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AJINOMOTO

Ajinomoto Co., Inc.

Forge Biologics,
Online Information Session

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October 2, 2024 (Japan Time Zone)
October 1, 2024 (U.S. Eastern Time Zone)

Overview of Forge Biologics

FORGE BIOLOGICS

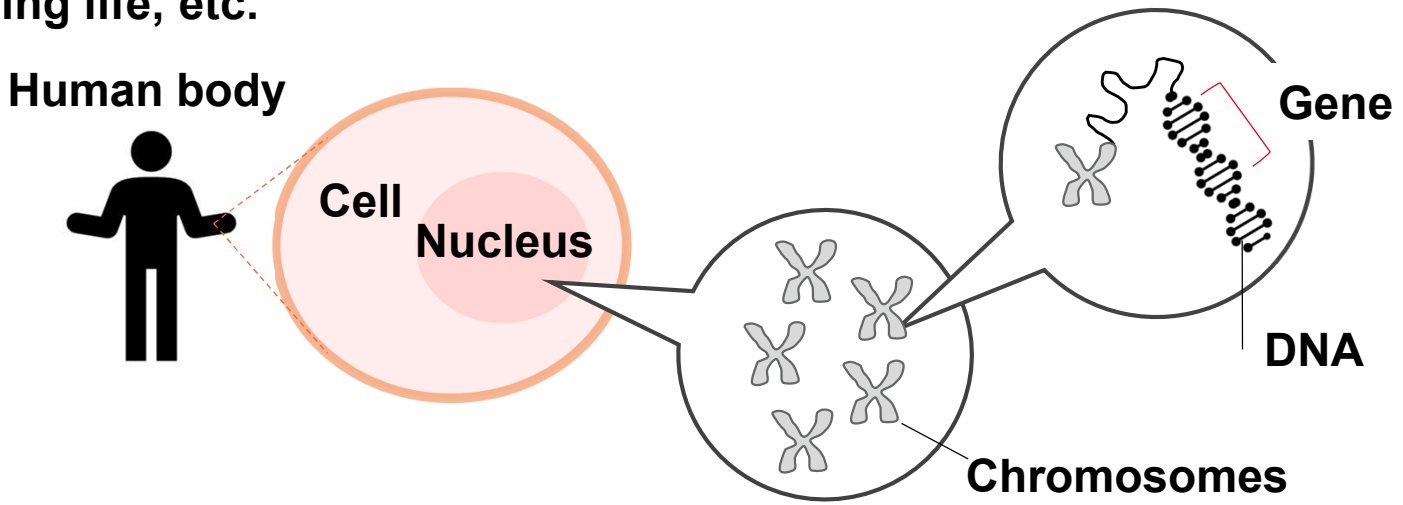
Gene Therapy CDMO

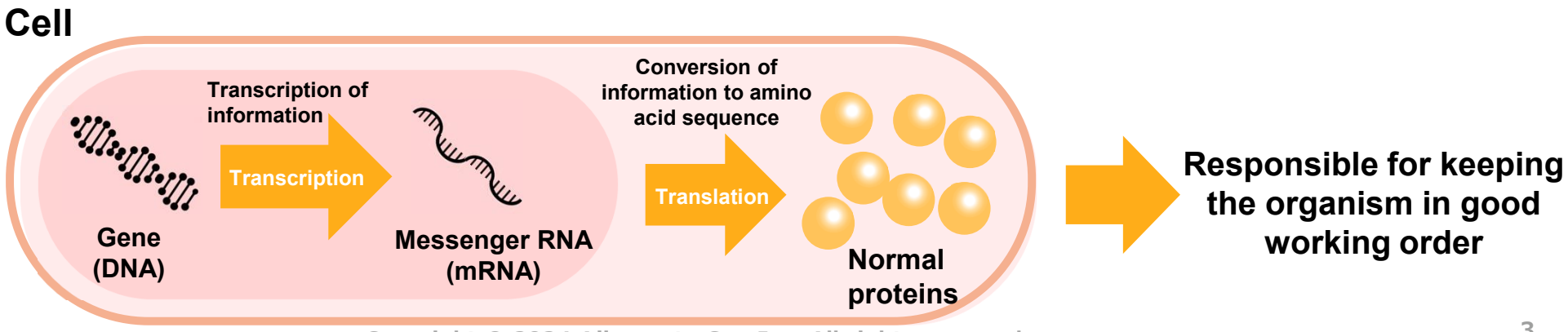
- 20 cGMP Suites
- 1L – 5,000L
  AAV Development and cGMP
- >200,000L Current Capacity
  and Ability to Expand Under One Roof
- Lots Produced >260
- +100% YoY Client Growth
- Approx. 350 Employees

What is Gene Therapy: The Body's Inner Workings

- **A gene is information encoded through DNA, serving as a blueprint by which the body's cells produce proteins.**

- **Genetic information is copied to messenger RNA (transcription) and based on that information, proteins are created (translation). The proteins created become the main components that make up the body, or essential enzymes necessary for sustaining life, etc.**

