

Life Sciences in Review:

Perspectives on October
Activity



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October Update

M&A



- The number of M&A and licensing transactions increased in October
 - 6 M&A and 26 licensing transactions were announced this month, versus 2 M&A and 15 licensing transactions announced in September of 2023
- While deal size has remained on the smaller end, three deals were announced with transactions greater than \$1,000mm in value
- Theme of acquiring early stage (Phase 2 or earlier) assets continues

Financing



- IPOs continue to price, despite market volatility
 - Most priced at the high or near the high-end of the range and traded up ~15%⁽¹⁾ on average
 - Current backlog of 3 IPOs on file
- Follow-on market slightly slowed down with 11 priced transactions vs. 15 in September
 - LS companies raised \$1,546mm in the aggregate in comparison to \$4,354mm in September
 - Average file-to-offer discount of (8.8%) vs. (7.2%) in September
- Private financing market remains stable with 18 deals vs. 13 in September
 - LS companies raised an aggregate of \$1,240mm vs. \$445mm in September

Industry News



- Starboard Value launched an activist campaign against Pfizer, asking the Board to have more oversight on management (represents the second activist campaign against a large pharma in the past 5 years (GSK/Elliot))
- Q3 was largely underwhelming for large pharma, with Lilly notably reporting lower-than-expected sales and EPS, primarily due to fluctuations in tirzepatide inventory levels and changes in IPR&D
 - Madrigal Pharmaceuticals' Rezdiffra – the first commercial asset for MASH – hit \$62mm in Q3 sales, exceeding consensus estimates of \$34mm, boosting its stock up by ~20% on the announcement day
- Scholar Rock hit the primary endpoint in its Phase 3 trial of apitegromab versus placebo in nonambulatory SMA patients, propelling its stock up by ~330% on the announcement day
- John Maraganore, founder of Alnylam, has secured \$135mm for City Therapeutics, a next-generation RNAi startup, with funding led by ARCH Venture Partners

(1) ~15% represents the T+1 day premium from the offer price.

Source(s): Capital IQ, public filings, and news, as of 10/31/24.

Month in Review: At-a-Glance

Market Updates

Index	% Change			
	1 Week	1 Month	6 Months	YTD
S&P 500	(1.8%)	(1.0%)	13.3%	20.3%
Nasdaq Biotech (NBI)	(1.0%)	(2.5%)	11.7%	4.3%
Large Pharma	(1.2%)	(3.6%)	9.0%	8.9%
Biotech	(0.4%)	3.2%	16.7%	22.5%
Large-cap (\$10-50bn)	(0.0%)	(3.3%)	35.1%	35.5%
Mid-cap (\$2-10bn)	0.5%	(0.8%)	16.4%	40.6%
Small-cap (\$500mm-2bn)	(1.6%)	3.4%	20.4%	26.3%
Micro-cap (<\$500mm)	(0.6%)	13.7%	(5.2%)	(12.4%)
Specialty Pharma	(6.2%)	(12.8%)	(11.9%)	(7.1%)

Key Data Events and News

Starboard launched a campaign against Pfizer, releasing a deck that demands management focus on achieving at least a 38% revenue growth return from R&D and M&A investments, amid no change in Pfizer's stock price

Eli Lilly's diabetes and weight loss drugs fell far short of expectations in Q3 – Lilly's disappointing quarterly performance prompted the company to lower its annual revenue forecast, sparking concerns that the market for its GLP-1 treatments may have peaked. Mounjaro's Q3 sales totaled \$3,110mm, significantly missing the expected \$3,700mm. Similarly, Zepbound achieved sales of \$1,260mm, falling short of the forecasted \$1,700mm. Following the release of these Q3 results, Lilly's stock fell by as much as ~15% on Wednesday, 10/30, reversing much of the 55% YTD increase observed before the earnings announcement.

Scholar Rock's Phase 3 reports positive data in spinal muscular atrophy – Patients treated with apitegromab, an inhibitor of latent myostatin, experienced a 1.8-point increase on the Hammersmith Functional Motor scale compared to placebo. 30% of patients showed a >3 point improvement compared to 12.5% on placebo. The data sent shares up 327% on 10/07. Apitegromab is also being studied in Phase 2 for lean muscle mass preservation in patients on a GLP-1 therapy.

