



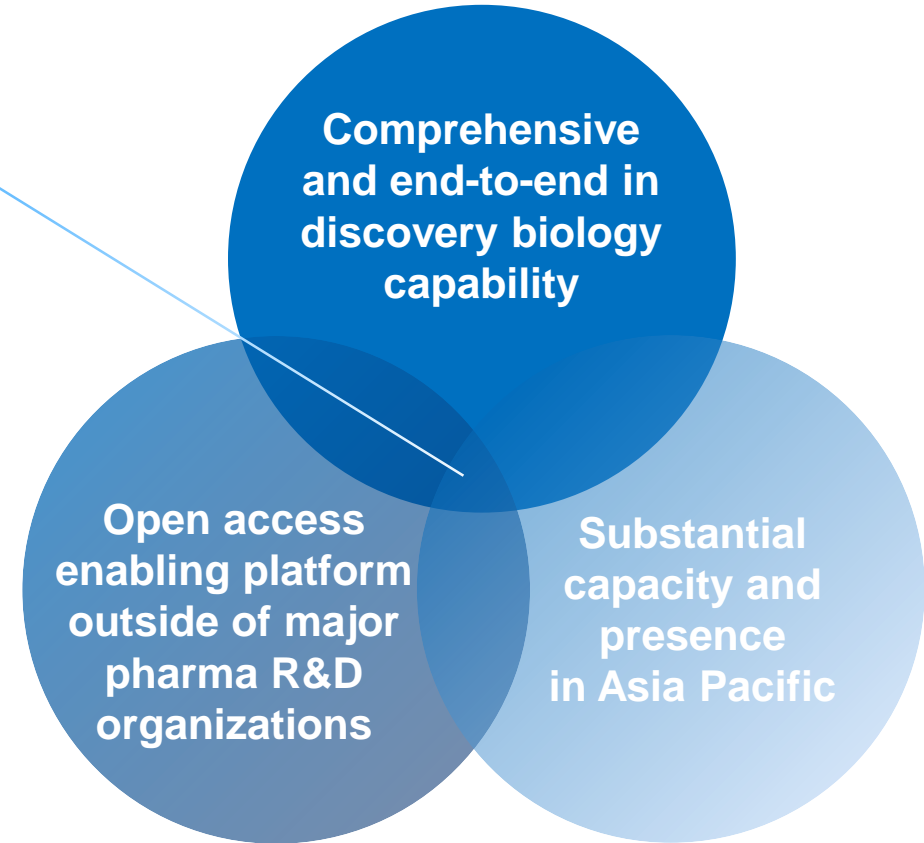
WuXi Biology: The Largest Discovery Biology Platform

Dr. Steve Yang
Co-CEO

WuXi Biology: The Largest and a Unique Drug Discovery Biology Enabler

- WuXi Biology is the **only** drug discovery biology enabler that meets all three criteria
- WuXi Biology is also the world's **largest** drug discovery biology enabling platform
- WuXi Biology is well positioned to **grow** and ride the waves of **scientific breakthroughs** in biology

Drug Discovery Biology



Our Global Footprint

CHINA



Shanghai (WGQ)



Shanghai (Zhangjiang)



Suzhou



Nantong



Chengdu

UNITED STATES



Boston



Cranbury



San Diego

GERMANY



Munich

Leadership of WuXi Biology and Discovery Service Business Development



Steve Yang, PhD
Co-CEO & Head of WuXi Biology



Henry Lu, Ph.D.
Vice President,
Head of DBU

Over 25 years' experience and 20+ years' experience in anti-infective field.



Qunsheng Ji, Ph.D.
Vice President,
Head of OIU

Over 20 years' industry experience in drug discovery and translational science especially in oncology.



Xuanjia Peng, Ph.D.
Vice President,
Head of HitS

Over 15 years' experience in organic/medicinal chemistry, rich experience on small molecule drug discovery.



Peiyuan Lin, Ph.D.
GM of HD
Biosciences

Over 30 years' experience in both drug discovery and the CRO industry.



Declan Ryan, Ph.D.
Vice President,
Discovery Service US
BD Head

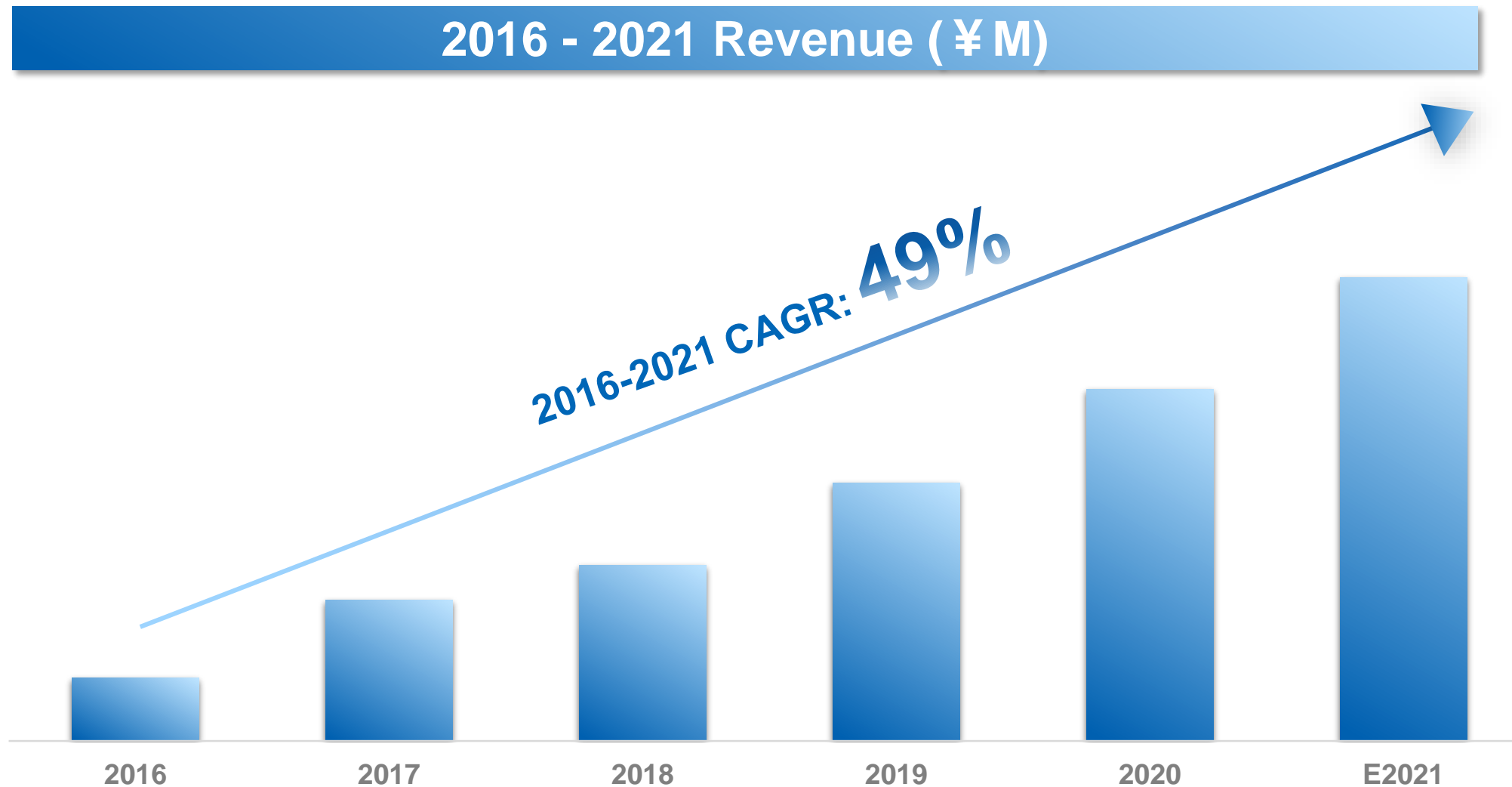
Over 20 years' experience in R&D in both research and business development roles.



Dave Madge, Ph.D.
Vice President,
Discovery Service EU
and Israel BD Head

Over 30 years' drug discovery experience in pharma, biotech, academia and CROs.

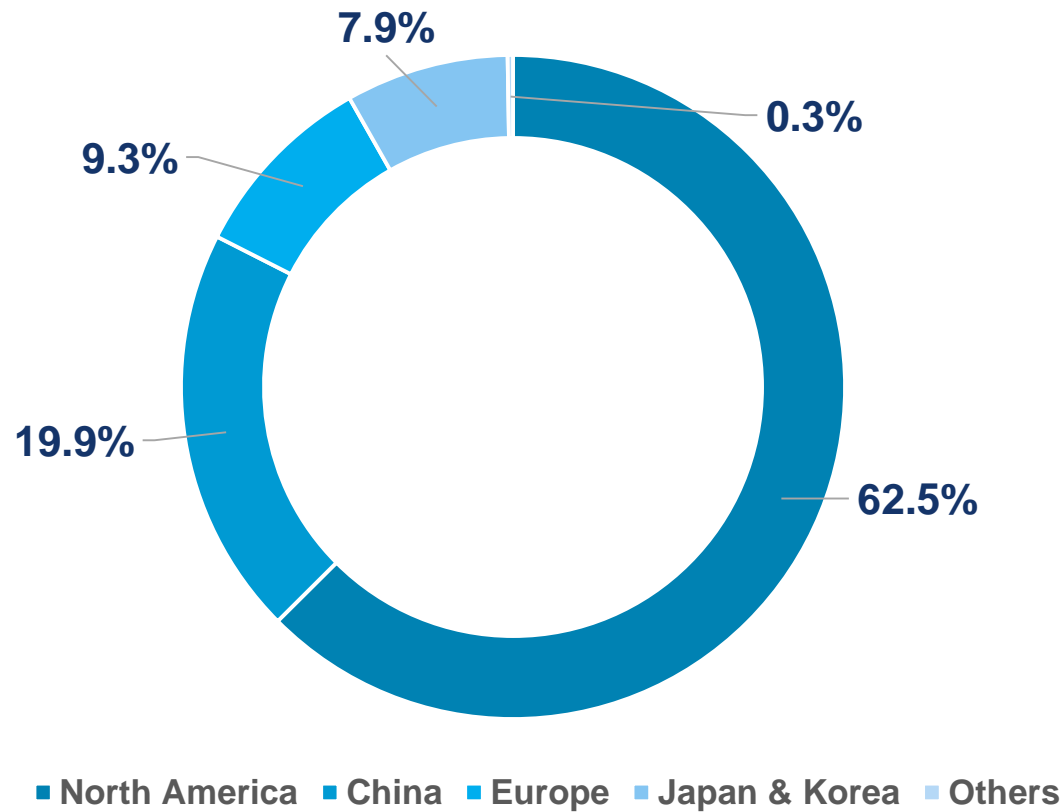
Robust and Continuous Business Growth



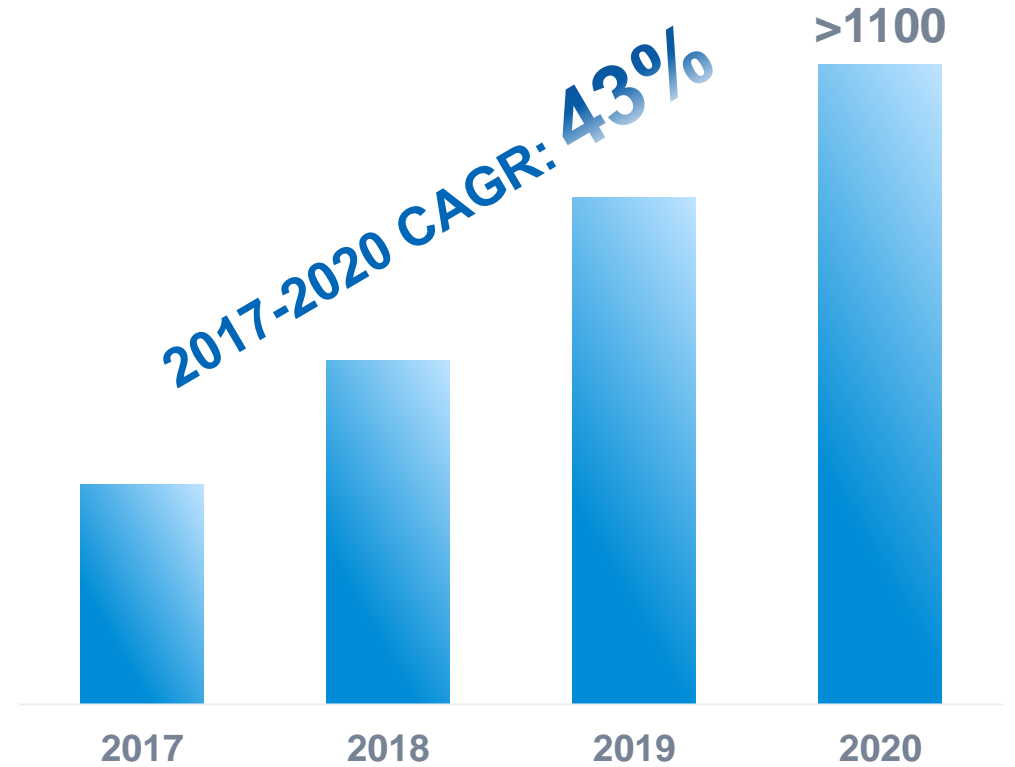
A Global and Rapidly Growing Customer Base