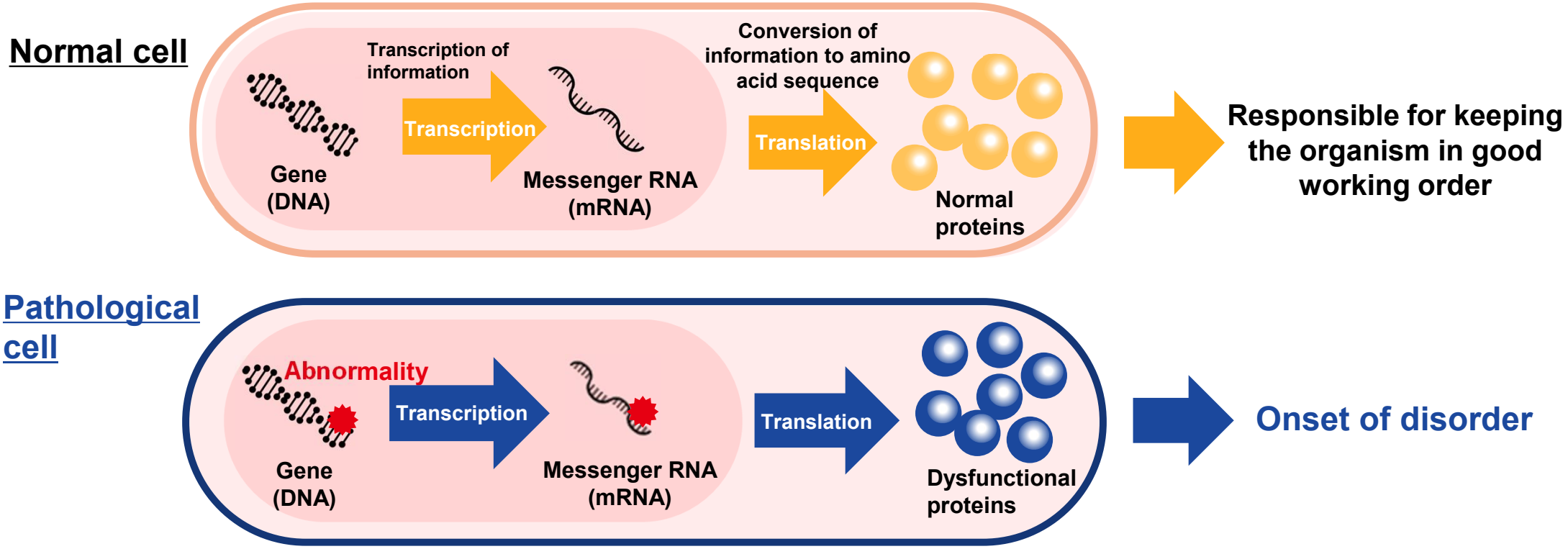




What is Gene Therapy: Causes of Genetic Disorders

- Genetic disorders are caused by an inability to produce proteins with the necessary functions, due to abnormalities in genes.

- Gene therapy refers to medical technologies that repair or add the genes contained in cells to treat genetic abnormalities that are the causes of disorders.

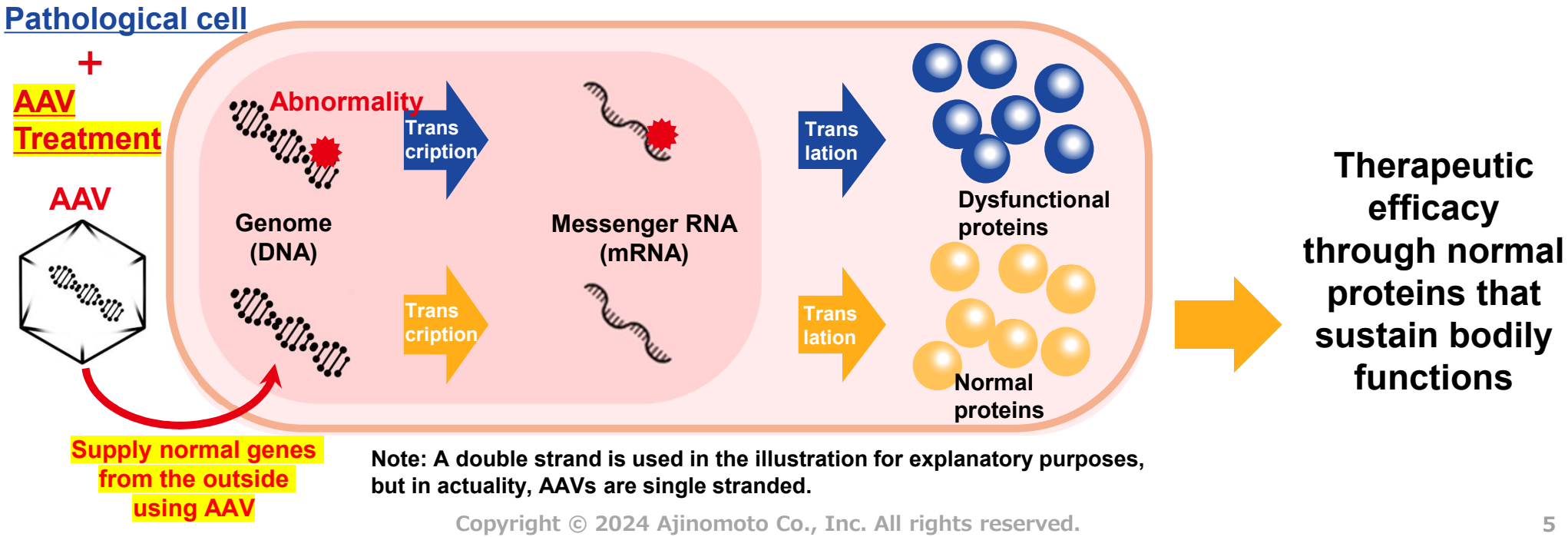


What is Gene Therapy: The Principles of AAV Treatment

- Adeno-associated virus (AAV) vectors are often used as carriers (virus vectors) to introduce genes, designed and manufactured to produce necessary proteins, into target cells in the body.

- The introduced therapeutic genes can remain in cells and sustainably produce normal proteins, enabling long-term therapeutic effects from a single treatment.

- Gene therapy supplies the genes necessary, as opposed to modifying genes.

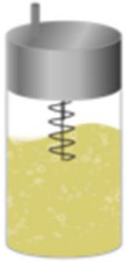


Note: A double strand is used in the illustration for explanatory purposes, but in actuality, AAVs are single stranded.

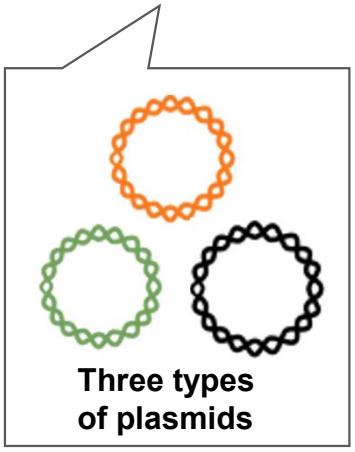
Video-1

About the AAV Manufacturing Method: Overview of Entire Process

1. Plasmid manufacturing process



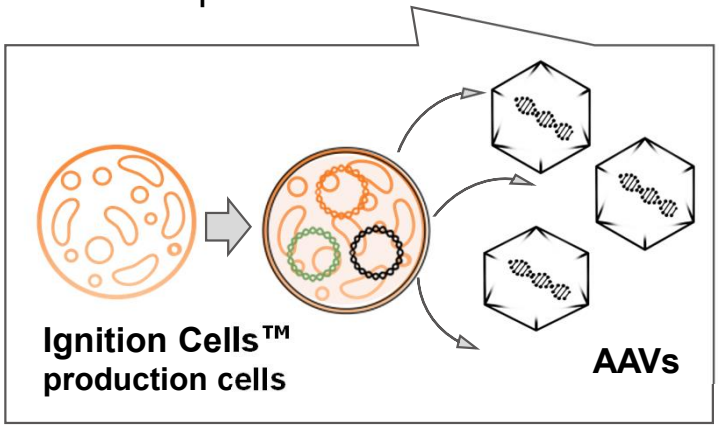
Manufacture plasmids required for manufacturing AAVs



