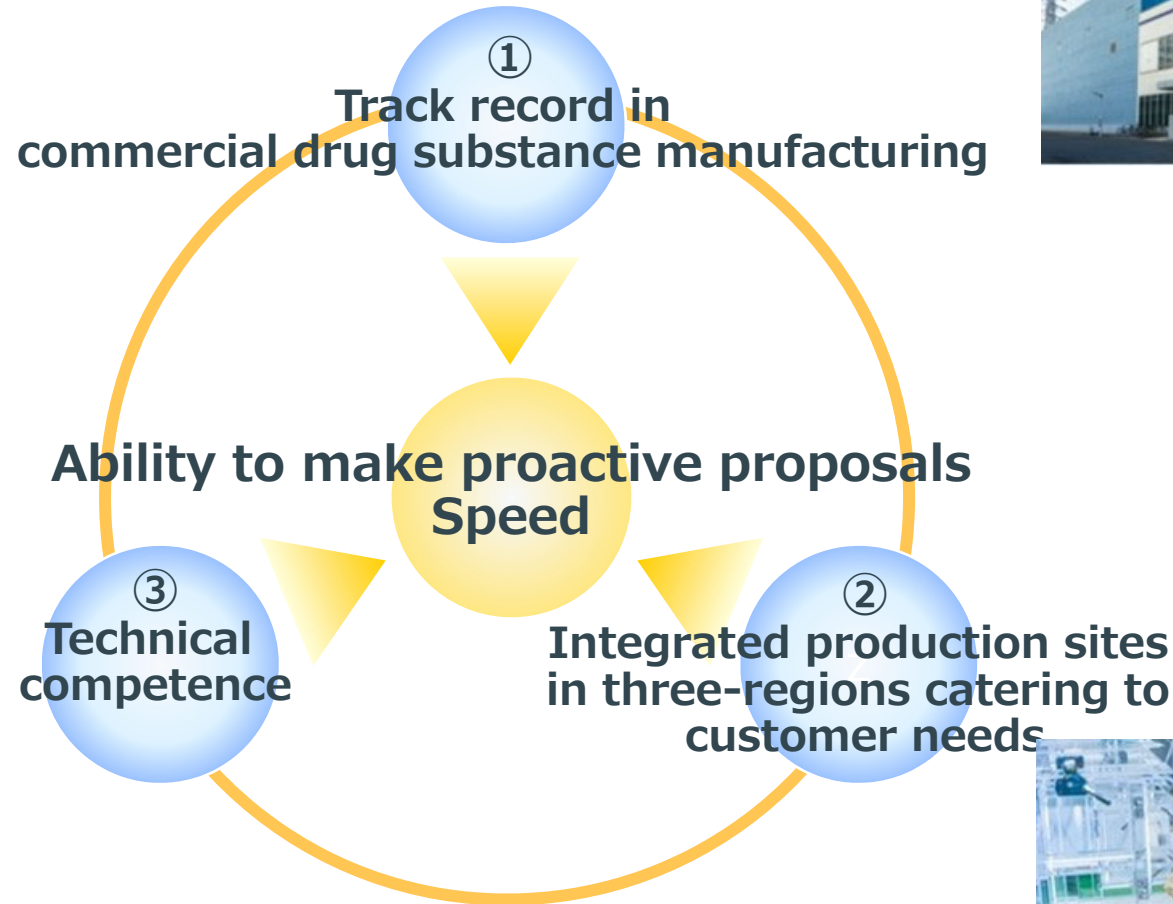


- The Life Science Business within the Chemicals Company
- Pharmaceutical Market/Industry Trends
- **Key Strengths of the CDMO Business and Business Expansion to Date**
- Working on New Modalities
- Impact of COVID-19

# Key Strengths that Lead to Recognition as a Trusted CDMO



## Key Strengths as a CDMO



# Strengths of AGC: Established track record in supplying commercial drug substances

- As quality, technical and process development capabilities are extremely important, **CDMOs with extensive track records** tend to be selected. AGC also has a track record in **continuous production\***.

