



Oppenheimer Biopharma M&A Update

Prepared for Swiss HLG

March 2025

Michael Margolis, R.Ph. Background

Hands-on senior Healthcare banker with 25+ years of life sciences sector experience including 20+ years as an investment banker having executed multiple deals backed by a relentless commitment to clients

Seasoned Healthcare and Life Science Banker



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Experience

- Michael is a Board Member at Life Science Cares New York and served as the Head of Healthcare Investment Banking at Roth Capital Partners and as a Managing Director at Merriman Curhan Ford Group
- Michael is a registered pharmacist and served as a Director at Rutgers University Foundation
- Worked in pharma industry at Novartis Pharmaceuticals and Eli Lilly, and was a buy-side Equity Research Analyst at Ursus Capital

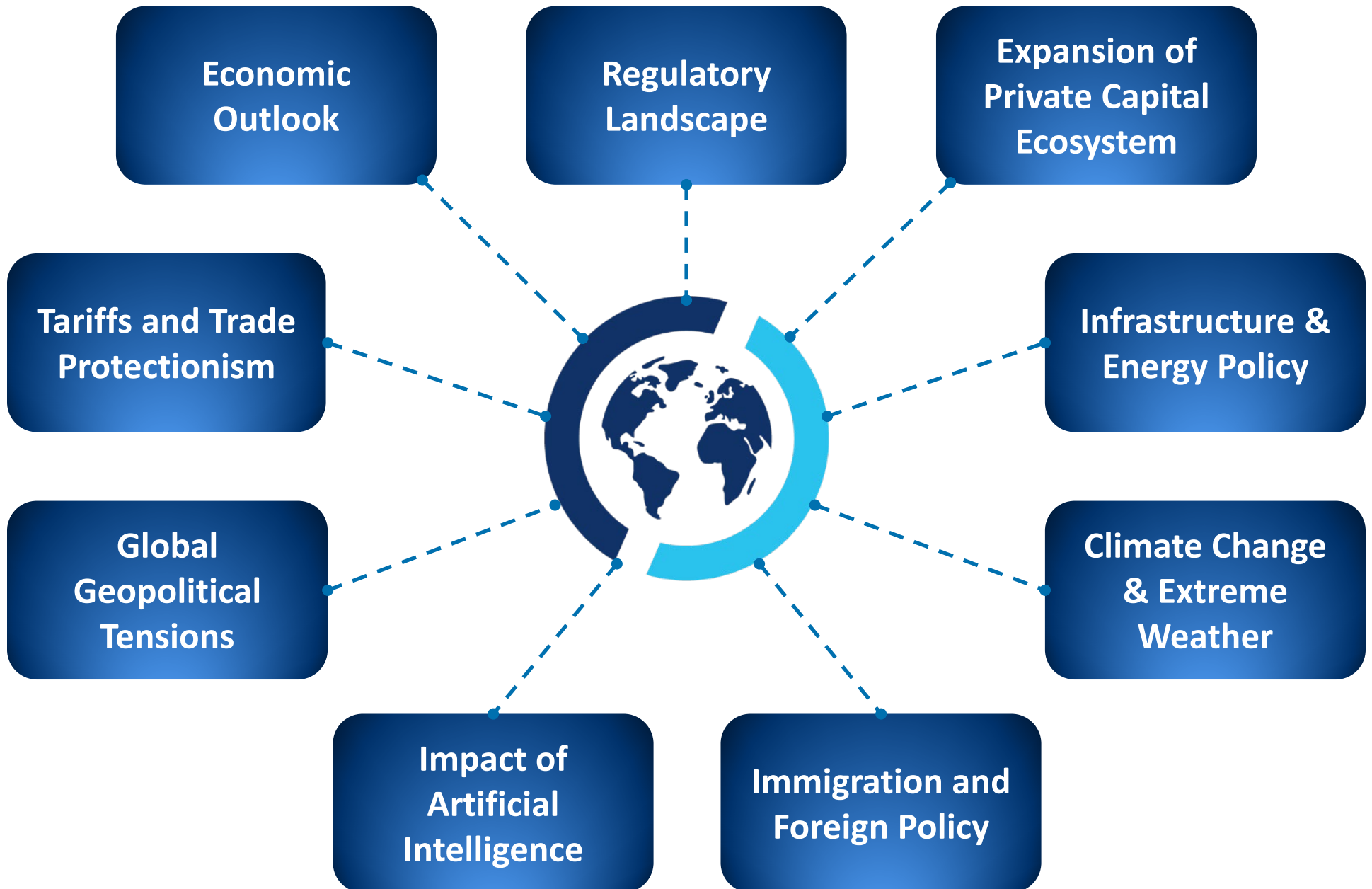


Education

- Pharmacy degree from Rutgers University, College of Pharmacy
- MBA, Finance from NYU Stern School of Business



Current State of Play – A World in Transition



Thoughts on Biotech in 2025: Cautious Sentiment Amid High Volatility

- ✓ **Public Financing Markets Showing Signs of Life**
- ✓ **Private Markets Remain Robust**
- ✓ **Technology Continues to Advance Rapidly**
- ✓ **Biotech Specialists Seeing Great Values in the Current Market**
- ✓ **Potential Decreased FTC Oversight**



- ✗ **High Interest Rates**
- ✗ **Lackluster M&A Market**
- ✗ **Investor Caution After String of Negative Data**
- ✗ **Biotech Equity Underperformance**
- ✗ **Increasing Competition from Chinese Biotech**
- ✗ **FDA in Flux**