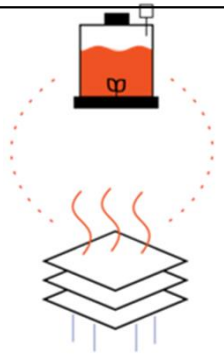
2. AAV manufacturing process (production, purification)

Upstream process (production)

Culture production cells, introduce plasmids, and produce AAVs

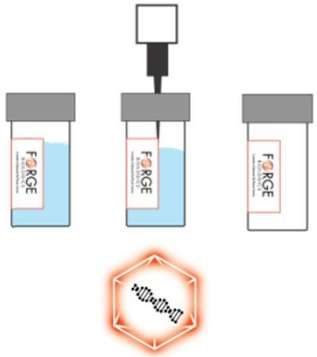


Downstream process (purification)



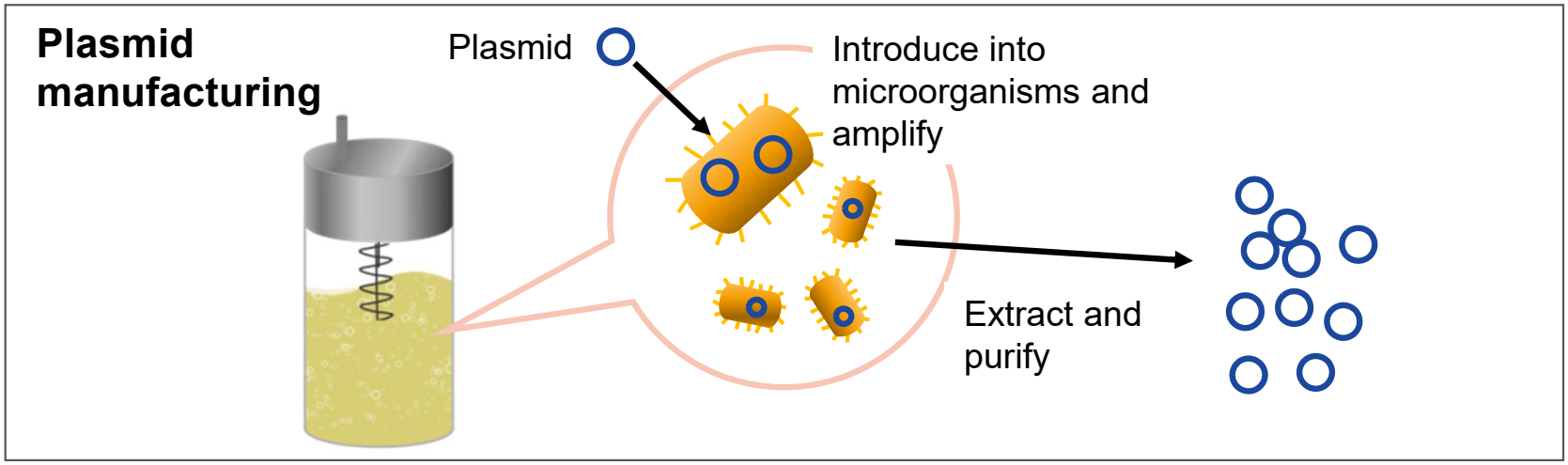
Purify AAVs from the culture media solution

3. Filling process



Fill and finish

About the AAV Manufacturing Method: The Plasmid Manufacturing Process



- **Prepare three types of plasmids**

(1) GOI (Gene of Interest) Plasmid
Contains target genes for therapeutic efficacy

(2) Rep/Cap Plasmid
Contains genes that code the proteins, capsid structures, etc. necessary for virus replication

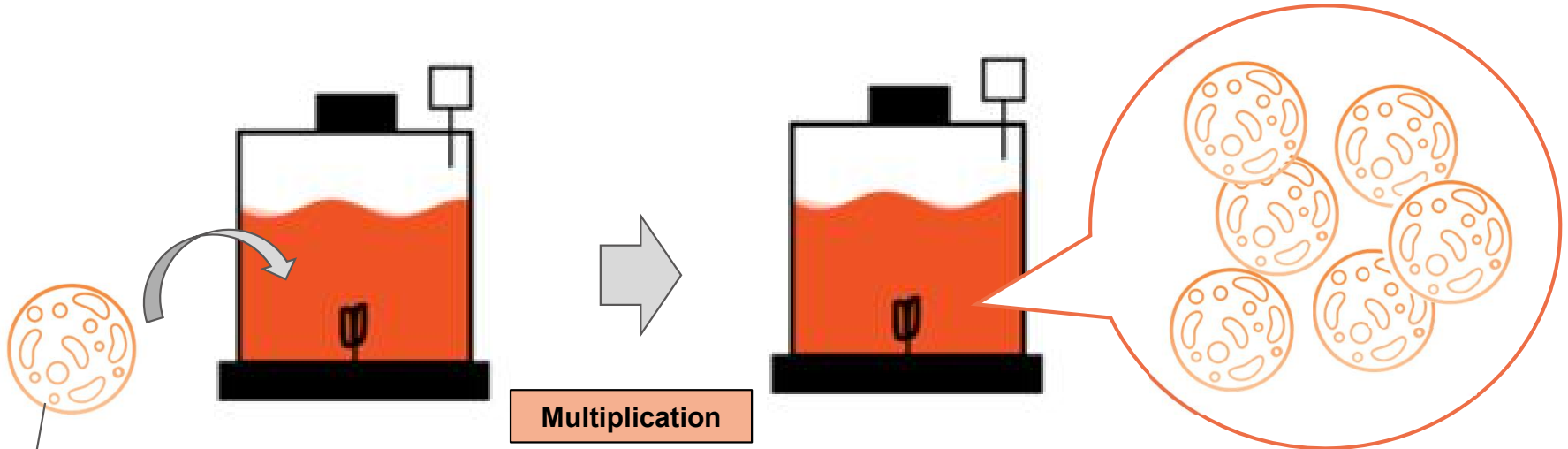
(3) pEMBR™
Forge Biologics' proprietary helper plasmid that contains genes with helper functions necessary for virus replication, supports high productivity