Geographic customer distribution in 2020

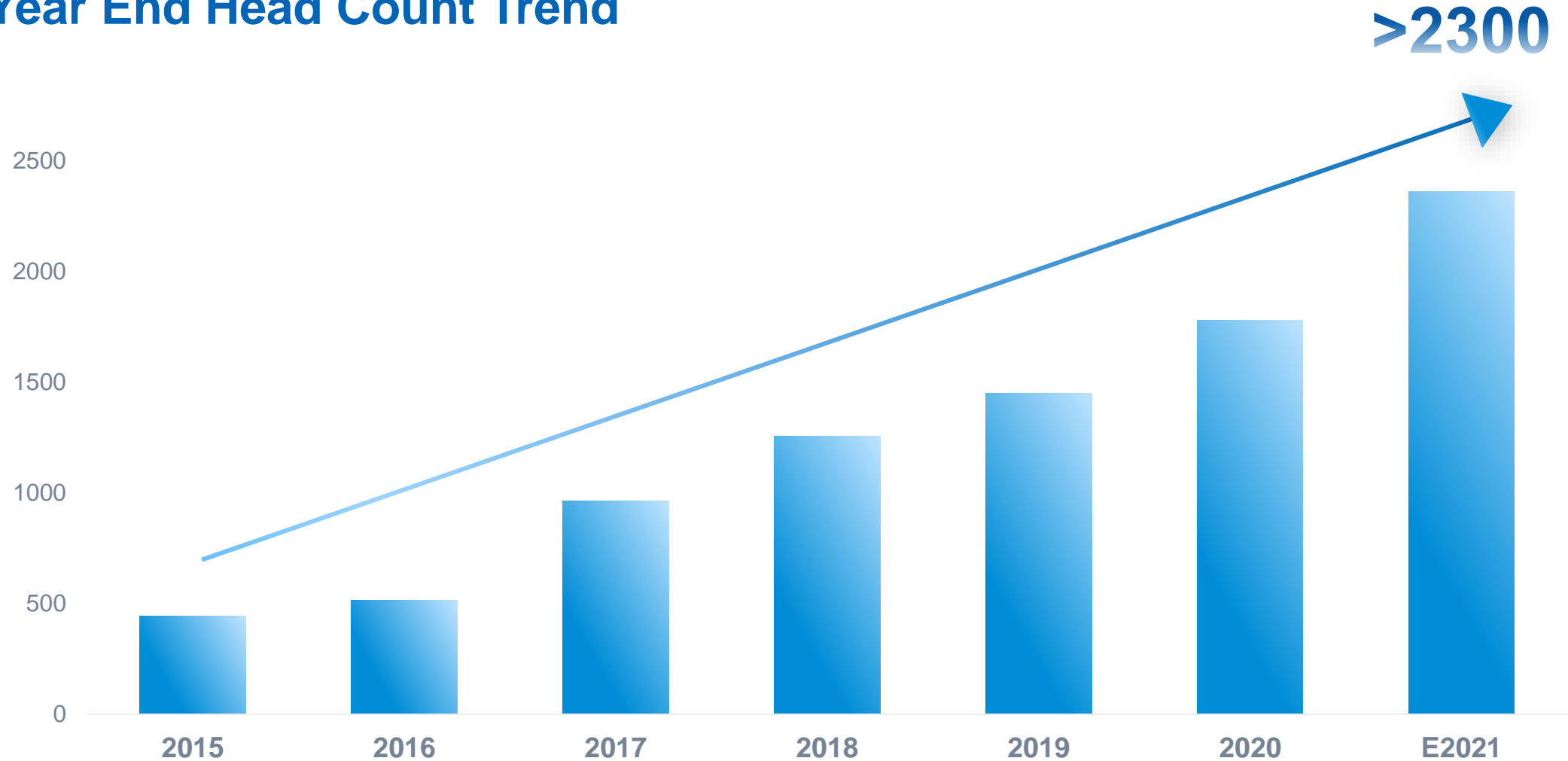


of active customer



Continuing Expansion of Talent Base

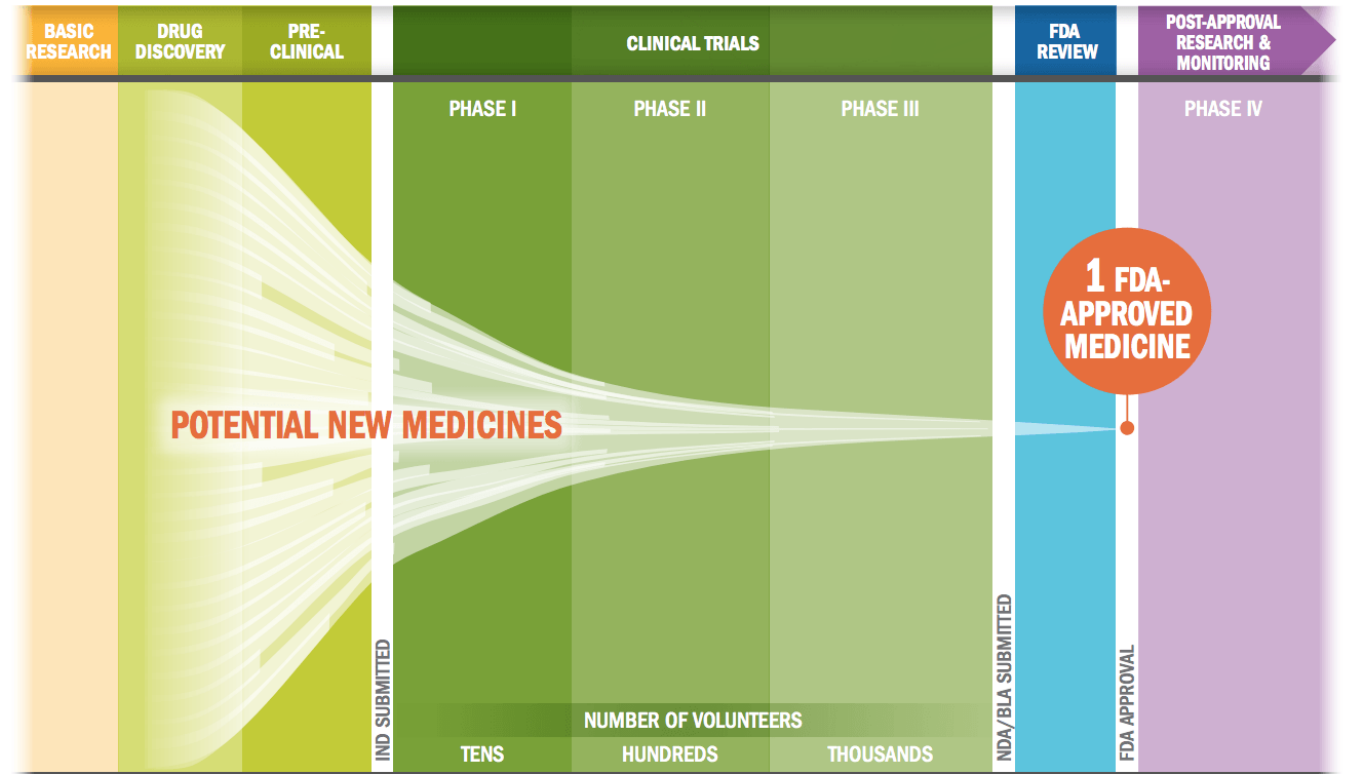
Year End Head Count Trend



The Drug R&D Process Begins with Discovery

5,000 – 10,000
COMPOUNDS

THE BIOPHARMACEUTICAL RESEARCH AND DEVELOPMENT PROCESS



Key: IND: Investigational New Drug Application, NDA: New Drug Application, BLA: Biologics License Application