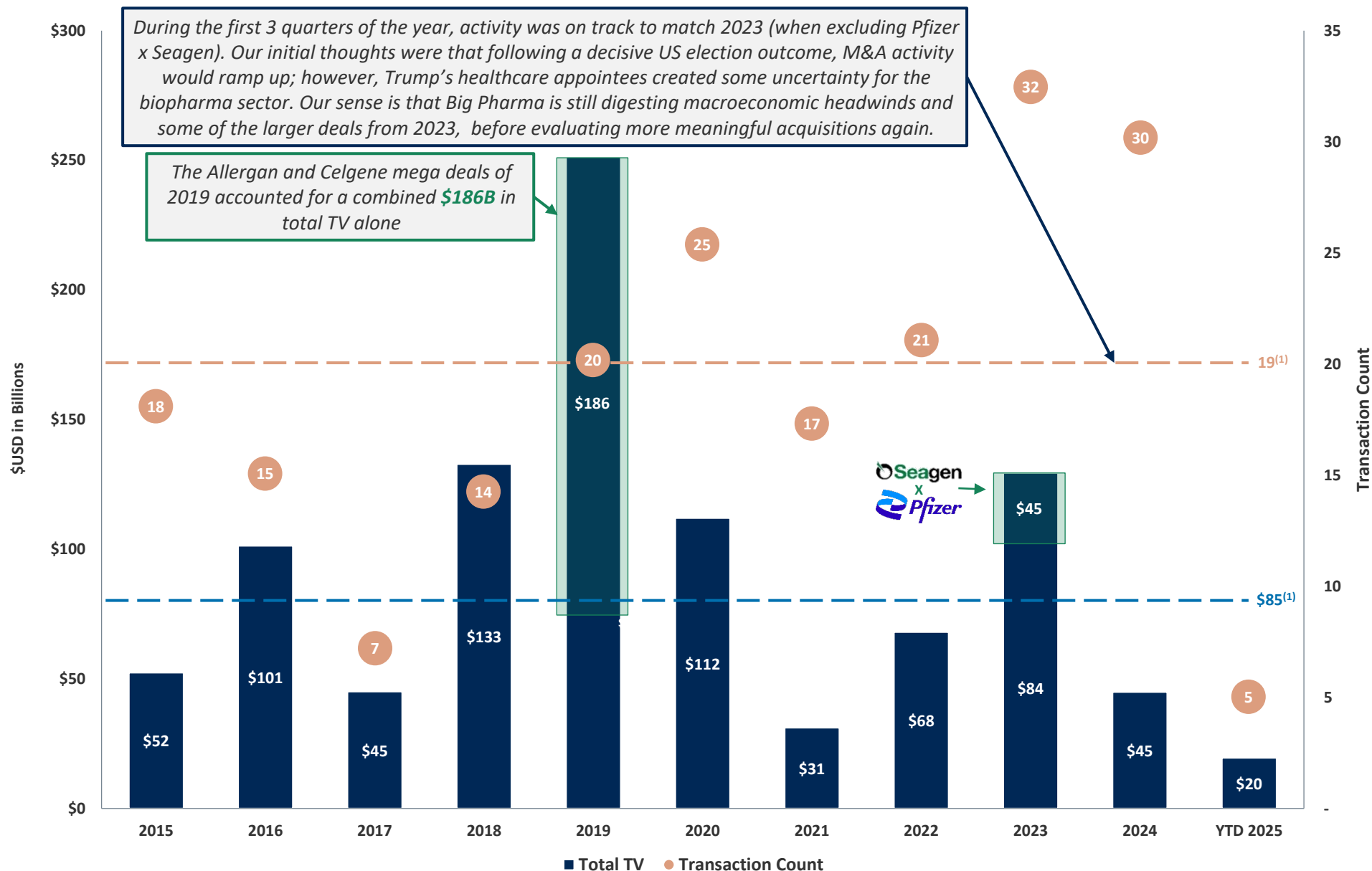
M&A and Strategic Collaborations in Life Sciences – 2025 Themes & Trends

Significant optimism that M&A activity in life sciences will carry momentum from 2024 into 2025

 <p><i>Dry Powder</i></p>	<ul style="list-style-type: none"> ▪ Even without new entrants, we expect there to be a material increase in activity from strategic buyers ▪ Larger pharmaceutical companies collectively have \$1T+ to deploy in dealmaking efforts ▪ If Day 1 of J.P. Morgan Healthcare Conference this year is any indication, we expect strategic industry participants to utilize their war chests to complement existing asset portfolios or to expand into new ones, particularly as revenues from existing assets could sour
 <p><i>Patent Expirations</i></p>	<ul style="list-style-type: none"> ▪ Within the next three years, patent expirations could affect ~\$300B in industry revenues ▪ Accordingly, Big Pharma will likely expand significant resources to not only continued R&D efforts but also to acquisitive growth, particularly with respect to later-stage and precommercial assets ▪ We also expect to see an increased focus and investment in branding strategies and trademark protection for products in order to maximize market share and value after the relevant products expire
 <p><i>Developments in Licensing</i></p>	<ul style="list-style-type: none"> ▪ In the weeds of contracting terms, we are seeing: <ul style="list-style-type: none"> ○ Licensees begin seeking royalty adjustments in the event that a product becomes subject to price negotiations in the U.S. ○ More sensitivity in clinical milestones to relevant indications and clinical plans ○ Ever-increasing attention to the rights each party gets to use arising from such data and results
 <p><i>Sensitivity to High R&D</i></p>	<ul style="list-style-type: none"> ▪ High-cost environment has interested entities focusing more on R&D costs and responsibility for budget overages ▪ Licensors want licensees to compensate for prior R&D investments to develop technology to where it is and then, depending on the licensing arrangement, expect a licensee to continue covering development costs ▪ Licensees who are funding ongoing activities have an interest in ensuring funds are spent on their intended target and to keep an eye on the solvency of their licensors
 <p><i>Cross-Border Licensing</i></p>	<ul style="list-style-type: none"> ▪ Big Pharma and well-funded licensees are accessing novel molecules being developed in China, with the China-based developer sometimes looking to retain Chinese rights ▪ Countries trying to support and encourage their local life sciences industry and at the same time, licensing remains essential to getting fully developed products into countries and to specific markets and patient populations that can benefit from targeted therapies
 <p><i>Regulatory Landscape</i></p>	<ul style="list-style-type: none"> ▪ The regulatory landscape will be shifting under the second Trump administration ▪ With the appointment of Andrew Ferguson to replace Lina Khan, the expectation is that the FTC and similar anticompetition agencies will put less focus on deal activity generally, including within the life sciences industry ▪ Concerns around the potential reset of agency prioritizes, departures of current FDA employees, positions on vaccines, approval processes, etc.

Volumes Remain Above Average and Nearly Match 2023

Big Pharma Acquisitions Since 2015 – Smaller Deals Continue To Be The Narrative



Source: CapitalIQ and Company Filings. As of 02/28/25. Note: "TV" stands for transaction value.
Orange and blue dotted lines represent 10-year average Big Pharma transaction count and total TV respectively.

Top 15 M&A Transactions of 2024

There were no M&A deals over \$5B in 2024, reflecting Big Pharma preference for bolt-on acquisitions

M&A Transactions (by Total Transaction Value)































Target	Acquirer	Target Company Type	Transaction Value (\$B) ⁽¹⁾	% Upfront of Total TV	Clinical Stage at Announcement	Therapeutic Area	Treatment Modality	Target	Lead Indication
ALPINE ImmuneSciences	VERTEX	Public	\$ 4.6	100%	Phase 3 Ready	Autoimmune / I&I	Protein	BAFF/APRIL	IgA Nephropathy
CYMABAY THERAPEUTICS	GILEAD Creating Possibilities	Public	4.3	100%	Phase 3	Liver	Small Molecule	PPAR delta	PBC
MORPHIC	Lilly	Public	3.2	100%	Phase 2	Autoimmune / I&I	Small Molecule	$\alpha 4\beta 7$	Ulcerative Colitis & Crohn's Disease
EyeBio	MERCK	Public	3.0	43%	Phase 2	Ophthalmology	Trispecific	WNT	Diabetic Macular Edema
morphosys	NOVARTIS	Public	2.9	100%	Phase 3	Oncology	Small Molecule	BET	Myelofibrosis
LONGBOARD PHARMACEUTICALS	Lundbeck	Public	2.6	100%	Phase 3	Neuroscience	Small Molecule	5-HT2C receptor	Epileptic Encephalopathies
Fusion	AstraZeneca	Public	2.4	83%	Phase 2	Oncology	Radiopharma	PSMA	mCRPC
deciphera	ONO	Public	2.1	100%	Commercial	Oncology	Small Molecule	c-KIT	GIST
INHIBRX	sanofi	Public	2.0	85%	Phase 2	Metabolic	mAb	A1AT	AATD
AMBRX	Johnson & Johnson	Public	1.9	100%	Phase 1/2	Oncology	ADC	PSMA	mCRPC
ProfoundBio	Genmab	Private	1.8	100%	Phase 2	Oncology	ADC	FOLR1	Ovarian Cancer
HI-Bio	Biogen	Private	1.8	64%	Phase 2	Autoimmune / I&I	mAb	CD38	IgA Nephropathy
mariana ONCOLOGY	NOVARTIS	Private	1.8	57%	Preclinical	Oncology	Radiopharma	ND	SCLC
AILOS BIO	GSK	Private	1.4	71%	Phase 2 Ready	Autoimmune / I&I	mAb	TSLP	Asthma
ALIADA THERAPEUTICS	abbvie	Private	1.4	100%	Phase 1	Neurodegeneration	mAb	3pE-A β	Alzheimer's Disease