Forge Biologics' proprietary technology

About the AAV Manufacturing Method: The AAV Manufacturing Process

- **Multiply mammalian cells used in AAV production**

Upstream process (production)



Ignition Cells™
- HEK293 mammalian cell line, developed by Forge Biologics
- High stability
- Extensive track record of use

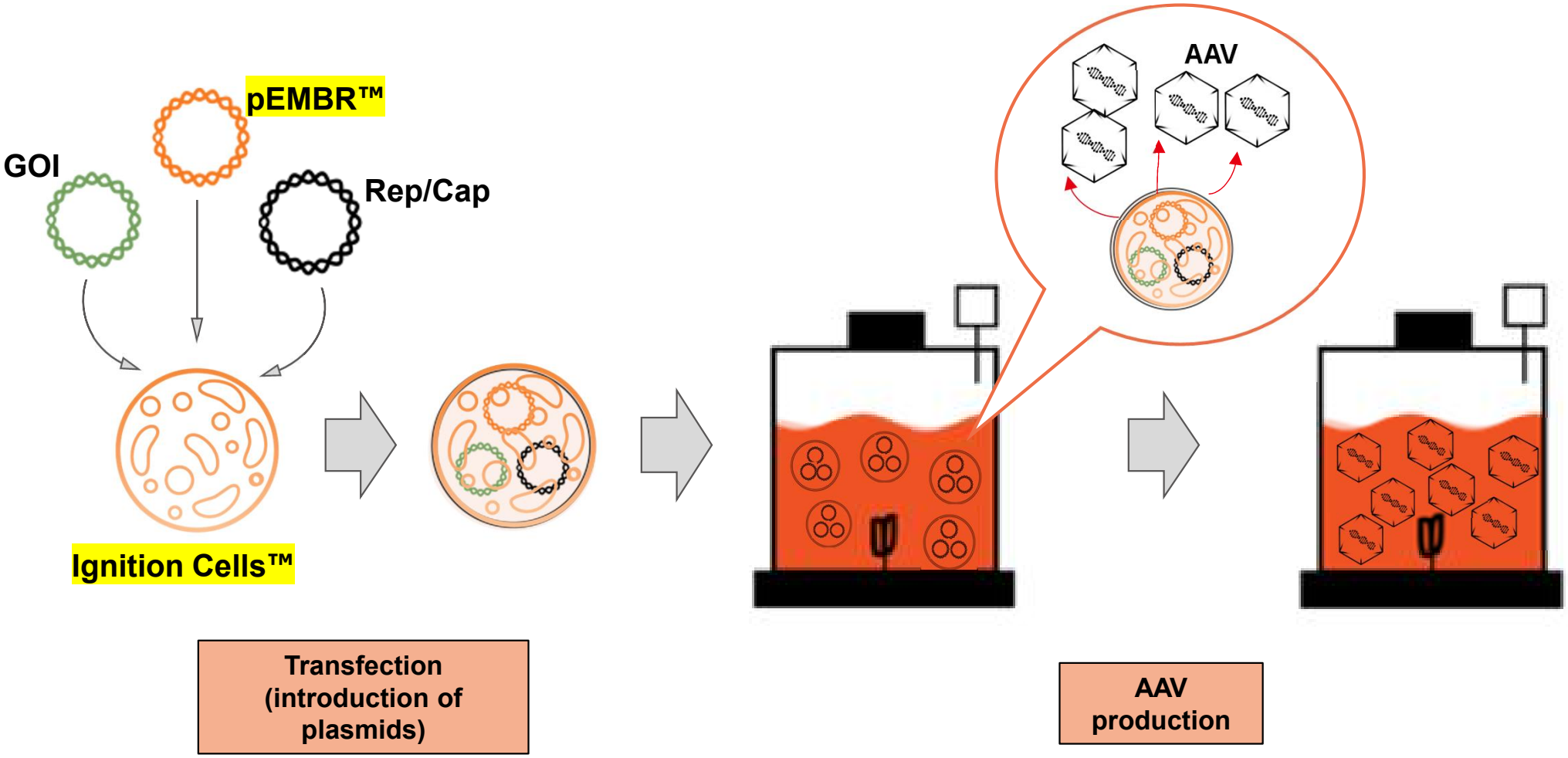
Forge Biologics' proprietary technology

= Realize high stability and productivity

About the AAV Manufacturing Method: The AAV Manufacturing Process

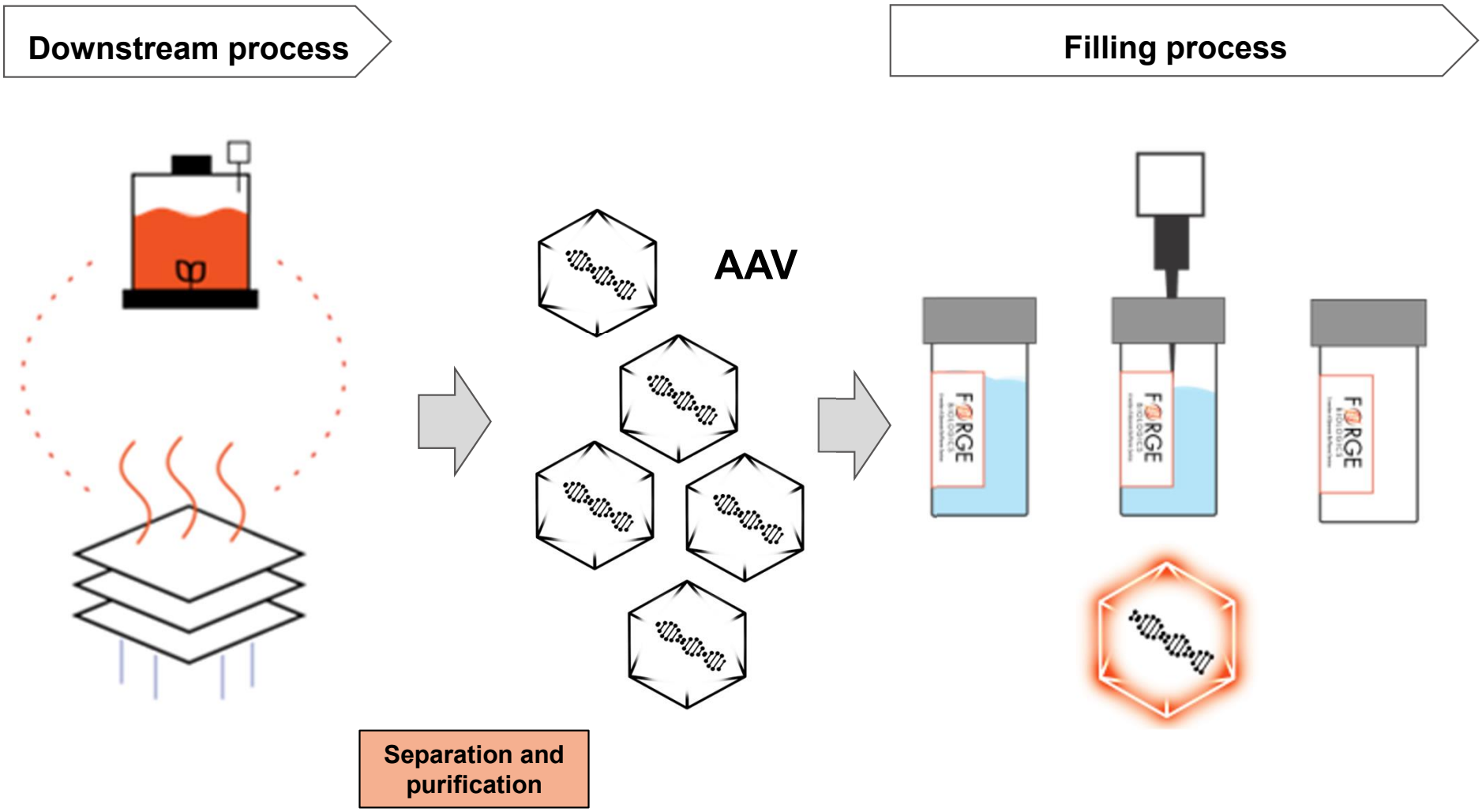
- Introduce three types of prepared plasmids and produce AAVs

Upstream process (production)



