

WuXi Chemistry

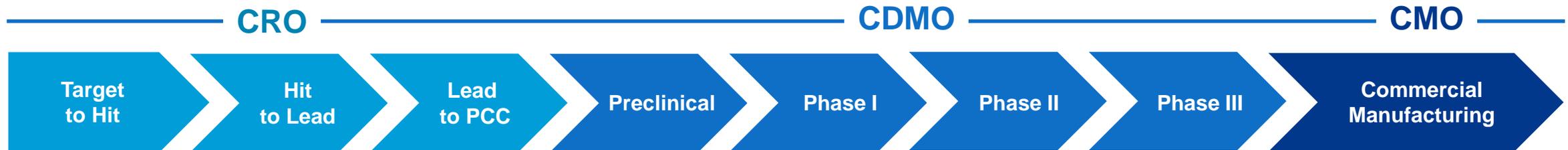


WuXi Chemistry – leading a new era of CRDMO

3 Established Global Brands



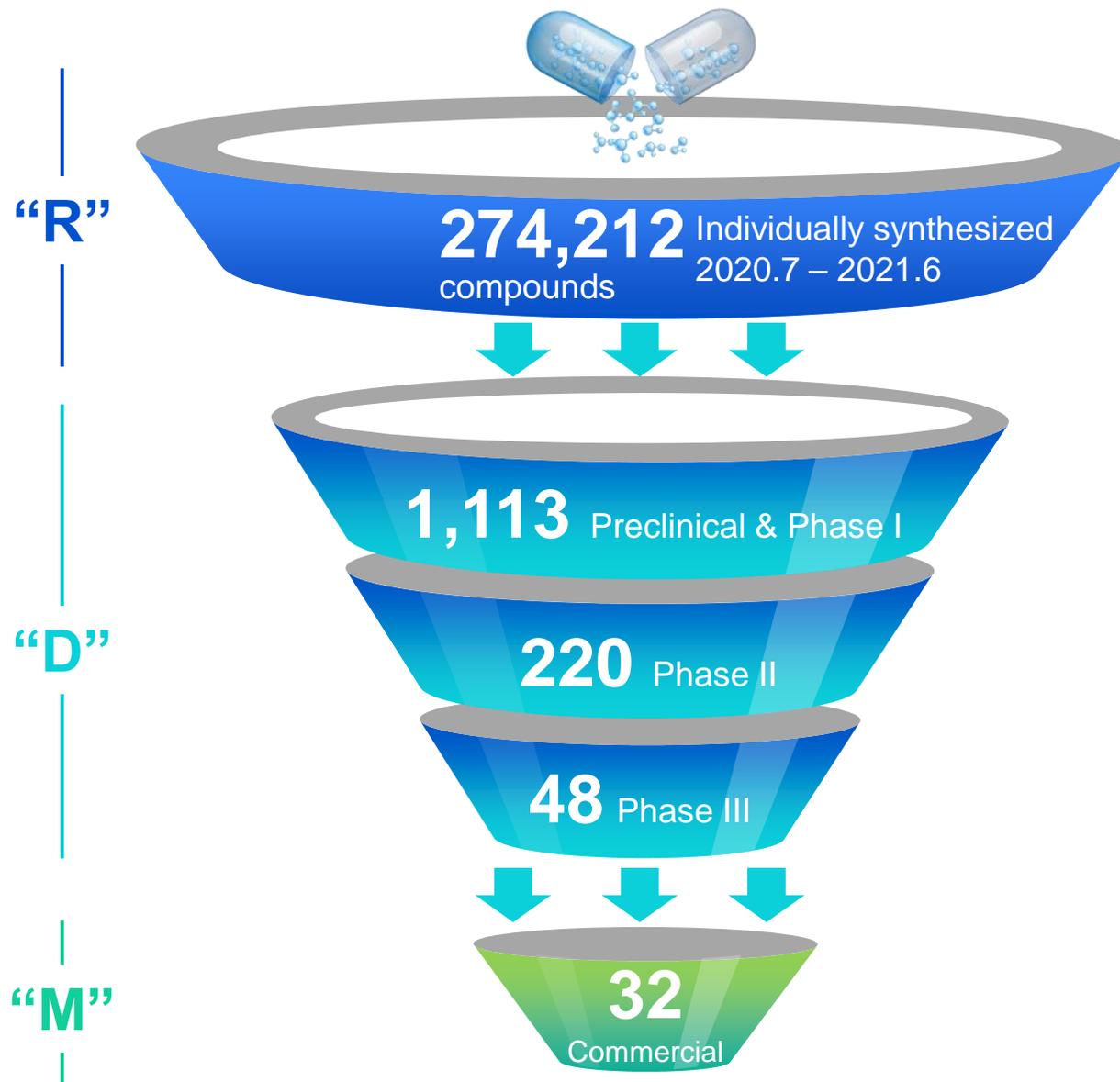
Unique CRDMO Model Captures Entire Value Chain



Global Platform, Global Talents



Rich CRDMO pipeline drives sustainable high growth

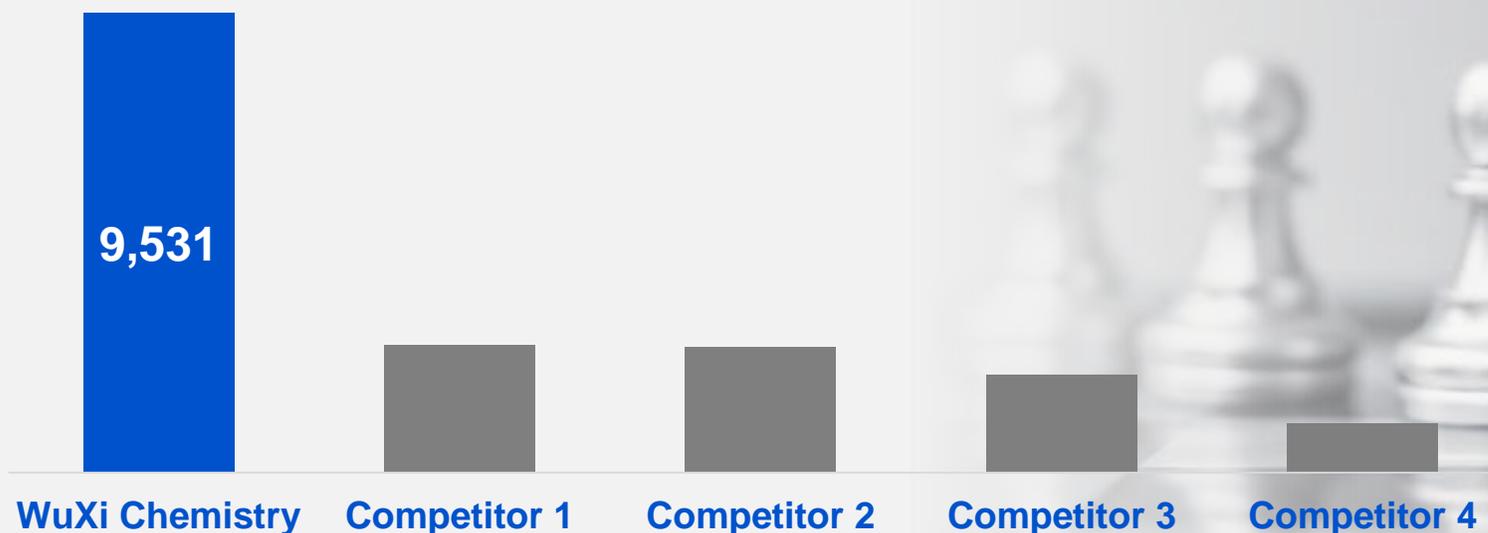


Delivered in 2020.7-2021.6

A dominant leader in China chemistry-based CRDMO market

2020 Chemistry Based Revenue

(¥ Million RMB)



Source: companies annual reports and investor analysis report

15 sites across the globe continue to expand

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

M

Switzerland



Couvet, Neuchâtel

M

R Research 7

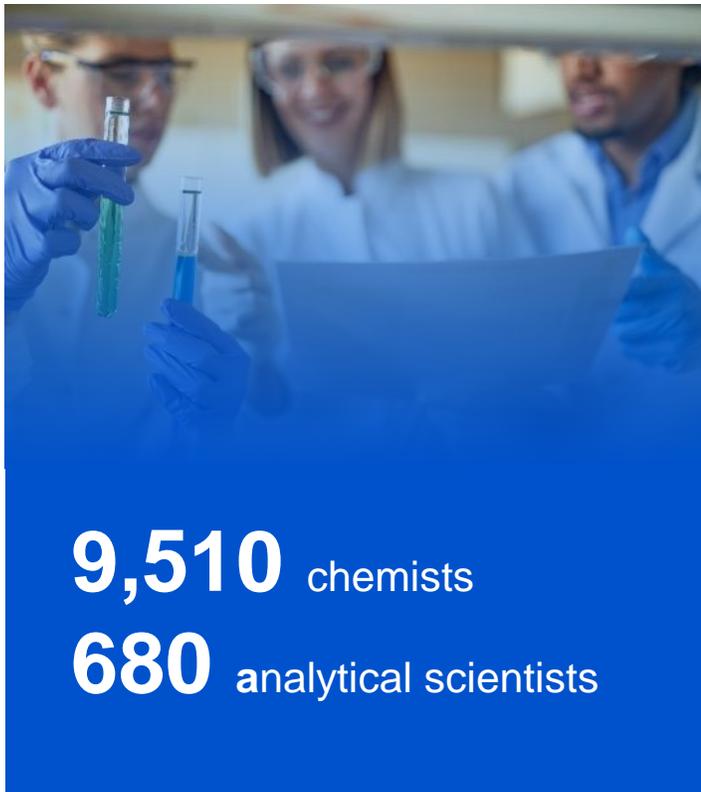
D Development 5

M Manufacturing 9

The largest chemistry services workforce in the world

Research

10,190



Development

3,741



Manufacturing

4,036



17,967

WuXi Chemistry Employees

WuXi Chemistry leadership team



Minzhang Chen, Ph.D.

