IR Book | Sept. 2025

ST PHARM

Technology Driven Gene Therapy CDMO
From Oligonucleotide to xRNA

Cautionary Statement regarding Forward-looking Statement

This presentation contains forward-looking statements from Dong-A Socio Group (“the Group”) that include, but are not limited to, statements regarding our future financial performance, business strategies, market opportunities, product development, and operational plans. Words such as “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “project,” “will,” and similar expressions are intended to identify such forward-looking statements.

These forward-looking statements are based on our current expectations and beliefs concerning future developments and their potential effects on the Group. Such forward-looking statements are inherently subject to risks, uncertainties, and assumptions that could cause actual results to differ materially from those expressed in these forward-looking statements.

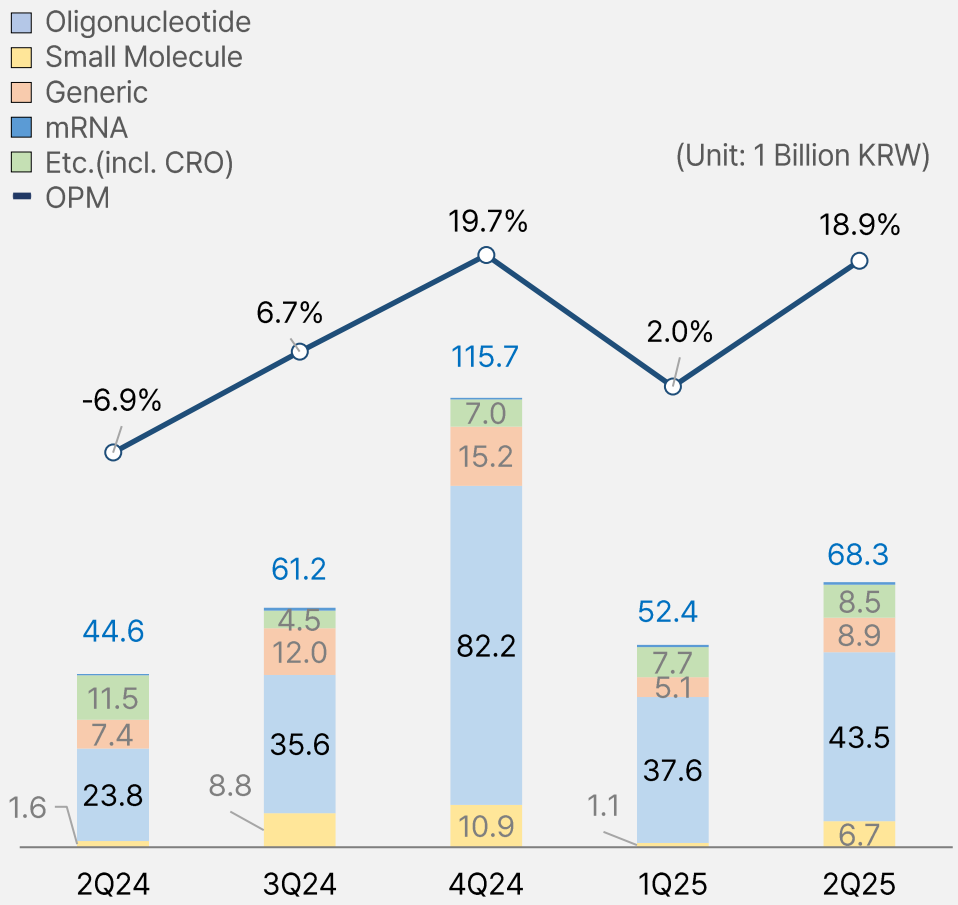
We caution investors not to place undue reliance on any forward-looking statements. These statements speak only as of the date they are made, and we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law. Additionally, please note that the financial figures and metrics presented in these Investor Relations materials are preliminary and have not yet been audited by an independent auditor. These numbers may be subject to change in future finalized disclosures.

Earning Result

2025 2Q Financial Statement

▪ Consolidated Financial Results

Quarterly Performance Trend



▪ Financial Statement

2Q Revenue ₩68.3B, Operating Profit ₩12.9B, Net Profit ₩5.4B

1) Revenue growth driven by major commercial projects from CDMO business
   Operating profit boosted from high-margin products & large sales volume
2) Reiterate annual revenue guidance of ₩320bn. Minor losses expected from CRO

(Unit: 1 Billion KRW)

Category	'25.2Q	'24.2Q	2024	YoY
Revenue	**68.3**	**44.6**	**273.8**	*53.1%*
Cost of Goods Sold	36.2	29.3	177.6	*23.6%*
Gross Profit	32.0	15.3	96.2	*109.5%*
SG&A Expenses	19.1	18.3	68.5	*4.1%*
R&D Expenses	6.1	6.1	22.1	*0.2%*
Operating Profit	**12.9**	**-3.1**	**27.7**	-
Net Profit	**5.4**	**0.9**	**32.5**	*491.7%*
Gross Profit Margin	*46.9%*	*34.3%*	*35.1%*	*12.6%p*
Operating Profit Margin	*18.9%*	-	*10.1%*	-
Net Profit Margin	*7.9%*	*2.0%*	*11.9%*	*5.8%p*

Earning Result

2025 2Q Financial Results by Segments

▪ Business Segment Breakdown

(Unit: 1 Billion KRW)

Sector		'24.2Q	'24.3Q	'24.4Q	'25.1Q	'25.2Q	YoY
Oligo. CDMO	**Subtotal** (% of Revenue)	**23.8** (53.3%)	**35.6** (58.1%)	**81.3** (69.7%)	**37.6** (71.7%)	**43.5** (63.8%)	**83.0%**
	Commercial	13.1	29.6	62.9	32.4	37.2	184.1%
	Clinical	10.7	5.9	18.5	5.1	6.3	-41.1%
Small Molecule API (SMA)		1.6	8.8	10.9	1.1	6.7	312.2%
mRNA		0.3	0.8	0.4	0.6	0.7	177.0%
Generic API (GA)		7.4	12.0	15.2	5.3	8.9	19.7%
Others		0.5	0.0	0.4	0.0	0.0	-97.9%
Separate Revenue		**33.6**	**57.2**	**109.1**	**44.7**	**59.8**	**77.8%**
Subsidiaries (CRO)		11.0	4.5	6.6	7.7	8.5	-23.7%
Consolidated Revenue		**44.6**	**61.2**	**115.7**	**52.4**	**68.3**	**52.8%**

▪ Comments

Oligo API business sales increased 83.0% YoY

- Oligonucleotide API
  Oligo Backlog Value ≈ $240M (CHF/USD = 1.2)
  Stable sales generated from commercial projects
  Majority of clinical project sales focused in 4Q
- Earlier-than-planned operations for 2nd Oligo Plant
  Small-scale clinical trial batches production in 3Q
  GMP, commercial projects produced from 4Q onward
- Oversea Subsidiaries
  KRW 0.2 bn losses from CRO and other subsidiaries
  P/L of CROs near BEP level in 2Q, resulting from cost-cutting measures
- Anticipated Events in 2025
  [Oligo] HAE project (Client, Approval),
  FCS/sHTG project (Client, P3 results),
  2nd Oligo Plant Operation
  [SM] Mitochondrial deficiency project (Client, Approval)
  [Pipeline] Pirmitegravir P2 interim results

