



2022 WuXi AppTec Investor Day

# WuXi Chemistry: A Global Leading CRDMO

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# WuXi Chemistry – A Global Leading CRDMO

## Unique CRDMO Model Captures Entire Value Chain



## 3 Business Growth Engines

### Small Molecule Chemistry

Medicinal Chemistry | Custom Synthesis |  
Library Synthesis | Catalog | Discovery Process  
Chemistry | Process Chemistry | Manufacturing

### Drug Product

Pre-formulation | Formulation Development |  
Manufacturing | Packaging | Labeling |  
Distribution

### New Modalities

Oligonucleotides | Peptides | Monomers |  
Linkers | Conjugates

## Global Platform, Global Talents

**16** global sites

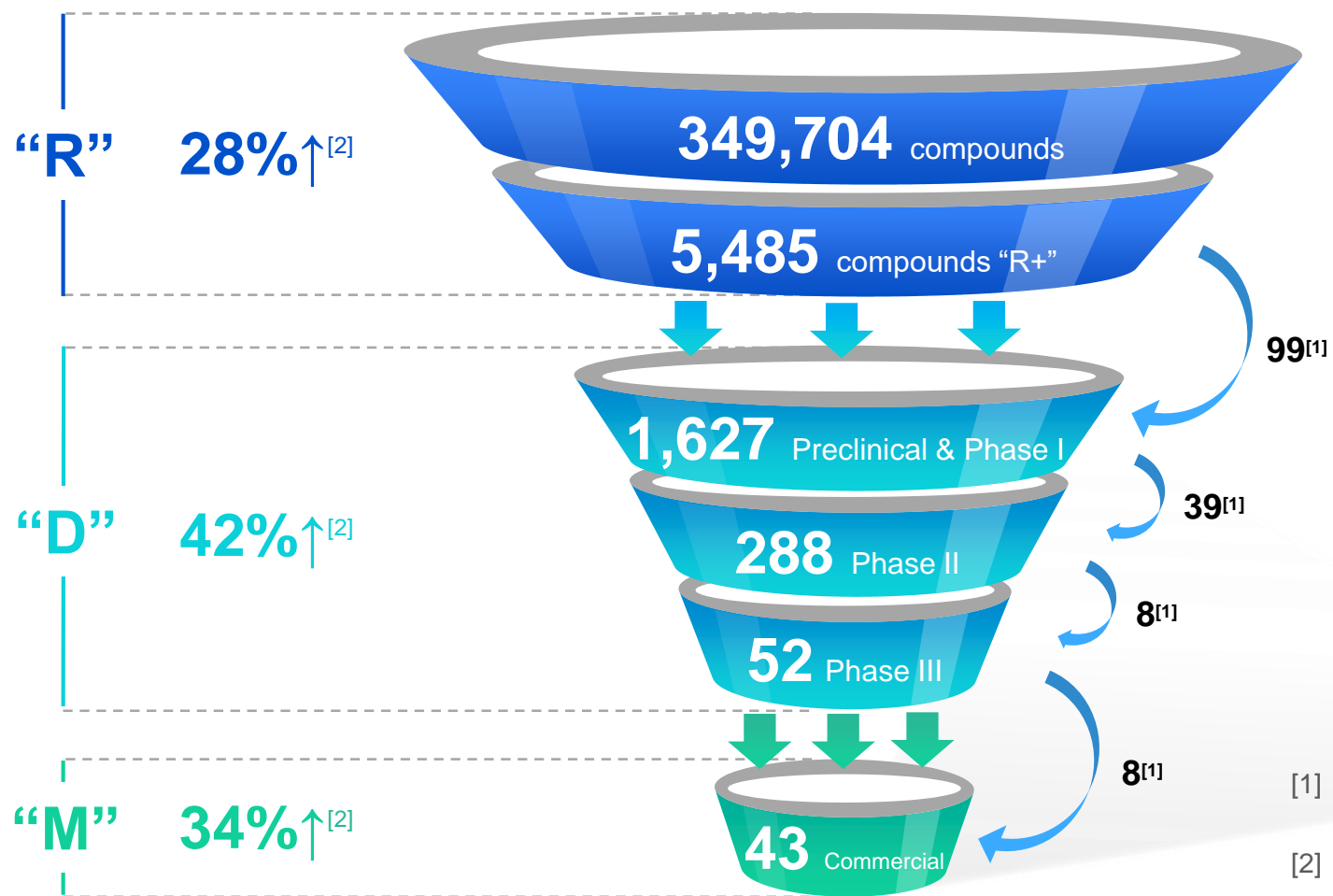
**24,137** employees

**2,014** clients worldwide

2022 H1

**CRDMO business model drives sustainable  
high growth**

# Rich and rapidly increasing CRDMO pipeline drives sustainable growth

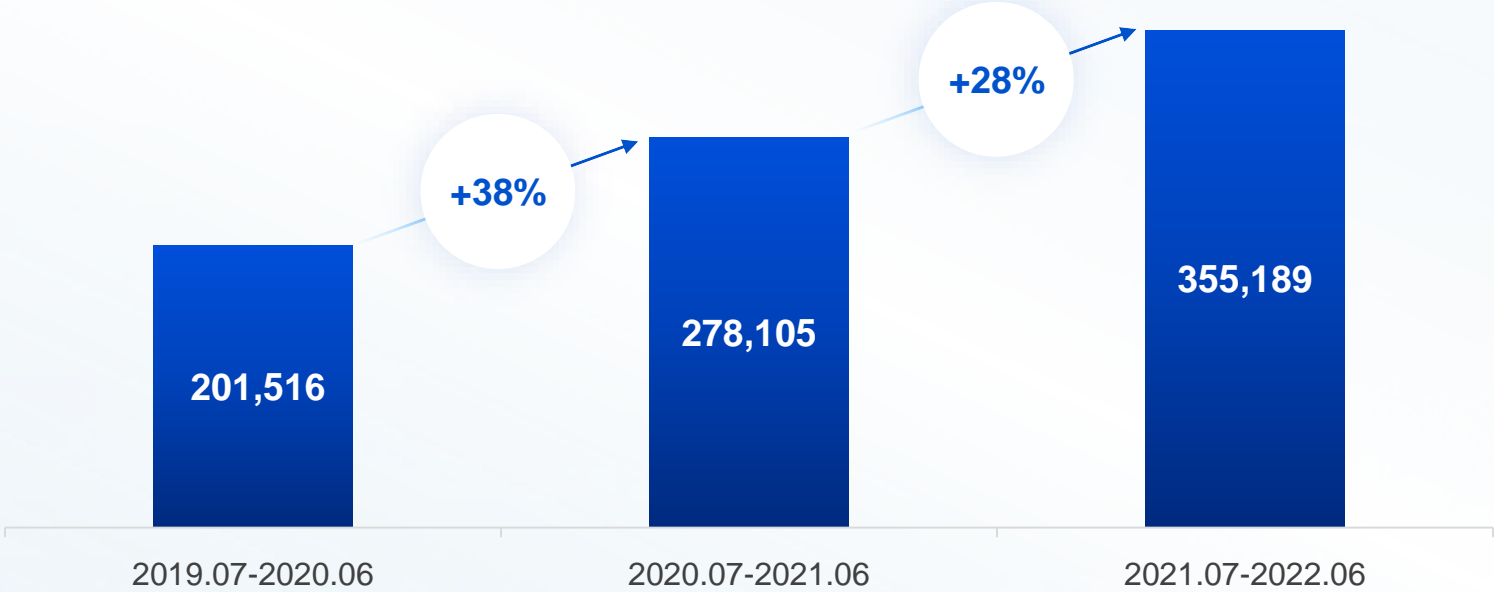


[1] number of molecules were moved to next stage and kept in WuXi Chemistry within past 12 months