Co-CEO, WuXi AppTec

20+ years
of experience



Tao Guo, Ph.D.

SVP, IDUSU

20+ years
of experience



Jingchao Dong, Ph.D.

SVP, CSU

20+ years
of experience



Xiaoyong Fu, Ph.D.

CTO, API

20+ years
of experience



Jinling Chen, Ph.D.

SVP, DP

20+ years
of experience



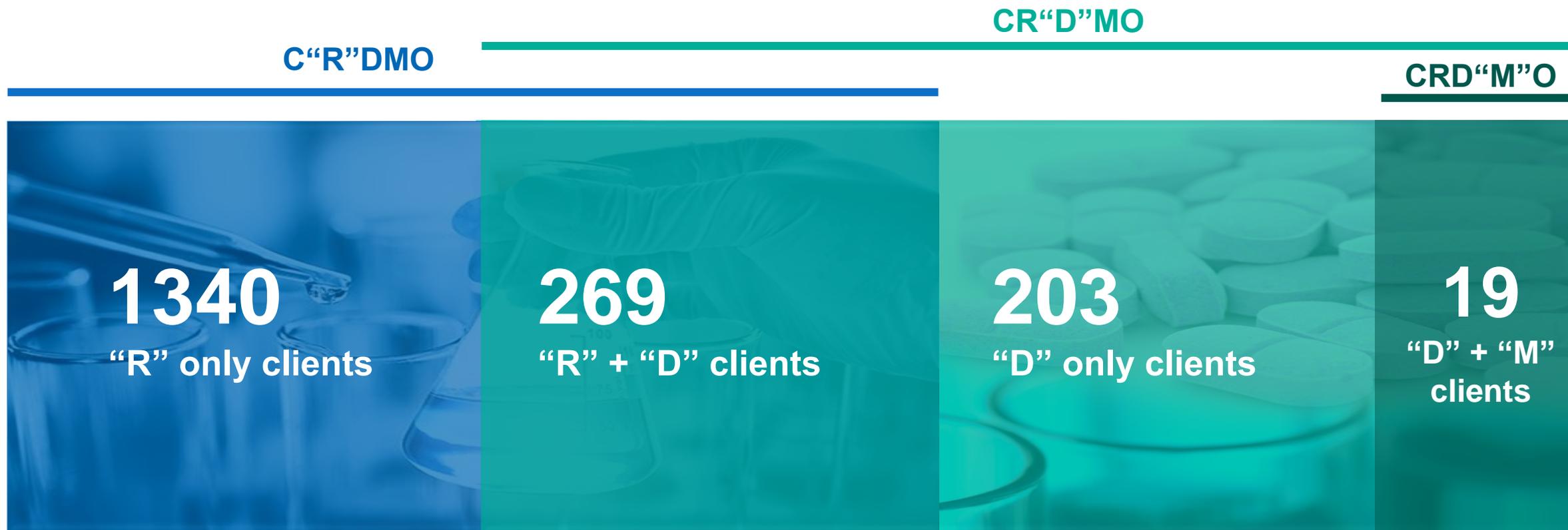
Yu Lu

CBO & New Modality

20+ years
of experience



Healthy CRDMO client base drives long term growth



WuXi Chemistry CRDMO clients in 2021 H1

WuXi Chemistry C“R”DMO

WuXi Chemistry C“R”DMO capability overview

Medicinal
Chemistry

Custom
Synthesis

Library
Synthesis

Catalog
Business

Discovery
Process
Chemistry

Non-GMP
Manufacture



Technology Platform

PROTAC®, AI for Retrosynthesis, Quantum Mechanics for Synthesis, Flow Chemistry, Electrochem, Photoredox, Catalyst Screening, Automation



Specialty Chemistry

Carbohydrate, Nucleoside/tides, Macrocyclic, Boron, Deuteration, Lipids, Polymer, Fluorescent Bio-probe and Labeling, Steroids, Fluorine, Late Stage Functionalization



Integrated Discovery

Medchem Design, Computer-Aided Drug Design, Project Management, Compound Management

Strong, loyal and expanding “R” client base



BROAD CLIENT BASE

1,609 global clients

20 of global top 20 pharmaceutical companies

DEEP ENGAGEMENT

516 have FTE collaboration

27 clients with 50+ FTE team including:

- **13** clients with 100+ FTE team

LONG HISTORY COLLABORATION

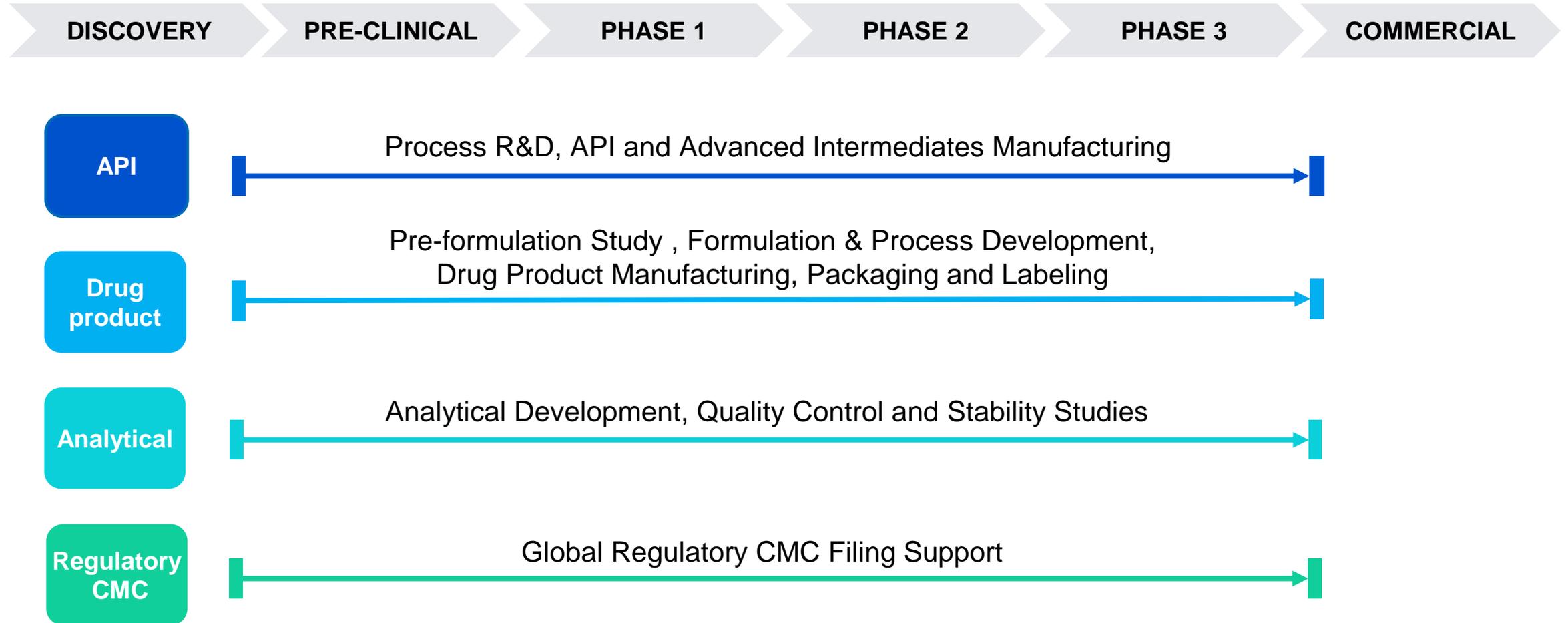
458 clients with >5 years' collaboration including:

- **75** clients with >10 years' collaboration



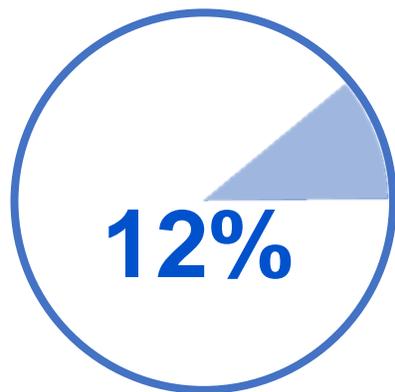
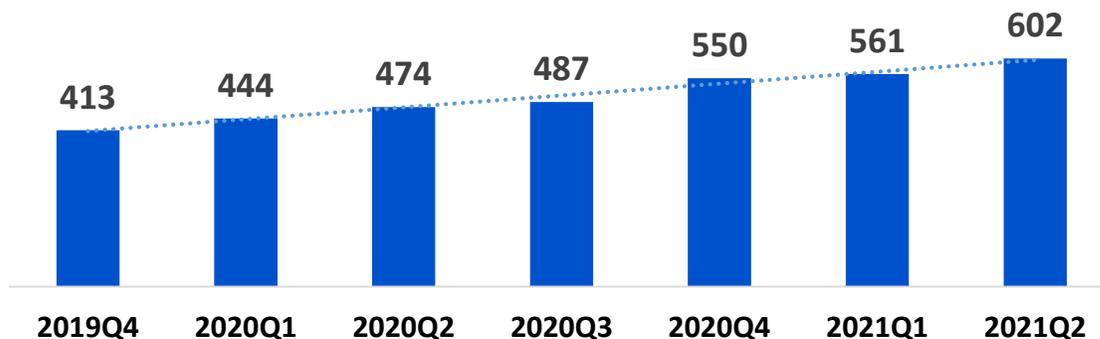
WuXi Chemistry CR“D”MO

WuXi Chemistry CR “D”MO capability overview

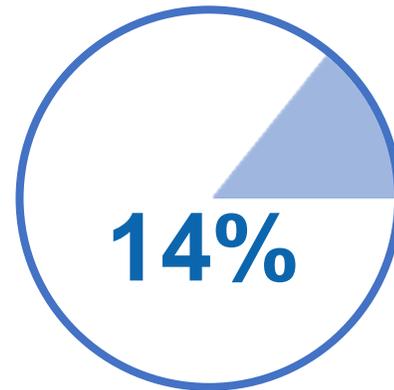


Our pipeline outgrew global clinical stage small molecule new drug candidate pipeline by 2+ times

46%* increase of WuXi Chemistry clinical stage new drug pipeline

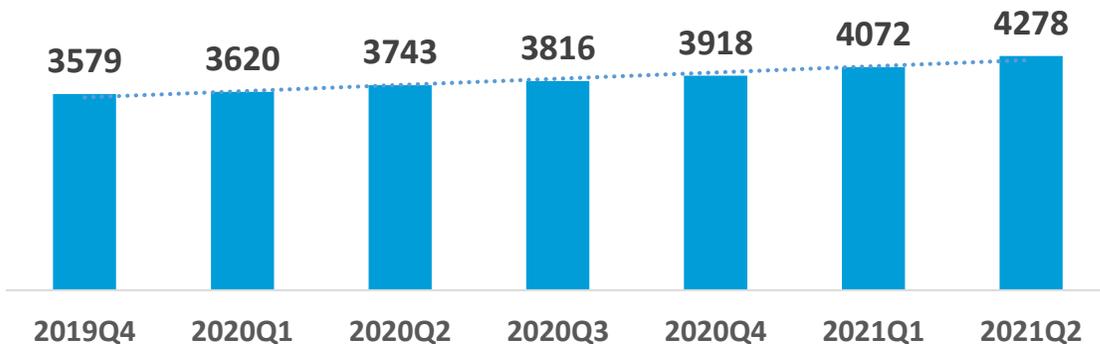


2019 Q4



2021 Q2

20%* increase of global clinical stage new drug pipeline



* Growth rate from 2019Q4 to 2021Q2

WuXi Chemistry CR “D”MO capability overview: API



2,549

process chemists &
analytical scientists



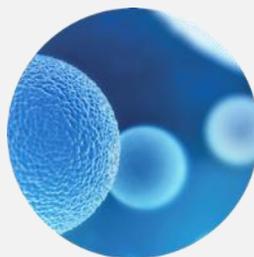
846

processes developed
APIs & Intermediates in
2021 H1

Globally Leading API Enabling Technology Platform



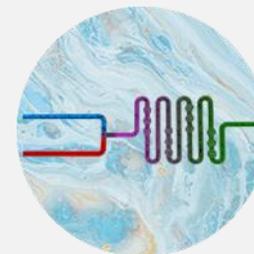
Crystallization
& Particle
Engineering



Biocatalysis



Chemo
Catalysis



Continuous
Processing
(Flow Chemistry)



Preparative
HPLC and SFC

WuXi Chemistry CR “D”MO capability overview: Drug Product

**Solid State
Development**

**Pre-
Formulation**

**Formulation
Development**

1,192

formulators and analytical scientists

1,704

pre-formulation molecules
evaluated in 2021H1

275

formulations developed
in 2021H1

Broad Dosage Forms

tablets | capsules | powder |
liquid capsules | granules |
injectable | liquid in bottle

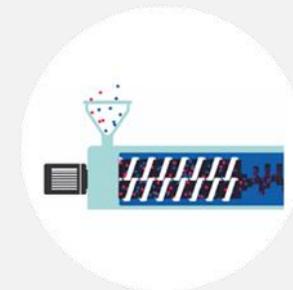
Advanced Delivery Technologies

pediatrics | modified release
sublingual delivery

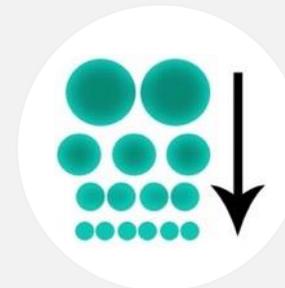
One-Stop Bioavailability Enhancing Platform