MFO = Marketed Follow-on; CMPO = Confidentially Marketed Public Offerings.
Source(s): Capital IQ, public filings, and news, as of 10/31/24.

Key Select M&A Updates

Acquirer	Target	Phase	Ent. Value (\$mm)
abbvie	ALIADA THERAPEUTICS	Phase 1	\$1,400
MERCK	ModifiBio	Preclinical	1,300
Landbeck	LONGBOARD PHARMACEUTICALS	Phase 3	2,600

Key Select Equity Financing Updates

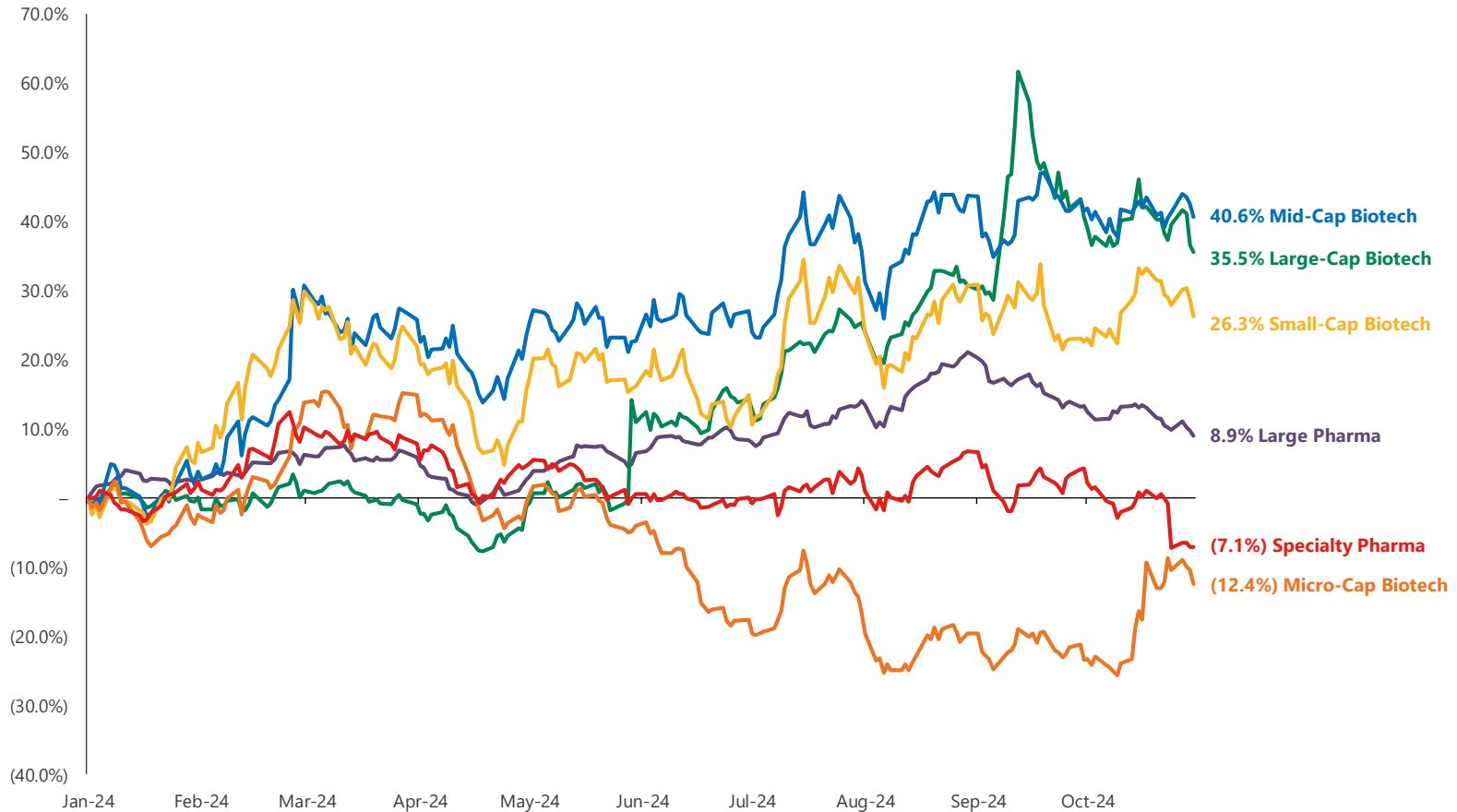
Company	Deal Type	Offer / T + 1 Day	Financing (\$mm)
Crinetics Pharmaceuticals	CMPO	6.3%	\$500
Scholar Rock	MFO	(6.2%)	300
biohaven	CMPO	13.1%	250