Source: Company Filings and Biomedtracker. As of 12/31/24. Note: "TV" stands for transaction value.

(1) Transaction value includes upfront payments and contingent / milestone payments.













The Largest Licensing Deals Were in the Neuroscience and Autoimmune / I&I Spaces

Strategic Collaborations and Asset Acquisitions (by Upfront Consideration)













Licensor	Licensee	Target Company Type	Upfront Value (\$M)	% Upfront of Total DV	Development Stage at Announcement	Therapeutic Area	Treatment Modality	Target	Lead Indication
 PTC THERAPEUTICS	 NOVARTIS	Public	\$ 1,000	34%	Phase 2	Neuroscience	Small Molecule	ND	Huntington's Disease
 arrowhead pharmaceuticals	 SAREPTA THERAPEUTICS	Public	825	77%	Phase 1/2	Neuroscience	Gene Therapy	Multiple	Multipile
 EURON CN201	 MERCK	Private	700	54%	Phase 1/2	Autoimmune / I&I	Bispecific	CD3xCD19	NHL
 LaNova PHARMACEUTICALS	 MERCK	Private	588	18%	Phase 1	Oncology	Bispecific	PD-1/VEGF	Solid Tumors
 CUREVAC live RNA people®	 GSK	Public	429	28%	Phase 2	Infectious Disease	Vaccine	ND	COVID-19
 CELLARES	 Bristol Myers Squibb	Private	380	100%	Platform / Discovery	Oncology	CAR-T Cell Therapy	NA	NA
 idorsia	 VIATRIS™	Public	350	100%	Phase 3	Autoimmune / I&I & Cardiovascular	Small Molecule	S1P-R & P2Y12	SLE & AMI
 KURA ONCOLOGY	 OYOWA KIRIN	Public	330	22%	Phase 2	Oncology	Small Molecule	MLL	AML
 bridgebio	 BAYER	Public	310	100%	Phase 3	Cardiovascular	Small Molecule	TTR	ATTR-CM
 Protagonist Therapeutics	 Takeda	Public	300	100%	Phase 3	Hematology	Peptide	Hepcidin	Polycythemia vera
 CHIMAGEN BIOSCIENCES CMG1A4	 GSK	Private	300	35%	Phase 1	Autoimmune / I&I	Bispecific	CD19xCD20	Lupus
 Autolus	 BIONTECH	Public	250	100%	Phase 1	Oncology	CAR-T Cell Therapy	Multiple	Multiple
 KEROS THERAPEUTICS	 Takeda	Public	200	13%	Phase 2	Hematology	Peptide	TGF-β	MDS
 Argo Biopharma	 NOVARTIS	Private	185	4%	Phase 1/2	Cardiovascular	RNAi	ND	ND
 ARVINAS	 NOVARTIS	Public	150	13%	Preclinical	Oncology	Protein Degradation	Androgen Receptor	mCRPC

Q1 2025 has Been Defined by Fluctuating Sentiment and Activity Amid High Political Uncertainty

Select Q1'25 M&A Transactions (by Total Transaction Value)

Target	Acquirer	Target Company Type	Transaction Value (\$B) ⁽¹⁾	% Upfront	Clinical Stage at Announcement	Therapeutic Area	Treatment Modality	Target	Lead Indication
 Intra-Cellular Therapies	 Johnson & Johnson	Public	\$ 14.6	100%	Commercial	Neuroscience	Small Molecule	Serotonin 5-HT2A	Schizophrenia and Bipolar Disorder
 ANTHOS	 NOVARTIS	Private	3.1	100%	Phase 3	Hematology	mAb	Coagulation Factor X	Stroke Prevention in Atrial Fibrillation
 SCORPION	 Lilly	Private	2.5	100%	Phase 1/2	Oncology	Small Molecule	PI3Kα inhibitor	Breast Cancer
 IDRx	 GSK	Private	1.2	87%	Phase 1	Oncology	Small Molecule	TKI	Gastrointestinal Stromal Tumor
 CHIMERIX	 Jazz Pharmaceuticals	Public	0.9	100%	NDA	Oncology	Small Molecule	Dopamine 2 Receptor	High-grade Brain Tumor
 Checkpoint Therapeutics	 SUN PHARMA	Public	0.4	85%	Commercial	Oncology	mAb	PD-L1	Squamous Cell Carcinoma

Select Q1'25 Strategic Collaborations (by Upfront Consideration)

Licensor	Licensee	Licensor Company Type	Upfront Value (\$M)	% Upfront	Clinical Stage at Announcement	Therapeutic Area	Treatment Modality	Target	Lead Indication
 ZEAL & ZEALAND PHARMA	 Roche	Public	\$ 1,650	31%	Phase 2	Metabolic	Peptide	Amylin Receptor	Obesity
 gubra	 abbvie	Private	350	16%	Phase 1	Metabolic	Peptide	Amylin Receptor	Obesity
 IONIS	 ONO PHARMA	Public	280	29%	Phase 2	Oncology	siRNA Therapy	Tmprss6	Polycythemia Vera
 LEO	 GILEAD Creating Possible	Private	250	15%	Preclinical	Autoimmune / I&I	Small Molecule	STAT6	Autoimmune / I&I Disorders
 STROKE THERAPEUTICS	 Biogen	Public	165	30%	Phase 2	Neuroscience	RNA Therapy	SCN1A	Dravet Syndrome
 REGENXBIO	 日本新薬 NIPPON SHINYAKU CO., LTD.	Public	110	14%	BLA	Metabolic	Gene Therapy	Alpha-L-iduronidase	Hunter Syndrome