Spray Dried Dispersion



Hot Melt Extrusion



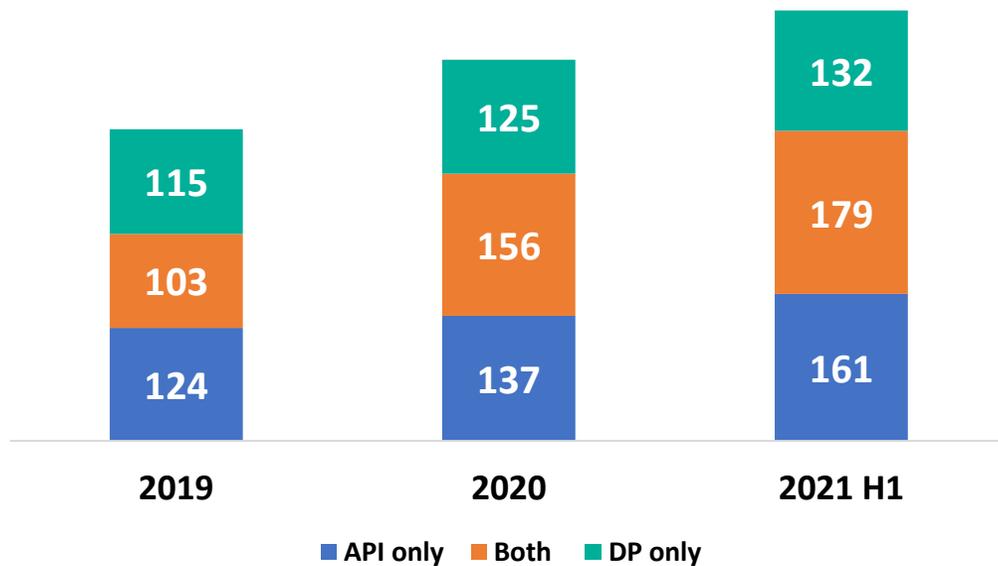
Nano Suspension



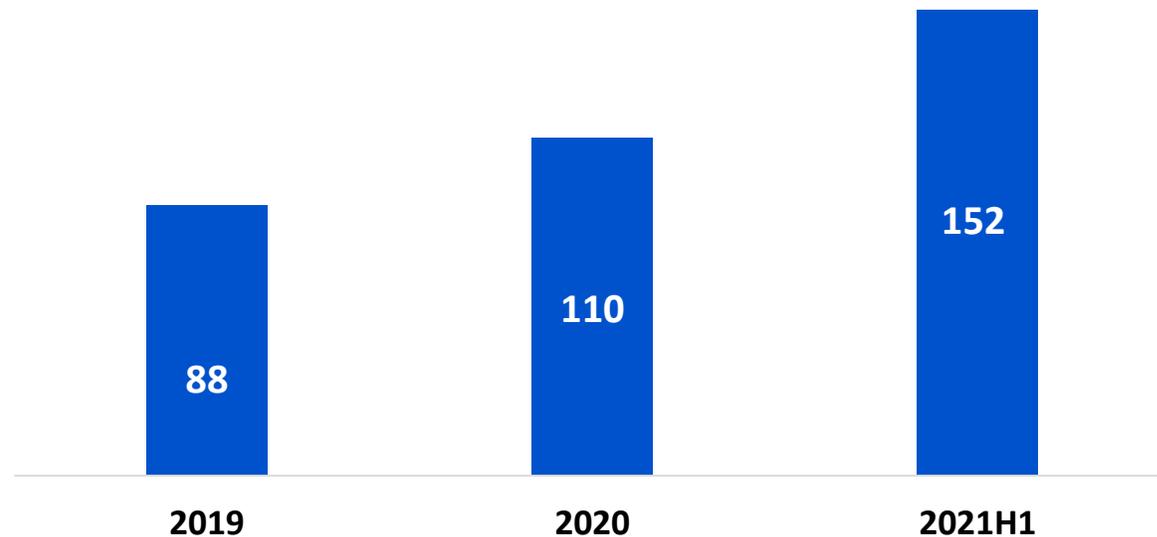
Liquid Capsules

Maximizing synergies from API to DP

API and DP client overlap



API → DP molecule conversion



- Number of clients using both API and DP services increased by **74%** from 2019
- API to DP molecule conversion increased by **73%** from 2019

Accelerating new drug development for both early and late phases via integrated CMC offering

4-6 months saving for IND submission

3-9 months saving for NDA submission

TIME & COST SAVINGS

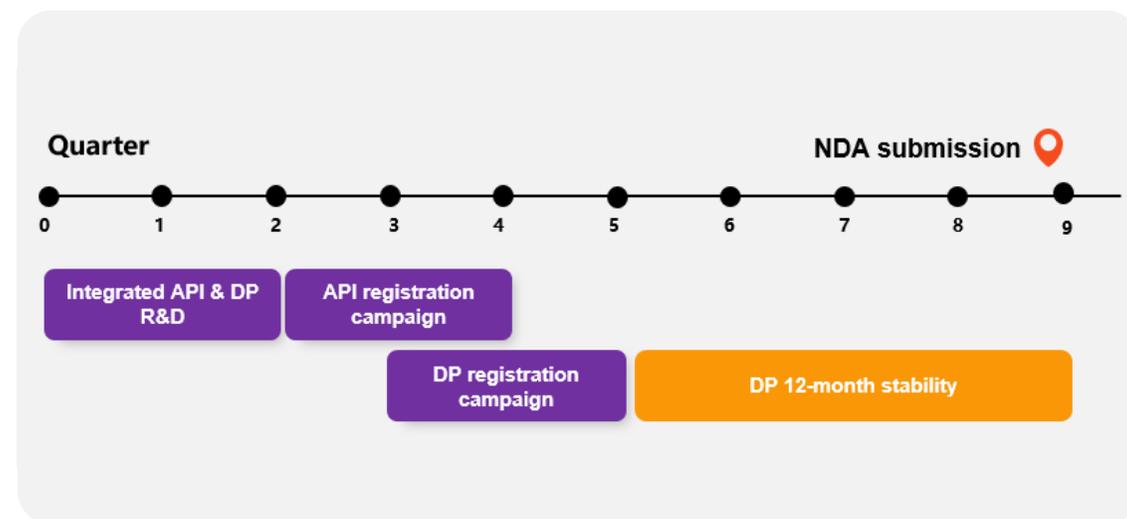
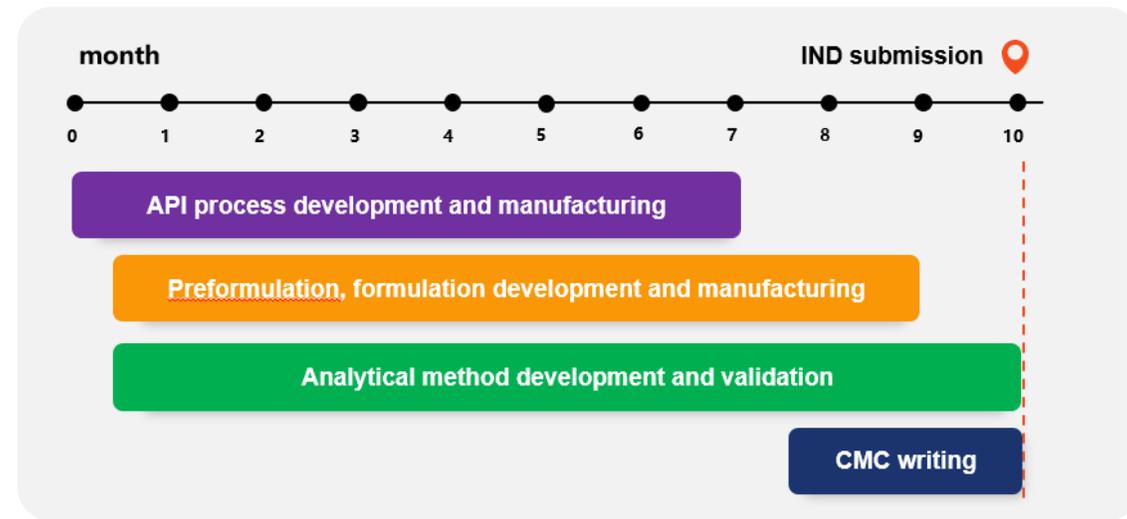
streamlined process and seamless tech transfer

REDUCED RISK

same high quality and EHS systems across all sites

IMPROVED EFFICIENCY

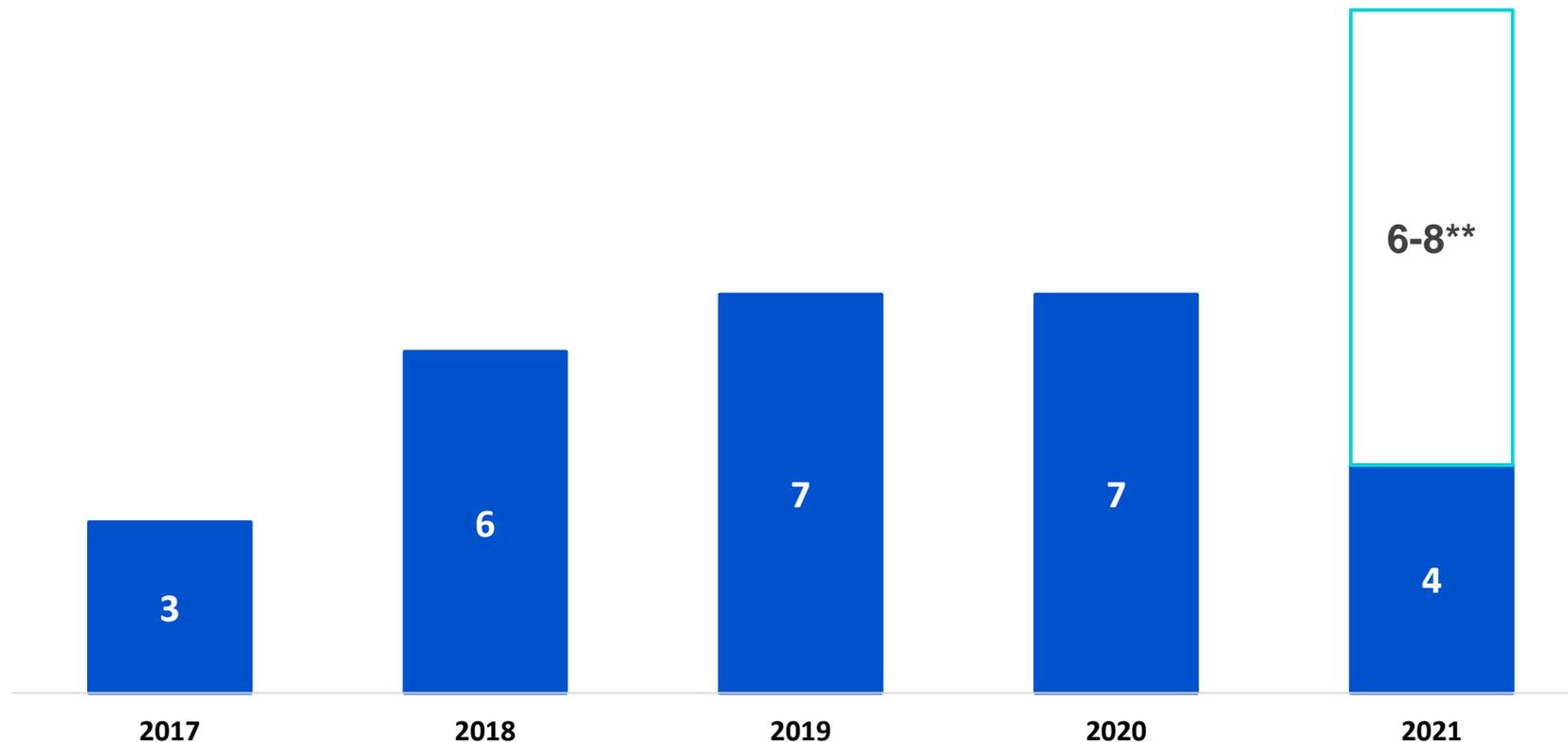
simplified CMC vendor management with ONE partner