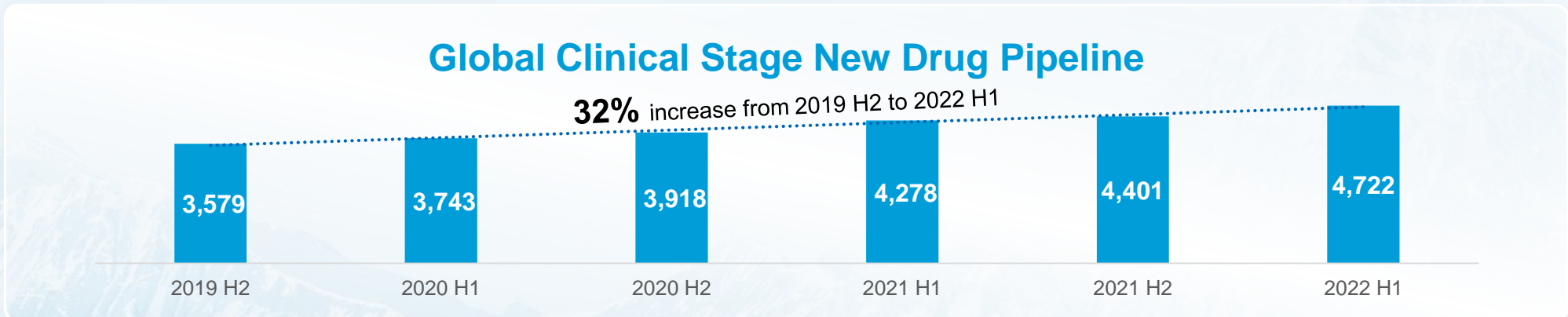
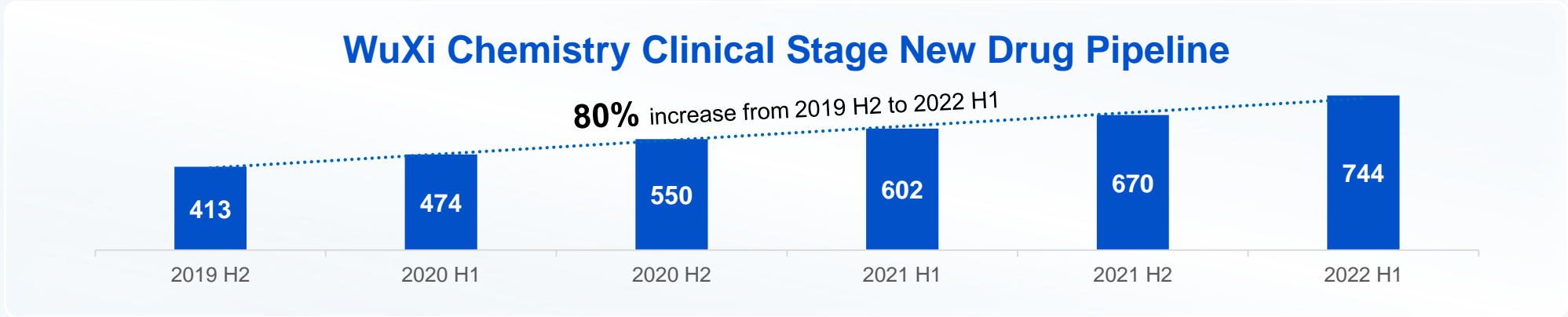
[2] increase rate vs. the number of end of 2021 June

# Continued growth of “R” pipeline

## Number of Compound Delivered by WuXi Chemistry C“R”DMO

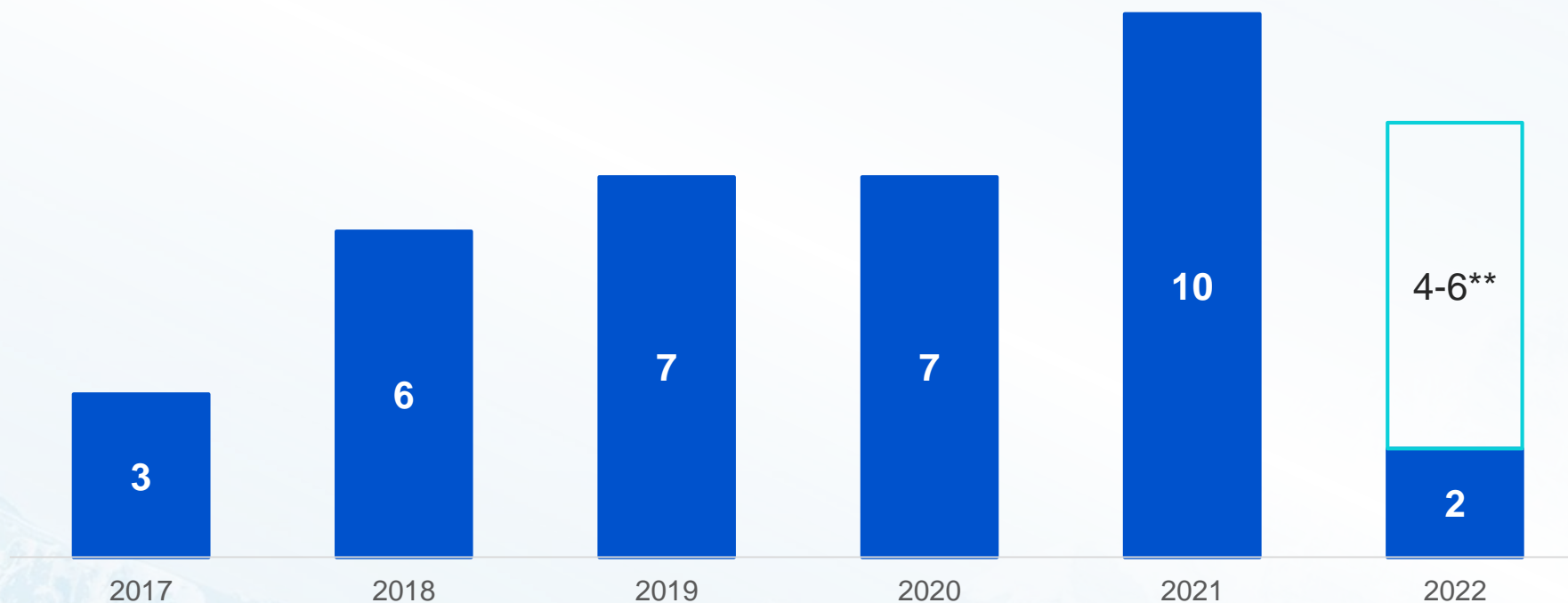


# Increased clinical stage global small molecule new drug pipeline market share reached to 16%



# An engine to support global launch of new drugs

## Supported 33 New Drugs Approved between 2017-2021



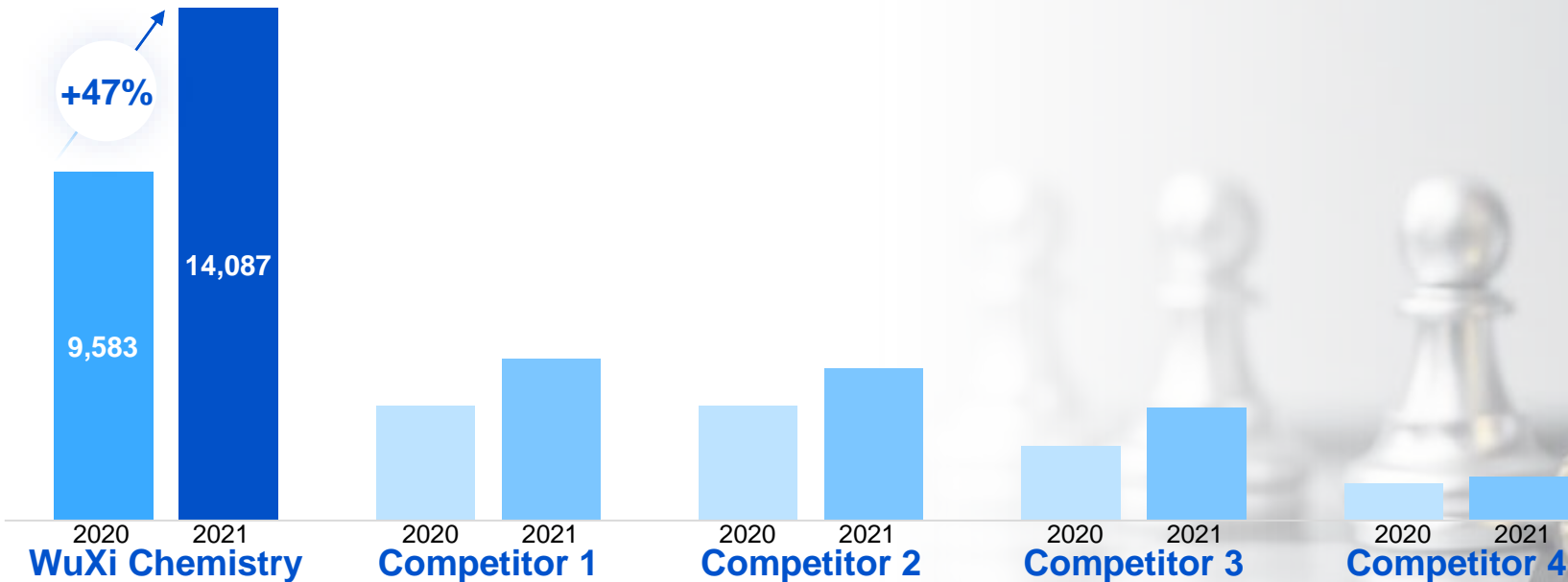
\*: only count first approval, all of those drugs are approved by FDA, EMA, NMPA or PMDA.