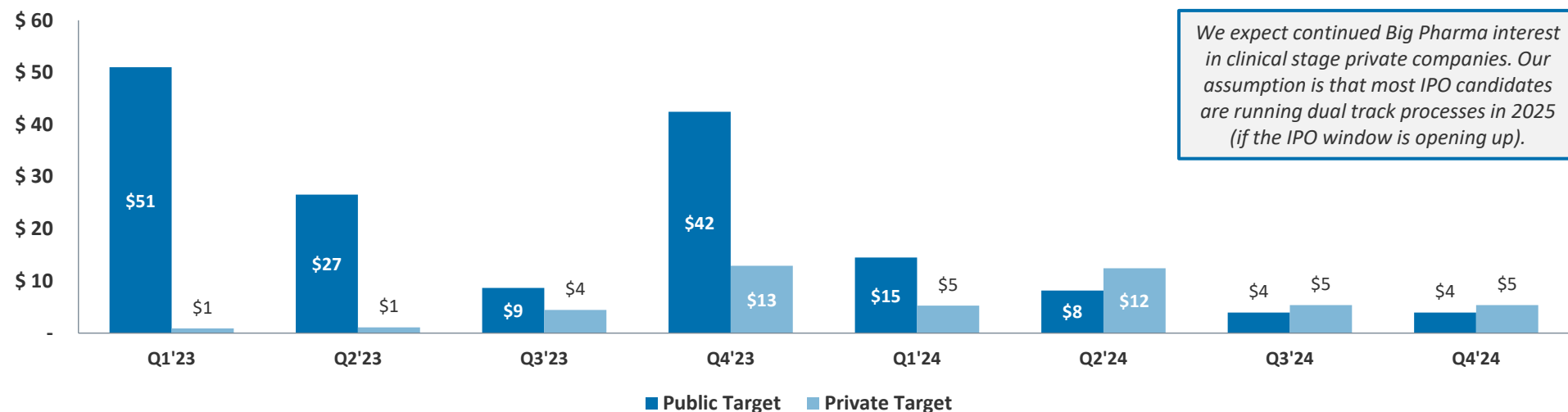
Source: Company Filings and Biomedtracker. As of 03/13/25. Note: "TV" stands for transaction value and "DV" stands for deal value.

(1) Transaction value includes upfront payments and contingent / milestone payments.

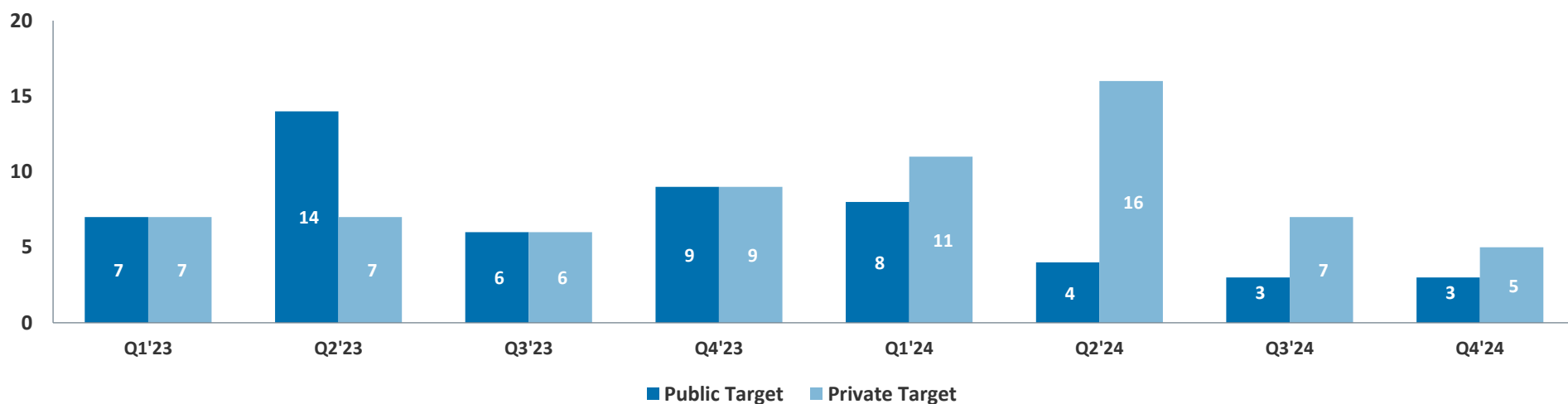
Big Pharma and Acquirers In General Remain Focused on Clinical-Stage Private Co's

Private companies continue to outweigh public peers in terms of total TV and transaction count

Quarterly M&A TV⁽¹⁾



Quarterly M&A Transaction Count



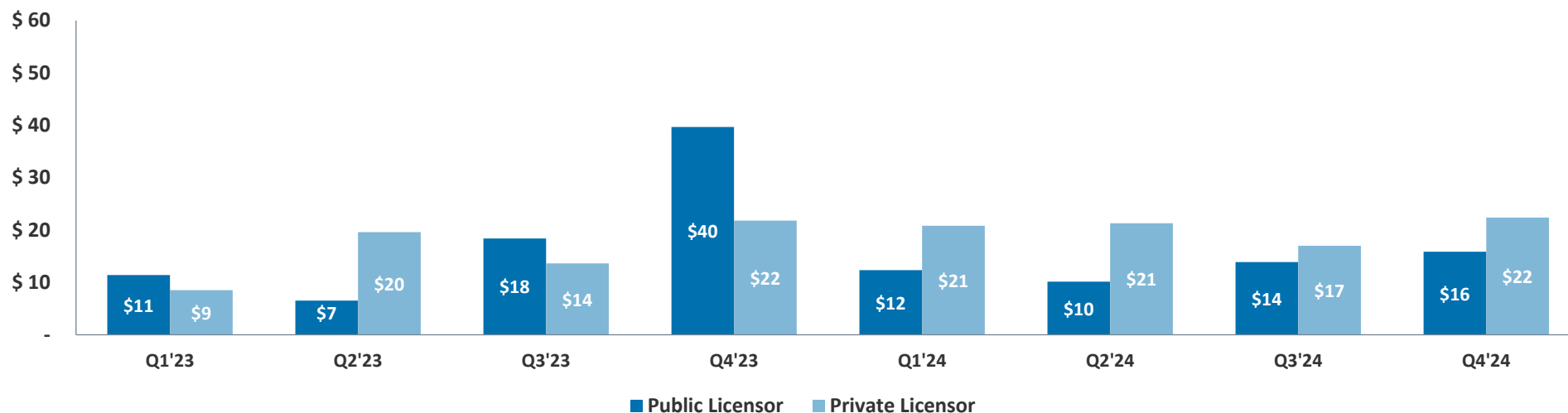
Source: Company Filings and Biomedtracker. As of 12/31/24. Note: "TV" stands for transaction value.

(1) TV is \$USD in billions and includes upfronts and contingent / milestone payments.