Key Select Priced IPO Updates

Company	Offer Price	Offer / T + 1 Day	Filing Amt. (\$mm)
septerna	\$18.00	18.9%	\$175
CAMP4™	\$17.00	29.4%	200
UpstreamBio	\$11.00	(2.5%)	75

YTD Stock Performance

By Industry Sub-vertical



Source(s): Capital IQ, as of 10/31/24.

NBI Subsector Stock Performance

Subsector Category		MoM % Change in Stock Performance	MoM % Change in Short Interest
NBI	Large Cap (>\$10bn)	(3.4%) 	(11.5%) 
	Mid Cap (\$2-10bn)	 9.4%	(3.0%) 
	Small Cap (<\$2bn)	(0.2%) 	(2.4%) 
Therapeutic Area	Oncology (N=59)	(2.0%) 	(3.7%) 
	Inflammation & Immunology (N=15)	(1.2%) 	(4.2%) 
	Endocrine & Metabolic (N=14)	 8.1%	(2.9%) 
	Neurology (N=14)	 1.7%	(2.4%) 
	Infectious Diseases (N=12)	(2.2%) 	 1.3%
	Neuropsych / Mood Disorders (N=11)	(4.3%) 	(4.1%) 
	Rare (N=10)	(3.4%) 	(3.3%) 
	Cardiovascular (N=9)	 0.1%	 1.7%
	Hematology (N=8)	(2.8%) 	(3.0%) 
	Pulmonology & Respiratory (N=8)	 7.8%	(12.3%) 
	Ophthalmology (N=6)	 18.0%	(5.8%) 
	Dermatology (N=5)	 3.5%	(10.3%) 
	Musculoskeletal (N=4)	 86.8%	(0.1%) 
	GI (N=3)	(5.0%) 	 0.3%
Modality	Small Molecule (N=88)	 2.2%	(5.7%) 
	Monoclonal Antibody (N=29)	 13.6%	(0.8%) 
	Protein & Peptide Therapeutics (N=17)	(4.7%) 	(1.8%) 
	Cell Therapy (N=11)	(7.1%) 	(9.3%) 
	DNA & RNA Therapeutics (N=9)	 6.5%	 3.7%
	Gene Therapy (N=7)	 3.0%	 0.9%
	Genome Editing (N=6)	(3.5%) 	 2.7%
	Vaccine (N=6)	(12.6%) 	(2.6%) 
	Recombinant Antibody (N=3)	 0.0%	(7.3%) 
	Plasma-derived Therapy (N=2)	(8.5%) 	 22.7%

Note(s): NBI constituents are equally weighted and averaged. Includes NBI constituents as of 10/31/24 and excludes generic manufacturers, royalty aggregators, hub-and-spokes, aesthetics companies, diversified specialty pharma companies and non-therapeutics-focused companies.

Source(s): Capital IQ, as of 10/31/24.