\*\* 4-6 molecules in WuXi Chemistry pipelines are expected to be approved in 2022 H2

# Extending the leadership position in China chemistry-based CRDMO market

## 2021 vs. 2020 Chemistry Based Revenue

(¥ Million RMB)



Total revenue of 4 competitors in 2021 is 13,129 ¥ Million RMB, 40% increase vs. 2020

8 Source: companies annual reports and investor analysis report



# Growing footprint with increasing capacities

## China



Shanghai Waigaoqiao

R D M



Shanghai Zhangjiang

R



Tianjin

R



Wuhan, Hubei

R



Chengdu, Sichuan

R



Qidong, Jiangsu

R



Shanghai Jinshan

D M



Changzhou, Jiangsu

D M



Changshu, Jiangsu

M



Taixing, Jiangsu

M



Wuxi city, Jiangsu

D M

## United States



San Francisco, CA

R



San Diego, CA

D M



Middletown, DE

D M

## Switzerland



Couvet, Neuchâtel

M

## Singapore



Singapore

R D M

R Research 8

D Development 7

M Manufacturing 10

# The largest chemistry services workforce in the world

Research

**12,978**



Development

**4,354**



Manufacturing

**6,805**



**24,137**

WuXi Chemistry Employees  
(34% increase vs. 2021H1)

# Total 2014 WuXi Chemistry clients in 2022 H1

C“R”DMO

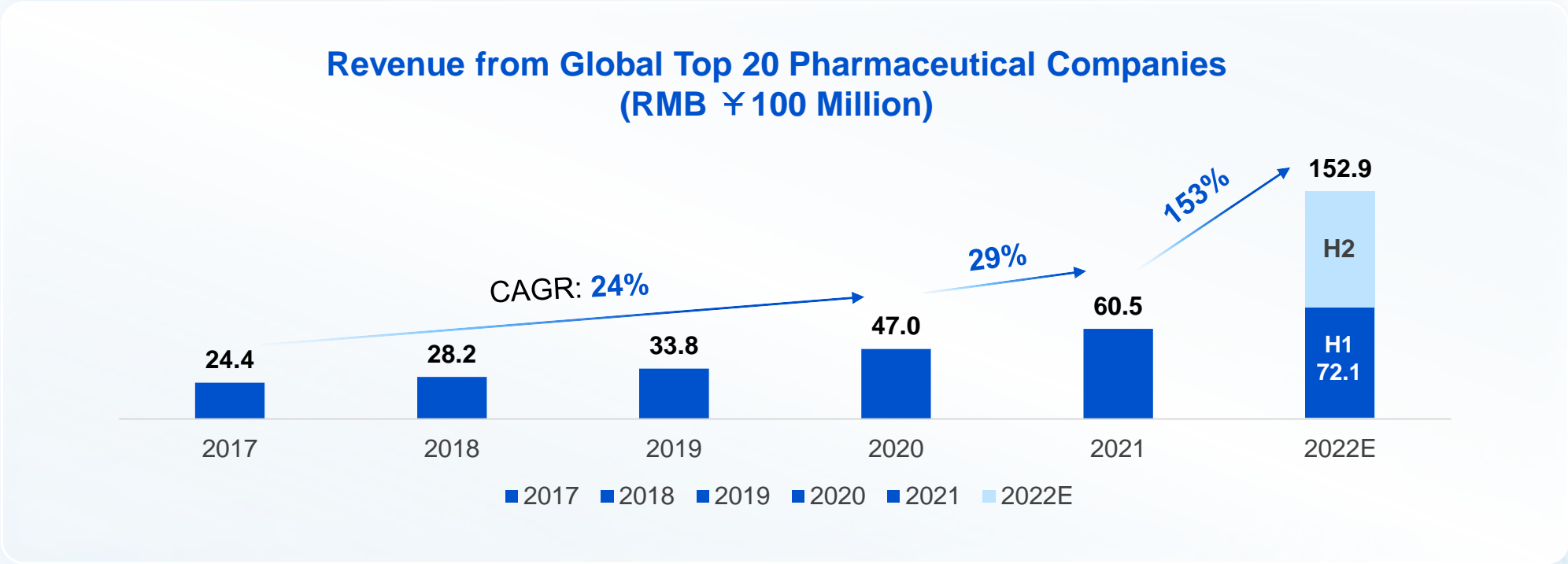
CR“DM”O



## 2,014

WuXi Chemistry CRDMO clients in 2022 H1

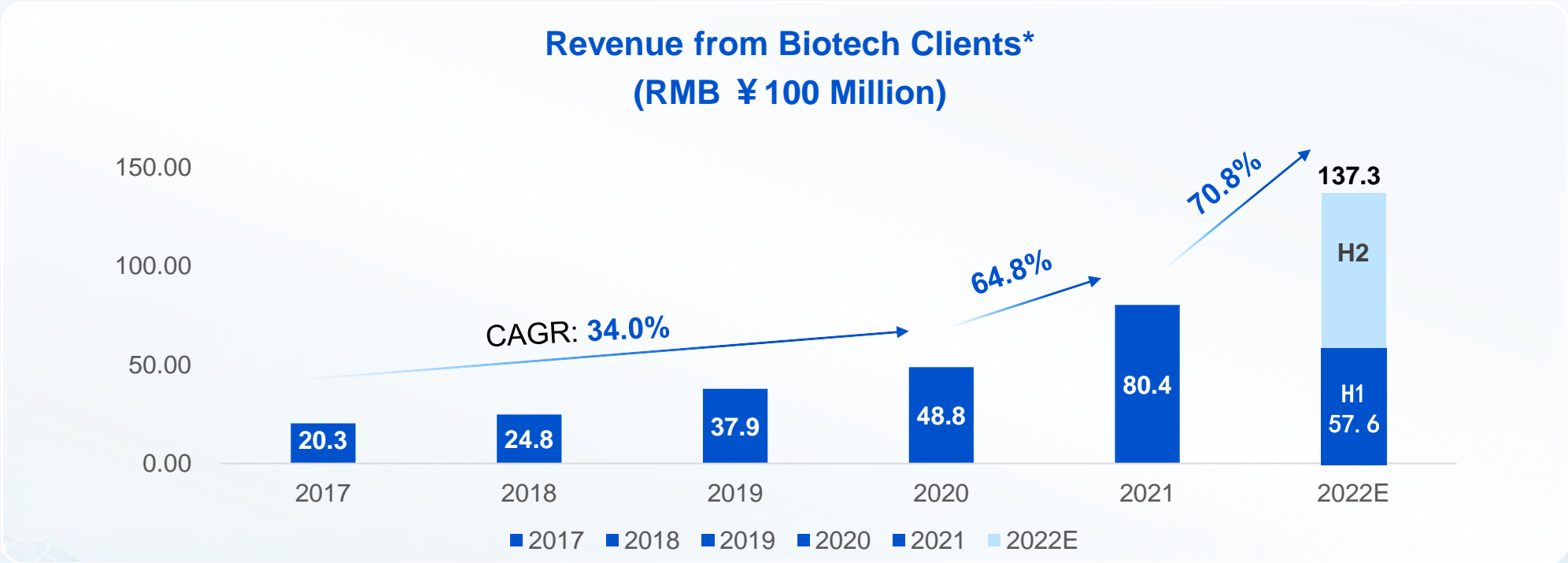
# Strengthened collaboration with global top 20 pharmaceutical companies



**20** of global top 20 pharmaceutical companies use “R” & “D” services.

**10** of global top 20 pharmaceutical companies use “R” & “D” & “M” services

# Continue to expand collaboration with biotech clients\*



Note: \* Biotech clients means clients excluding global top 20 pharmaceutical companies.

# A proven track record of global standard quality system

## Inspection Highlights (2021H2 - 2022H1)



1<sup>st</sup>

Drug product  
US FDA inspection



1<sup>st</sup>

Drug product  
EMA inspection



1<sup>st</sup>

Drug product  
MFDS inspection



4

Inspections passed in one  
single month



9 successful US FDA inspections  
2013 - 2021



4 successful EU EMA inspections  
2016 - 2021



30+ successful China NMPA inspections  
2015 - 2022



300+ client audits



4 successful Japan PMDA inspections  
2019 - 2022



4 successful South Korea MFDS inspections  
2022



3 successful SwissMedic inspections  
2018 - 2020

# WuXi Chemistry CRDMO platform enabled the rapid advancement of R&D and commercial manufacture for multiple COVID-19 treatments

**9,180**  
compounds

**22**  
clinical stage drug candidates

**4**  
commercial drugs

## SPEED

In-parallel activities via close collaboration of “R” “D” and “M” sub teams within WuXi Chemistry

## CAPABILITY

“One-stop” enabling technology platforms to conquer a variety of development challenges

## CAPACITY

Large manufacturing capacity and robust commercial supply chain

## QUALITY

A proven track record of global standard quality system

# Strong growth across all three CRDMO business lines

- Small molecule chemistry
- Drug product
- New modalities (oligonucleotide + peptide)



# Small molecule chemistry CRDMO business far outgrew the industry average

Small Molecule Chemistry CRDMO Platform Revenue  
(RMB ¥ 100 Million)