Source: PhRMA, BIOPHARMACEUTICALS IN PERSPECTIVE FALL 2020

Drug Discovery Typically Starts with Biology



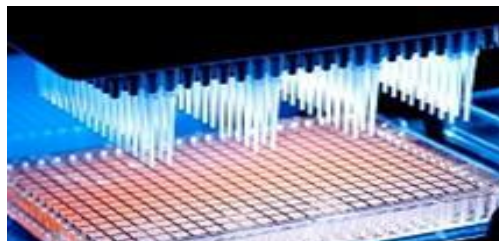
TARGET

Identify & Validate



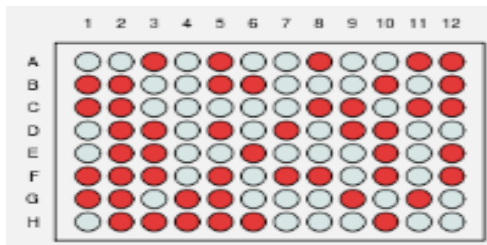
HIT

Find



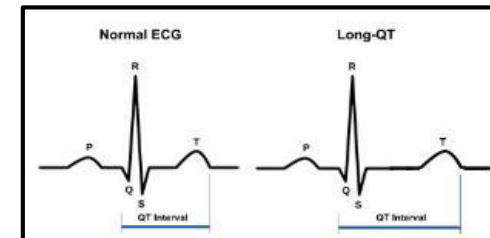
LEAD

Optimize



PCC PRECLINICAL
CANDIDATE

Select

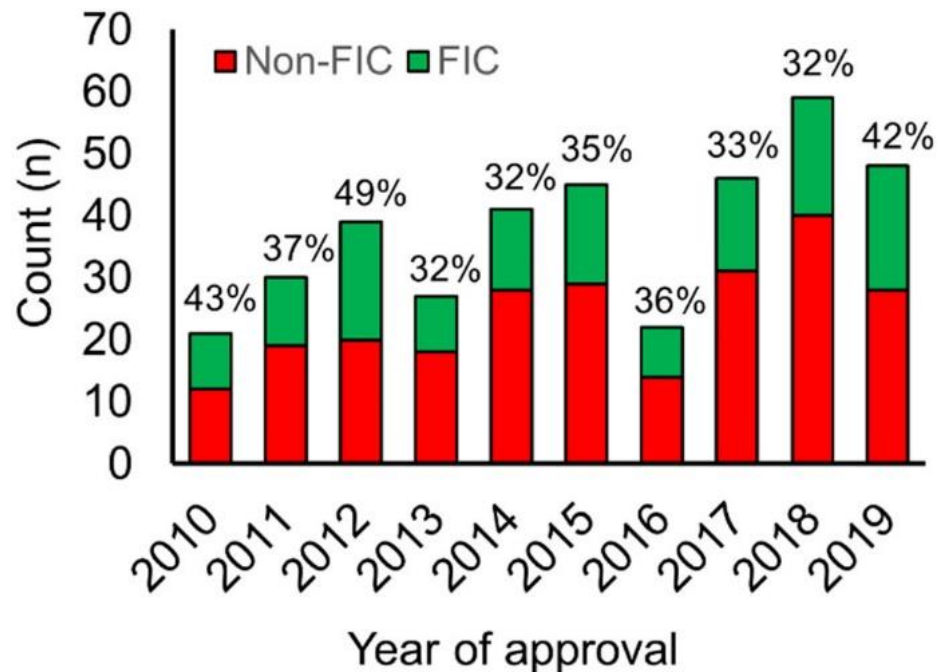


BIOLOGY

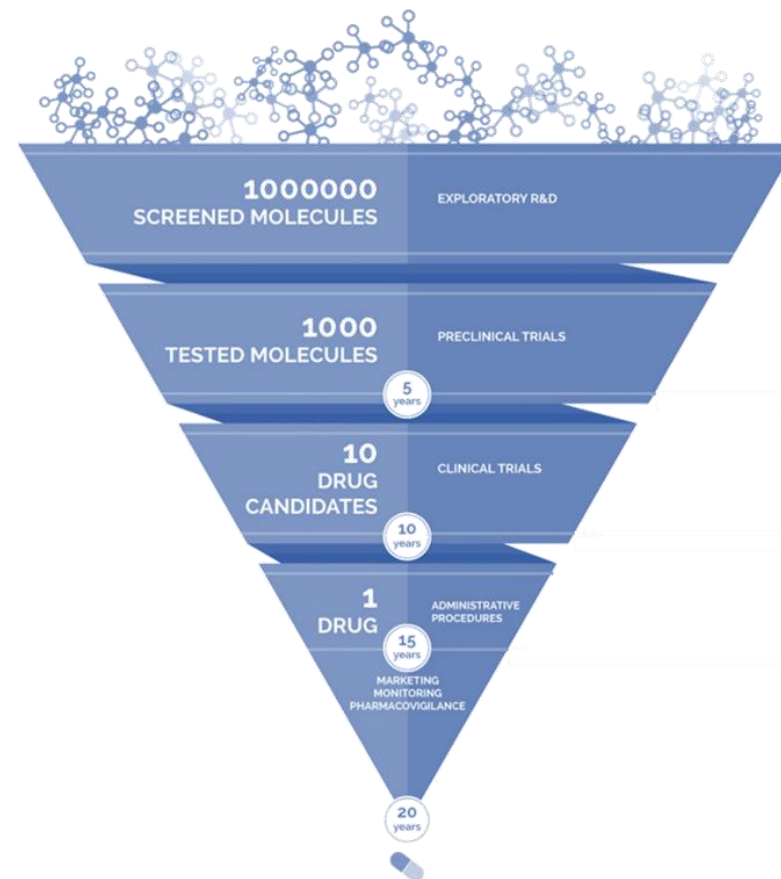
CHEMISTRY

Novel Drug Target Hit Finding Usually Requires Screening

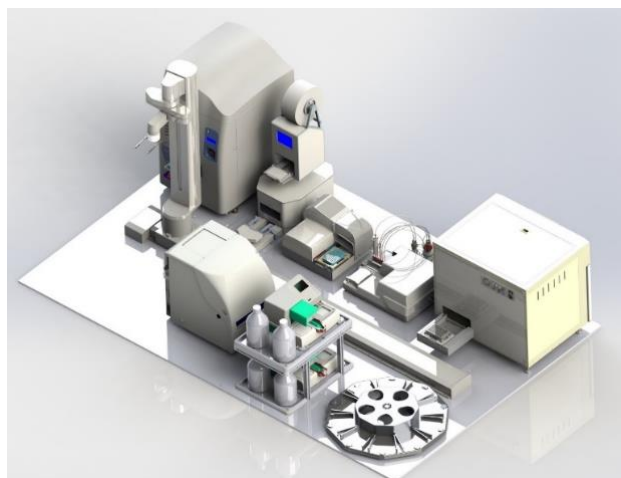
First-in-class (FIC) new drug approvals by year



Source: Brown and Wobst J Med Chem 2021, 64, 2312-2338



The Leader in High Throughput Screening in Asia Pacific



- **Largest** High Throughput Screening (HTS) center in Asia Pacific
- Topnotch Center of Excellence for Hit Finding with **fully automated Robot System**



- **First ever 1536-well** throughput in China CRO industry
- **Unique** WuXi compound Library (no IP restrictions) or customer library
- **Designated Screening Center** for HTS for several global major pharma companies



- **Fully integrated** with medicinal chemistry, in vitro biology and ADME for lead optimization

>300k
Lead like collection

>150
Campaigns
completed

>35M
Data points
delivered in 2020

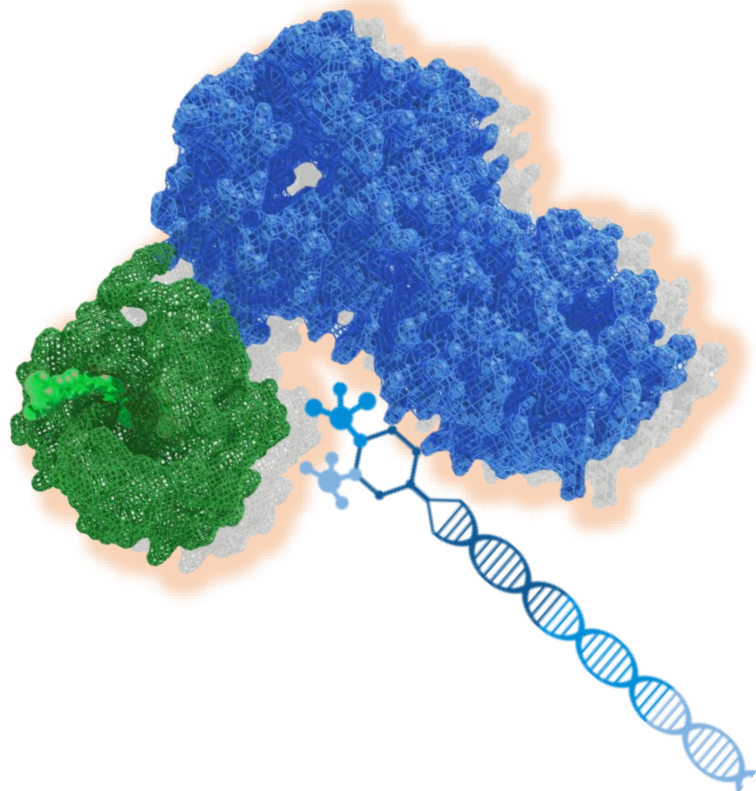
~ 180M
Data points
delivered in total

Please enjoy a short video of
our automated robot system for
High Throughput Screening
(HTS)



A Global Leader in DNA Encoded Library (DEL)

WuXi DNA Encoded Libraries



- **Largest** global customer base
- **Pioneer DEL Kit** business model



- **Unique** WuXi library with drug like scaffolds
- 23 applied patents of invention, 5 authorized
- 11 published academic papers
- **World renowned** academic advisors



- **Strong synergy** with WuXi Chemistry capabilities



DELopen

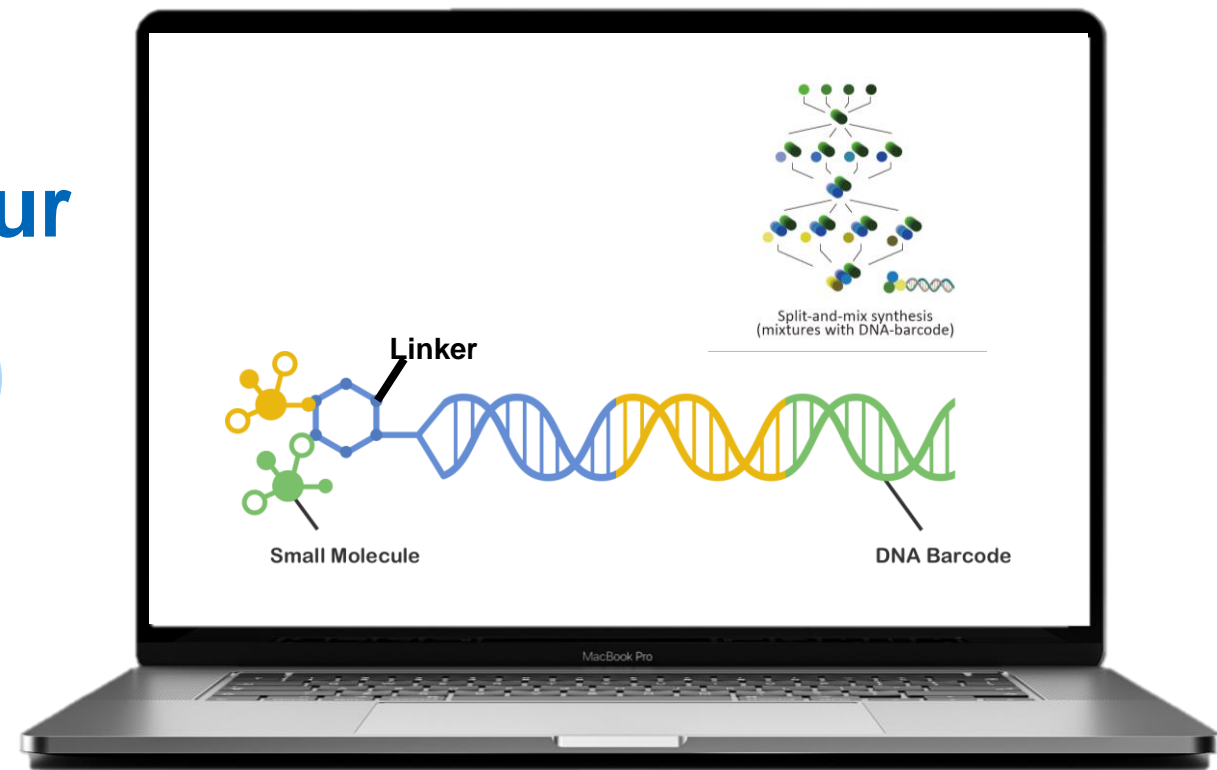
>80B
compounds

>200
libraries

6,000
proprietary
scaffolds

35,000
building blocks

Please enjoy a short video of our DEL (DNA Encoded Library) platform



Pioneer in Business Model: DEL Kit



DELOpen



DELIGHT



Fragment
DEL kit



OpenDEL



GenDECL



OpenDEX

	2018	2019	2019	2020	2021	2021
1st Launch (year)	2018	2019	2019	2020	2021	2021
Upgrade (year)	2020	2020				
Library size (million)	4,400	15,100	0.37	40,000	400	unknown
ML+AI service	√	√	×	×	×	×

Recognition of DEL kit market since **2019**

>99% market share of DEL kits business, although new entrants emerges

454 WuXi AppTec DEL kits delivered

19,257,020 unique compounds unlocked

Pioneer in DEL Community

- The pioneer of DEL technology
 - Dr. Richard Lerner
- Two Nobel laureates
 - Professor Roger Kornberg
 - Professor Barry Sharpless

Hit-Finding Success with DNA Encoded Libraries in Academia

June 29, 2021

8:00 a.m. PDT,
11:00 a.m. EDT

c&en | WEBINARS

WuXi AppTec



With the support provided in this partnership we aim to bridge academia and industry and jointly promote the application of DEL technology in the field of new drug discovery.