About the AAV Manufacturing Method: The AAV Manufacturing Process – Filling

- **Refine AAVs and fill**

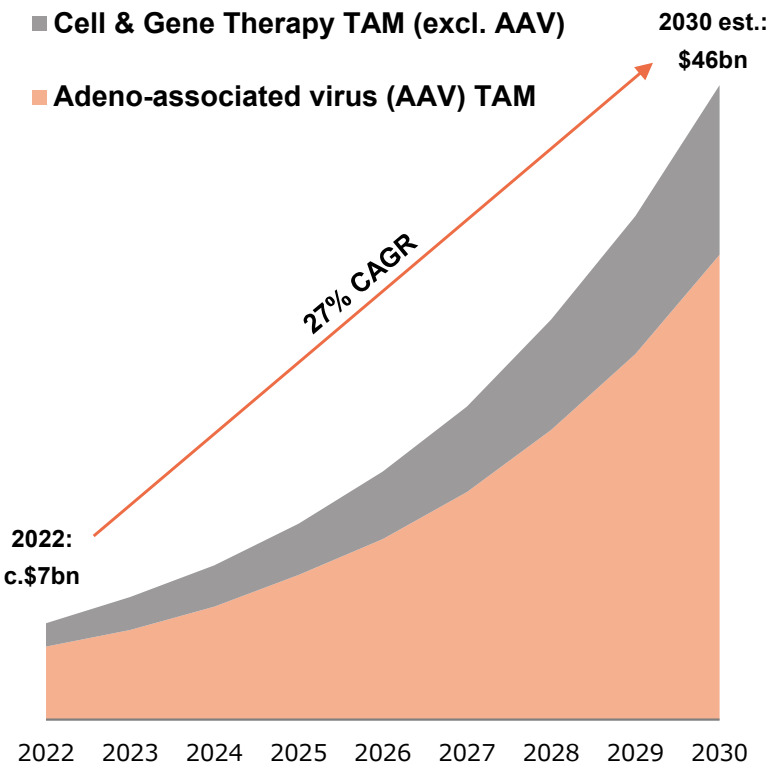


Video-2

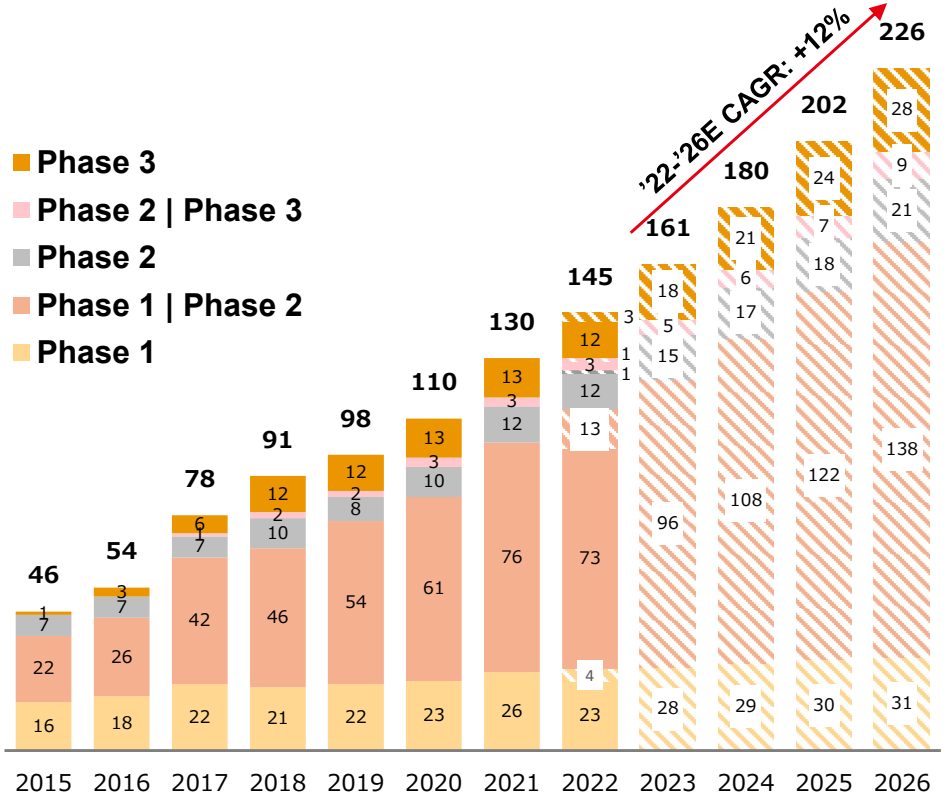
Rapid Growing Gene Therapy CDMO Market

Gene therapy market is expected to grow rapidly at double-digit rates annually, driven