# Small molecule chemistry manufacture capacity overview



Shanghai Jinshan  
China



Changzhou, Jiangsu  
China



Taixing, Jiangsu  
China



Changshu, Jiangsu  
China



San Diego, CA  
USA

**17** plants | **2,000+** m<sup>3</sup> Total Reactor Volume (TRV)

# Small molecule chemistry manufacture expansion – Changzhou and Taixing



## Changzhou

Phase III expansion to be completed in 2022, adding  
~**1000** m<sup>3</sup> TRV

**4 Plants**

H1 2022

**1 Plant**

H2 2022

## Taixing

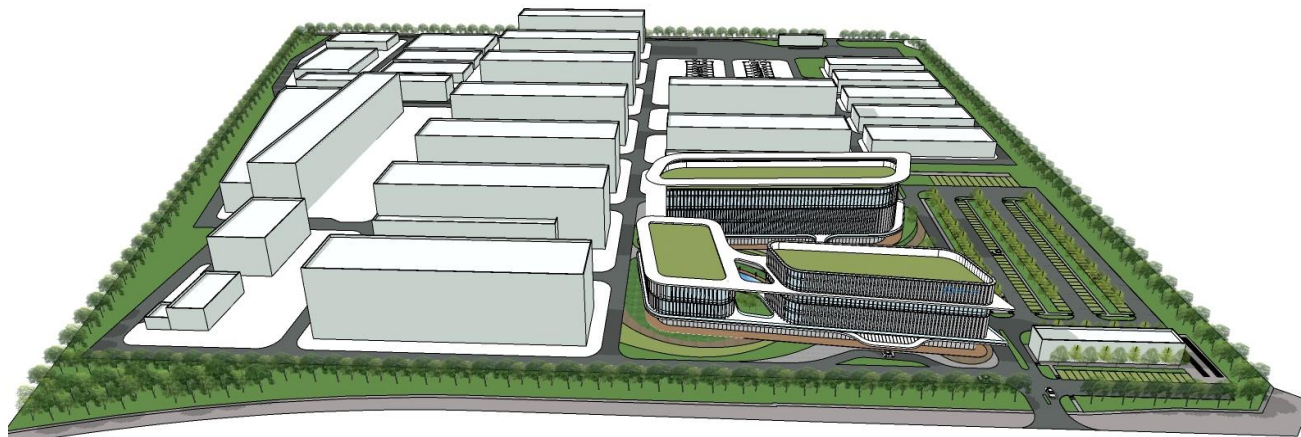
Phase I (2023-2025)

**7 Plants**  
~**1000** m<sup>3</sup> TRV

Phase II (2025-)

**In planning**

# Small molecule chemistry expansion - Singapore



## R&D center

- Automated chemistry lab
- Green Chemistry Center of Excellence
- Start operation in 2025

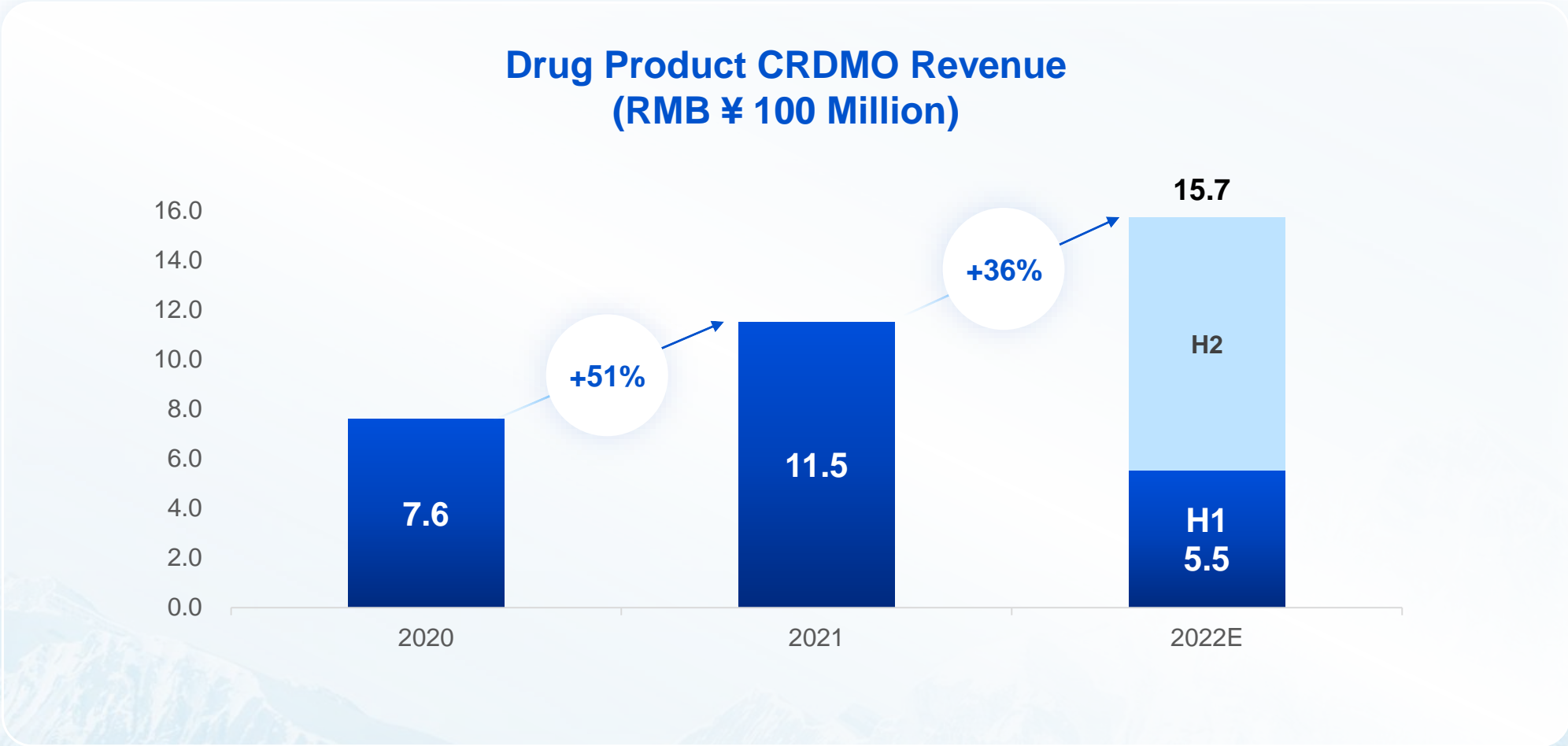
## Manufacturing facility

~50 acre, total 7 plants

Phase I scope:

- 2 plants for small molecule API, 350+ m<sup>3</sup> TRV
- 1 plant for oligonucleotides, peptides and complex chemical conjugates
- Start operation in 2026

# Rapid growth of drug product CRDMO business

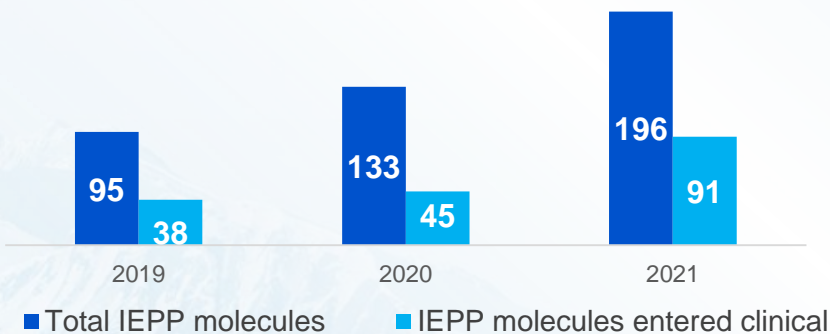


# Engage more customers earlier and increase customer stickiness via unique IEPP and SSD offerings

## IND Enabling Preformulation Package (IEPP)

- **Fast:** IND formulation ready in 8-12 weeks
- **Most Comprehensive**
  - All enabling technology screening included
  - All tests included (In-vitro, in-vivo and in-silico)

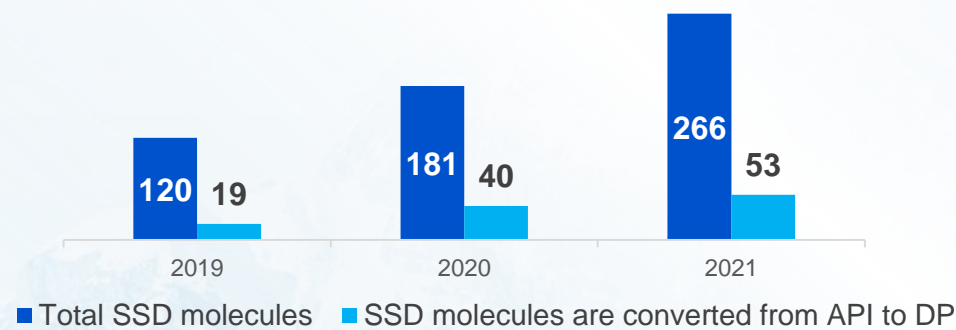
### Number of Molecules Used IEPP Service