PART 01

Introduction

Overview

Introduction

Summary

(By end of 2024)

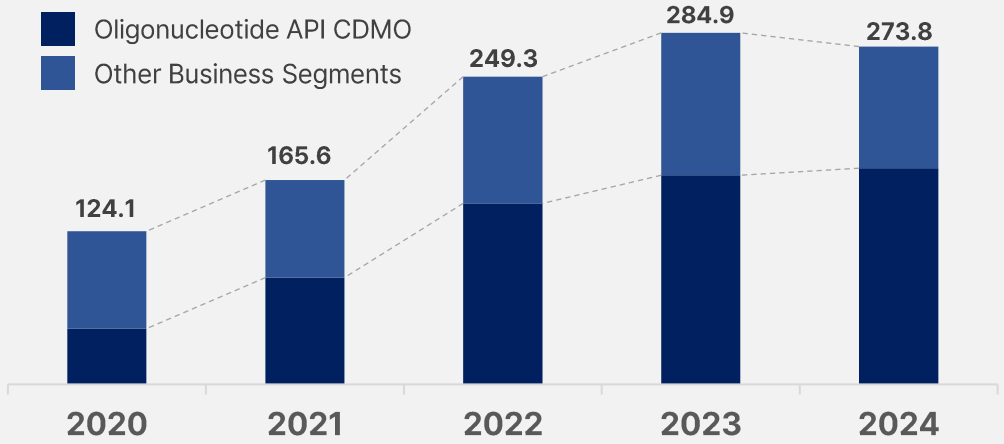
Establishment	1983
Equity	503 Billion KRW
Employees	664
Revenue	274 Billion KRW (Overseas 79%, Domestic 18%)
Shareholders	Affiliated / Affiliated Persons hold 38.7%

API CDMO specializing in xRNA Therapies

- Major global player in Oligonucleotide API CDMO
- CDMO service ranging from Small Molecule to xRNA
- Solid records in both CDO and CMO areas

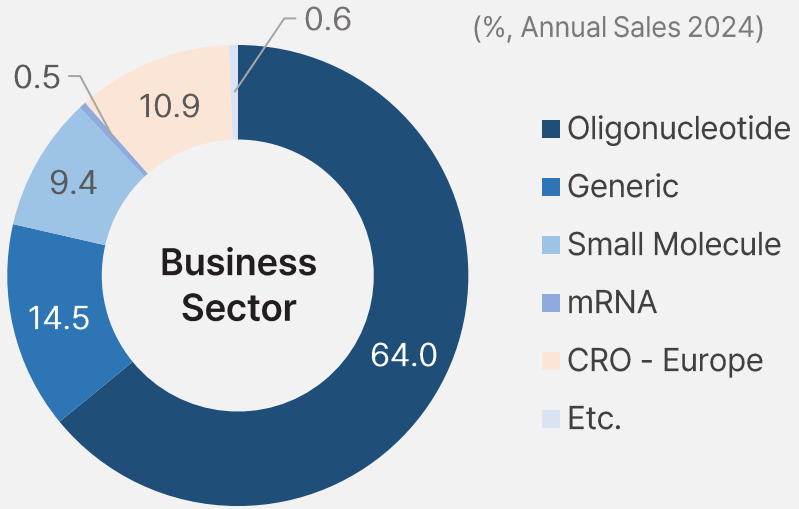
Consolidated Annual Revenue

(Unit: 1 Billion KRW)



Revenue Breakdown

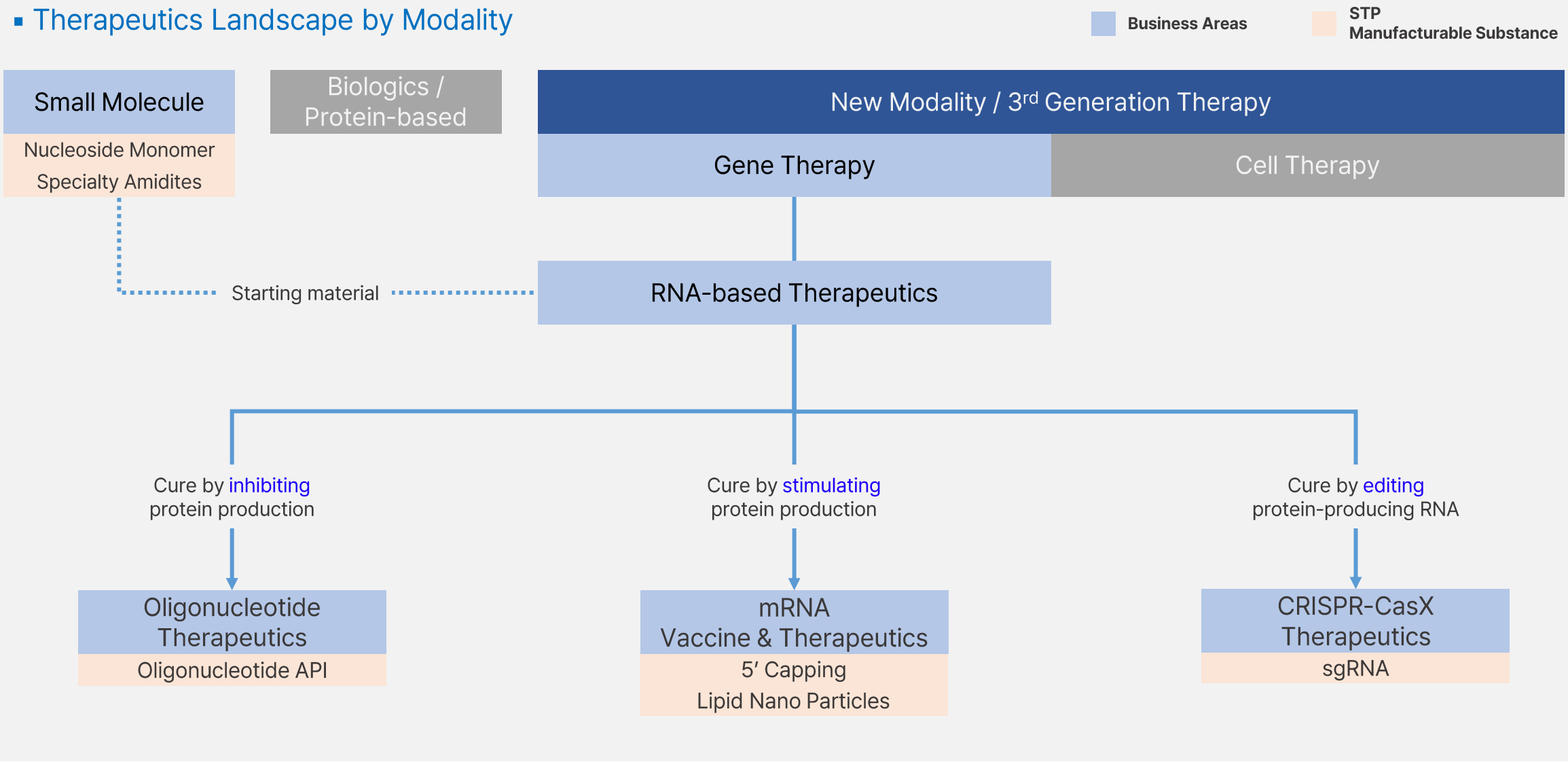
(%, Annual Sales 2024)