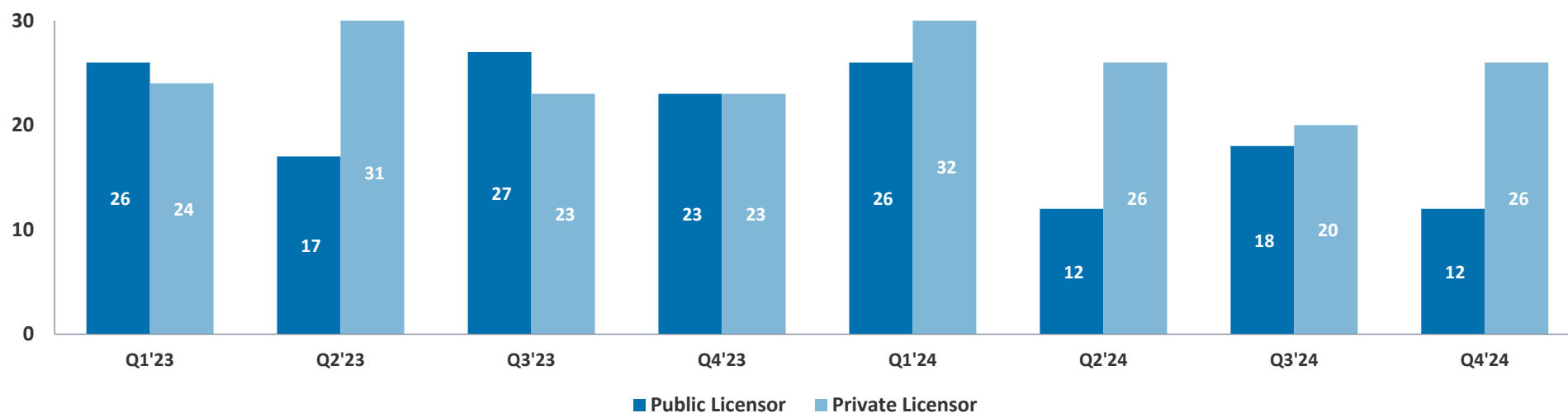
Similar Theme Observed for Private Companies in The BD&L Market

Private companies executed significantly more deals and accounted for more DV throughout the year

Quarterly Strategic Collaboration DV⁽¹⁾



Quarterly Strategic Collaboration Deal Count

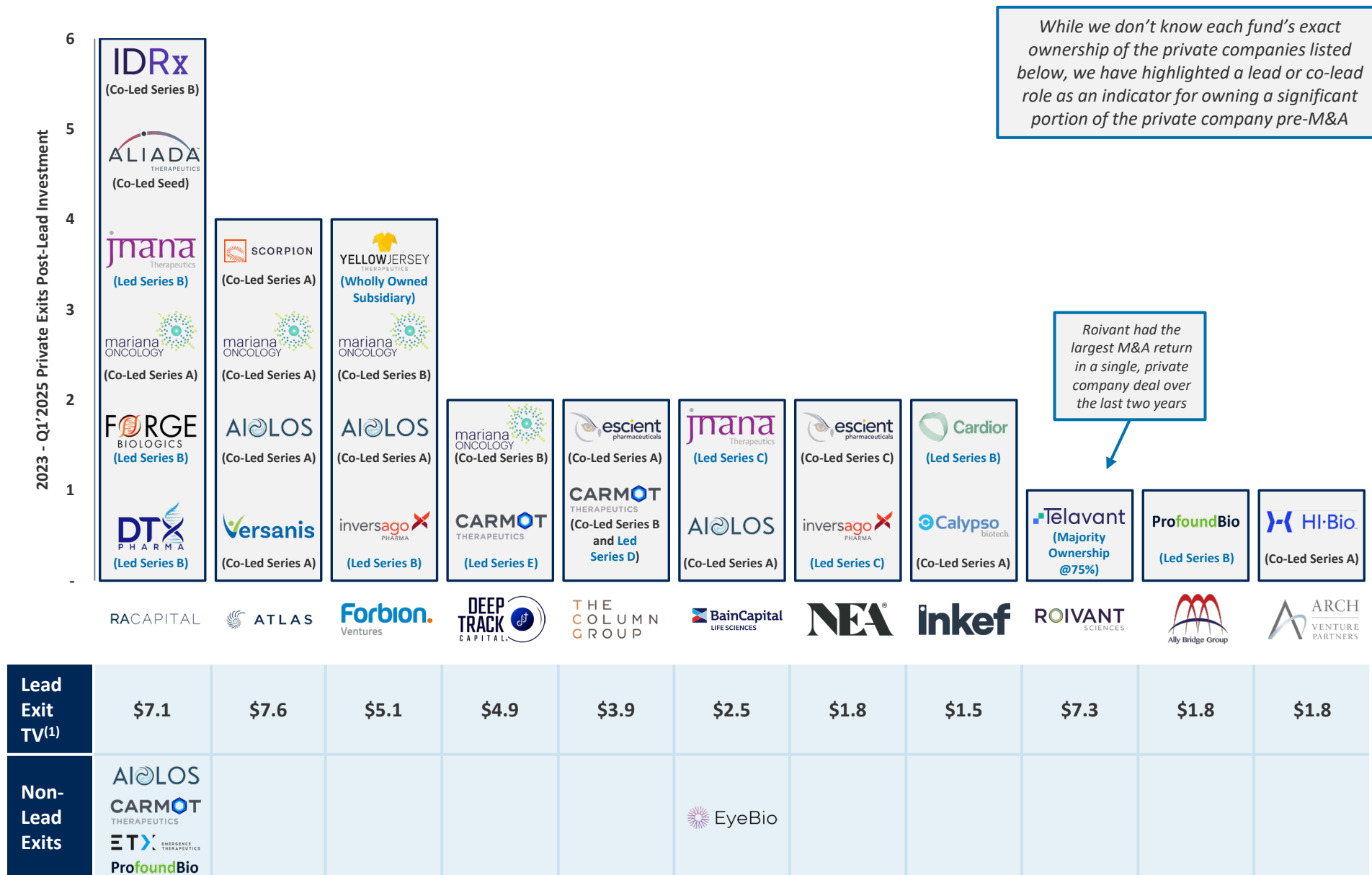


Source: Company Filings and Biomedtracker. As of 12/31/24. Note: "DV" stands for deal value.

(1) DV is \$USD in billions and includes upfronts and contingent / milestone payments.