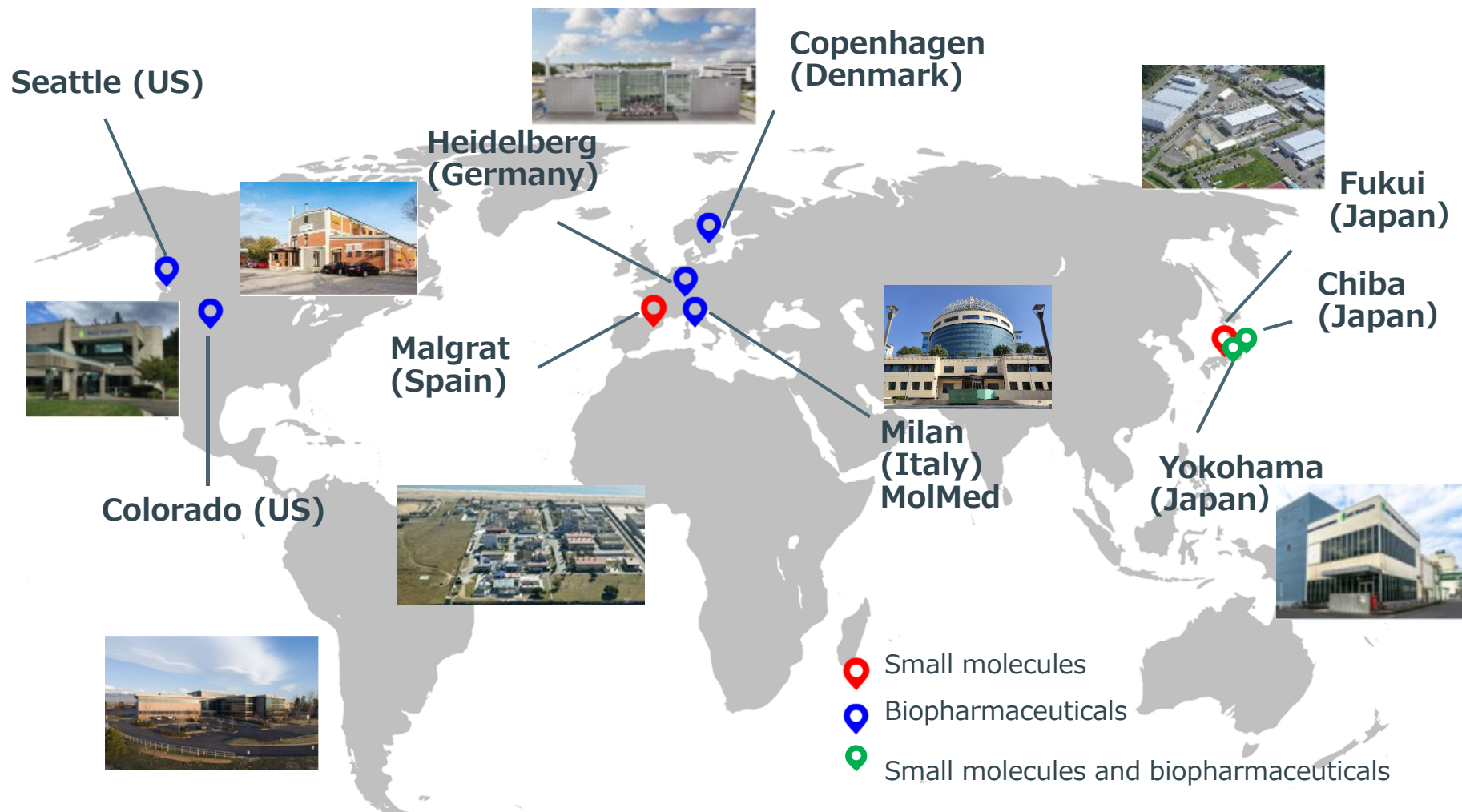
<Inspection Track Record of AGC Sites>  
 (\*Also includes those other than commercial products)

		FDA US Food and Drug Administration	EMA European Medicines Agency	PMDA Pharmaceuticals and Medical Devices Agency
Small Molecules	AGC Chiba Plant	●		●
	AGC Pharma Chemicals Europe (Catalonia)	●	●	●
Biopharmaceuticals	AGC Biologics (Seattle)	●	●	
	AGC Biologics (Copenhagen)	●	●	●
	AGC Biologics (Heidelberg)	●	●	
	MolMed (Milan)		●	
	AGC Chiba Plant			●

\*Continuous production: A manufacturing method enabling continuous culturing by adding new culture media while removing a portion of the culture liquid that contains the target product from the culture tank in the culture process. In addition to enhancing manufacturing efficiency, it has the advantage of enabling facilities to be more compact.