Overview

Introduction to Core Business Areas

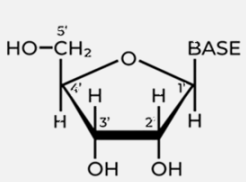
▪ Therapeutics Landscape by Modality

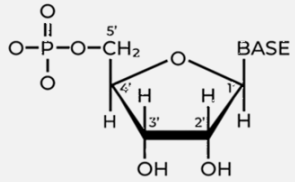


Overview

History & CDMO Records

Nucleosides API





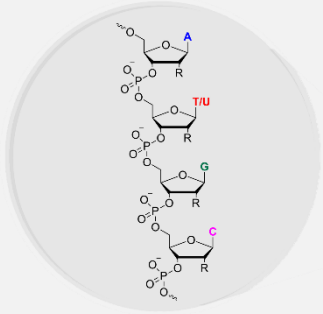
CDMO specializing in small-molecule nucleoside APIs for anti-viral medications

API Supplier of

GSK Thymidine
GSK Zidovudine
Novartis Telbivudine
Gilead Sofosbuvir

Integrated value chain from nucleosides to phosphoramidites

Oligonucleotide API



Oligonucleotide (Single-strand)

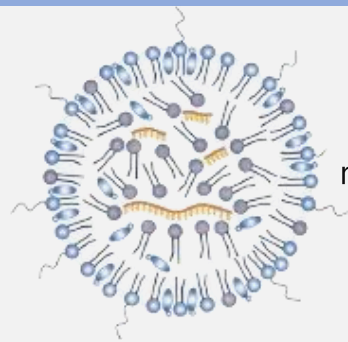
2018
- First commercial-scale Oligo Plant

2022
- NAI grade from US FDA PAI Inspection

2024
- MDS Oligo CDMO project received US FDA Approval
- Rare CVD Oligo CDMO received US FDA Approval

2025
- HAE Oligo CDMO project received US FDA Approval

xRNA CDMO Platform



mRNA-LNP

2023
- Commercial-scale mRNA production facility

2024
- Application of STLNP® Patent(PCT)
- Supply Agreement with Quantoom Bio.
- Completion of in-house developed 5′-Capping (SmartCap®)

2025
- mRNA Partnership with Evonik AG (SmartCap®)

[Source: Difference Between Nucleotide and Nucleoside - GeeksforGeeks
Linde Schoenmaker, Dominik Witzigmann, Jayesh A. Kulkarni, Rein Verbeke, Gideon Kersten, Wim Jiskoot, Daan J.A. Crommelin. (2021) mRNA-lipid nanoparticle COVID-19 vaccines: Structure and stability, International Journal of Pharmaceutics]

Market

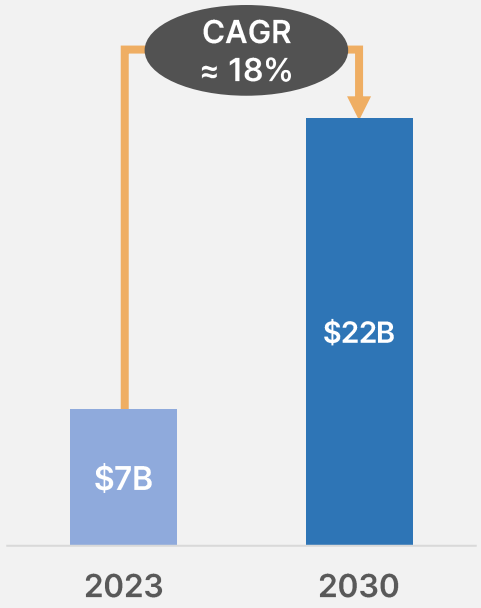
Oligonucleotide Therapeutics & CDMO Market

- Oligonucleotide Market Growth Forecast

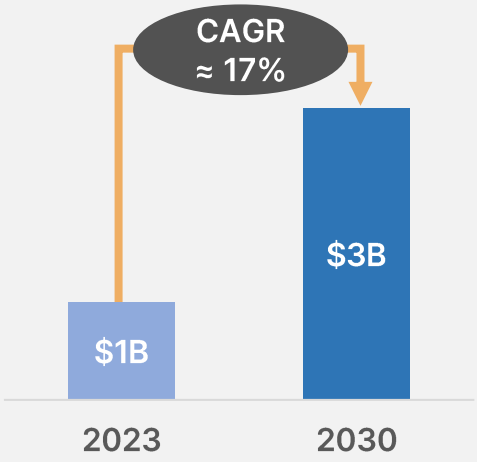
Therapeutics market size to achieve **double-digit growth** through 2030, with CDMO market reflecting ≈15% of downstream market

R&D landscape expanding to target diseases with larger population → **from rare & hereditary to chronic diseases (CVD, metabolic, etc.)**