WuXi Chemistry CRD“M”O

An engine to support global launch of new drugs

Supported 23 new drugs approved between 2017-2020

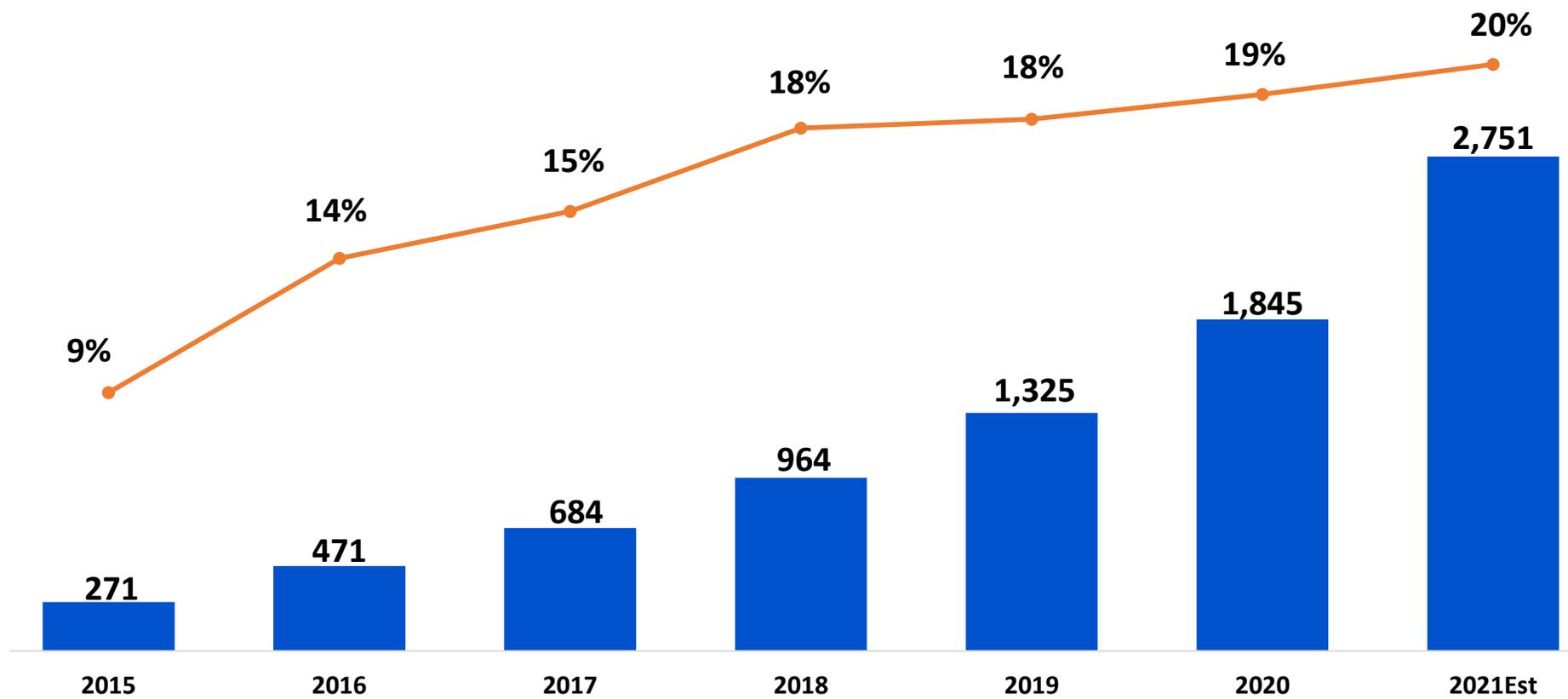


*: only count first approval, all of those drugs are approved by FDA, EMA, NMPA or PMDA.

** 6-8 molecules in WuXi Chemistry pipelines are estimated to be approved in 2021 H2

Growing weight of CRD“M”O business in WuXi Chemistry

2015-2021 WuXi Chemistry Commercial Project Revenue (RMB ¥ Million)



■ Commercial Project Revenue
—● % of Commercial Revenue in WuXi Chemistry Revenue

A proven track record of global standard quality system



7 successful US FDA inspections
2013, 2014, 2016, 2018 and 2019



30+ successful China NMPA inspections
2015-2020



2 successful EU EMA inspections
2019



2 successful Japan PMDA inspections
2019



3 successful SwissMedic inspections
2018, 2019 & 2020



200+ client audits
every year

Our winning strategy: follow the molecule

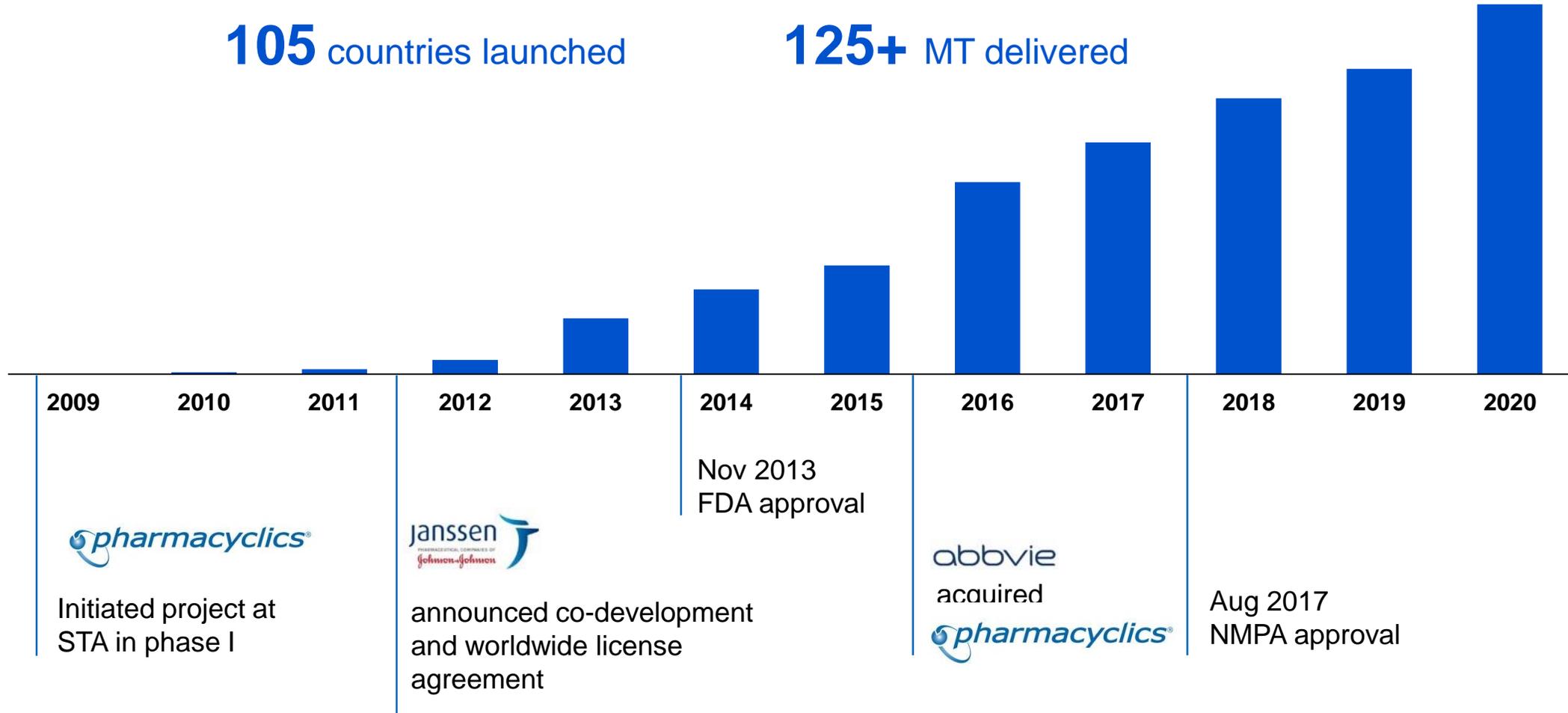
Case study ①: Support ibrutinib API and intermediates from phase 1 to commercial through different partners