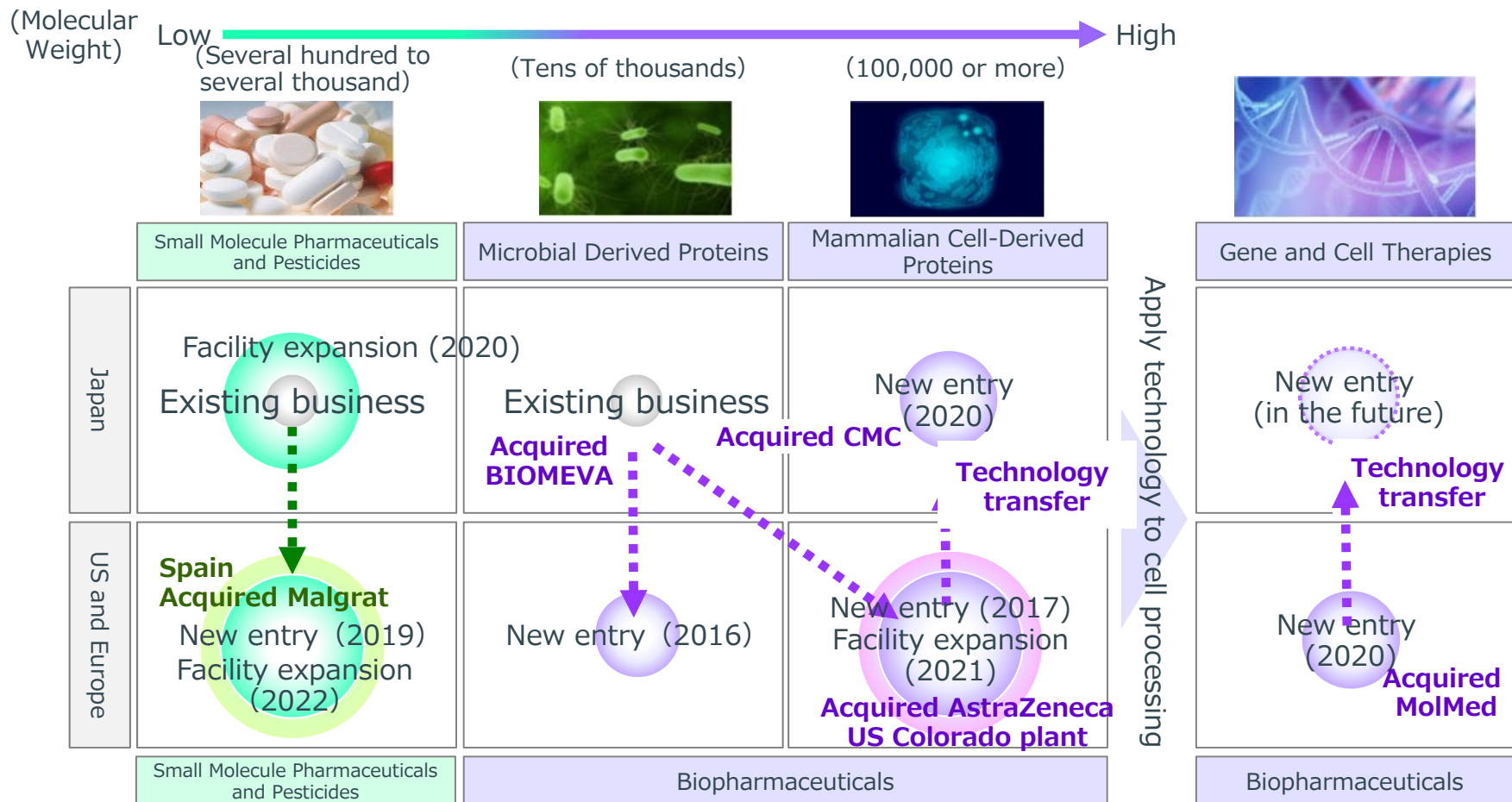
# Strengths of AGC: Production network catering to customer needs

- Capable of providing high quality services using chemical synthesis/  
microorganisms/mammalian cells, and for gene & cell therapies in three regions,  
Europe, the US and Japan