M&A Update

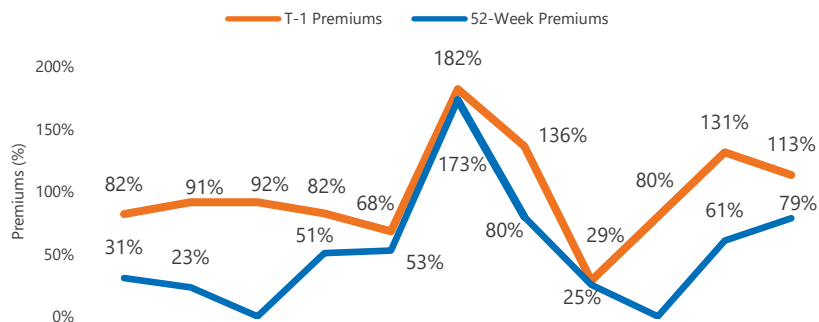
M&A Transaction Highlights

AbbVie to acquire Aliada Therapeutics for \$1,400mm – AbbVie entered into an agreement to acquire Aliada for \$1,400mm, strengthening its neuroscience pipeline. Aliada's lead compound, ALIA-1758, an anti-pyroglutamate amyloid beta (3pE-A β) antibody, is in Phase 1 development for the treatment Alzheimer's disease. Aliada's novel blood-brain barrier crossing Modular Delivery (MODEL™) platform technology, moreover, is designed to deliver different types of biological cargoes such as antibodies and siRNAs into the brain, by targeting the transferrin and CD98 receptors.

Merck to acquire Modifi Biosciences for up to \$1,330mm – Merck has acquired all outstanding shares of Modifi Biosciences for \$30mm upfront. Modifi Biosciences are also eligible to receive potential milestone payments totaling up to \$1,300mm. Modifi Biosciences has developed a novel class of small molecules that target cancer cells lacking expression of a key DNA repair protein called O6-methylguanine methyl transferase (MGMT).

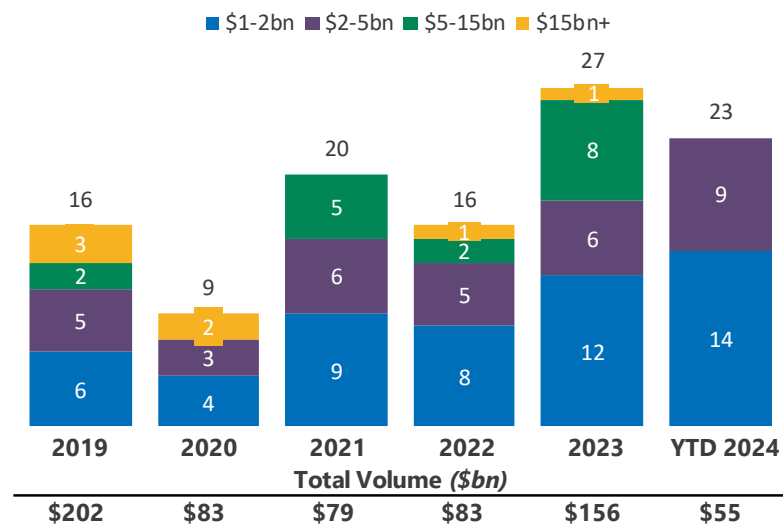
Lundbeck to acquire Longboard Pharmaceuticals for \$2,600mm – Lundbeck entered into an agreement to acquire Longboard for \$60 per share, representing a 77% premium over the 30-day volume-weighted average price, representing a total consideration of \$2,600mm. Longboard's lead asset, bexicaserin, is a novel 5-HT_{2C} agonist in Phase 3 development for the treatment of seizures associated with Developmental and Epileptic Encephalopathies (DEEs).

YTD 2024 Premiums Paid

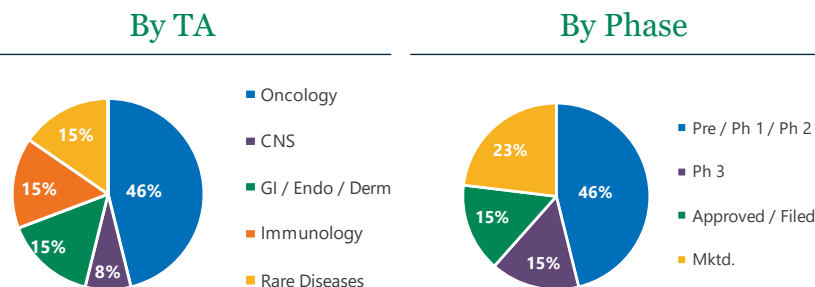


Source(s): Capital IQ, public filings, and news, as of 10/31/24.