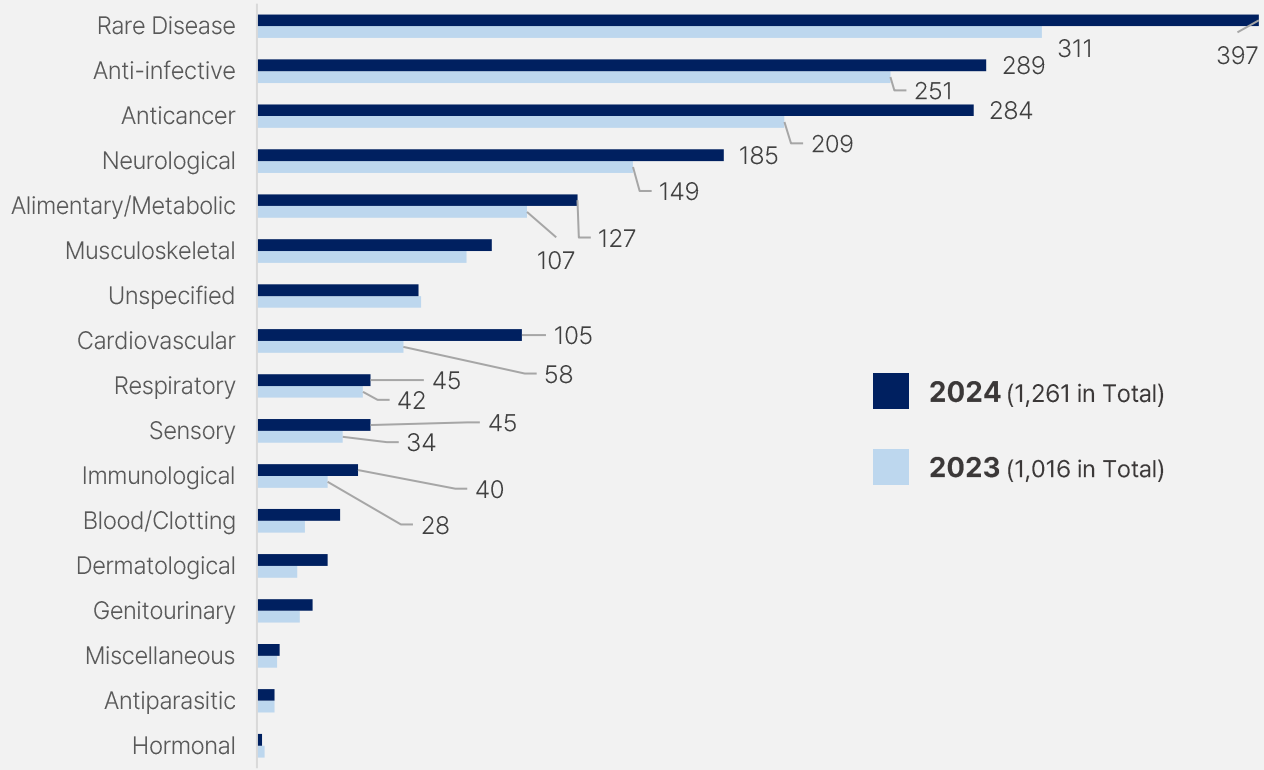
Global Oligo Therapeutics Market



Global Oligo CDMO Market



[Pipelines targeting diseases with larger population increasing]



[Referred Source: Cortellis, 2023]

[Referred Source: American Society of Gene and Cell Therapy]

PART 02

Business Overview

Business

Production Facility (GMP)

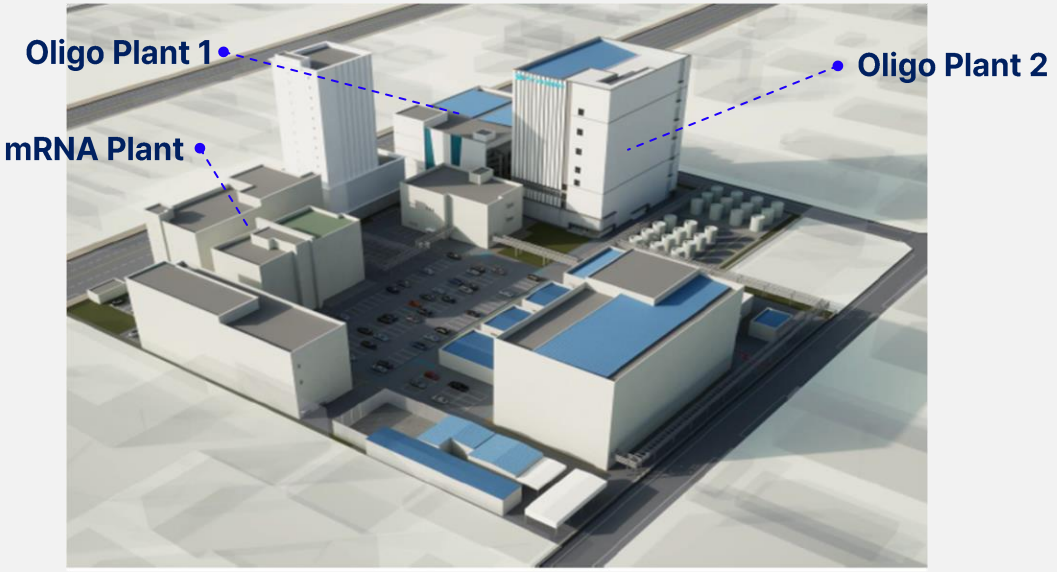
▪ Overall Capacity

Facility	Chemical Plant	Oligo Plant	mRNA Plant
	SM, Generic, Monomer	Oligonucleotide API	mRNA, Lipid Nano Particles
Equipment Status	96 (Reactors)	6 (Lines)	-
Total Capacity	376,250 L	6 ~ 8 moles*	Max. 100M Dose/Year

* Include Plant 1 and Plant; Plant 2 operational since July 2025
** Additional expansion of Plant 2 planned during 2027 ~ 2028

▪ View of Siwha Campus

▪ View of Banwol Campus



Business

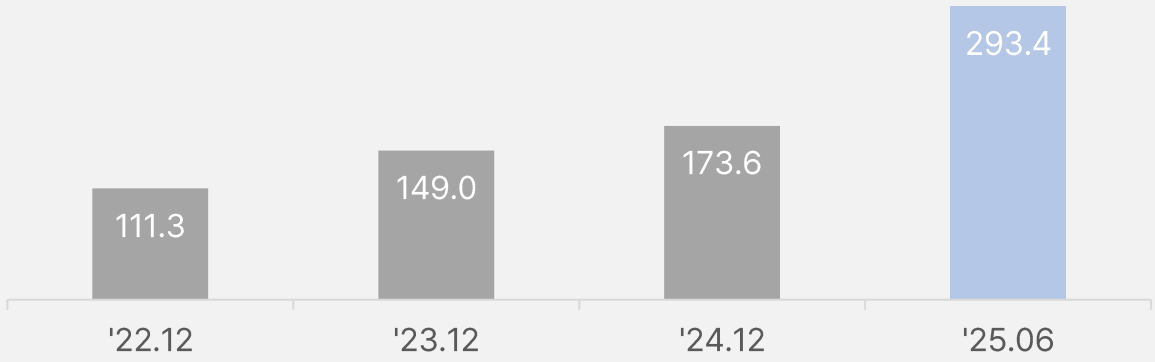
CDMO Business – New Drug API

▪ Major CDMO Projects

#	Client	Indication / Target Disease	Stage (P1 / P2 / P3 / Approved)
Oligonucleotide API			
1	Client A	Hyperlipidemia	P3
		CVRR	Indication expansion
2	Client B	Spinal Muscular Atrophy (SMA)	P3
3	Client C	Myelodysplastic Syndrome (MDS)	P3
		Myelofibrosis (MF)	Indication expansion
4	Client D	Familial Chylomicronaemia Synd.	P3
		Severe Hyper-triglyceridema	Indication expansion
5	Client D	Hereditary Angioedema	P3
6	Client A	Atherosclerosis	P2
7	Client F	IgA Nephropathy	P2
8	Client E	Chronic Hepatitis B	P1
9	Client F	Chronic Hepatitis B	P1
10	Client F	Huntington's Disease	P1
Small Molecule API			
11	Client G	Not disclosed	P3
12	Client H	Mitochondrial Dysfunction	P2

▪ Total CDMO Project Backlog Status

[Unit: 1 Million USD]



* CHF/USD = 1.20 for 2025

▪ Oligo CDMO Project Backlog Status (as of Jun. 25)