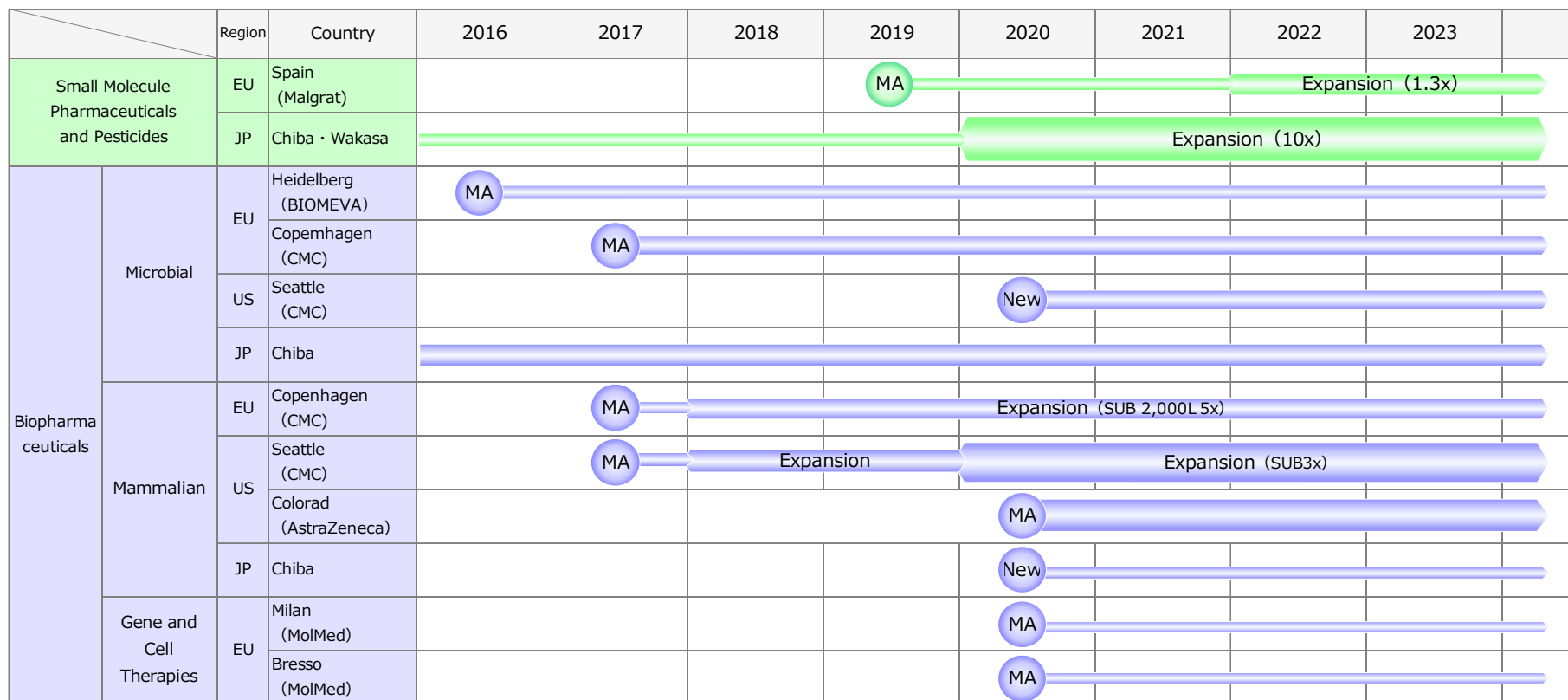
# Recent Regional/Technological Expansions

- With the small molecule pharmaceuticals/pesticides and biopharmaceuticals (microbial) CDMO in Japan as the starting point, AGC has expanded its business both regionally and technologically.
- In line with the rapid market growth, AGC has carried out several M&As and facility expansions since 2016, and expects to achieve its revenue target in excess of 100 billion yen two to three years ahead of its initial target schedule.



# M&A Activities and Facility Expansion Investments

- AGC has successfully entered into new business fields technologically, and efficiently expanded its regional manufacturing footprint through various M&As. The company has also continuously invested in expanding its existing facilities.
- Through the acquisition of CDMO companies, AGC has enhanced its business strengths in a short period of time by gaining manufacturing technologies, quality assurance capabilities, inspection track records, and geographic advantages compared to building everything greenfield.