by expanding market size and increasing clinical trials.

Cell and Gene Therapy TAM [1] ($bn)



AAV Clinical Trials

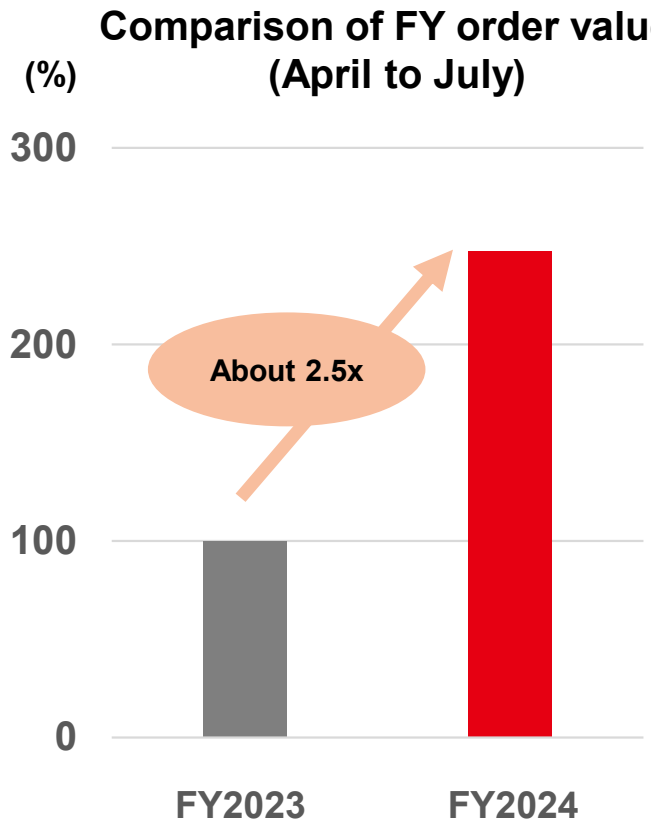


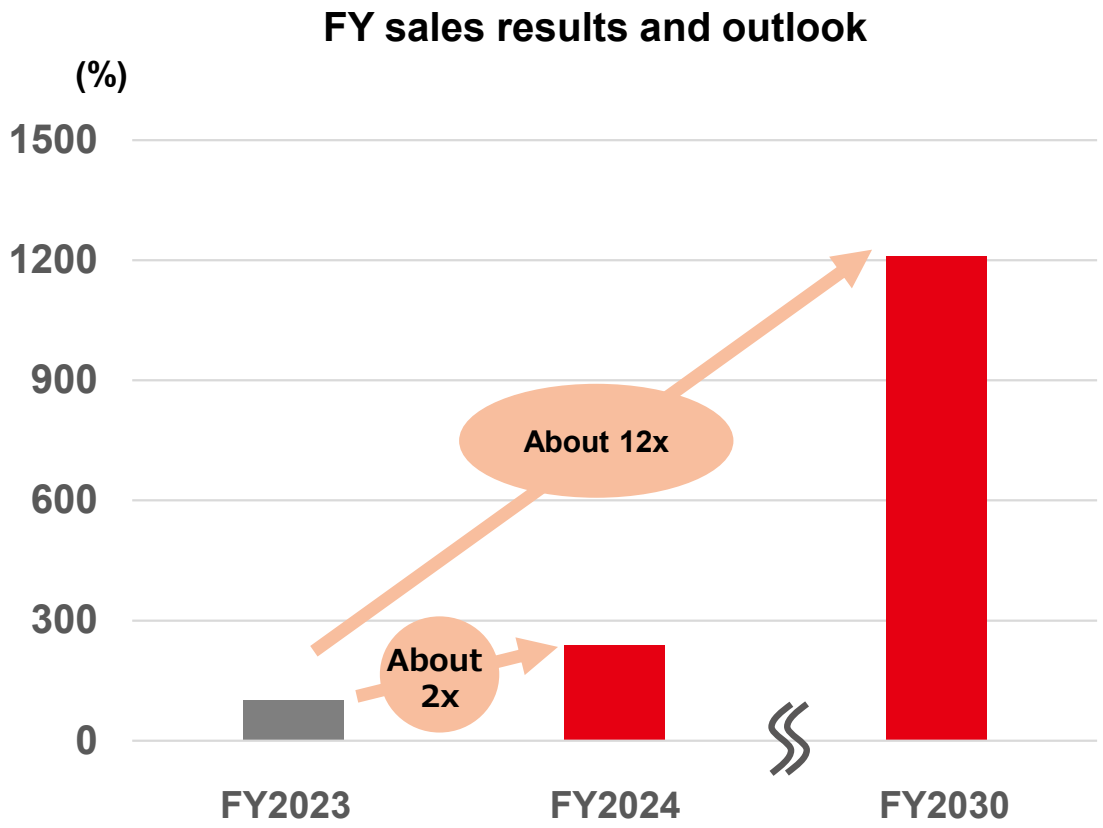
Source: Wall Street Research, Alliance of Regenerative Medicine, Roots Analysis and public press releases