[Unit: 1 Million USD]

Category	End of 2022	End of 2023	End of 2024	Newly Added in 2025
Commercial	13.2	36.1	106.5	47.5
Clinical	67.2	81.4	47.7	38.3
Total (Accumulated)	**80.4**	**117.4**	**154.2**	**240.0**

* Backlog status based on date of Product Order receival
** Commercial/Clinical project determined based on date of pipeline's new drug approval
*** CHF/USD = 1.20 for "Newly Added in 2025"

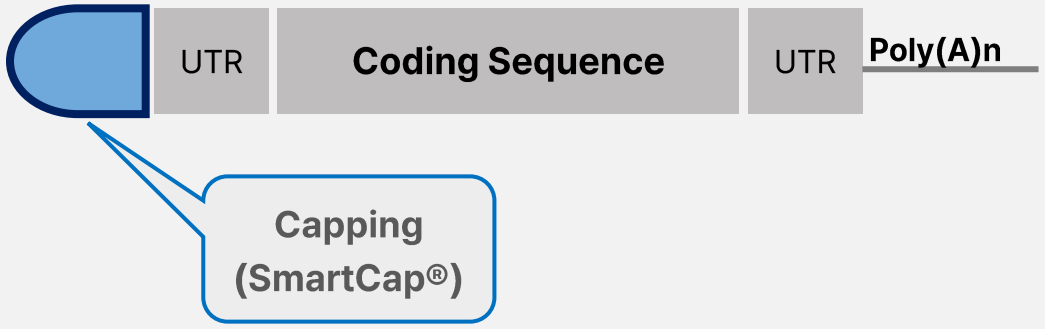
Business

CDMO Business – mRNA Platform

- In-house Platform Technologies

SmartCap® (Stability)

- Registered patent in Korea
- Ongoing PCT International Patent Publication
- Over 30 capping analogues → highly customizable
- Efficacy & Safety data through STP-2104 clinical trial

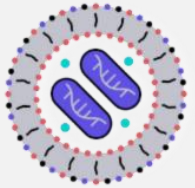


Supply Agreements & Partnerships:

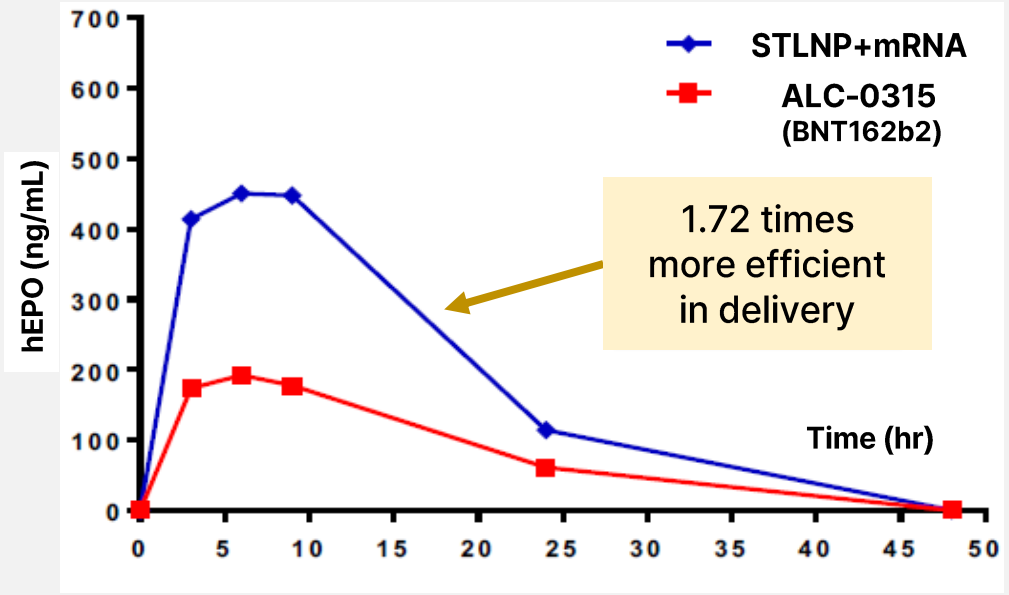
Quantoom Biosciences — Aug. 2024

EVONIK Leading Beyond Chemistry — Jan. 2025

STLNP® (Delivery)



- Ongoing PCT International Patent Publication
- Delivery efficacy data observed from nonclinical study



PART 03

Technology & Pipeline

Technology

Enzymatic Ligation for Oligonucleotide CDMO

- Development of **Enzymatic Ligation** approach to revolutionize API production at scale…

Our Approach

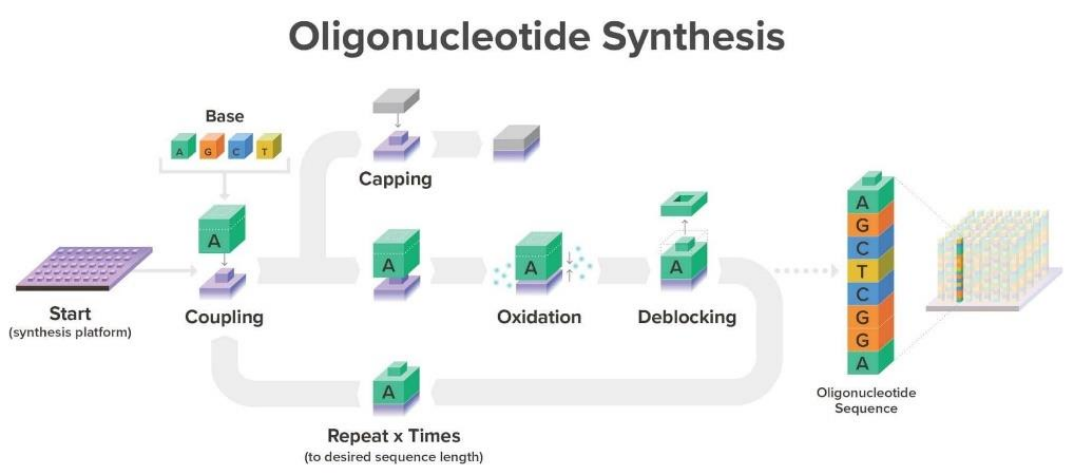
1) Synthesize monomers into shortmers instead of phosphoramidites as individual building blocks
2) Synthesize shortmers into full-length oligo APIs through enzymatic ligation