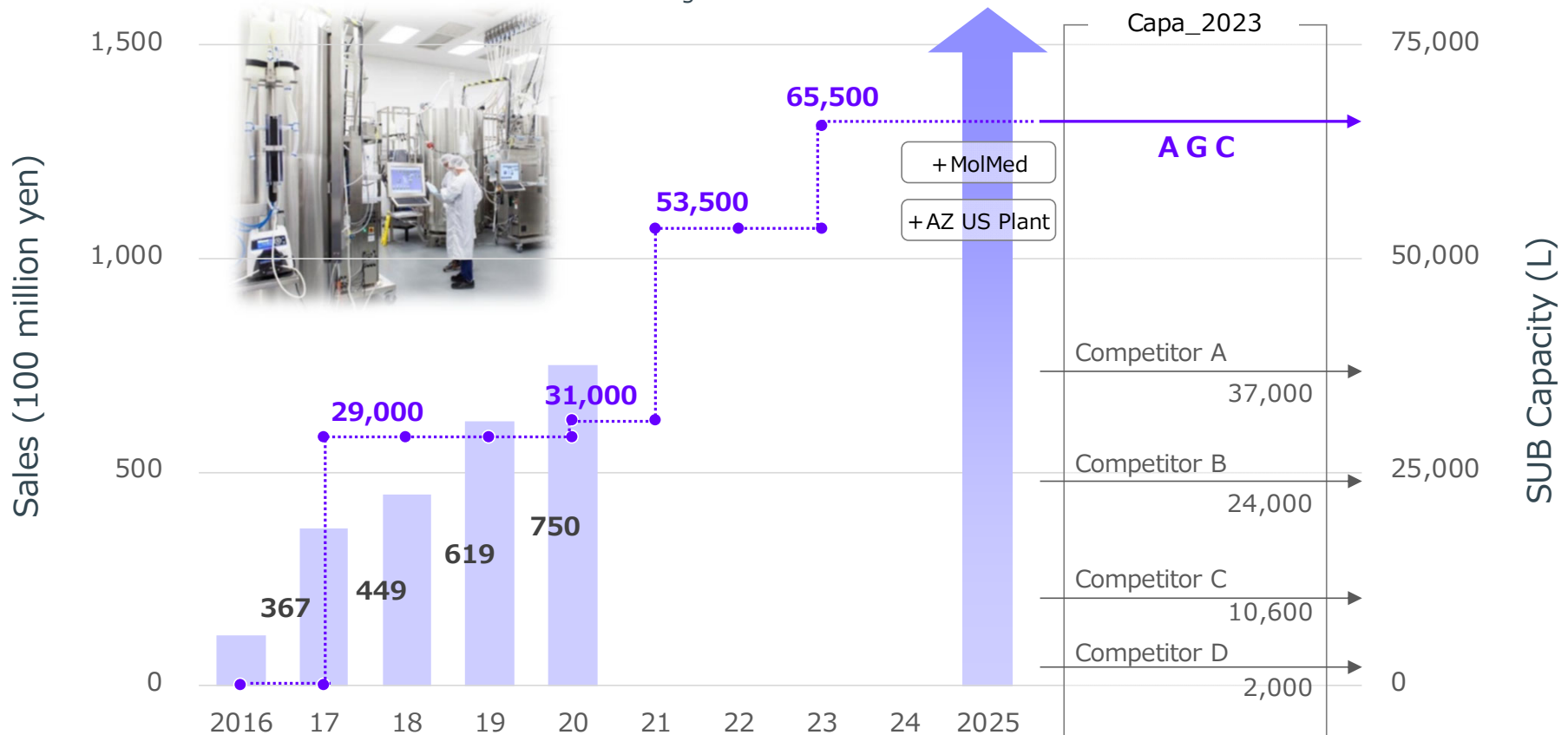




# Revenue Trends/Positioning

- Facility expansion decisions required to achieve sales in excess of the initial 100 billion yen target had been decided prior to the acquisition of MolMed and the AZ U.S. Colorado plant. These facilities will become operational soon, and asset efficiency is also expected to increase towards 2025.
- In biopharmaceuticals, the company has maintained and **grown its top position in utilizing SUBs with a stronghold in providing services for rare disease/orphan drugs.**
- The company made the decision to acquire the Colorado plant (SUS\*) as more and more existing projects are transitioning from clinical to the commercial phase, with many suitable for use of such SUS bioreactors.

\*SUS : Stainless steel cell culture bioreactors \*\*SUB : Single-use bioreactors



\*Competitor capacities: Estimated by AGC based on published figures

- The Life Science Business within the Chemicals Company
- Pharmaceutical Market/Industry Trends
- Business Development and Strengths of the CDMO Business
- **Working on New Modalities**
- Impact of COVID-19

# Acquisition of MolMed in Italy

## MolMed (Molecular Medicine S.p.A.)

- Established : 1996
- Location : Milan, Italy (2 sites)
- Number of Employees : Approximately 220
- Sales : 36.3 million euros (2019 actual sales)
- Business Description : Gene and cell therapy CDMO and drug discovery
- Date of Acquisition : July 2020
- Acquisition Price : Approximately 27 billion yen