— **Richard Lerner**
The Scientific Advisory Board chairman for DELopen



合作院校



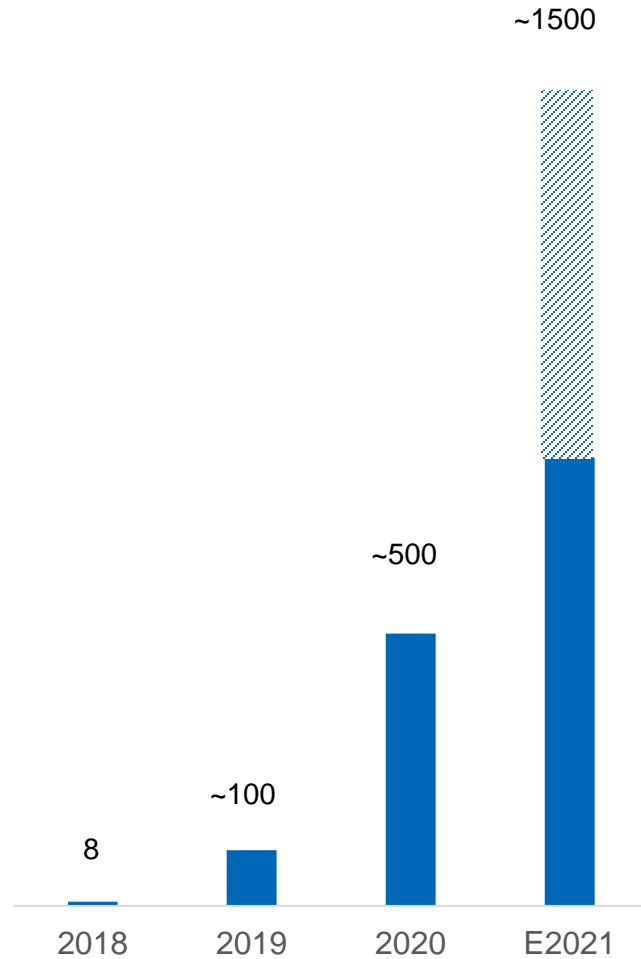
• Influential academic leaders joined in the DELopen Scientific Advisory Board to demonstrate their support

• New KOLs emerged from DELopen Scholar Community to share their positive opinions and feedbacks

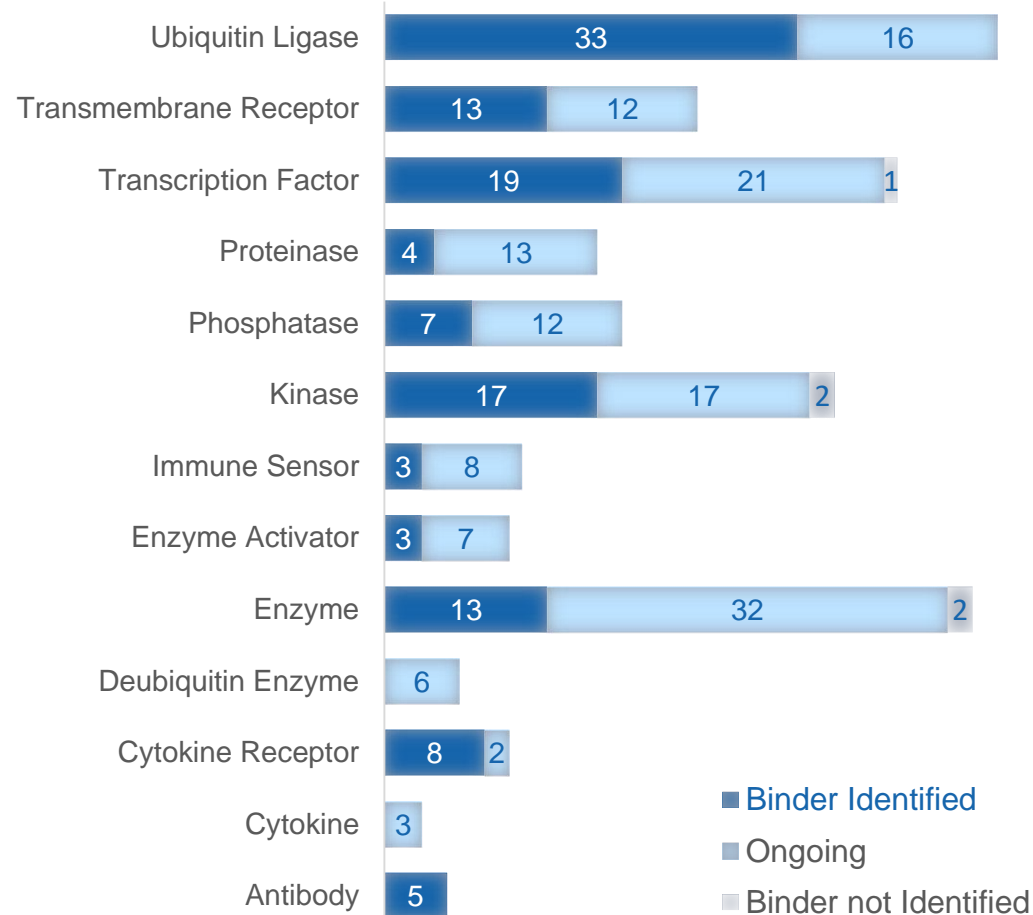
• **320+** Professors joined in DELopen program and the global community

The Largest Customer Base and Successful Delivery of DEL Screens

Customer Number



Screened Target Number via DEL



Total Target No.
279

Target Class
13

*Binder Confirm Rate
>90%

Strongest Hit (K_D)
pM

DELpro data until Jun 2021 *Ongoing project not included

Industry Leading Platform for Hit Identification

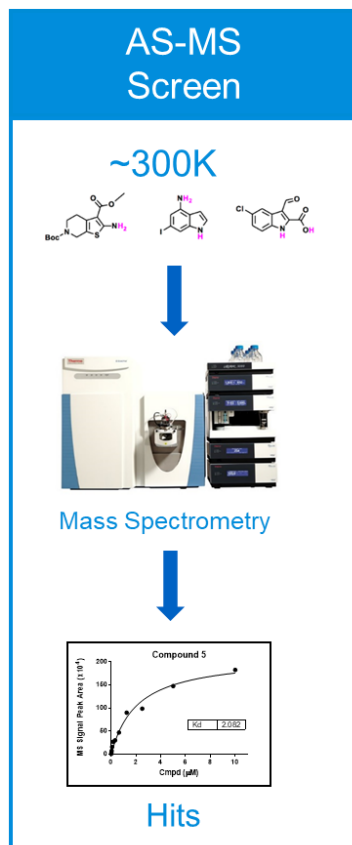
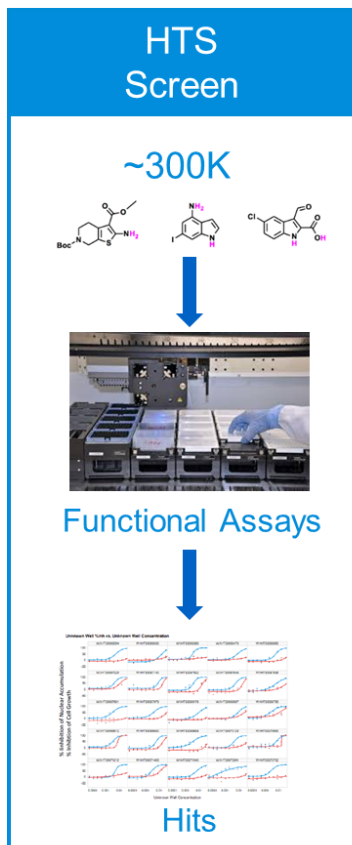
Target

Hit

Lead

Candidate

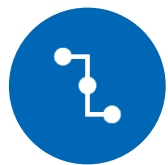



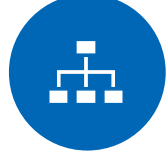

IND



- **Hundreds of** successful hit finding projects
- Different target types require different hit finding technologies to find the best hits
- Different methods will uncover different chemotypes

Pharmacology for Candidate's Efficacy








Assays for All Targets

-  GPCRs
-  Metabolites
-  Enzymes
-  Transporters
-  Ion Channels
-  Others

Capabilities For Diverse Modalities

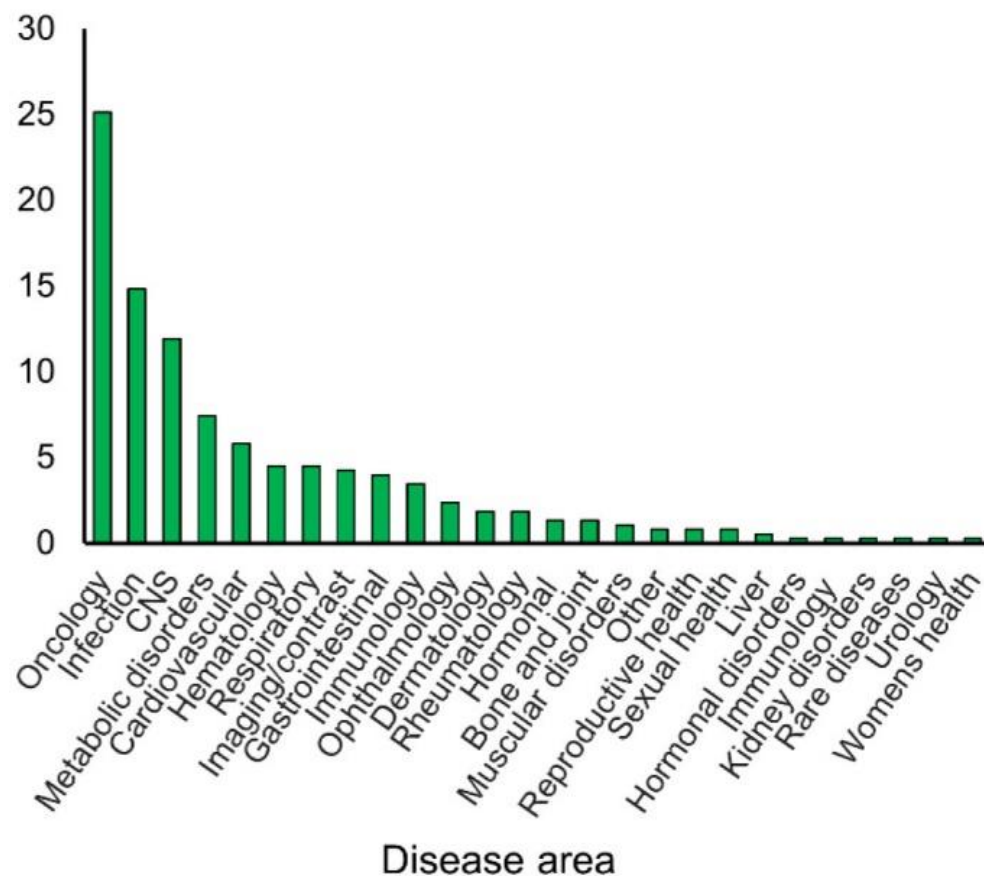
-  Small Molecules
-  Biologics
-  Oligonucleotide / Peptide
-  Gene/Cell Therapy
-  PROTAC®
-  Others