Selected Top Lead Investors in Recent Private Biotech Acquisitions Since 2023

RA Capital, Atlas, Forbion, Deep Track, TCG and Bain were all either a lead or co-lead investor in several high profile private M&A deals



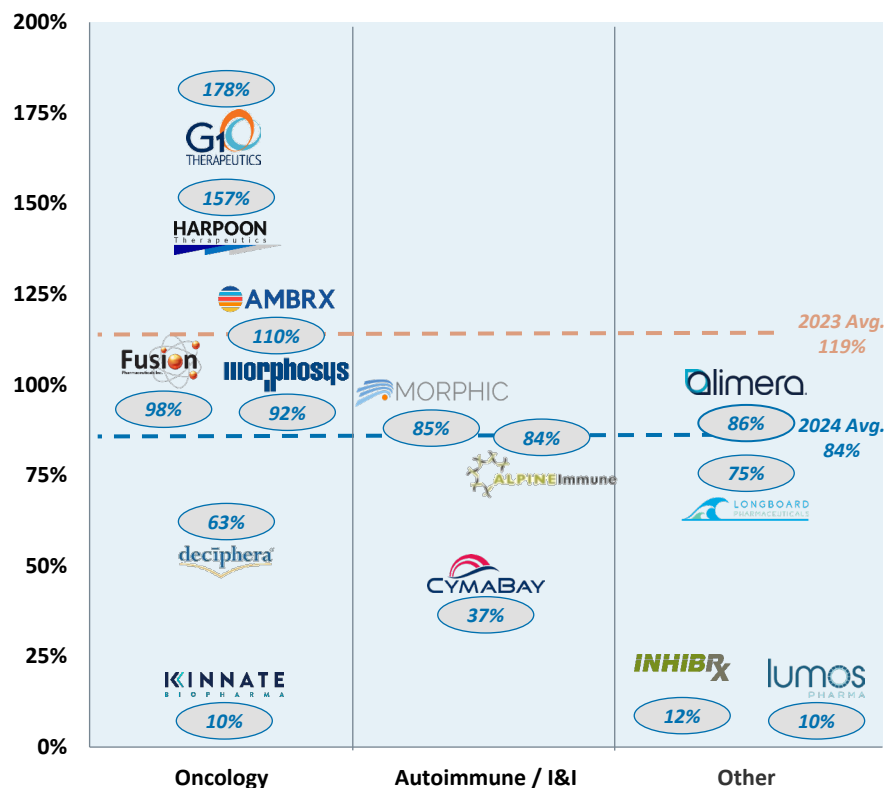
Source: Capital IQ and Company Press Releases as of 12/31/24. Note: Private takeouts listed above include only those that disclosed the TV and listed Series investors publicly.

(1) Represents the total aggregate transaction value (including milestones) of the respective private takeouts listed within the bar chart.

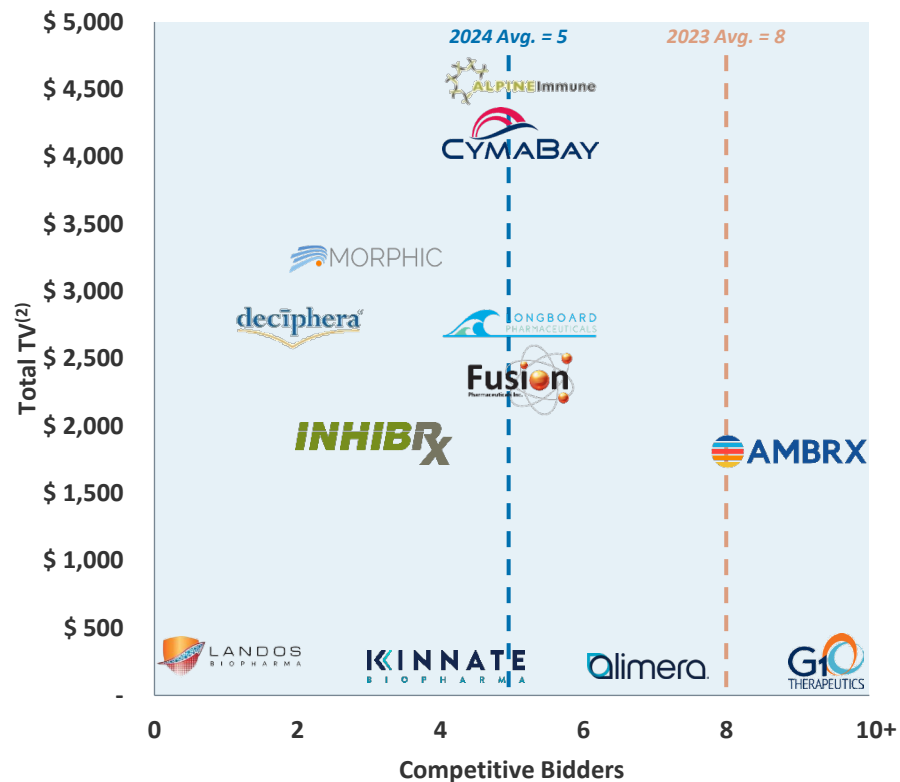
2024 Public M&A Takeouts – Average Premium Down Significantly from 2023

On average, Oncology companies had the largest share price premium in 2024

2024 30-D Pre-Ann. Share Price Premiums⁽¹⁾



2024 Competitive Bidding Dynamics



- Overall, 30-Day share price premiums are well below the 2023 average – Likely a reflection of less competition on the side of acquirers
- We have excluded the Poseida and Landos premiums (440% and 450%, resp.) and the Exscientia discount (15%) from the graph and 2024 average above to not skew the calculation

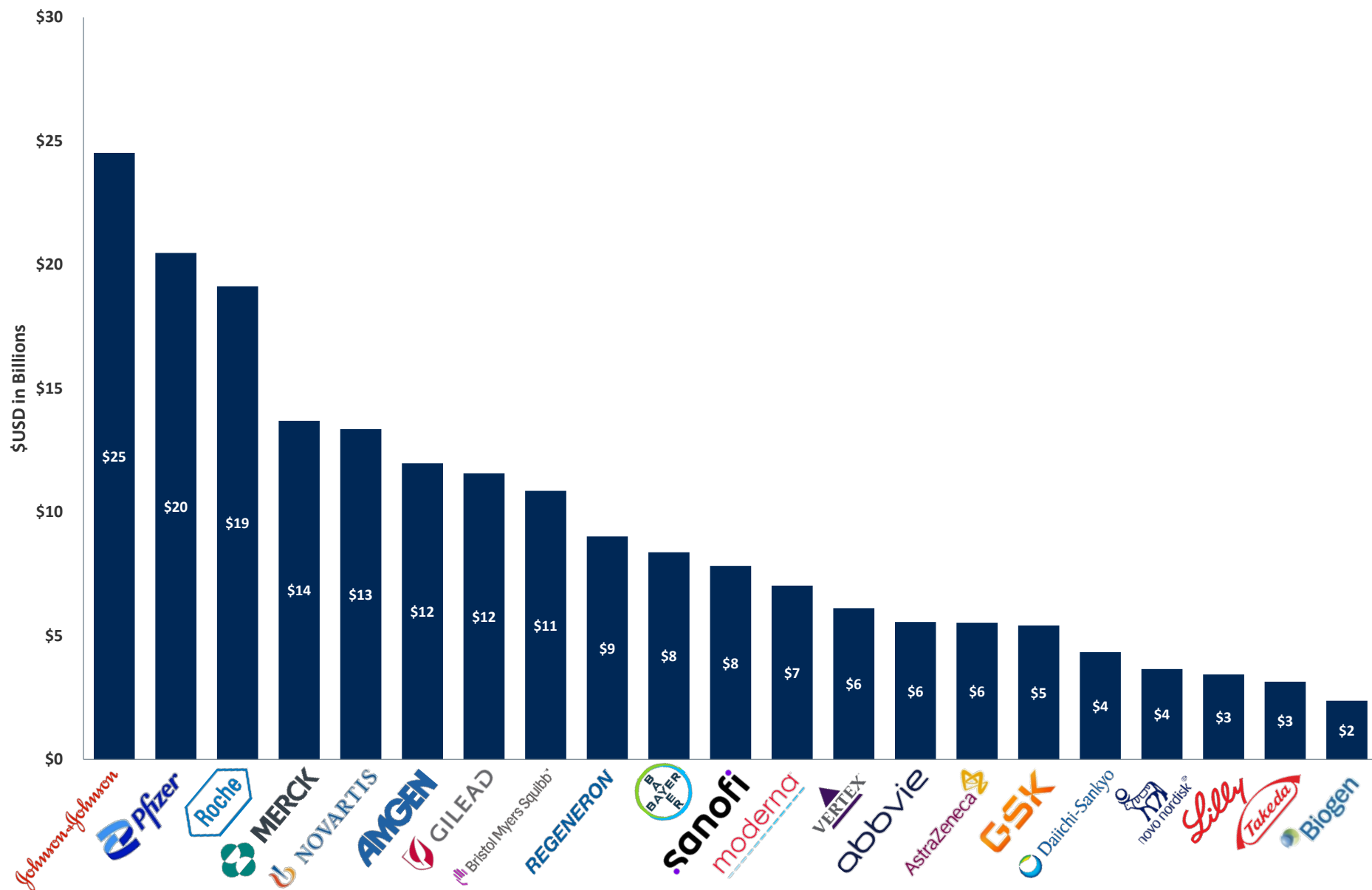
- Dynamics from a potential buyer standpoint appear to be less competitive than during 2023 – Nearly all public \$1B+ takeouts in 2023 had a minimum of 6+ bidders at the table. However, there are still multiple bidders for most acquisition targets
- The number of active bidders for private company acquisitions remains opaque. Given the increased M&A interest in private biotechs in 2024, it is reasonable that these processes were competitive with multiple bidders