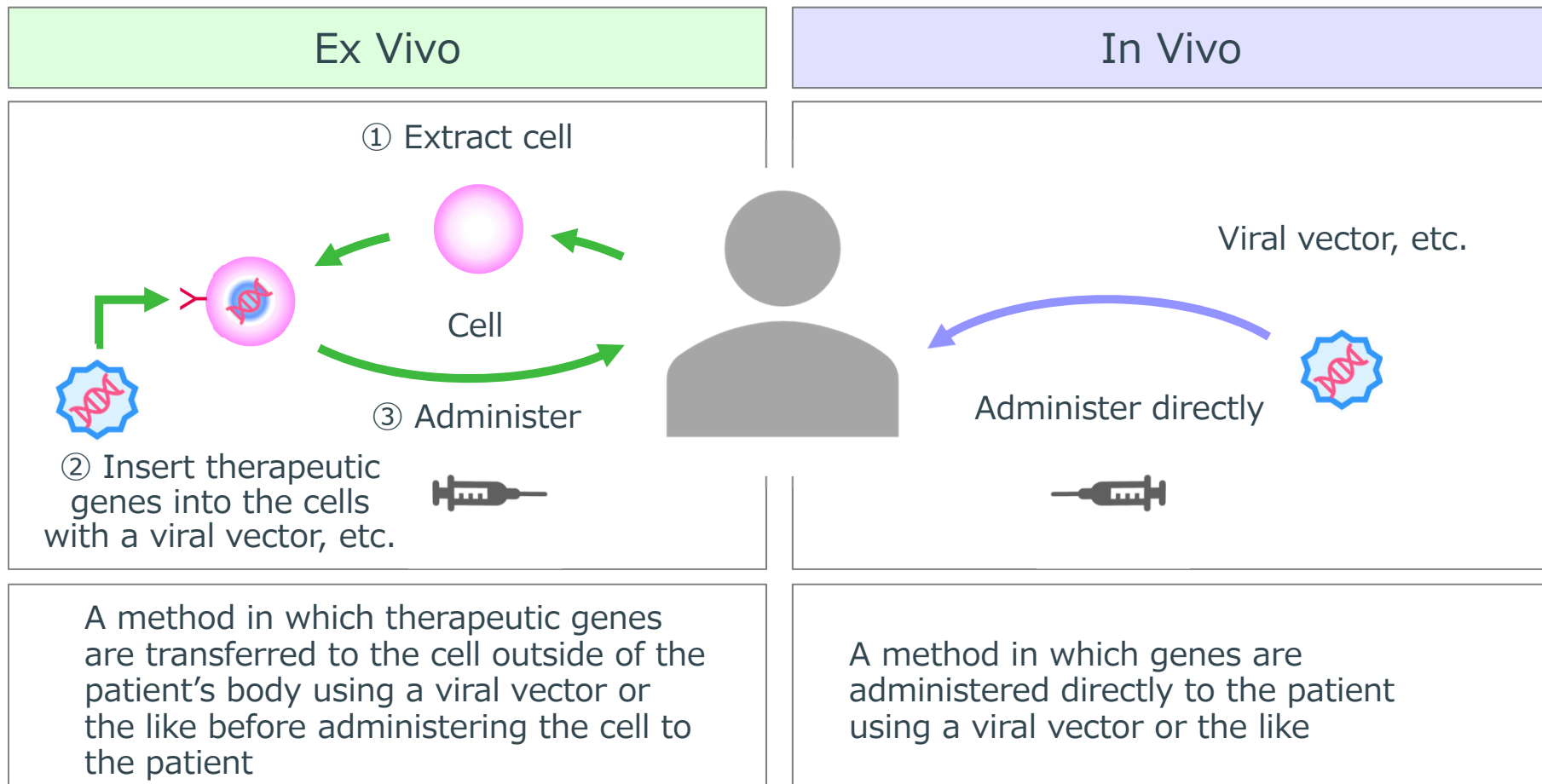


Exterior of the company building in Milan

- Derived from its own drug discovery activities, it has a strong established platform for cell processing and vector manufacturing
- It already has commercial manufacturing projects
- Expected to generate significant synergy with the AGC Biologics Heidelberg site (Germany) that is engaged in manufacturing plasmids, a raw material for gene and cell therapies
- After completing the current sell-out procedure, expected to be delisted at the end of September