Animal Disease Models for Major Disease Areas

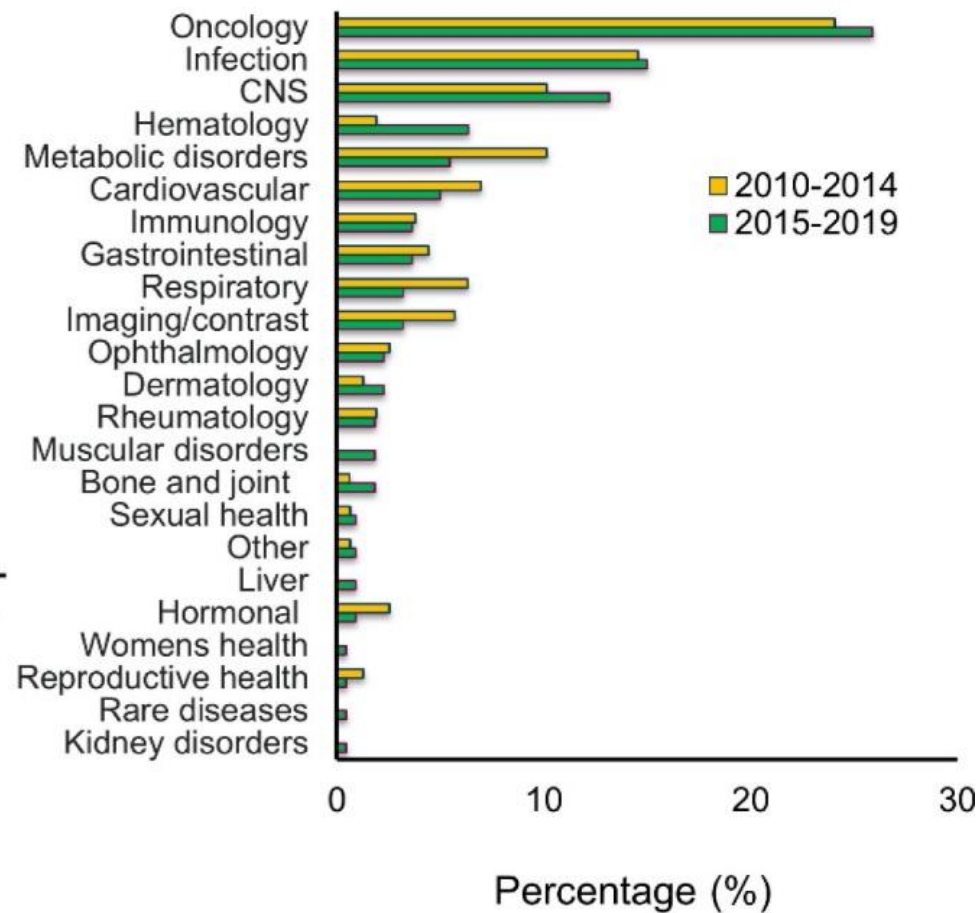
-  Oncology & Immunology
-  Cardiovascular
-  Metabolic
-  Digestive
-  CNS
-  Pulmonary
-  Infectious Diseases
-  Nephrology
-  Hepatology
-  Ophthalmology

Drug Approval Trends By Disease Areas

a Total approved drugs 2010-2019 by disease area



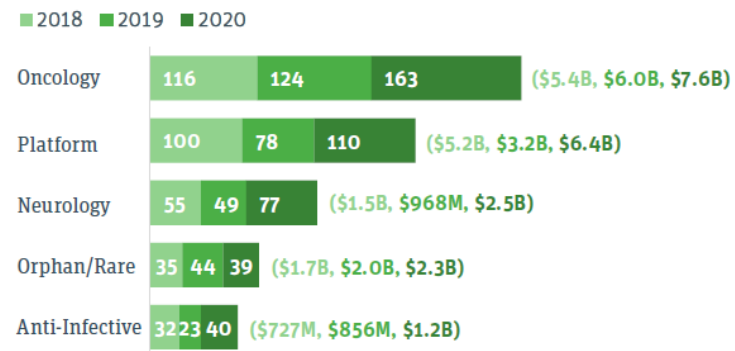
b Change in disease area approvals



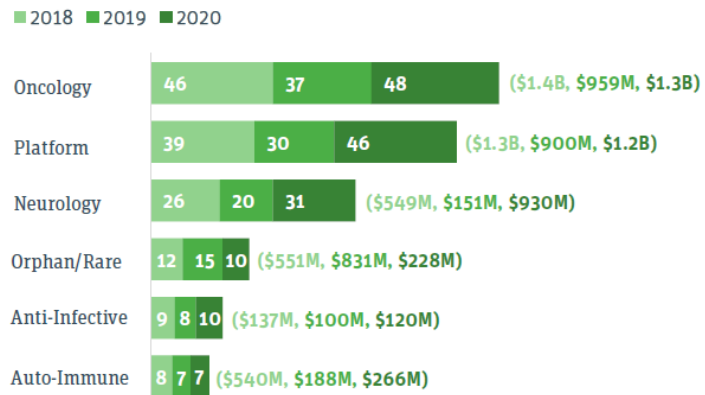
Source: Brown and Wobst J Med Chem 2021, 64, 2312-2338

Disease Area R&D Opportunities & Investment Trends

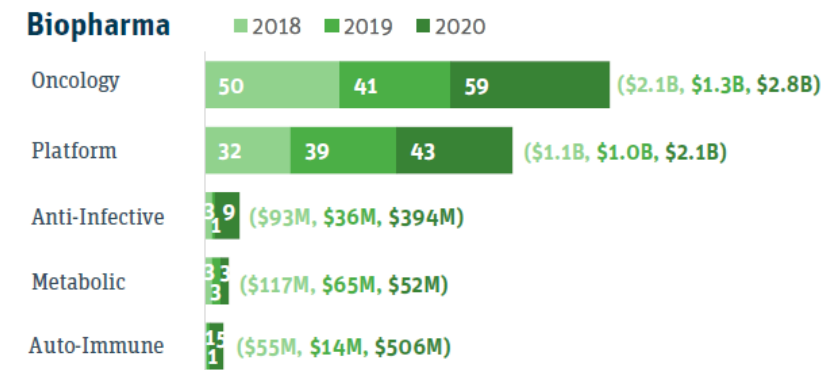
Biopharma Deals and (Dollars) by Top Indications
US and Europe



Series A Deals and (Dollars) by Top Indications



China Deals and (Dollars) by Top Indications



Source SVB Healthcare Annual Report 2021



Oncology & Immunology



Neuroscience







Infectious diseases



Orphan / rare diseases

Enable Discovery in Oncology & Immunology

	Target Validation	Efficacy	IND Enabling	Customer Tech Platform	IPO
	○	○		Synthetic Lethality	\$342M 2021
		○	○	Peptide PDC	\$61M 2019
		○	○	RAS Pathway	\$238M 2020
		○	○	PROTAC	\$182M 2020



2000+ Tumor models

1200+ Cancer cell lines

130+ IO models

150+ Autoimmune & RGD models

500+ Customers



OncoWuXi Online open access database

Note: IO: Immuno-oncology, RDG: rare genetic disease

World Class Antiviral Discovery Platform

Target

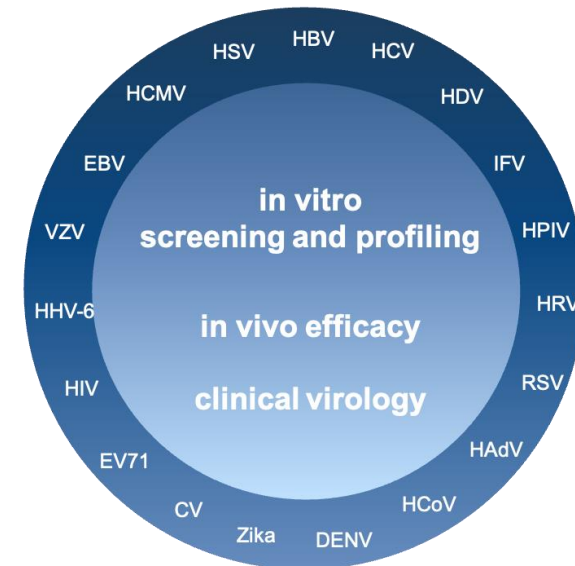
Hit

Lead

Candidate

IND

-  **World class** antiviral platform, with **dominant** service capability and capacity in HBV, COVID 19, and other viral diseases
-  **Integrated** drug discovery services from assay setup to clinical trial support
 - >**20** types of viruses
-  **Extensive** experience in integrated drug discovery projects
 - Substantial** contributions to discovery of HCV drugs



200+
active
customers

500+
projects
per year

150+
IND
studies

7+
drugs on
market



Enable Drug Discovery Against Novel Coronavirus Targets

Jan 23
Initiation

Completed 2
methods validation
in 1 month

Contracts from both
domestic and oversea
customers

Total 13 methods
completed

Feb 01

Feb 15

Mar 6

Mar 15

April-May

June-Oct

 **NOVARTIS**



TRI-INSTITUTIONAL
THERAPEUTICS DISCOVERY INSTITUTE

 **GILEAD**

 **Takeda**

 **药明康德
WuXi AppTec**

77
customers

120+
projects

- Leverage deep expertise in anti-infectious disease area
- Record time for rapid assay set up during COVID period
- Important contribution to global alliance of COVID-19 small molecule drug discovery programs
- Collaboration & synergy with WuXi Chemistry

30+
assays

300K
cpd
HTS

Enable Rare Genetic Disease Discovery Using CRISPR



- Generated **100+ customized** Rare Genetic Disease (RGD) models for small molecule, large molecule and gene therapeutics

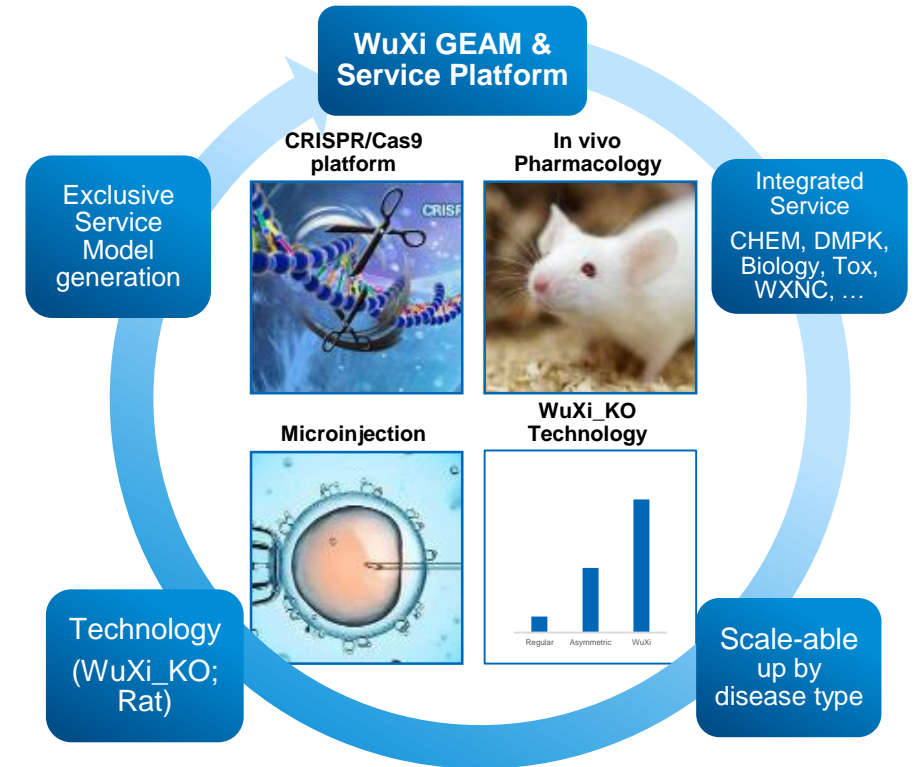


- End-to-end** Rare Genetic Disease (RGD) discovery biology service from genetically engineered animal model creation to efficacy testing