imbruvica®
(ibrutinib)
560, 420, 280, 140 mg tablets | 140, 70 mg capsules

Cumulative API and Intermediate Delivery

105 countries launched

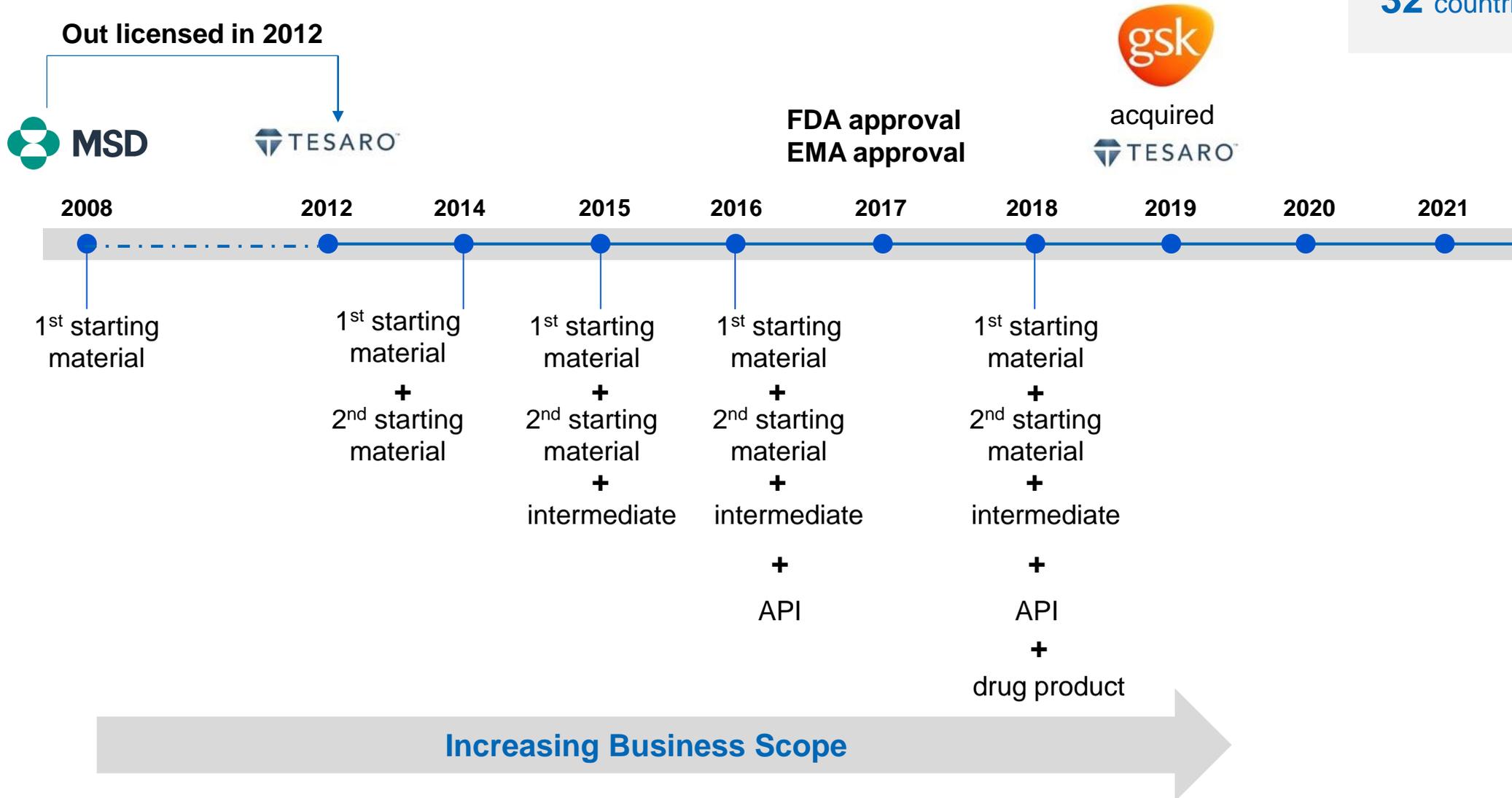
125+ MT delivered



Our winning strategy: follow the molecule

Case study ②: Won the business to cover the entire supply chain of niraparib over time

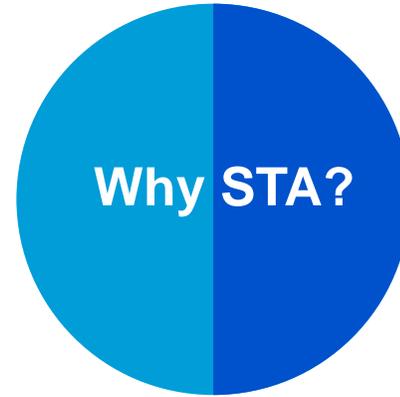
Once-daily oral
Zejula
niraparib
capsules 100 mg
32 countries approved



Enabled Zejula[®] fast track NDA approval by FDA and EMA

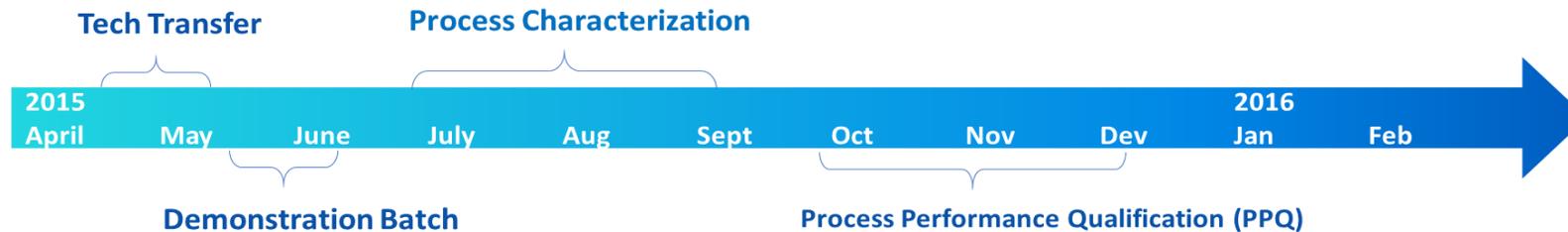
Key Challenges:

- Complex process but fast timeline
- Tightened regulatory oversight
- Virtual biotech company without CMC resources



Key Criteria when Selecting CDMO:

- Both strong in R&D and production
- Late stage and launch experience
- Quality and regulatory inspection track record
- Team size, technical capability and capacity



Result:

Resolved Regulatory Starting Material push back from EMA (converted 2 non-GMP steps to GMP steps in <4 months vs. 8-12 months if switching to another CDMO)

Completed process development and Process Performance Qualification in 8 months (vs. 18 months quoted by another CDMO)

Our winning strategy: follow the molecule

Case study ③: Supported Orelabrutinib approval by NMPA via integrated CMC offering

Supported Orelabrutinib Approval by NMPA (Dec.2020)



国家药品监督管理局
National Medical Products Administration



1st CDMO in China to support a new drug launch involving Spray Dried Dispersion (SDD) technology



1st CDMO in China to support a new drug launch with an integrated CMC platform across 4 sites



- **Shanghai Waigaoqiao:** API and DP R&D
- **Jinshan:** API manufacturing
- **Changzhou:** SDD manufacturing
- **Wuxi:** Drug product manufacturing and packaging

WuXi Chemistry CRD“M”O capacity overview: API

Changzhou, China



Current Capacity

15
plants

1400 m³ (1,400,000 L)
total reactor volume

2021H1 Delivered

6195
batches

141 MT
products

Large and rapidly growing API manufacturing capacity



Expansion in Next 2 Years

15 new plants

6 from Changzhou phase III and 9 from Taixing phase I

2,486 m³ (2,486,000 L)

additional total reactor volume

WuXi Chemistry CRD“M”O capacity overview: Drug Product

Wuxi, China



Current Capacity

2 sites

Shanghai
Waigaoqiao/Wuxi

3.2 billion
tablets

1.4 billion
capsules

2021 H1 Delivered

638

Batches manufactured

25

Ongoing Late phase and
commercial projects

Continue to strengthen drug product capability and capacity



Expansion in Wuxi city

- **Phase II:** New R&D center with oral, injectable and analytical platforms opened in May 2021
- **Phase II:** Add additional capacity for both oral and injectable drug product manufacturing by Q1 2022
- **Phase III:** HP oral and injectable drug product manufacturing new technologies including continuous manufacturing in 2 years

Key milestones in CRD“M”O global network expansion



Couvet, Switzerland

Drug Product Manufacturing
(Deal closed in July 2021)