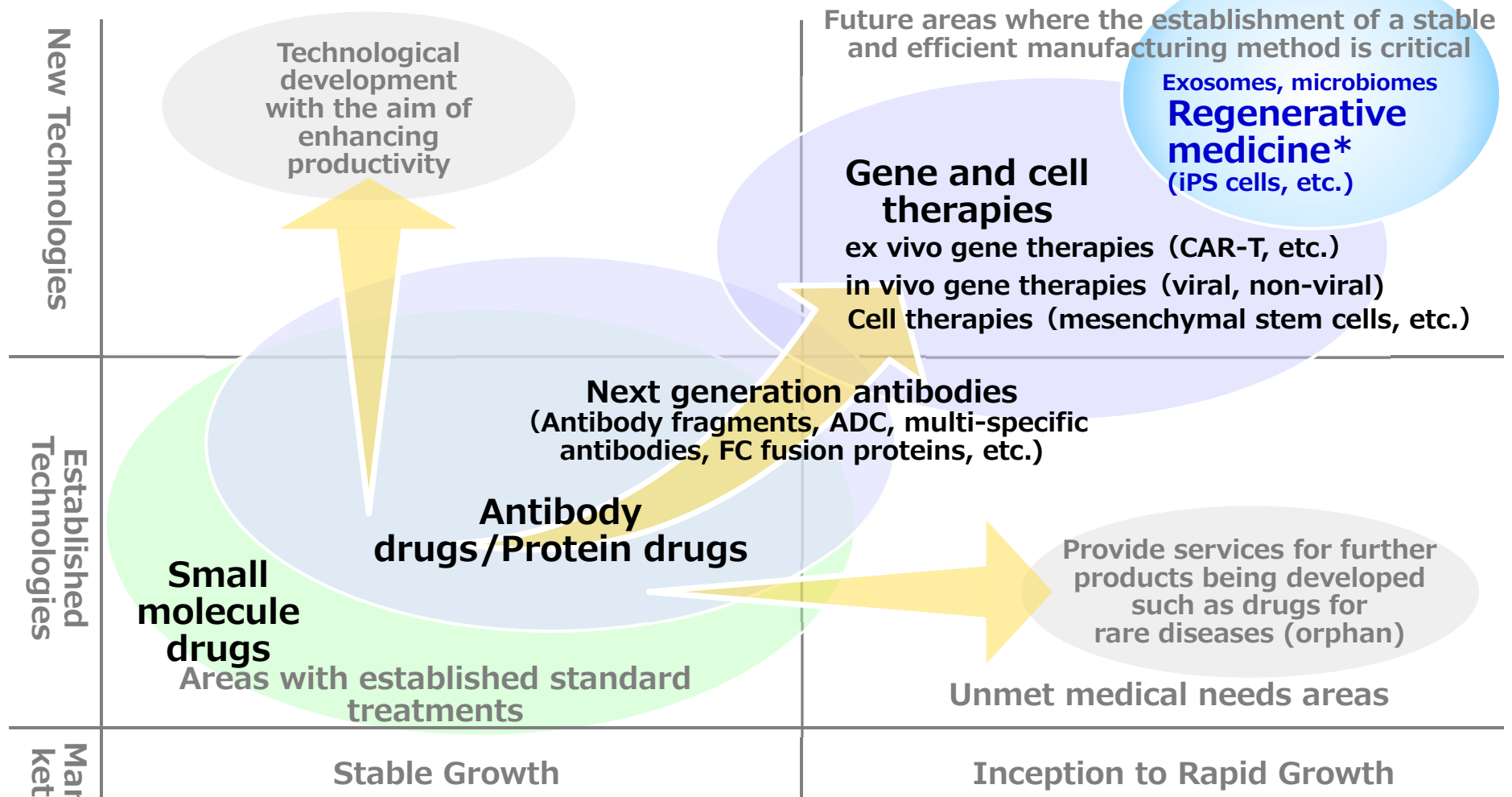
# About Gene and Cell Therapies

- A therapy in which genes or cells carrying the target genes are administered into the body. MolMed's strengths are in the manufacturing of viral vectors, cell processing technologies, the handling of human-derived cells, and manufacturing/QC (quality control)/QA (quality assurance).



# Expanding our Business Scope

- With the acquisition of MolMed, AGC is now active in all modalities where there is current substantial demand for CDMO services. The company will decide the appropriate timing for expanding its service offerings into other modalities, such as the field of regenerative medicine, where research is being conducted towards future commercialization, as well as others in the early stage of development.









\*Black text (modalities that AGC has already entered), blue text (modalities the company will consider entering in the future)

- The Life Science Business within the Chemicals Company
- Pharmaceutical Market/Industry Trends
- Business Development and Strengths of the CDMO Business
- Working on New Modalities
- **Impact of COVID-19**