1. Total Addressable Market

Forge Biologics' Customer Acquisition Status and Sales Forecast

- Under an improved financing environment in North America, orders in the April to July period of FY2024 were approximately 2.5x that of the same period last year.
- Compared to FY2023, sales are expected to grow over 2x in FY2024 and approximately 12x through FY2030





Forge Biologics' High-Level Expertise and Diverse Human Resources

- **Forge Biologics has many highly experienced experts in the field of gene therapy, with over 50 Ph.D holders, including within top management. The company's retention rate is also high.**

- **In Ohio, USA, a world leading region in the field of gene therapy, the company's strong network with hospitals, affiliates, government bodies, and academia is evolving.**

High Affinity between “AminoScience” and Forge Biologics' Technologies

- **Launched a synergy team through collaboration between Ajinomoto Co. and Forge Biologics**

CELL|ST™ StemFit

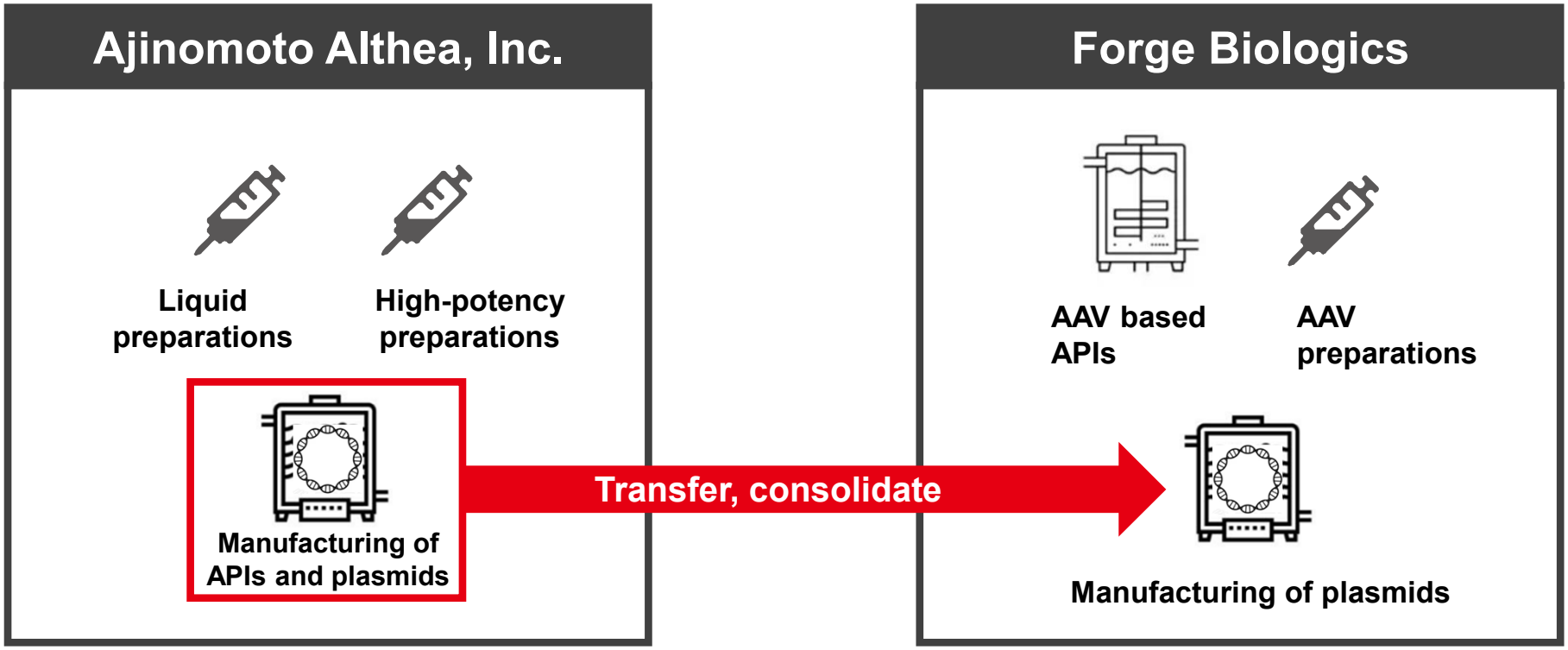
High-level technology foundation in the CDMO field. Cultivated manufacturing know-how and optimized formulation through the development of culture media.

AAV manufacturing know-how. Unique platform technology. Ignition Cells™ and pEMBR™.

- **Development of media optimized for Forge Biologics' platform technologies**
- **Promotion of joint R&D in AAV manufacturing**

Supply Chain Optimization

Optimization of the supply chain in the North American Bio-Pharma business with the acquisition of Forge Biologics



Transfer of API and plasmid manufacturing to Forge Biologics
Focus on liquid formulation business

Transfer of personnel and know-how from Ajinomoto Althea
Strengthen the plasmid manufacturing business