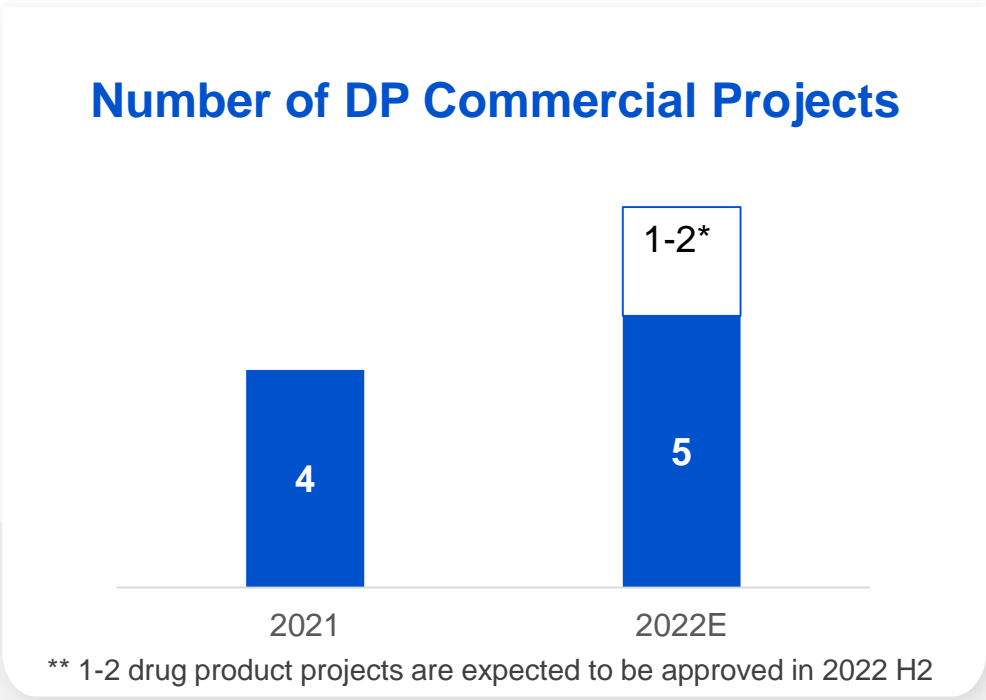
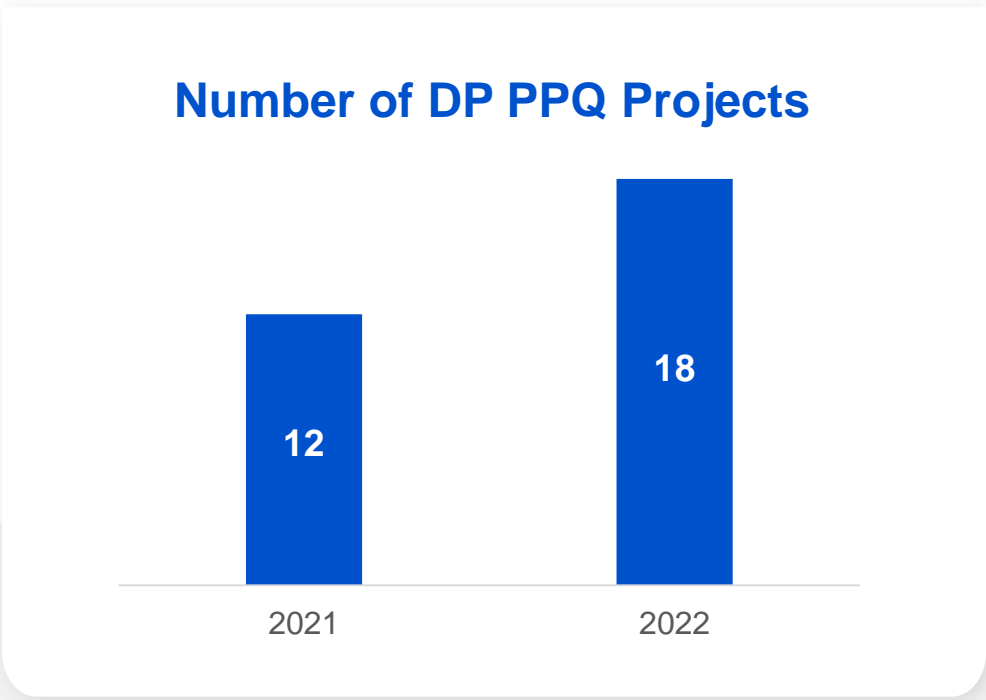
## Solid State Development (SSD)

- **Large and experienced team (90+ scientists)**
- **Most Comprehensive**
  - Support both API and DP development at any stage
  - Industry leading advanced solid state and material science technologies

### Number of Molecules Used SSD Service



# Rapid growth of late phase and commercial DP projects enabled by a robust global drug product commercial supply network



## 3 DP sites approved by major regulatory agencies

Shanghai Waigaoqiao, China



Wuxi city, China



Couvet, Switzerland



# New capabilities drive growth – oral solid drug product



**Spray Dried Dispersion (SDD)**

- Doubled capacity in past 12 months
- 69%↑ molecule number used SDD technology in H12022 vs. H1 2021
- 2.5 – 3X capacity expansion by 2023



**Continuous Manufacturing**

- 1<sup>st</sup> continuous manufacturing line in China for oral solid drug to be opened in Q4 2022
- Key benefits:
  - Shorter production time
  - Better process control
  - Lower cost



**High Potency Oral Drug Product**

- Target to open in Q3 2022
- Tablets and capsules with primary packaging
- Forms unique integrated CMC platform (API & DP) for High Potency drugs



# New capabilities drive growth – parenteral drug product

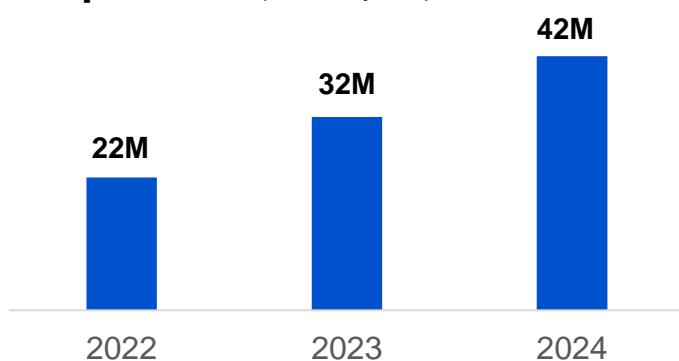


1<sup>st</sup> injectable production line launched in Wuxi city in Q1 2022



1<sup>st</sup> Lipid Nano Particle GMP plant to be opened in Wuxi city in Q3 2022

## Injectable Production Capacity Expansion (units / year)



## Lipid Nano Particle Platform

- Novel multi-channel mixing technology enables lipid nanoparticles with various assembly structures
- Enhanced scalability and reproducibility
- Part of the “one-stop” offering for new modalities

60 projects, including  
16 integrated CMC  
(API+DP) oligo and  
peptide projects