** Ongoing joint research with global pharmaceuticals/clients for commercialization of technology*

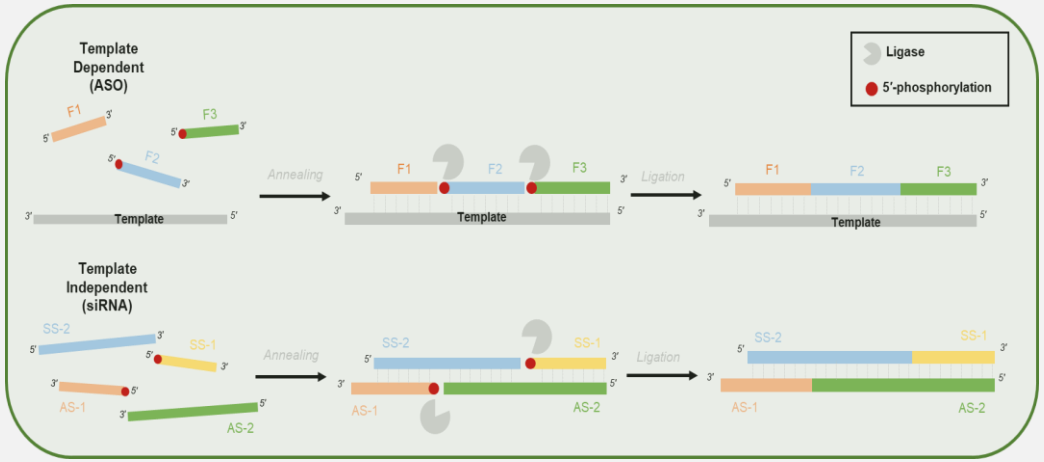
Why it matters

- Improves scalability & lowers production cost
- Eco-friendly, by using non-chemical organic solvents (ex. water)
- Allow efficient synthesis of longer-length oligomers/oligonucleotides

[Solid Phase OS]



[Enzymatic Ligation OS]



[Source: Twist Bioscience]

Technology

sgRNA Chemical Synthesis for CRISPR-Cas CDMO Service

- sgRNA synthesis in response to CRISPR-Cas demands

Successful manufacturing of 100-mer sgRNA

- Backed by +20 years of expertise in oligo-/nucleotide synthesis and development of analytical methods
- In-house capability from synthesis-purification to analysis

Ongoing developments and production augmentation

- 130-mer sgRNA development work-in-progress
- On schedule for installing dedicated line during 1Q.2025

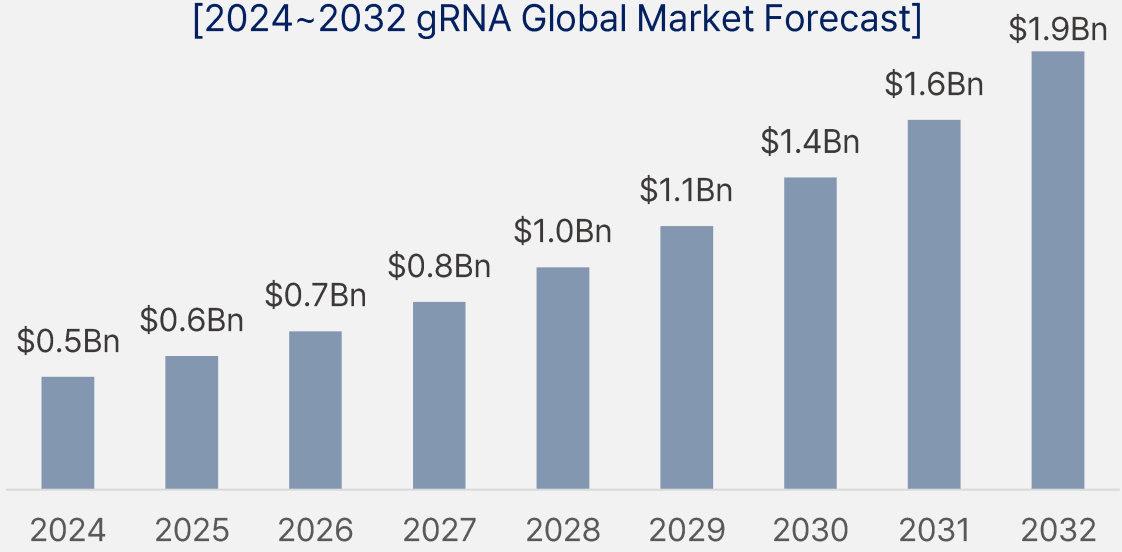
[100-mer sgRNA Purification Results]

As of Oct. 2024

Length	Modification	Crude (Pre-Purification)	Post Purification
100 mer	2′-OH	7~17 %	79~87%*

* Major competitor Target purification ≥ 80% (100-mer)

[2024~2032 gRNA Global Market Forecast]



[Source: AnalystView Market Insight]

[Production Facility Status (GMP)]

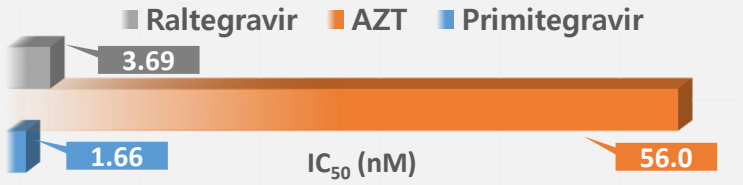
Status	Line	Capability
Installed	R&D Lab Line* (non-GMP)	50 µmol ~ 1.2 mmol
Installed	Small-scale Line*	1.2~20 mmol
Planned	Small-scale Line **[sgRNA-dedicated]**	1.2 mmol scale

* Currently utilizing two installed lines for both oligonucleotide & sgRNA synthesis

Pipeline

STP0404 - ALLINI Mechanism HIV Treatment

Anti-viral Efficacy (Preclinical, Cell Line MT-4)



Anti-viral Efficacy against Resistant HIV (Preclinical)

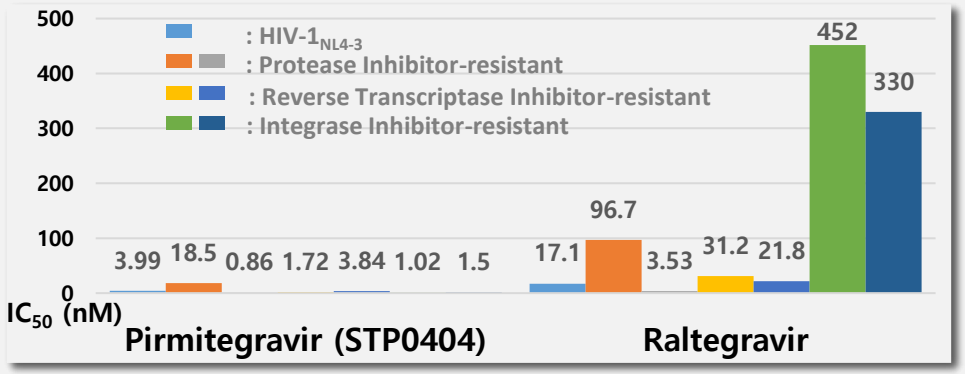


Table 3. Antiviral activity in Raltegravir-resistant strains

Compounds	Average IC_{50} (range, nM)	
	PBMC	MT-4
STP0404	0.08 (0.02~0.22)	2.49 (0.95~3.48)
Zidovubine	7.96 (0.22~20.7)	37.94 (29.7~57.6)
Raltegravir	1,227.70 (12.5~3,036)	2525 (351~4,322)
Elvitegravir	-	2751.5 (276~10,000)
Dolutegravir	-	4.57 (3.07~8.54)