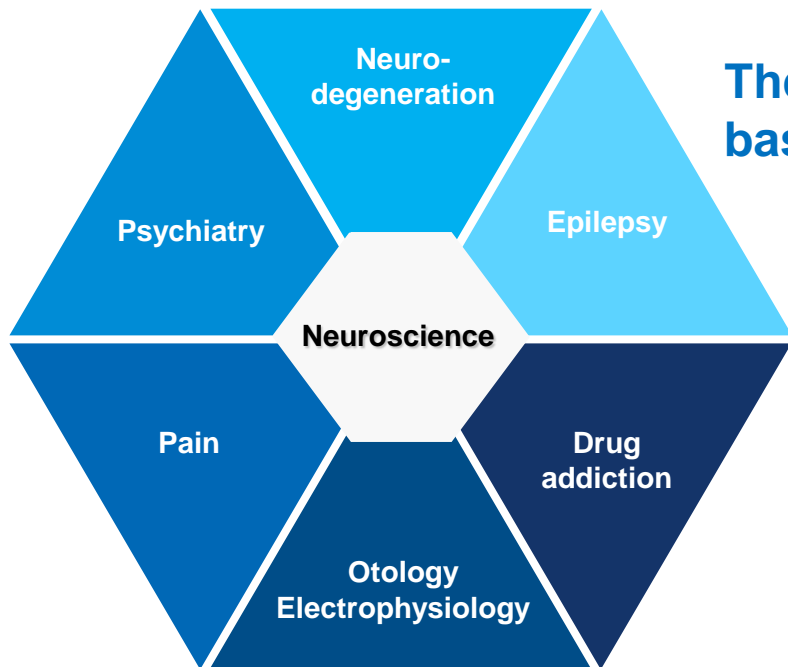
- CRISPR-based** genetically engineered animal model creation and characterization



- Long standing partnership with Agios for its entire Rare Genetic Disease (RGD) preclinical portfolio
- Joint efforts with WuXi Chemistry team

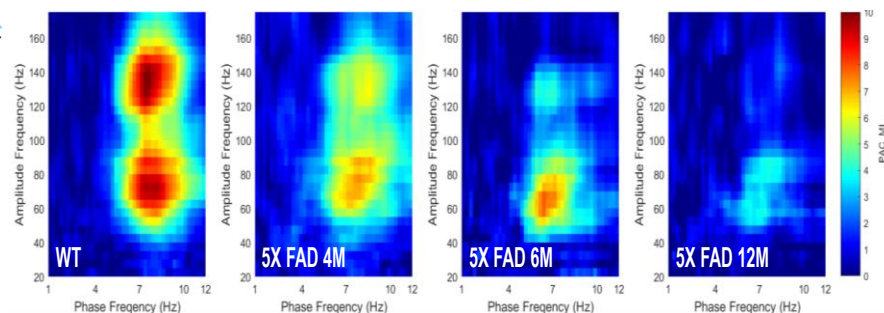


Enable Discovery in Neuroscience and Ageing

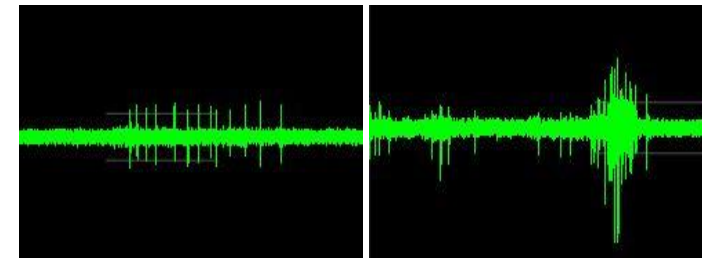


The world's first Alzheimer's disease model based on electroencephalogram (EEG)

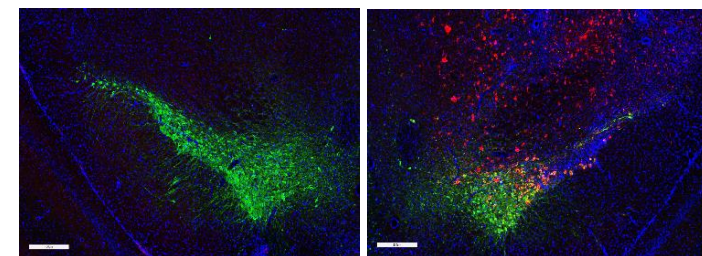
EEG analysis of AD model



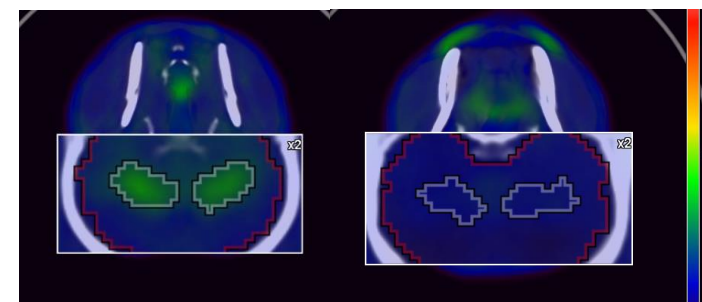
In vitro neuro firing on MEA



Neuro-inflammation in vivo



PET/CT of PD model in NHP



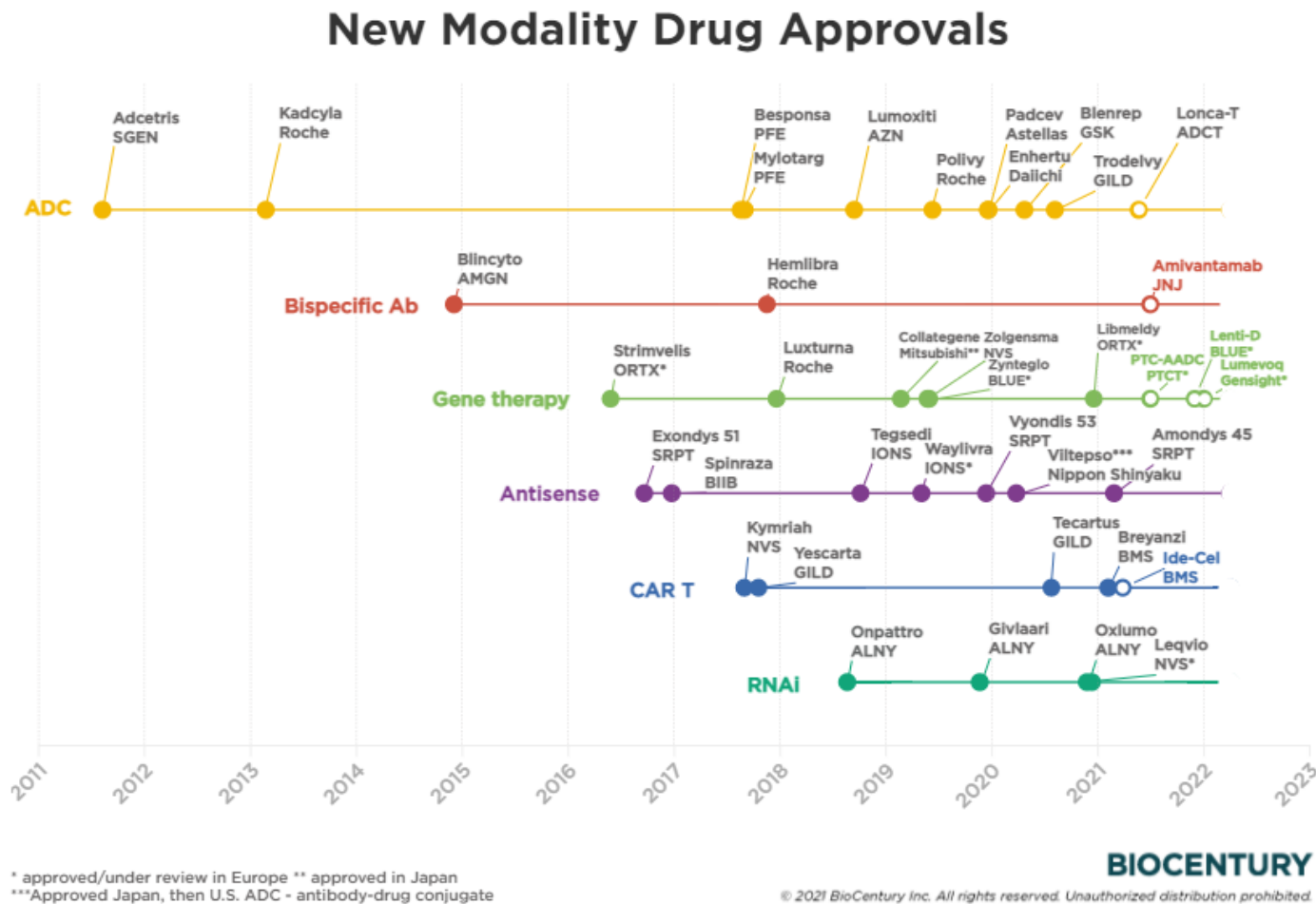
200+
In vitro
targets

90+
Animal
models &
tests

350+
Customers

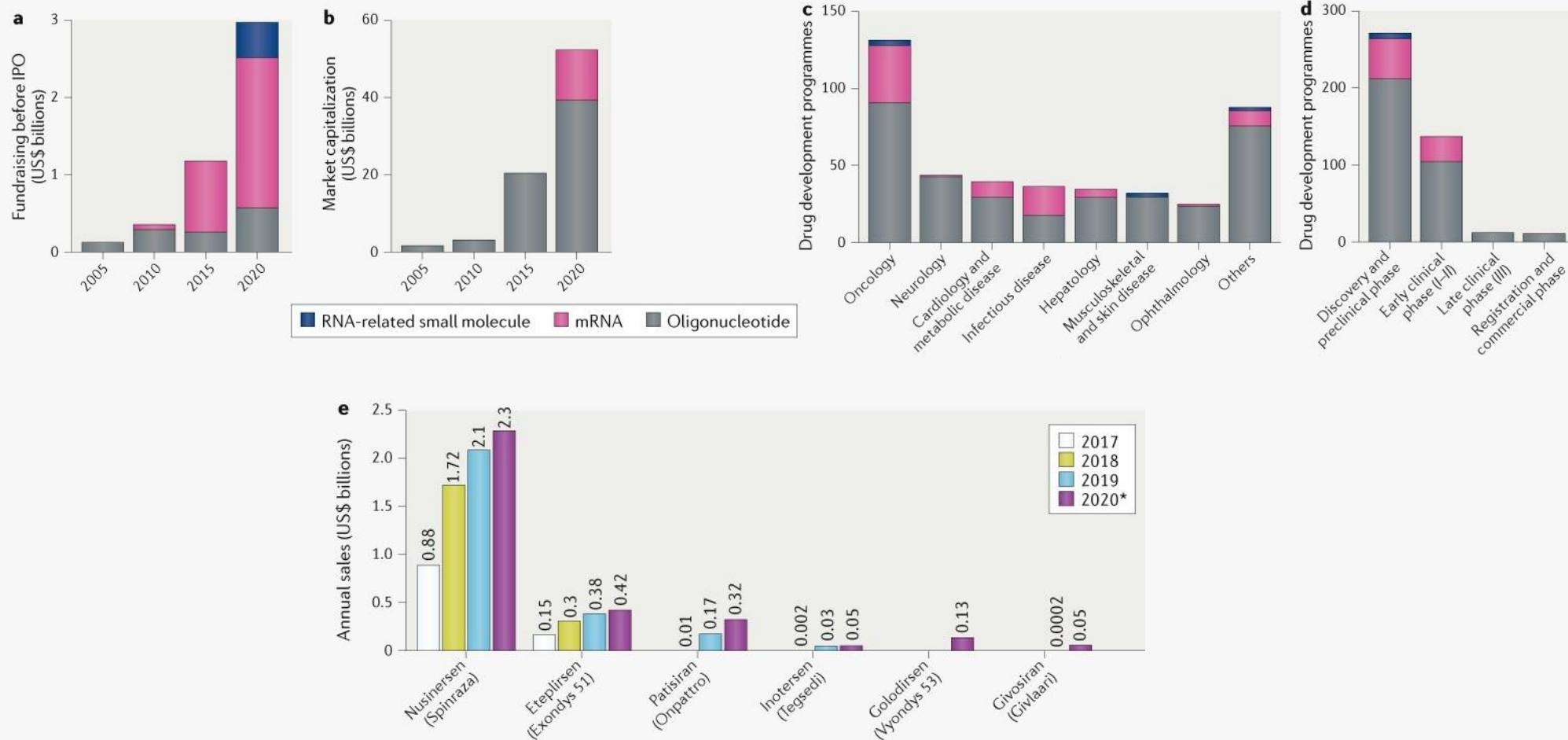
140+
IND filing
last 3.5 yr.