# Drug product manufacture facility overview



Shanghai Waigaoqiao  
China



Wuxi city, Jiangsu  
China



Couvet, Neuchâtel  
Switzerland

## Oral Dosage Form

Tablets | Capsules | Powder | Liquid Capsules | Granules | Liquid in Bottle

## Injectable Dosage Form

Solution | Suspension | Emulsion | Lyophilized Powder | Liposome

# Middletown, Delaware US site construction underway



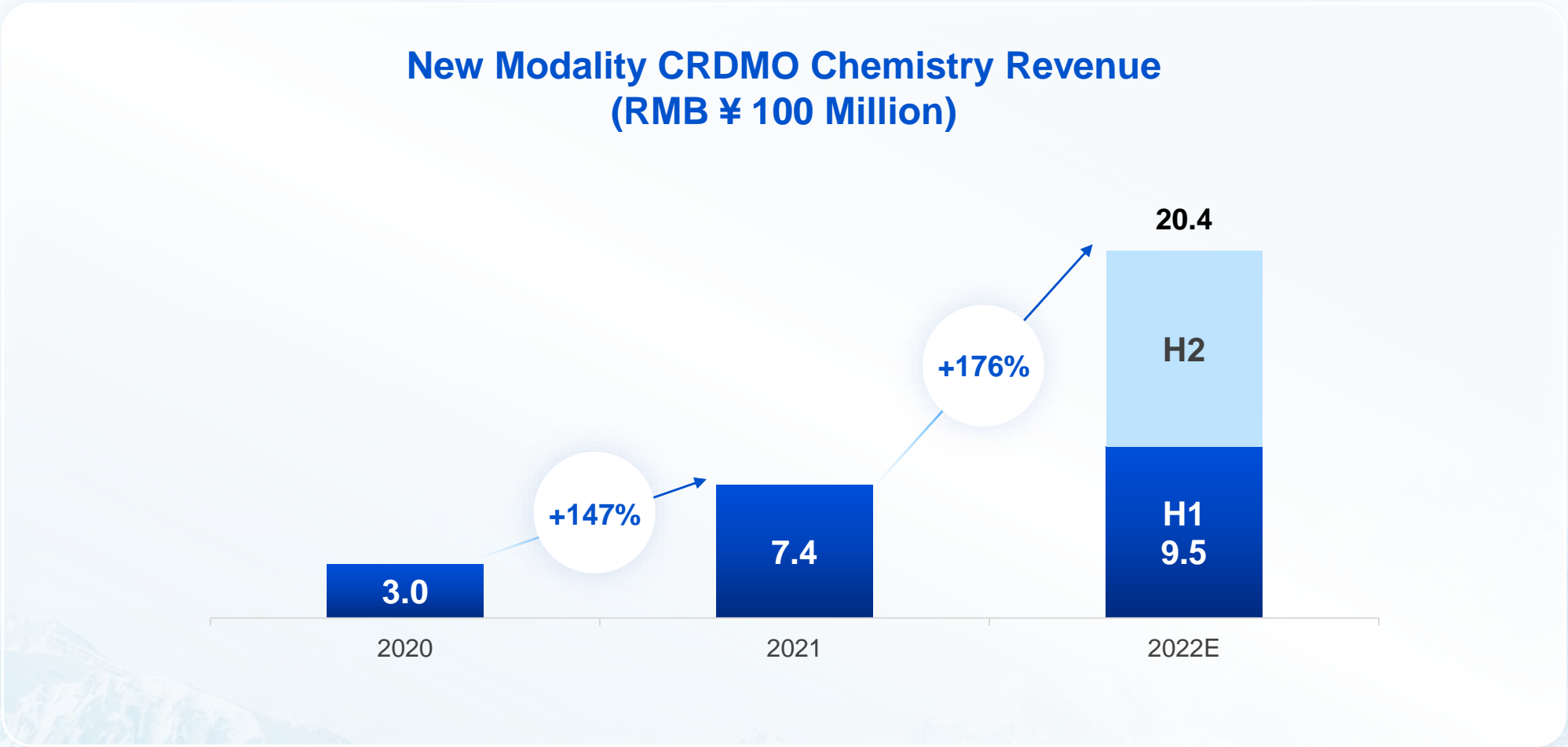
## Phase 1 Summary

**Start operation in 2025**

### Scope:

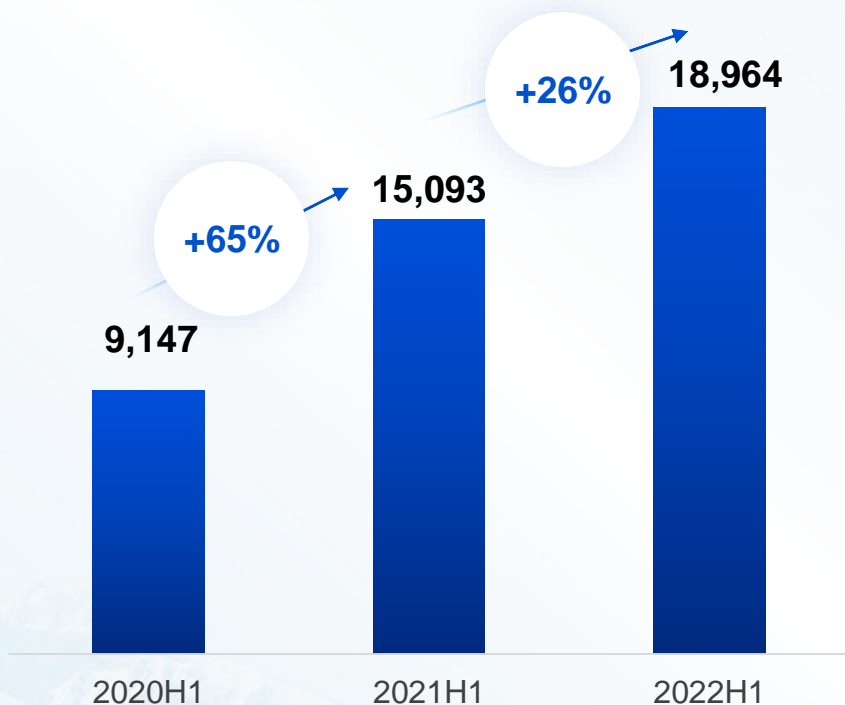
- Formulation R&D
  - Formulation development
  - Analytical
- Clinical and Commercial Drug Product Production
  - Oral solid and injectable
- Packaging, labeling and distribution

# New modality (oligonucleotide and peptide) chemistry business achieved unprecedented growth

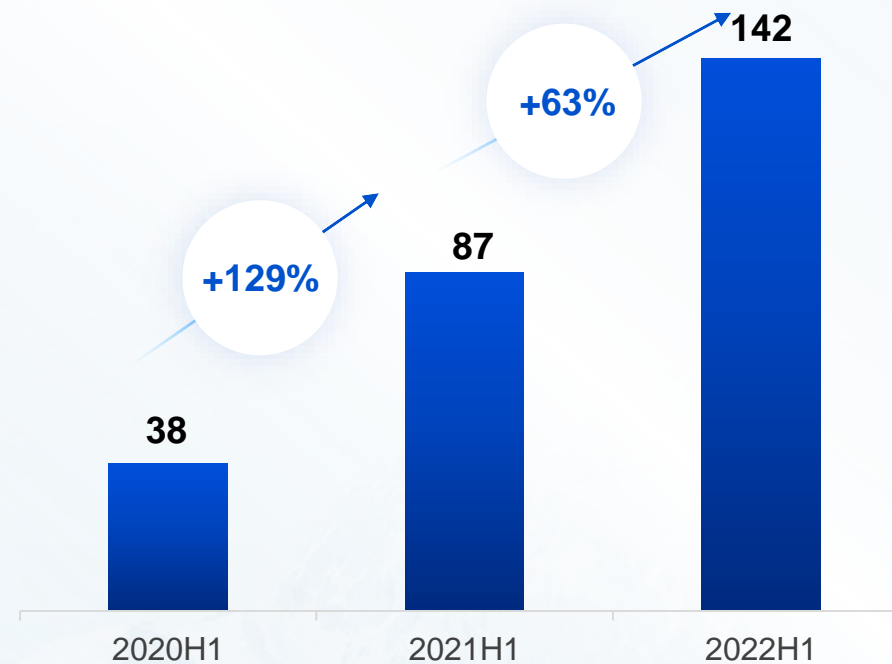


# Fast growing new modality CRDMO pipeline

## Oligo and Peptide “R” Compound #



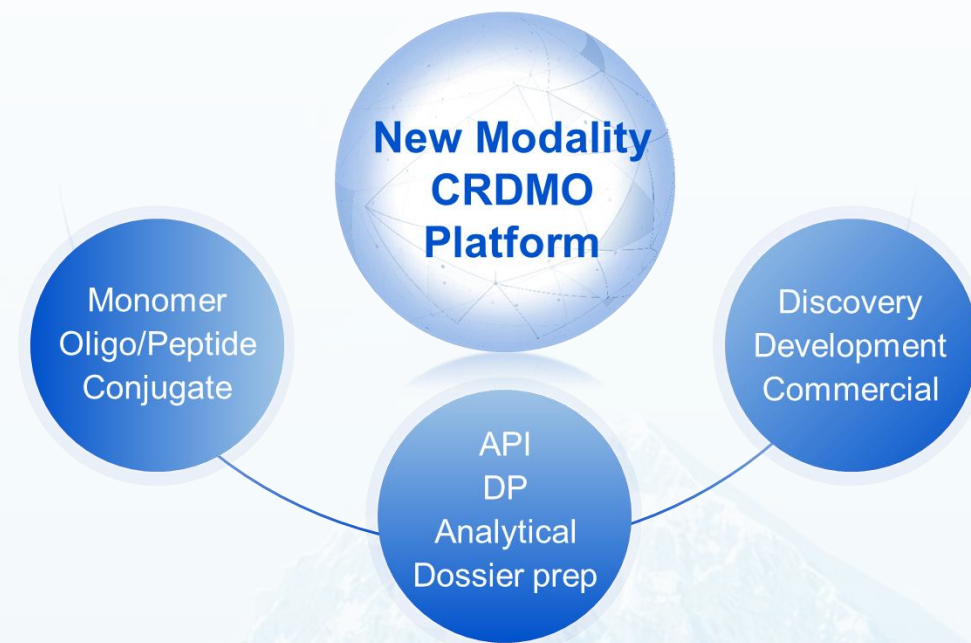
## Oligo and Peptide “D+M” Molecule #



Supporting **4 Phase 3** and **1 commercial** oligo and peptide drugs

# Our new modality business competitive advantages

- 1 Most comprehensive CRDMO “one-stop” capabilities
- 2 Readily available and fast growing large “R”, “D”, and “M” capacity
- 3 Staying ahead of the technology curve
- 4 Synergies with WuXi Chemistry small molecule chemistry and drug product platforms
- 5 Global standard quality system inspected by all major regulatory agencies