RAL-resistant strains: 4736_2, 4736_4, 6070_1, 6070_2, 1666_1

Clinical Trial Details

- Healthy 65 male volunteers (18~45 yrs old) enrolled in Phase 1
- No TEAEs in MAD 400 mg; no SAEs, severe AEs or deaths; MTD not reached
- Half-life > 20 h, T_{max} ~4-4.5 h; broad therapeutic range (> 700-fold $paEC_{95}$)
- Slight accumulation in AUCs (~1.3-fold); food notably increased drug exposure (1.5~2-fold)
- Anti-viral efficacy against resistant HIV during Preclinical trial

Phase 2a (U.S.) Clinical Trial Details (NCT05869643)

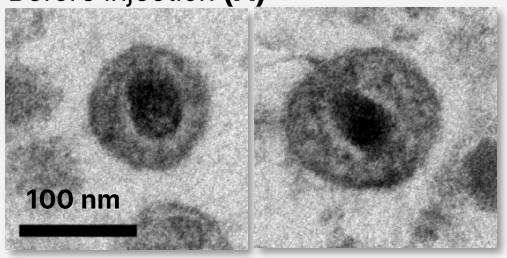
- Evaluation of antiviral effect, safety, tolerability, and pharmacokinetics in adult participants with HIV-1infection
- Randomized, Double-Blinded, Placebo-Controlled, Multicenter Study
- Approximately 36 enrollments (Jul. 2025)
- Arms: Cohort 1 (low-dose), Cohort 2 (medium-dose), Cohort 3 (high-does) + Placebo Comparator for each Cohorts

Pipeline

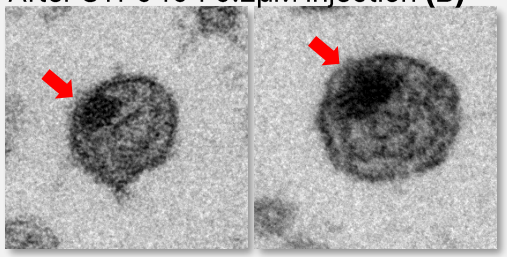
STP0404 - New Mechanism for Potential Functional Cure

▪ STP0404 Mechanism of Action

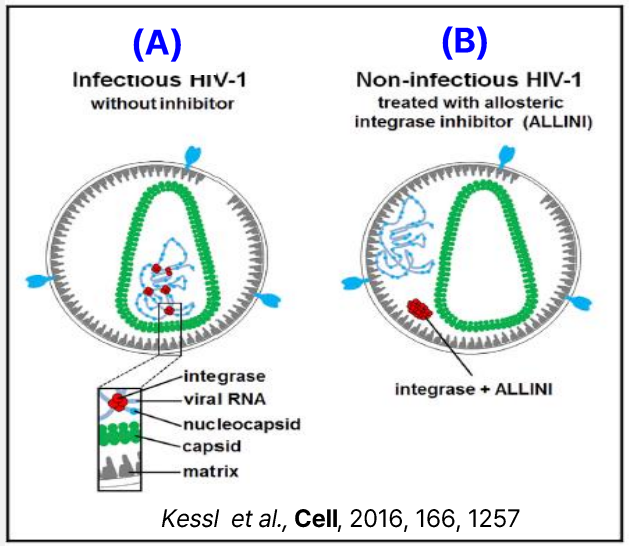
Before Injection **(A)**



After STP0404 0.2µM Injection **(B)**

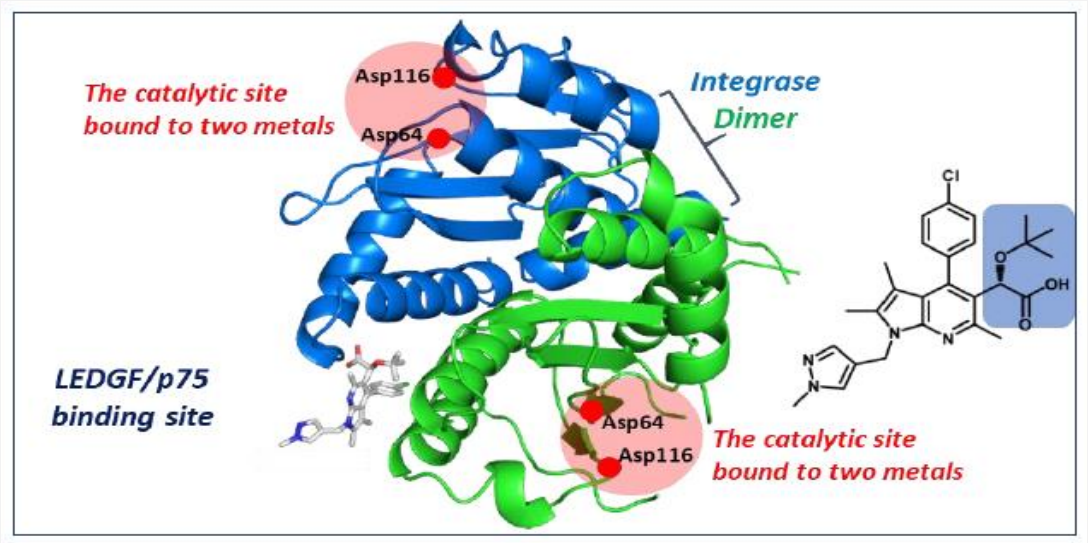


TEM study in Emory Univ.



Kessl et al., **Cell**, 2016, 166, 1257

▪ STP0404 X-ray Structure



- New mechanism ALLINI (Allosteric integrase inhibitor) founded by Prof. M. Kvaratskhelia (Univ. of Colorado) in 2016
- HIV-1 integrase binds the viral RNA genome and plays an essential role during virion morphogenesis **(A)**
- ALLINI induces aberrant integrase(IN) multimerization and binds to viral RNA, leading to mislocalization of viral RNA **(B)**
- STP0404 leads to mislocalization of vRNP* complexes outside the viral capsid, allowing the formation of non-infectious HIV-1 **(B)**
- New MOA for HIV-cure as "maturation inhibitor" - "Divide and Conquer", not 'Shock & Kill' or 'Block & Lock''
- Identification of ALLINI mechanism supported by US NIH grants in 2018. Collaboration with Emory University & University of Colorado Boulder

* Viral ribonucleoprotein

PART 04

Appendix

Market

RNA-based Therapeutics Concept

▪ Overview

RNA Therapeutic is 3rd-Gen therapy that allows a more fundamental treatment by silencing or inhibiting expression of disease-inducing protein
Only 3% of all DNAs is transcribed to proteins via mRNA
The remaining 97% is transcribed to RNA
Most RNA functions unidentified ▶ Great potential RNA-related treatments