Middletown, DE, USA

API & Drug Product Manufacturing
(Announced in June 2021)

- Providing customer better flexibility with an enhanced supply worldwide
- Gaining greater access to the global market

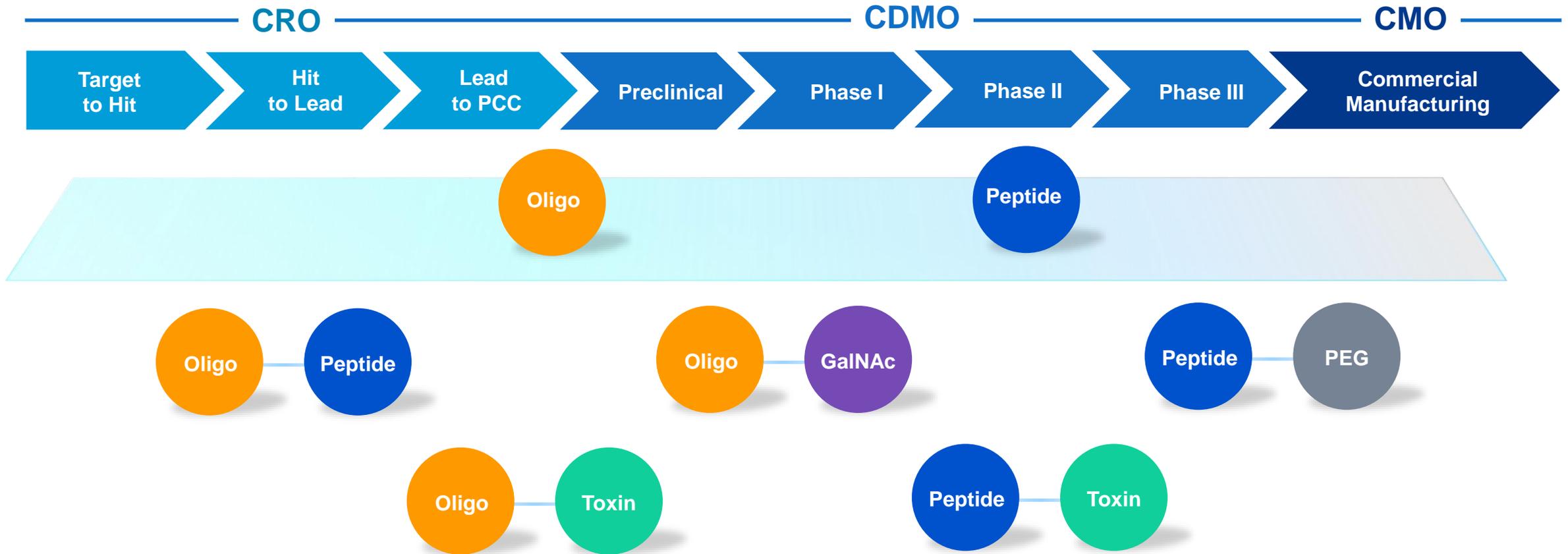
Global Brand

Global Platform

Global Talents

WuXi Chemistry New Modality CRDMO Platform

Follow the chemistry – expanding into new modalities



Unique CRDMO New Modality Platform Captures Entire Value Chain

Capable to offer both API and formulation services for oligonucleotide, peptide as well as their conjugates under one roof

Capturing the next wave of oligonucleotide market growth via our unique CRDMO platform



134

global clients



240

scientists



Broad Coverage

ASO, siRNA, Aptamer, microRNA, PMO/PPMO etc.



Vertically Integrated

From customized monomers and linkers to APIs



Chemistry Powerhouse

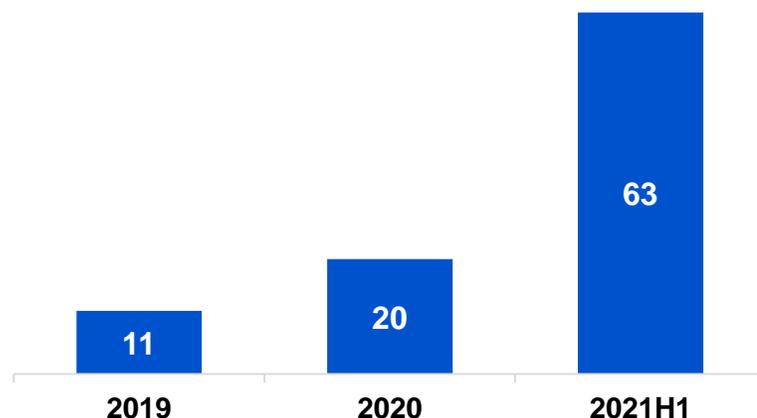
Solid phase synthesis
+ Liquid phase synthesis
Complex oligo conjugates synthesis



Analytical Strength

Comprehensive analytical capability and know-how ensuring quality and speed

Number of Oligonucleotide new drug candidates in our pipeline



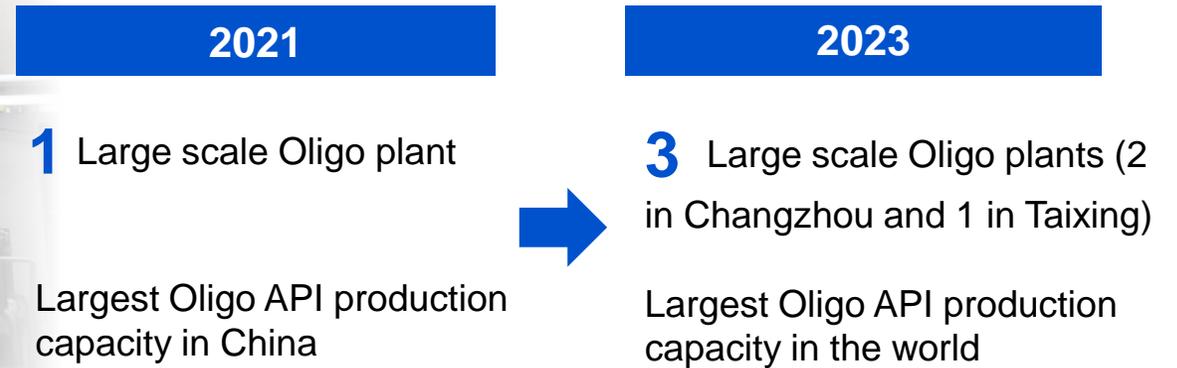
Aggressively investing in oligonucleotide API production capacity to address the increasing market demand



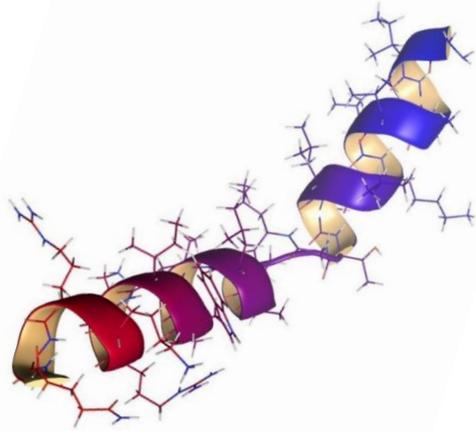
The **1st** and **only** multi kilo scale oligo production facility in China

Changzhou, China

Oligo API production capacity remains a global challenge as more and more high-volume oligo therapies are being developed.



A unique peptide CRDMO platform with a long history working with global partners



174

Peptide global clients

224

Peptide scientists

2,500+

Unnatural amino acids

Chemistry Powerhouse

Solid phase synthesis
+ Liquid phase
synthesis

Complex peptide
conjugates synthesis

Vertically Integrated

From unnatural amino
acids to peptide APIs

Analytical Strength

Comprehensive
analytical capability and
know-how ensuring
quality and speed

Aggressively investing in peptide API production capacity and advancing peptide process technologies

1,000 L peptide synthesizer
Changzhou · China

2021

1 Large scale peptide plant

1,000 L largest solid phase peptide synthesizer

2023

3 Large scale peptide plants (2 in Changzhou and 1 in Taixing)

2,000 L largest solid phase peptide synthesizer



Peptide Innovations

- Industry's first fully contained peptide solid phase synthesis equipment train
- Advancing multiple novel process technologies to make the traditional peptide manufacturing process greener

Fast growing injectable platform to strengthen the integrated CMC offering for new modalities

22 Ongoing injectable projects including **8** integrated CMC oligo and peptide projects



Dosage Forms

Injection, Solution
Injection, Emulsion
Injection, Sterile Powder (Lyophilized)
Injection, Liposome



Wuxi Site Fill-Finish Line



Filling Capability

Vial, prefilled syringe, cartridge

Single-use mixing-filtration-filling system with sterile container closure system