New Modality Drug Approvals are Accelerating



WuXi Biology supports all these new modalities with efficacy studies

The Growing Opportunities in RNA Therapeutics



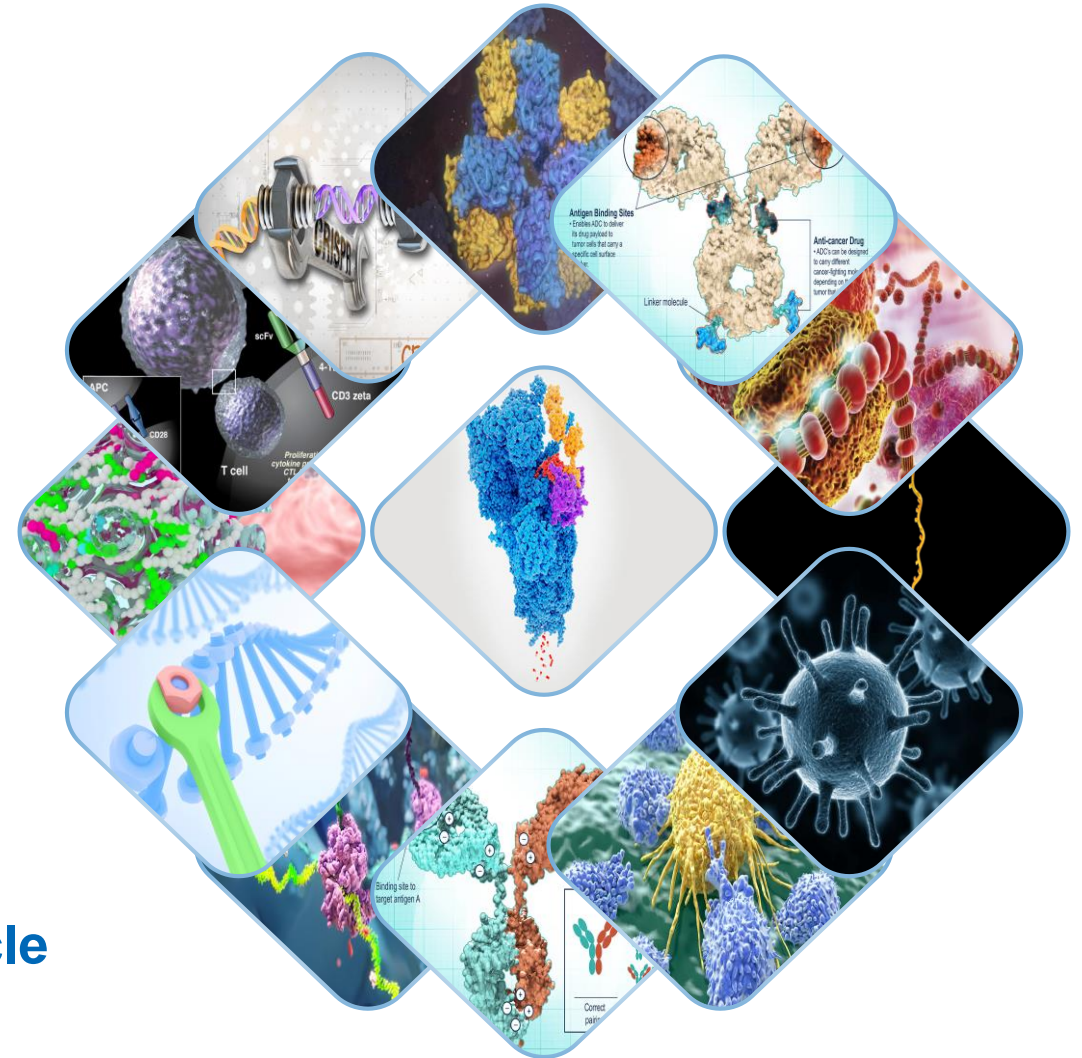
Source: RNA Therapeutics on the rise, Feng Wang *et al.*, *Nat Rev Drug Discov.* 2020 July; 19 (7): 441–442.

WuXi Biology Capability Building in New Modalities

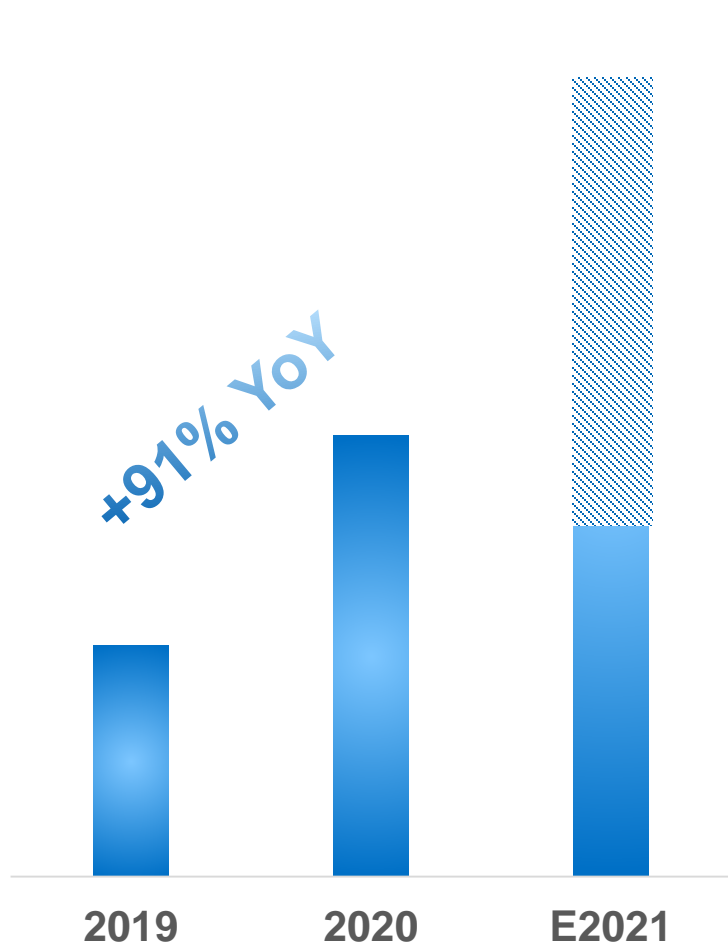
+74% YOY

R&D in progress

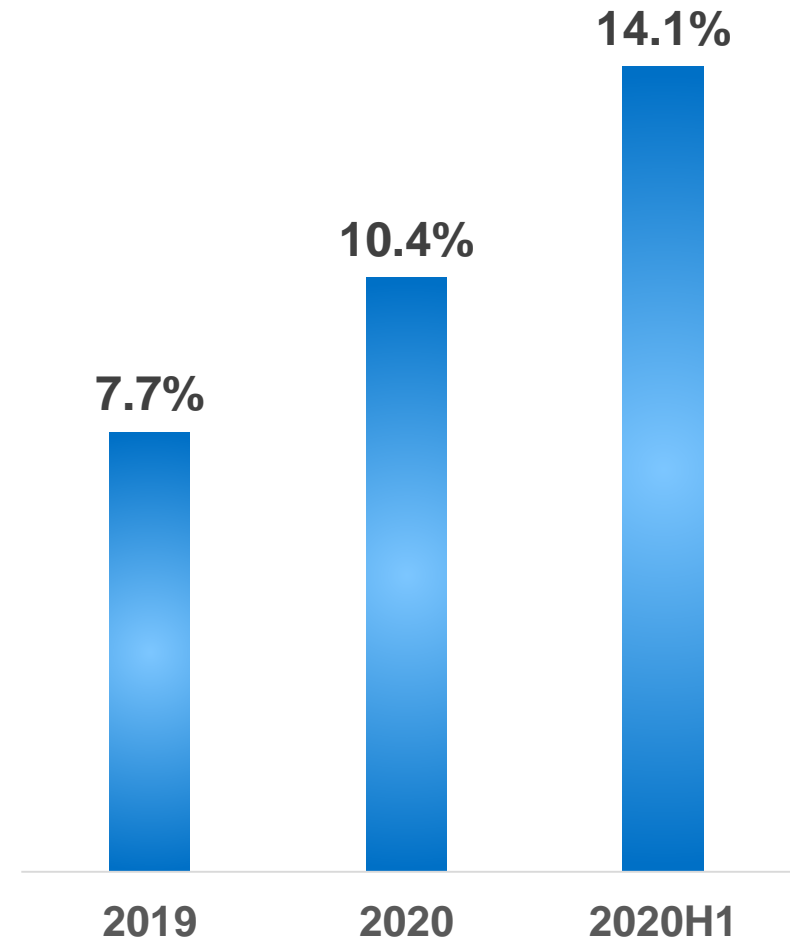
- Oligo Platform
- Cancer Vaccine
- PROTAC®
- Cell/Gene Therapy
- Vector Platform
- Novel Drug Delivery Vehicle