Source: Company Filings, CapitalIQ, and 14A or 14D-9 Filings. As of 12/31/24.

(1) 30-Day pre-announcement share price premiums for publicly traded M&A targets.

(2) TV is \$USD in billions and includes upfront payment and contingent / milestone payments.






M&A firepower remains abundant for Big Pharma – There is currently ~\$195B in their coffers⁽¹⁾



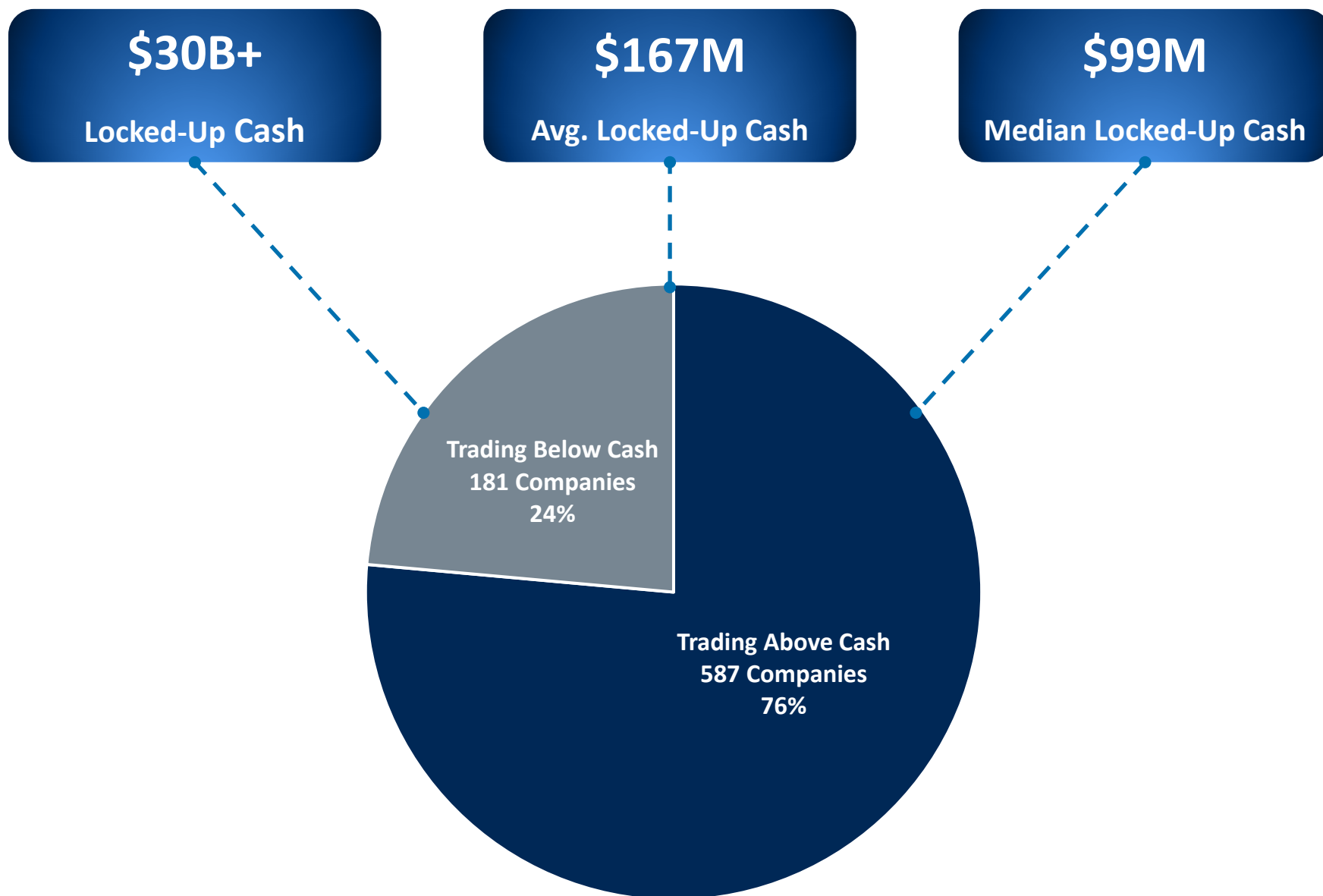
Source: CapitalIQ and Company Filings.

(1) Reported cash and equivalents figures as of 12/31/24; Cash and equivalents includes short term investments.