# Expand oligonucleotide & peptide manufacture capacity globally



Changzhou, China  
(3 oligo & peptide plants)



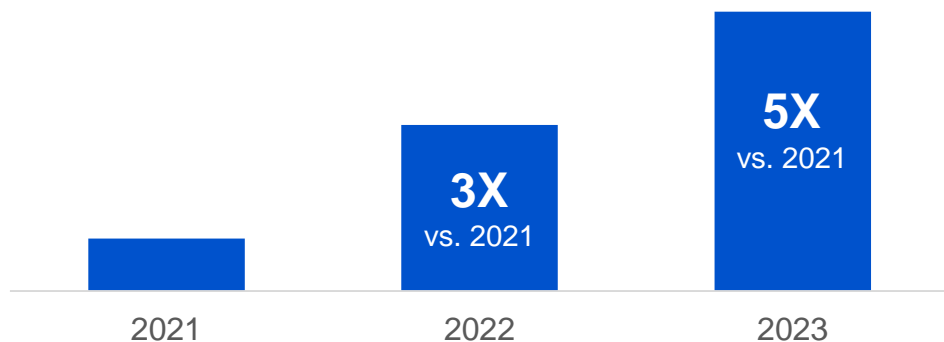
Taixing, China  
(1<sup>st</sup> oligo and peptide plant ready in 2023)



Singapore  
(1<sup>st</sup> oligo and peptide plant ready in 2026)

## Oligo Manufacture Capacity

2022: one of the largest oligo CDMOs in the world



## Peptide Manufacturing Capacity

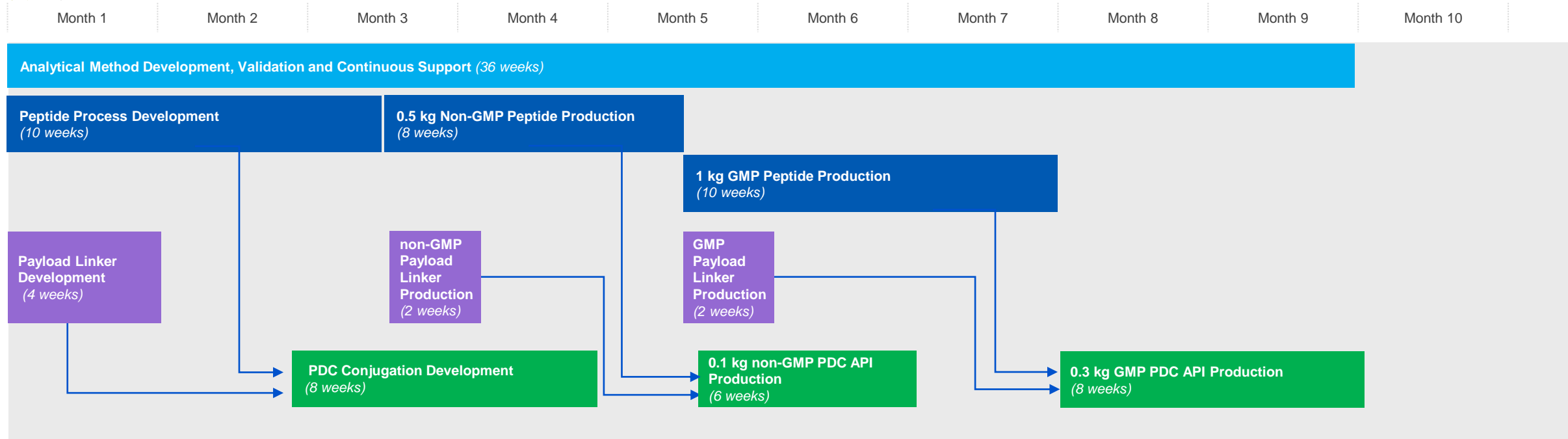
2022: one of the largest peptide CDMOs in the world



[CASE STUDY]

# Integrated Peptide Drug Conjugate (PDC) development and manufacture

★ Project Kick-off



Material Flow



Peptide



High Potent Payload Linker



PDC



Analytical

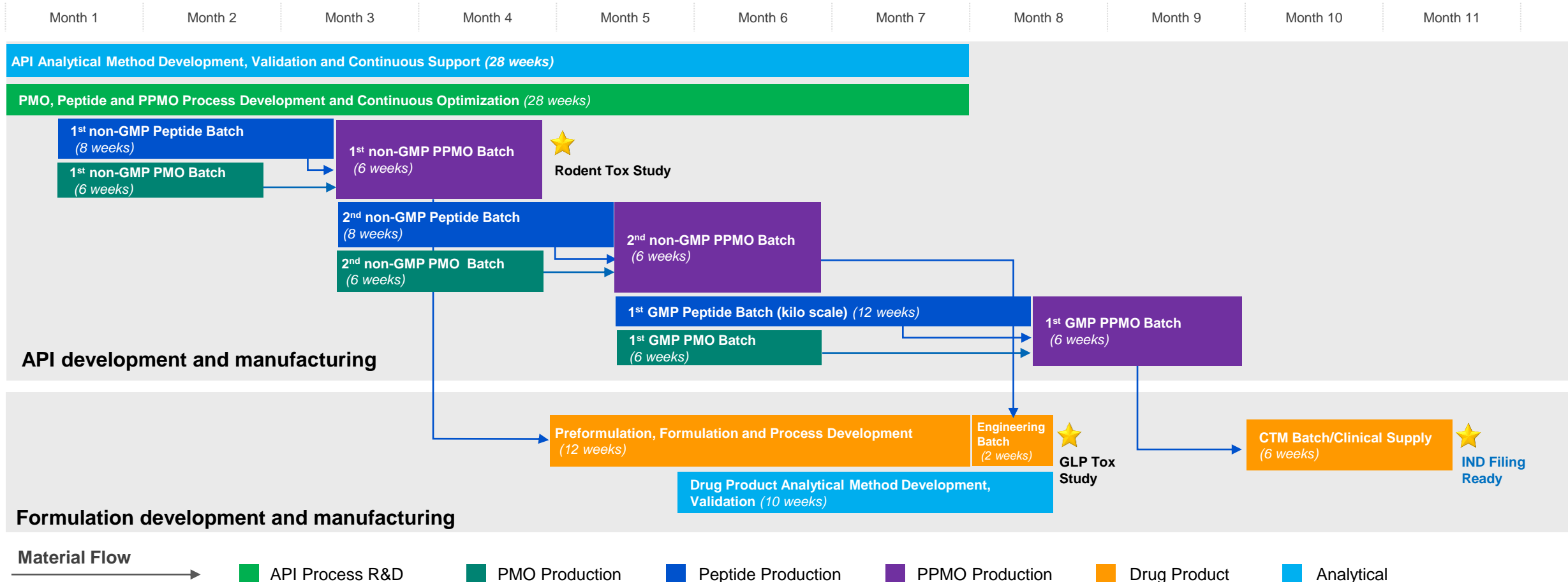
- Seamless collaboration with in-parallel activities among 4 workstreams
- Integrated small molecule and peptide R&D and manufacturing saves 4-6 months



[CASE STUDY]

# Integrated Peptide-PMO CMC development and manufacture

★ Project Kick-off



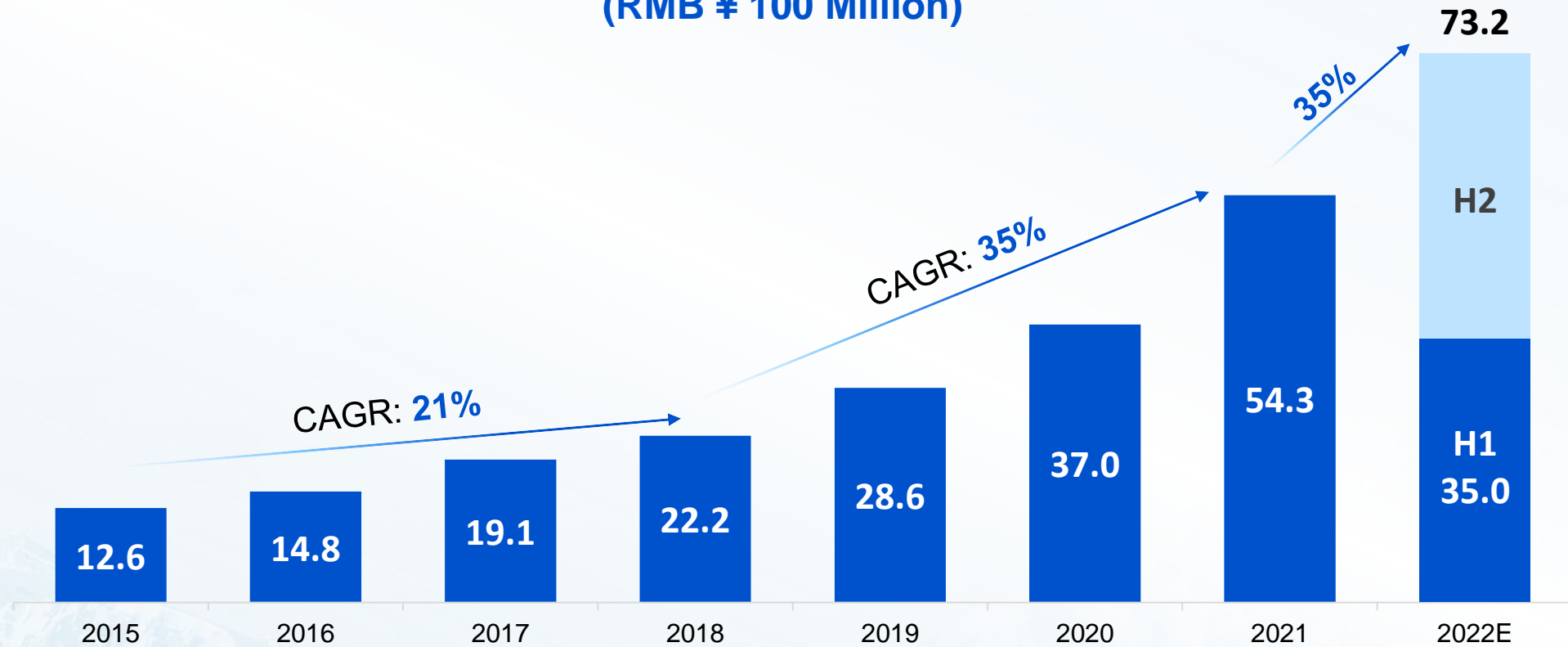
Phosphorodiamidate morpholino oligomers (PMO)