▪ RNA-based Therapeutics

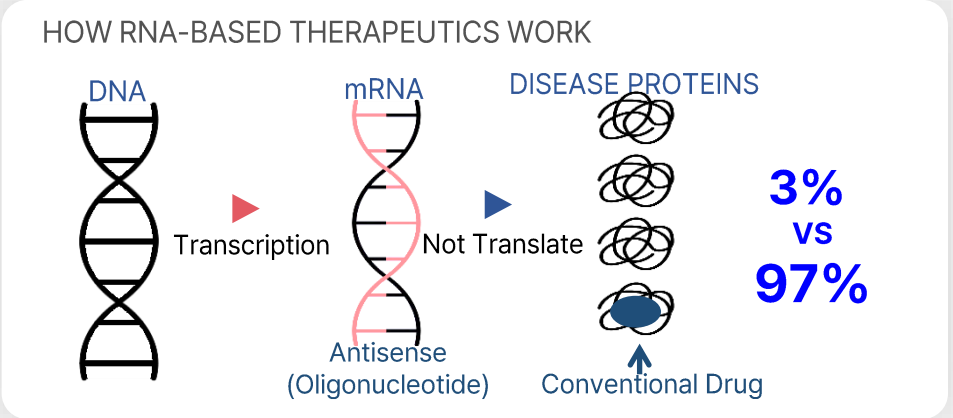
Mechanism: Inhibits expression of harmful proteins RNA
Types: Anti-sense (ASO), siRNA, miRNA etc.
Examples : Spinraza (Ionis / Biogen) Spinal Muscular Atrophy
Leqvio (Alnylam / Novartis) Hereditary Hyperlipidemia

▪ Characteristics of RNA-based Therapeutics

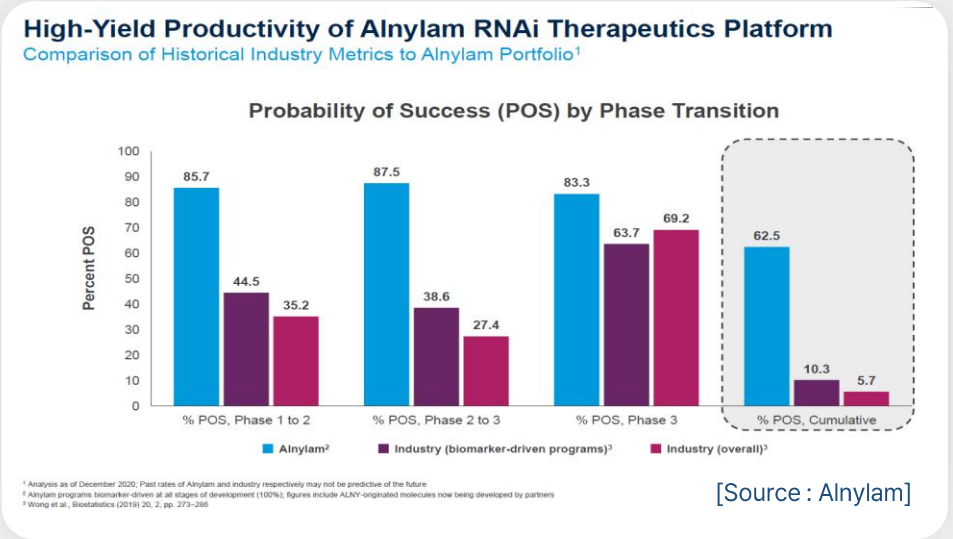
Strengths : High selectivity over target proteins
Quick & cost-effective development ▶ ≥ 2yr of Pre-clinical phase
Very low tolerance
Excellent drug persistence ▶ Leqvio 6-months
Lower drug price ▶ Leqvio ≥ U$4,000 while Repatha = U$5,850

Weaknesses: Difficulty in delivery to organs/cells apart from liver or brain
Require delivery technology such as LNP etc.
▶ New methods: Avidity's Antibody oligonucleotide conjugates
Difficulty in mass production ⇒ Few capable CDMO companies

▪ Central Dogma & Non-coding DNA



▪ Alnylam's siRNA Clinical Trial Success Rate : 62.5%



[Source : Alnylam]

Appendix

Summarized Consolidated Balance Sheet

[Unit : 1 Billion KRW]

	2Q24	3Q24	4Q24	4Q24	2Q25
Asset	666.2	691.6	721.9	742.2	732.4
Current Asset	324.4	323.5	330.1	336.7	322.5
Cash and Cash Equivalent	29.5	41.0	63.4	24.8	41.7
Account Receivables	44.6	50.5	67.8	56.6	57.5
Inventory	154.7	158.6	127.0	146.6	163.1
Non-current Asset	341.8	368.1	391.8	405.4	409.9
Liabilities	238.0	203.1	218.9	247.9	231.9
Current Liabilities	76.3	80.9	133.3	162.1	147.6
Non-current Liabilities	161.7	122.1	85.6	85.7	84.3
Short & Long-term Borrowings	156.1	118.6	115.5	74.4	76.5
Equity	428.2	488.5	503.0	494.3	500.5
Current Ratio	*425.1%*	*399.7%*	*247.7%*	*207.7%*	*218.5%*
Debt-to-Equity Ratio	*55.6%*	*41.6%*	*43.5%*	*50.1%*	*46.3%*
Borrowings / Equity	*36.5%*	*24.3%*	*14.6%*	*15.0%*	*15.3%*
Borrowings *(excl. Cash)* ***/ Equity***	*29.6%*	*15.9%*	*2.0%*	*10.0%*	*7.0%*

Appendix

Summarized Consolidated Income Statement

[Unit : 1 Billion KRW]

	1Q24	2Q24	3Q24	4Q24	2024	2Q25
Revenue	51.7	44.6	61.7	115.7	273.8	68.3
Cost of Goods Sold	32.7	29.3	39.2	76.3	177.6	36.2
Gross Profit	19.0	15.3	22.5	39.4	96.2	32.0
SG & A Expenses	17.1	18.3	16.4	16.6	68.5	19.1
R&D Expenses	5.0	6.1	5.6	5.5	22.1	6.1
Operating Profit	1.9	-3.1	6.1	22.8	27.7	12.9
Non-operating Income	0.0	0.0	0.0	0.6	0.6	0.1
Non-operating Cost	1.4	0.2	0.1	0.6	2.3	0.6
Financial Income	10.3	7.3	14.0	3.7	35.3	2.0
Financial Cost	3.2	3.2	5.2	7.0	18.6	7.5
EBT	7.5	0.9	14.9	19.4	42.7	6.9
Net Profit	5.4	0.9	13.7	12.4	32.5	5.4
Gross Profit Margin	*36.7%*	*34.3%*	36.4%	*34.0%*	*35.1%*	*46.9%*
Operating Profit Margin	*3.6%*	*-6.9%*	9.9%	*19.7%*	*10.1%*	*18.9%*
EBT Margin	*14.5%*	*2.0%*	24.1%	*16.8%*	*15.6%*	*10.1%*
Net Profit Margin	*10.5%*	*2.0%*	22.2%	*10.8%*	*11.9%*	*7.9%*

Thank You

ST PHARM

Technology-Driven Gene therapy CDMO
From Oligonucleotide to xRNA