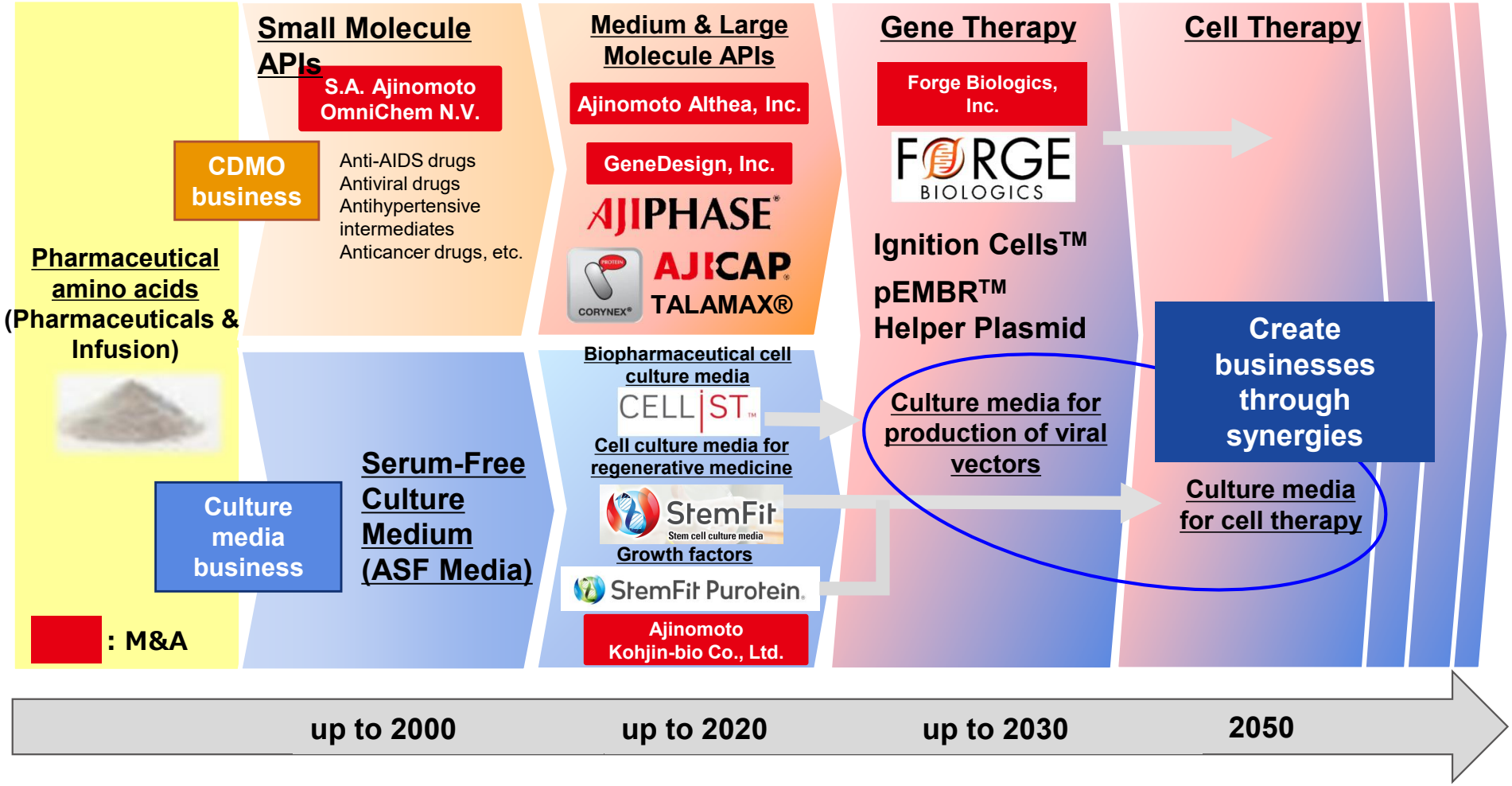
Synergies with Bio-Pharma Business Global Sites

- **Enhancement of reliability by becoming a member of the Ajinomoto Group and strengthening its management foundation**
- **Increase in points of contact with customers by utilizing the Ajinomoto Bio-Pharma Services network that spans Japan, the United States, and Europe**
- **Regulatory support from Ajinomoto Althea for commercial production**

Collaboration among global sites as Aji Bio-Pharma is evolving

Growth Strategy in the Healthcare Area
Acquisition of Forge Biologics and Expansion

With the acquisition of Forge, we acquired the business foundation and unique differentiating technology of a gene therapy CDMO, and gained a foothold to strengthen and create business through synergies and expand into the cell therapy field.



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- Forward-looking statements, such as business performance forecasts, made in these materials are based on management's estimates, assumptions and projections at the time of publication. A number of factors could cause actual results to differ materially from expectations.
- This material includes summary figures that have not been audited so the numbers may change.
- “AminoScience” is a trademark of Ajinomoto Co., Inc. registered in Japan.

Glossary ①

Term	Meaning and details
Transcription and translation	The process by which the genetic information in DNA is copied to messenger RNA (mRNA) is called "transcription." The process by which the information that was copied to mRNA is converted into a sequence of amino acids, the amino acids are bound together by ribosomes (where proteins are synthesized), and proteins are produced is called "translation."
Virus vector	In gene therapy, a vector is a carrier used to deliver therapeutic genes to cells. Viral vectors are based on viruses.
Adeno-associated virus (AAV) vector	A type of virus vector. Because AAV vectors are non-pathogenic, they can be used to safely and easily deliver genes to a patient's cells, suggesting potential for the treatment of many diseases.
Culture Medium	A culture medium is a nutrient solution containing balanced amounts of amino acids, carbohydrates, lipids, vitamins, minerals, growth factors, and other components required by cells. Cells take in nourishment from the medium to multiply and to produce substances.
cGMP	An abbreviation for the "current Good Manufacturing Practice" U.S. standard for manufacturing control and quality control in pharmaceuticals.

Glossary ②

Term	Meaning and details
GMP suite	GMP stands for "Good Manufacturing Practice," referring to standards and rules established to ensure product quality. A GMP suite is a special room in which specific rules and criteria are in place, used for the production of viral vectors for gene therapy. This ensures safety, stability, and high quality in the manufacturing of virus vectors.
Plasmid	A small, circular DNA molecule found within the cells of bacteria and yeast. Plasmids can be technologically modified to deliver target genes to cells and to function in specific ways. The manufacture of AAVs requires three types of plasmids.
pEMBR™ helper plasmid	A unique technology, patented by Forge Biologics, designed to optimize plasmid size, enhance stability in manufacturing plasmids, and reduce immunogenicity. It is used by many Forge Biologics customers.
Rep/Cap plasmid	A plasmid carrying two genes, Rep and Cap, that are present in the AAV genome. Rep encodes non-structural proteins that are responsible for the replication and transcription of viral genomes, while Cap encodes three types of structural proteins (capsid proteins).

Glossary ③

Term	Meaning and details
Ignition Cell ™	Forge Biologic's proprietary HEK293 cell strain for the manufacture of virus vectors. The strain demonstrates stable transfection efficiency and high AAV production efficiency. It also meets various regulatory standards and the cell bank is certified.
Upstream, downstream	The manufacturing of AAVs is divided into the processes of plasmid manufacturing, upstream, downstream, and Fill & Finish. Following their manufacture, plasmids are introduced into cells (transfection) in the upstream process and AAVs are manufactured. In the subsequent downstream process, removal of impurities, separation, and refinement are performed to obtain high-purity AAVs. The product is then completed in the Fill & Finish sterile filling process.