Biopharma M&A Dynamics by Deal Size



YTD 2024 Transaction Distribution



M&A Transactions

Mergers and Acquisitions

Ann. Date	Acquiror	Target	Drugs / Lead Programs	Indications	Drugs Highest	Upfront	Projected	Upfront as	Milestones	Territories
					Status	Payment	Total	% of total		Included
10/28/24	AbbVie	Aliada Therapeutics	ALIA-1758	Alzheimer's disease	Phase 1	\$1,400	\$1,400 ⁽¹⁾	100%	-	WW
10/25/24	Lyell Immunopharma	ImmPACT Bio ⁽²⁾	IMPT-314	R/R aggressive B-cell lymphoma	Phase 1/2	30	ND ⁽³⁾	ND	ND	WW
10/23/24	Merck	Modifi Biosciences ⁽⁴⁾	MOD-246	Glioblastoma	Preclinical	30	1,330 ⁽⁵⁾	2%	1,300	WW
10/22/24	Ocuphire Pharma ⁽⁶⁾	Opus Genetics ⁽⁶⁾	OPGx-LCA5	Leber congenital amaurosis 5	Phase 1/2	ND	ND ⁽⁷⁾	ND	ND	WW
10/18/24	REGiMMUNE	Kiji Therapeutics	KJ01	Acute GVHD	Preclinical	ND	ND ⁽⁸⁾	ND	ND	WW
10/14/24	Lundbeck	Longboard	Bexicaserin	DEEs	Phase 3	2,600	2,600 ⁽⁹⁾	100%	0	WW

(1) AbbVie will acquire all outstanding Aliada equity for \$1.4bn in cash, subject to certain customary adjustments.

(2) Lyell has prioritized its pipeline to focus on next-generation CAR T-cell therapies, including IMPT-314 and LYL119, and is discontinuing development of LYL797, LYL845 and earlier-stage TIL programs.

(3) Deal terms include upfront consideration of \$30mm and 37.5mm shares of Lyell common stock. ImmPACT shareholders will also be eligible to receive contingent consideration consisting of 12.5mm shares of Lyell common stock that may be earned upon the achievement of a value-enhancing clinical milestone and a low single-digit royalty on future net sales of the dual-targeting CD19/20 CAR T-cell product in the US.

(4) Modifi Biosciences, a Yale University spinout company formed in 2021, has developed a novel class of small molecules that target cancer cells lacking expression of a key DNA repair protein called O6-methylguanine methyl transferase (MGMT).

(5) Merck, through a subsidiary, has acquired all outstanding shares of Modifi Biosciences for \$30mm upfront. Modifi Biosciences shareholders are also eligible to receive potential milestone payments totaling up to \$1.3bn.

(6) Ocuphire Pharma is acquiring Opus Genetics, a clinical-stage gene therapy company for inherited retinal diseases (IRDs), in all-stock acquisition transaction. The merger will aim to create a transformative biotech company focused on the development of gene therapies for the treatment of IRDs. In connection with the merger, the combined company will be renamed Opus Genetics, Inc., effective 10/23/24, and will trade on Nasdaq under the ticker symbol "IRD" effective 10/24/24.

(7) Ocuphire Pharma issued 5.2mm shares of its common stock and 14.1k shares of its convertible preferred stock to existing stockholders of Opus Genetics. The shares of convertible preferred stock will be convertible into shares of common stock, subject to stockholder approval at the company's annual meeting of stockholders, to be held in Apr '25. Following the issuances, pre-acquisition stockholders of Ocuphire Pharma will own ~58% of the combined company's fully diluted capitalization, and pre-acquisition stockholders of Opus Genetics will own ~42% of the combined company's fully diluted capitalization.

(8) Taiwan's REGiMMUNE and Europe-based Kiji Therapeutics are merging for an undisclosed value to create a globally minded regulatory T-cell biotech. The new entity, which will operate under the REGiMMUNE name, is planning to IPO on Taiwan's Emerging Stock Market by mid-2025.

(9) Lundbeck will commence a tender offer for all outstanding shares of Longboard common stock, whereby Longboard shareholders will be offered a payment for \$60 per share in cash. The cash consideration represents a 77% premium to the 30-day VWAP of shares of Longboard common stock as of 09/30/24.

Note: \$ in mm. DEEs = Developmental and Epileptic Encephalopathy syndromes.

Source: Cortellis, Company websites, filings and press releases, as of 10/31/24.