Current Capacity

1 injectable line in Shanghai Waigaoqiao

Expansion

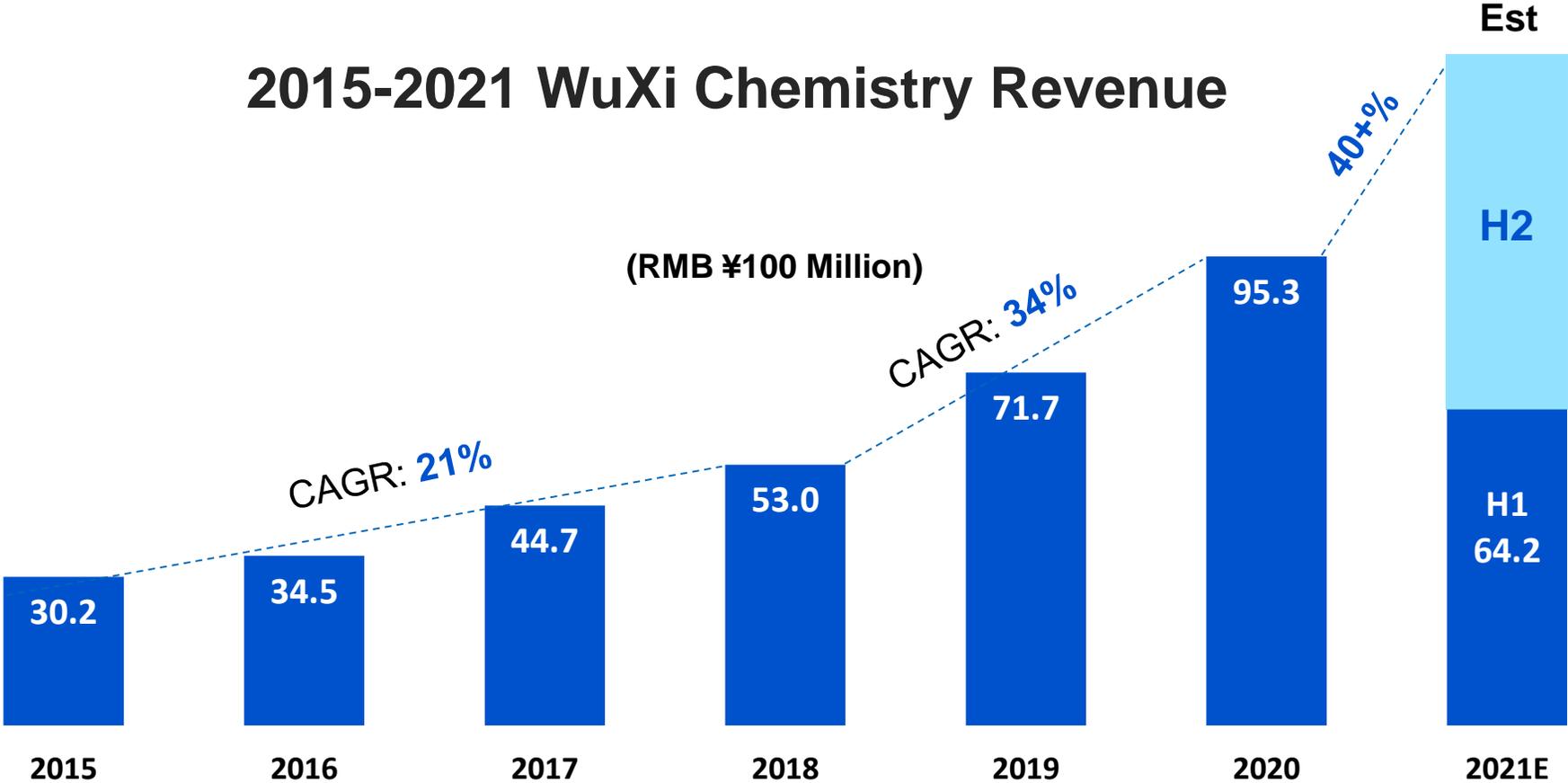
4 injectable lines in Wuxi city between Q4 2021 to 2025

Financials

Business far outgrew the industry average

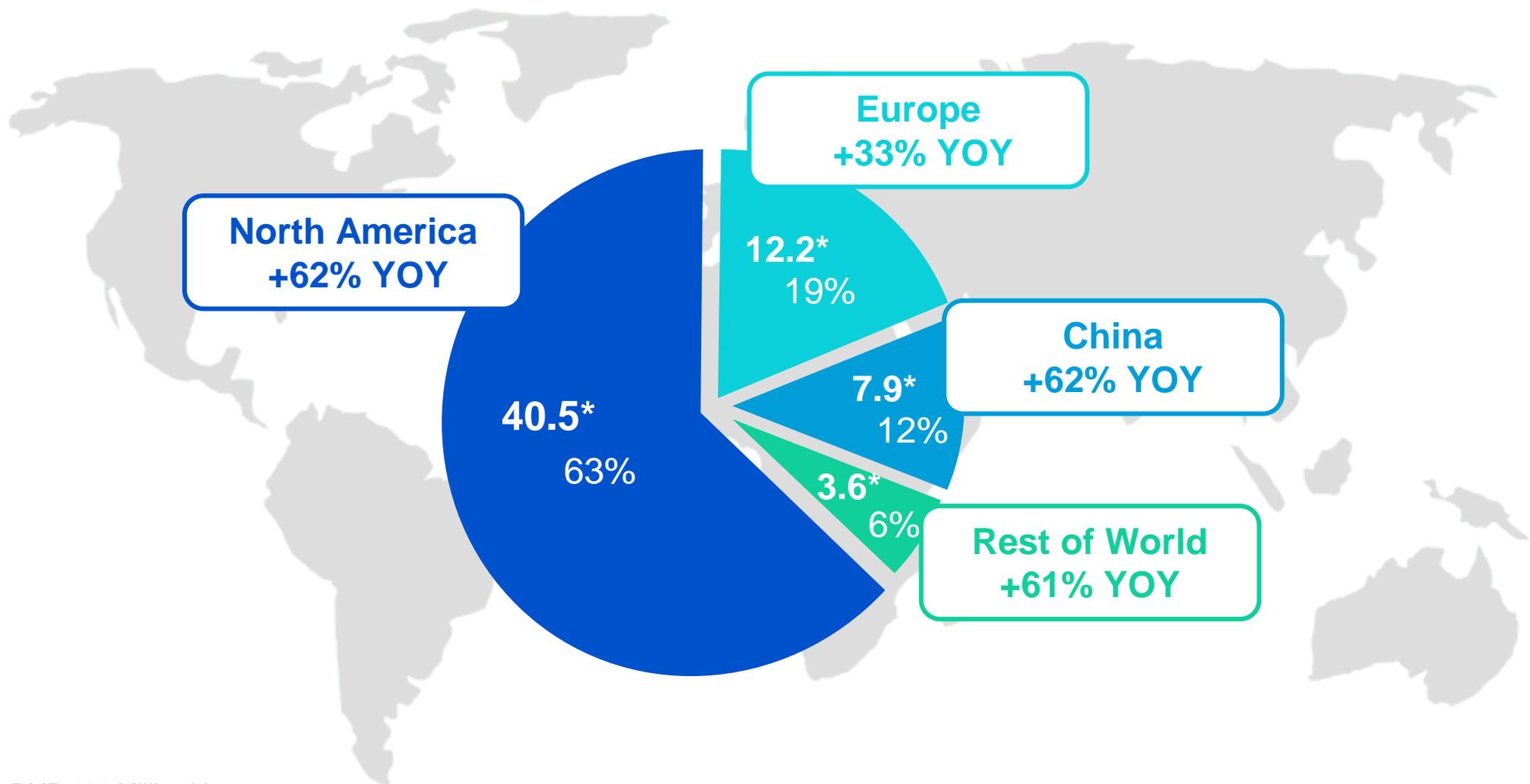
2015-2021 WuXi Chemistry Revenue

(RMB ¥100 Million)



Strong business growth achieved across all 4 markets

2021 H1 WuXi Chemistry revenue 64.2*, increased by **56%** vs. 2020 H1



*Unit: RMB 100 Million Yuan

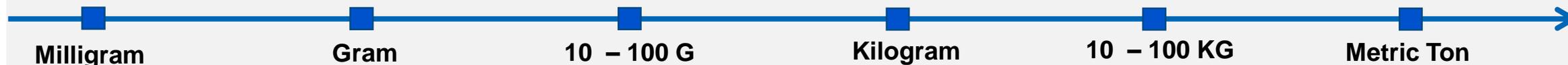
WuXi Chemistry CRDMO capability summary



Most Comprehensive CRDMO Platform

meeting any material requirement throughout the entire new drug development process

Capable at Any Scale



Cover All Categories for All Synthetic Molecular Modalities

Non-GMP

GMP

API

Drug Product

Small Molecule

Oligonucleotide

Peptide

HP API

Conjugates

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