Multi-modality Expansion Supports Drug Discovery



Revenue from Biologics & New Modalities



Biologics and New Modalities Contribution to Total Revenue

Building New Capacities for Future Growth



Brand new campus in Chengdu

2021.6: ~12,000 m² in use



State of the art new campus in Nantong

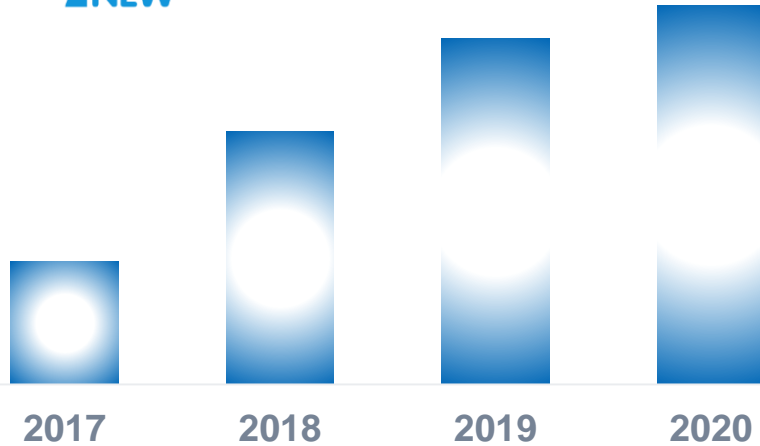
2023: ~20,000 m²

2025: ~20,000 m²

Attracting New Customers through Marketing and Sales



of new customers



Conferences & Events

Online Events

Digital Marketing

Customer Engagement

China

- Conferences: 9
- Roadshow: 5
- 明新汇: 4

- 药明直播间: 6

- WeChat: 50
- RSDPress: 13

- Offline: 1,668
- Online: 1,795

US&EU

- Workshop: 1

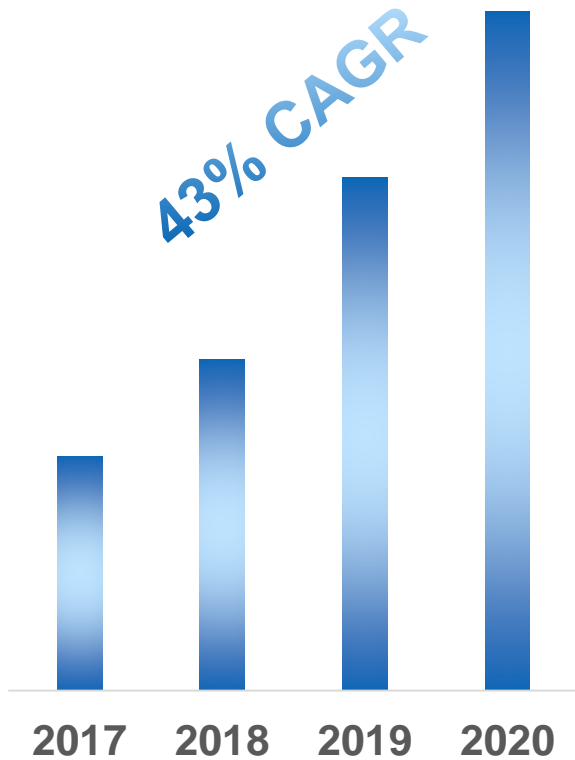
- Conference: 12
- Webinar: 3

- LinkedIn: 62
- Website: 7

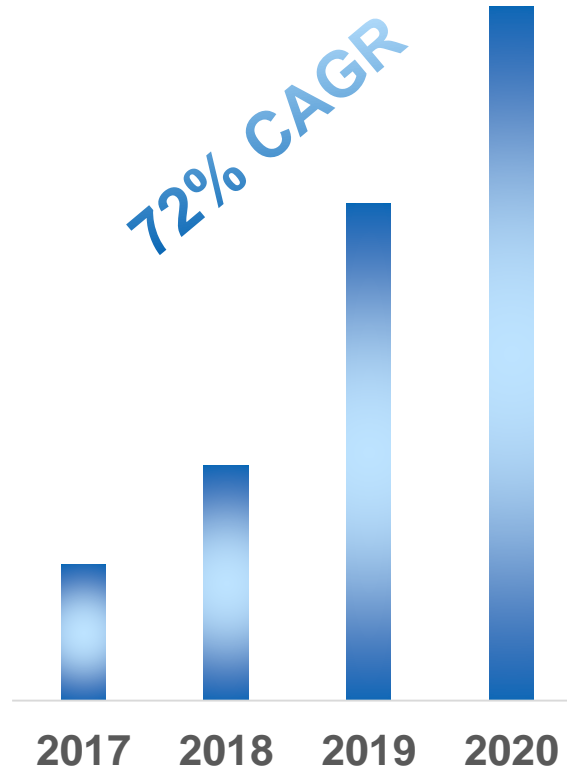
- Online: 5000+

Synergies between WuXi Biology & Chemistry Platform

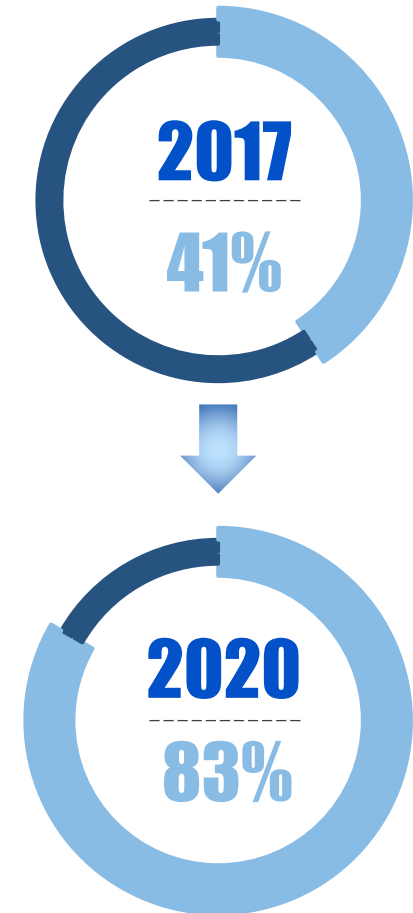
of Customers use both CHEM and BIO platforms



Revenue of customers use both CHEM and BIO platforms



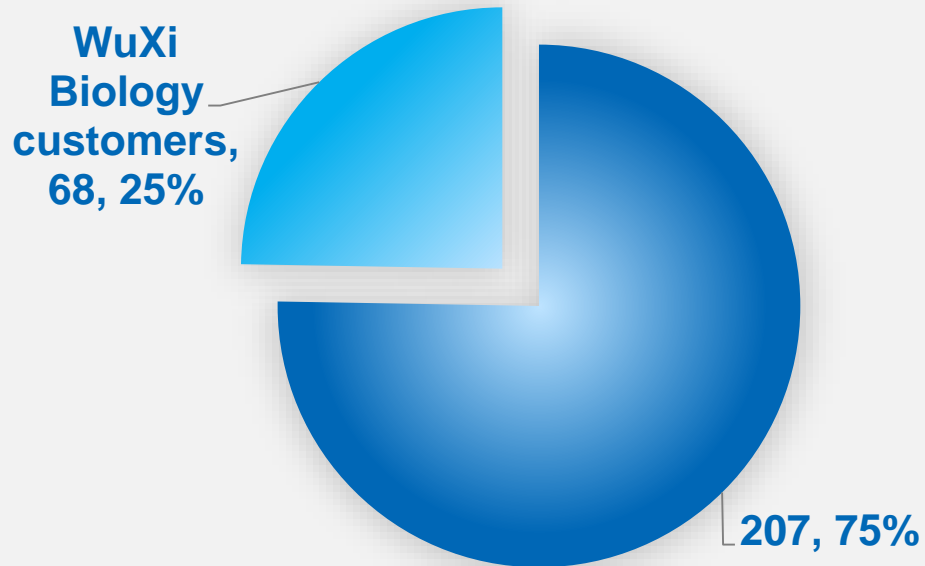
Revenue contribution in WuXi Biology



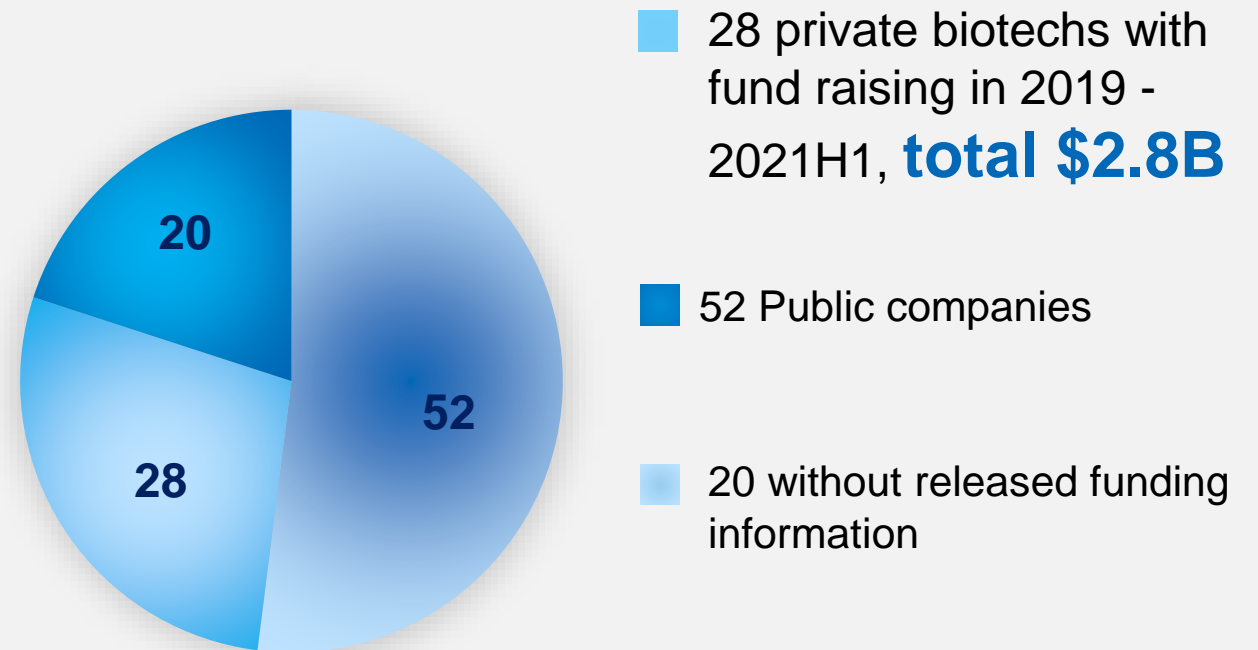
Note: Chemistry platform*: IDUS&CSU

Enable Drug R&D Project Progression and Customer Fund Raising

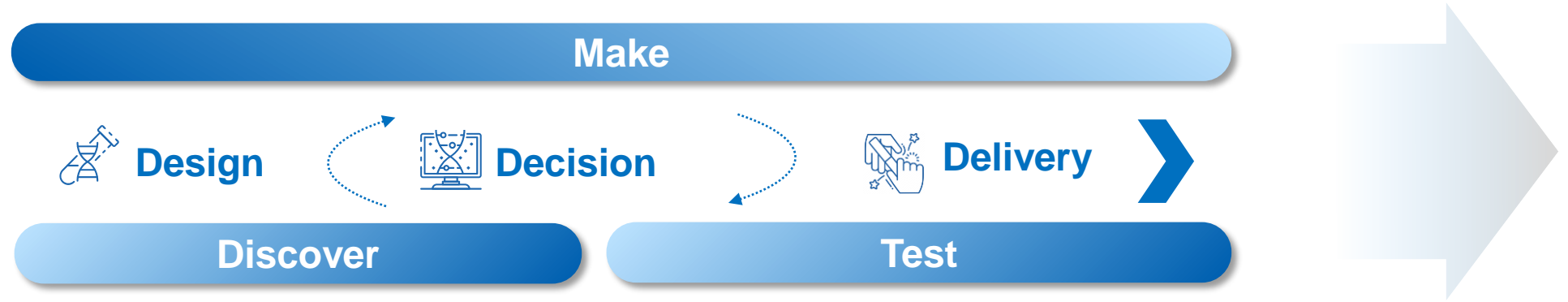
Total 275 US Biotech went public
2018 to 2021H1
(Data source: Crunchbase)



WuXi Biology Top 100
Biotech Customers



Enable Innovation through Making, Discovering and Testing



WuXi Biology



WuXi Biology in Summary



CAPACITY

- The **largest** discovery biology enabling platforms



CAPABILITY

- Expertise in **all major disease areas** and target classes
- Enable discovery of **all modalities**
- **One-stop** Target-to-Hit solutions



SYNERGY

- **Integrated** support from discovery to PCC
- Collaboration with the **largest** discovery chemistry team in the industry



QUALITY

- Lab and animal facility management based on **global standards**
- State of the art equipment and systems

1900+ Biologists and scientific managers
¥ 890M revenue in 2021H1

- Track record of enabling the delivery of **hits, leads and PCCs** (Preclinical Candidates)
- Track record of enabling the discovery and **approval of innovative medicines** on the market

>83% revenue in 2021 comes from customers using both WuXi Biology and Chemistry platforms

Entrusted by **20** of global top 20 pharmaceutical companies and **>1100** collaborators

WuXi Biology Key Growth Strategy