Big Pharma execs prioritize long-term growth by focusing on product pipeline strengthening

 <p>Rob Michael CEO Q4'24 Earnings Call</p>	<p>Discussing BD strategy going forward, specifically immunology market expansion:</p> <ul style="list-style-type: none"> "I mentioned neuroscience, aesthetics and eye care and, of course, immunology and oncology. I mean these are all large markets with high unmet need. And so our BD efforts are focused on building pipeline depth in those areas. Now I should say, if we see an opportunity for differentiation in another large market with high unmet need, we would consider pursuing it, especially if it can help drive growth in the next decade, and the company has the financial wherewithal to pursue those opportunities as well." "We see several tailwinds that will support growth into the next decade, including healthy immunology market growth, strong share capture, continued robust market access, and momentum from new indications, such as Skyrizi in UC, as well as the potential five new indications for Rinvoq over the next few years."
 <p>Robert A. Bradway CEO Q4'24 Earnings Call</p>	<p>Discussing sustained growth and long-term innovative strategy:</p> <ul style="list-style-type: none"> "We are well-positioned for 2025 and beyond, navigating regulatory changes, pricing pressures, and LOEs while sustaining long-term growth...Looking ahead, our novel medicines are well-positioned for demographic shifts, and we will scale to meet patient needs while delivering for shareholders." "We're focused on molecules that we think we can add value to, irrespective of where they come from. So we have had and maintained a very active search for interesting opportunities for licensing and acquisitions all around the globe."
 <p>Robert Davis CEO Q4'24 Earnings Call</p>	<p>Discussing pipeline strength and blockbuster growth drivers:</p> <ul style="list-style-type: none"> "...if we can see value and a tie in to our strategy where science intersects, we will be willing to move. And it will still be in that \$0 to \$15 billion range is our sweet spot....we're open to commercialized assets as well if they fit the overall profile I laid out of science and value." "Our pipeline includes 20+ potential blockbuster assets and \$50B in revenue opportunities. We see long-term leadership in oncology, cardiometabolic, immunology, HIV, ophthalmology, infectious diseases, and vaccines, with strong business development focus."
 <p>Albert Bourla CEO Recent Annual Health Care Conference</p>	<p>Discussing LOE impact and recovery, highlighting acquisitions, pipeline strength, and margin expansion post-2028:</p> <ul style="list-style-type: none"> "Operate in four areas of interest: Oncology, Vaccines, Internal Medicine, and Inflammation & Immunology (I&I). Oncology has significant opportunities, with expansion on the West Coast but limited big spending. Vaccines rely on internal pipelines with minimal external investments. Internal medicine and I&I present key business opportunities, especially in metabolic diseases, cardiovascular, and obesity." "We face \$17B in LOE by 2028, with the biggest impact in 2028. To offset this, acquisitions are projected to generate \$20B in revenue by 2030 and new launches will balance LOEs. Post-2028, with no LOE impact, we expect strong topline growth driven by new products."
 <p>Leonard Schlelfer CEO Q4'24 Earnings Call</p>	<p>Discussing product pipeline:</p> <ul style="list-style-type: none"> "13 products have been approved or authorized worldwide, several of which are driving revenue growth and hold significant future potential. Pipeline of approximately 40 product candidates across various therapeutic areas, and DNA sequence-linked database, providing us with unparalleled insights into key drivers of disease." "In closing. Regeneron remains in a very strong position scientifically, commercially and financially, enabling us to invest heavily in R&D and deliver tremendous innovation from our pipeline, maximize the growth opportunities from our in-line brands..."

24% of Biotech Companies on a Major U.S. Exchange Are Trading Below Cash



Chinese Biotech's "DeepSeek Moment"

- In 2024, China saw \$8.3B in upfront value with \$43.1B of total potential deal value
- Chinese companies and assets have been at the center of several high-profile transactions, such as ProfoundBio's \$1.8B acquisition and Curon's \$1.3B asset deal with Merck
- Merck acquired exclusive global license to GLP-1 from Hansoh for \$112M upfront and up to \$1.9 billion in milestone payments
- China rapidly and affordably advances biologic development
- Investors are paying attention
 - Bayer and RTW Investments announced an \$162M equity investment into Ji Xing Pharmaceuticals
 - Venture Capital firms Atlas Venture, Bain Capital Life Sciences and RTW Investments led a \$400 million Series A for Kailera Therapeutics
- AstraZeneca will invest \$2.5B in a new global strategic R&D center in Beijing over the next five years

YTD 2025 China Out-Licensing Deals						
Licensor	Licensee	Date	Asset(s)	Target + Modality	Phase	TA
 HARBOUR BIOMED	 AstraZeneca	3/21/2025	Multiple	Multi-Spec. Antibodies	Preclinical	Imm. & Onc.
 Synovion 元星生物	 AstraZeneca	3/21/2025	Synova™ platform	Macrocyclic Peptide Drug R&D	N/A	Autoimm., Metabolic
 CSPC	 RADYANCE biopharma	2/19/2025	SYS6005	ROR1 ADC	Phase 1	Oncology
 POLYMED	 Photys	2/18/2025	HPB-143	IRAK4 PROTAC	IND	I&I
 乐普生物 LEPU BIOPHARMA	 ARRIVENT	1/22/2025	MRG007	Unknown ADC	Preclinical	Oncology
 KeyMed Biosciences  INNO CARE	 Prolium Biosciences	1/20/2025	CM355	CD20 x CD3 Bispecific Antibody	Phase 1/2	Oncology
 GENFLEET THERAPEUTICS	 VERASTEM ONCOLOGY	1/14/2025	GFH375	KRAS G12D Small Molecule	Phase 1/2	Oncology
 Simcere	 abbvie	1/13/2025	SCR-8572	CD3 x GPR x C5D x BCMA Trispecific Antibody	Phase 1	Oncology
 启德医药 GeneQuantum Healthcare	 biohaven	1/13/2025	GR1017 + up to 18 ADCs against specific targets	FGFR ADC	Preclinical	Oncology
 KELUN-BIOTECH 科伦博雅  HARBOUR BIOMED	 WINDWARD	1/10/2025	HBM9378	TSLP mAb	Phase 1	I&I
 和正医药 Hezheng Therapeutics  SINUM	 Johnson & Johnson	1/10/2025	Undisclosed	BTK Degraders	Preclinical	Multiple
 KeyMed Biosciences	 TIMBERLYNE THERAPEUTICS	1/10/2025	CM313	CD38 mAb	Phase 2	I&I / Oncology
 BIOCYTOGEN	 Sotio	1/9/2025	SOT109	Unknown ADC	Preclinical	Oncology
 SCIWIND	 Verdiva Bio	1/9/2025	XW004 & VRB-103	GLP-1/GLP-1R Peptide & Amylin Peptide	Phase 1 & Preclinical	CV / Metabolic
 天广实 Mabworks	 CLIMB BIO	1/9/2025	MIL116	APRIL mAb	Preclinical	I&I
 WuXi Biologics Global Solution Provider	 Candor THERAPEUTICS	1/7/2025	Undisclosed	CD19 x CD20 x CD3 Trispecific Antibody	Preclinical	I&I
 DualityBio 映恩生物	 AVENZO THERAPEUTICS	1/7/2025	DB-1418	HER3 x EGFR ADC / Bispecific Antibody	Preclinical	Oncology
 Innovent	 Roche	1/2/2025	IBI3009	DLL3 ADC	Phase 1	Oncology

Source: FactSet, Company Websites.

Note: Innovative assets only (no biosimilars); assets only (not just platform technology); must include major ex-China markets (i.e. US, EU, Japan).

Note: Ouro Medicine licenses CM336 in November 2024 through subsidiary Platina Medicines.

As of 03/21/25.

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