- Seamless collaboration with in-parallel activities among 6 teams
- Integrated CMC approach enables IND filing in 11 months

# Financials

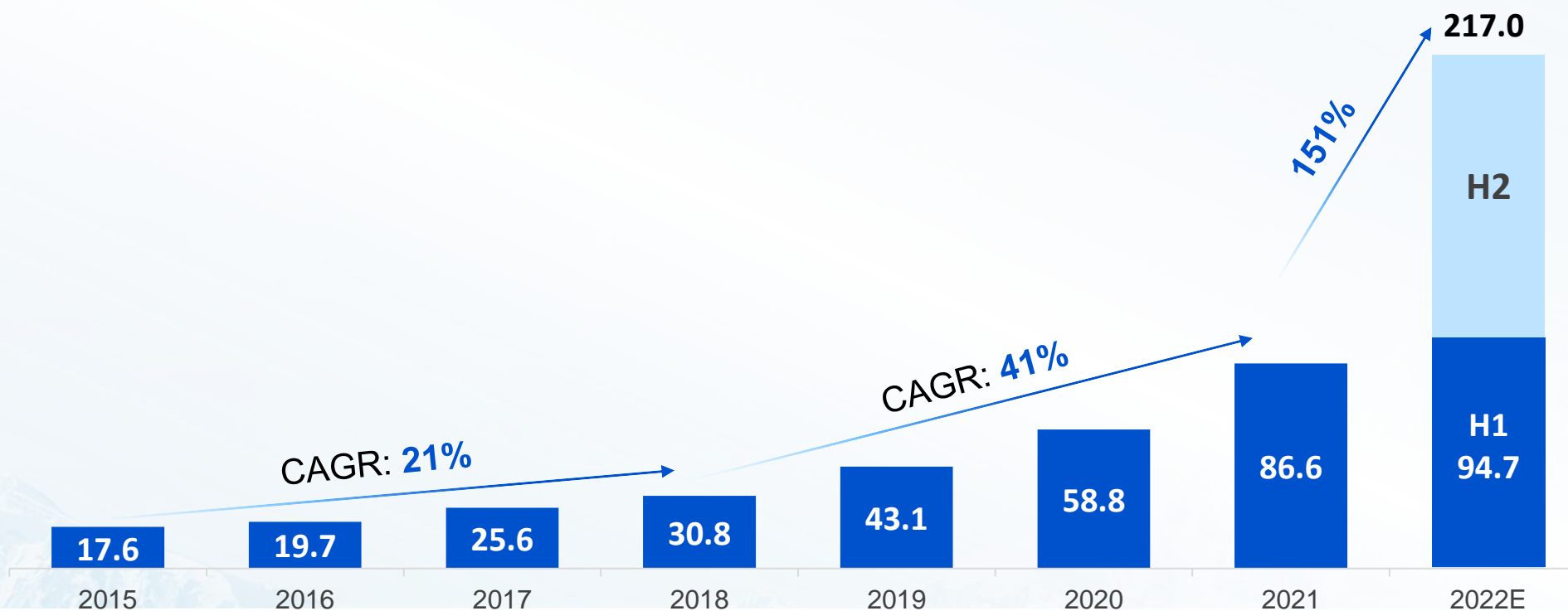
# Rapid growth of C“R”DMO business in WuXi Chemistry

2015-2022 WuXi Chemistry “R” Revenue  
(RMB ¥ 100 Million)



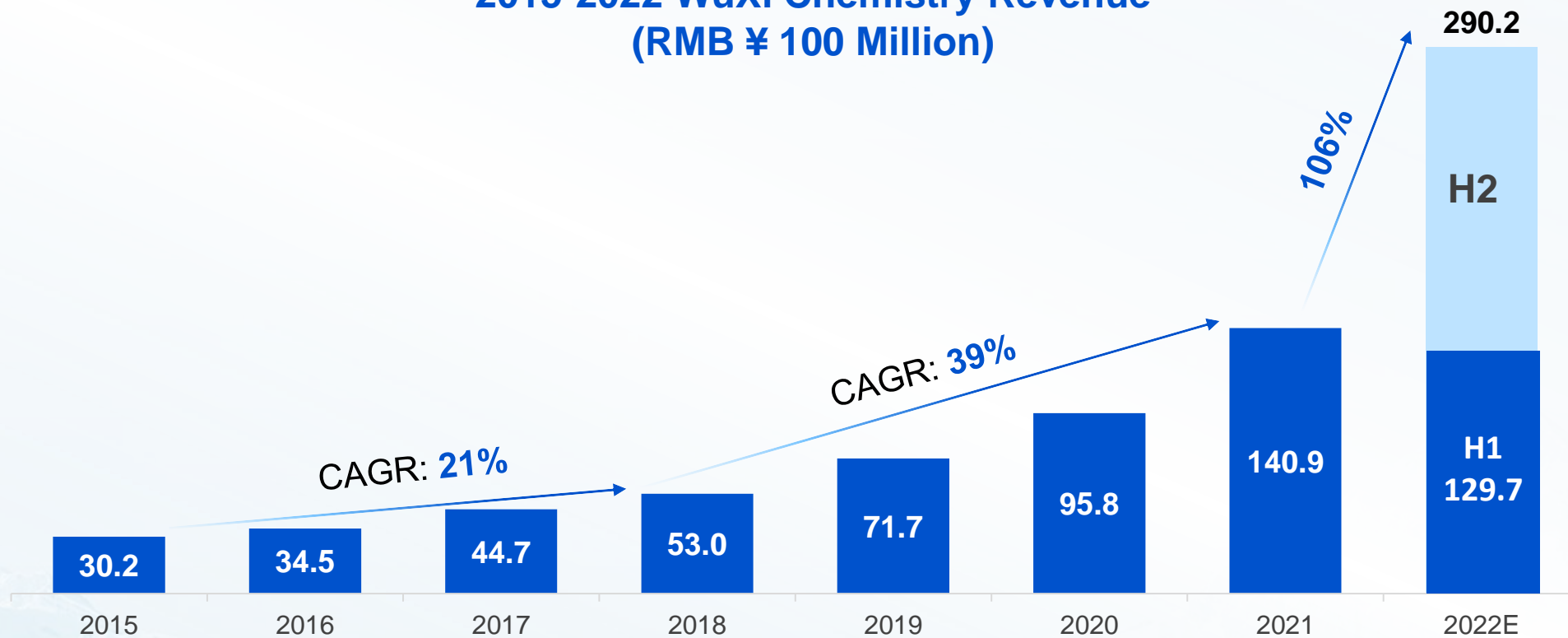
# Record growth of CR“DM”O business in WuXi Chemistry

2015-2022 WuXi Chemistry “D&M” Revenue  
(RMB ¥ 100 Million)



# Business far outgrew the industry average

2015-2022 WuXi Chemistry Revenue  
(RMB ¥ 100 Million)



# WuXi Chemistry key growth strategy

WuXi Chemistry's unique CRDMO model is well positioned to capture the entire value chain for any synthetic molecules

01

02

Synergies from “R” to “D” to “M” and from API to DP are the key to drive long-term sustainable business growth

03

Invest aggressively to expand capabilities and capacities of new modalities to capture the fast growing market opportunities

04

Continue to penetrate long tail customers and grow top global clients

05

Continue to build and expand global “R” “D” and “M” network