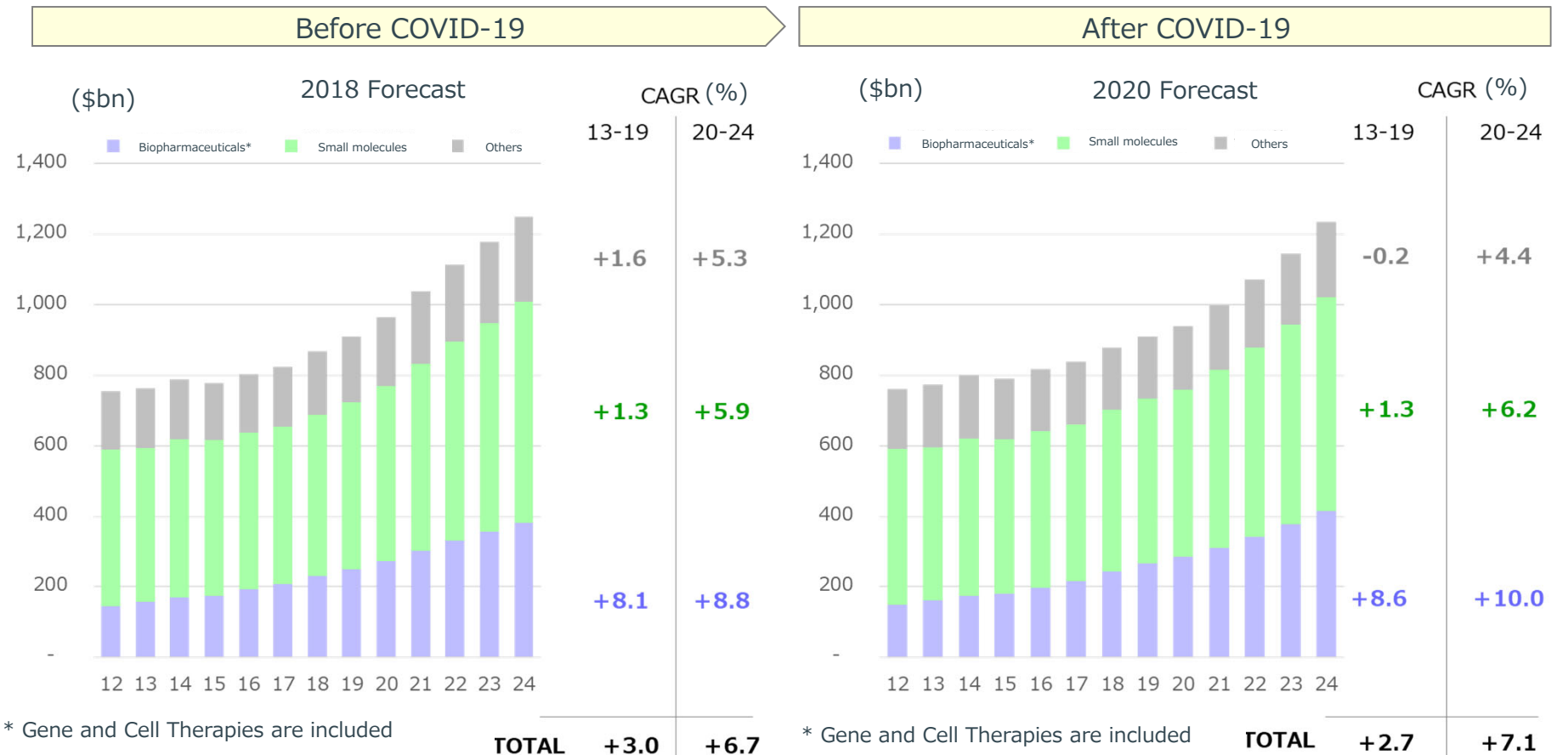
# Announced COVID-19-Related Projects that AGC has been Contracted for

(As of the end of August 2020)

date	Contractor company	Announcement
05/14/20	AdaptVac (Denmark)	Manufacture of a VLP Vaccine candidate 
05/14/20	CytoDyn (US)	Leronlimab, a candidate for the treatment of COVID-19 (Clinical trials are underway in the US.) 
05/21/20	Takara Bio (Japan)	Manufacture of an intermediate for a DNA Vaccine candidate 
06/04/20	Novavax (US)	Manufacture of an adjuvant of a nanoparticle vaccine candidate 
07/20/20	Molecular Partners AG (Switzerland)	Manufacture of MP0420, a drug candidate for the treatment of COVID-19 
08/18/20	Novavax (US)	Expanded the contract of the adjuvant for the nanoparticle vaccine candidate 

# Impact of COVID-19 on the Industry

- The spread of COVID-19 has increased the number of projects in the industry.
- The CAGR forecast for the global pharmaceutical market has gone up from +6.7% (2018 forecast) to +7.1% (2020 forecast).
- For biopharmaceuticals in particular, the CAGR forecast has increased from +8.8% (2018 forecast) to +10.0% (2020 forecast)





## Disclaimer

- This material is solely for information purposes and should not be construed as a solicitation. Although this material (including the financial projections) has been prepared using information we currently believe reliable, AGC Inc. does not take responsibility for any errors and omissions pertaining to the inherent risks and uncertainties of the material presented.
- We ask that you exercise your own judgment in assessing this material. AGC Inc. is not responsible for any losses that may arise from investment decisions based on the forecasts and other numerical targets contained herein.

Copyright AGC Inc.  
No duplication or distribution without prior  
consent of AGC Inc.

**AGC**

Your Dreams, Our Challenge

**END**