Licensing Transactions

Licensing, Collaboration and Asset Sales

Ann. Date	Originator	Partner	Drugs / Asset(s)	Indications	Drugs Highest	Upfront	Projected Upfront as		Milestones	Territories
					Status	Payment	Total	% of total		
10/31/24	EvolveImmune	AbbVie	EVOLVE platform ⁽¹⁾	Oncology	Preclinical	\$65	\$1,465 ⁽²⁾	4%	\$1,400	WW
10/29/24	Neomorph	Biogen	Molecular glue discovery platform ⁽³⁾	Alzheimers, rare, and immunological diseases	Preclinical	ND	1,450 ⁽⁴⁾	ND	ND	WW
10/29/24	Revitope Oncology	Genmab	TwoGATE technology ⁽⁵⁾	ND	Preclinical	9	609 ⁽⁶⁾	1%	600	WW
10/29/24	Chimagen Biosciences	GSK	CMG1A46 ⁽⁷⁾	B cell malignancies Lupus	Phase 1 Preclinical	300	850 ⁽⁸⁾	35%	550	WW
10/28/24	Monte Rosa	Novartis	MRT-6160 ⁽⁹⁾	Immune-mediated conditions	Phase 1	150	2,250 ⁽¹⁰⁾	7%	2,100	WW
10/25/24	Gedeon Richter	AbbVie	ND	Neuropsychiatric disorders	Preclinical	25	ND ⁽¹¹⁾	ND	ND	WW ex EU, RUS, VNM & CIS countries

(1) EvolveImmune's proprietary EVOLVE platform is designed to deliver potent, selective and integrated T-cell co-stimulation to amplify and sustain the tumor killing capacity of the T-cells.

(2) The companies have agreed to a collaboration and option-to-license agreement to develop multispecific biologics for multiple targets in oncology. EvolveImmune will receive \$65mm upfront and equity investment from AbbVie and is eligible for up to \$1.4bn in aggregate option fees and milestones, as well as tiered royalty payments on net sales.

(3) Biogen and Neomorph will collaborate to identify, validate, and optimize small molecule molecular glue degraders for several high-priority targets and Biogen will advance clinical candidates for further development and potential commercialization.

(4) Neomorph will receive an upfront payment and is eligible to receive contingent milestone payments for a total consideration of up to \$1.45bn.

(5) The TwoGATE TCE technology platform exploits unique combinations of antigens co-expressed on cancer cells to enable development of highly specific cancer immunotherapies with improved safety and efficacy. The approach combines a pair of tumor-targeted antibodies each carrying half of a silent T cell engaging domain that assemble and become active only when bound to cancer cells co-expressing both antigens.

(6) Revitope to receive an upfront payment of \$9mm with milestone and fee payments up to \$600mm plus tiered single-digit royalties on sales of successfully commercialized therapies. Genmab is granted exclusive rights to utilize TwoGate for multiple drug target pairs, including the option to take up to 3 exclusive licenses for worldwide development and commercialization of the resulting products.

(7) CMG1A46 is currently in Phase 1 clinical trials in leukemia and lymphoma in both the US and China. GSK aims to begin a Phase 1 trial in lupus in 2025.

(8) GSK will pay \$300mm upfront to acquire full global rights to CMG1A46. In addition, Chimagen will be eligible to receive success-based development and commercial milestone payments totalling \$550mm.

(9) MRT-6160 is a potent, highly selective, and orally bioavailable investigational degrader of VAV1, a key signaling protein downstream of both the T- and B-cell receptors. The drug has shown promising activity in preclinical models of multiple immune-mediated conditions.

(10) Novartis has agreed to pay Monte Rosa \$150mm upfront. Monte Rosa is eligible to receive up to \$2.1bn in development, regulatory and sales milestones, beginning upon the initiation of Phase 2 studies, as well as tiered royalties on ex-US net sales.

(11) The collaboration includes both preclinical and clinical R&D activities with shared financing by the parties. Richter will receive an upfront cash payment of \$25mm, along with potential future development, regulatory and commercialization milestones. In addition, Richter may also receive sales-based royalties.

Note: \$ in mm. RUS = Russia; VNM = Vietnam.

Source: Cortellis, Company websites, filings and press releases, as of 10/31/24.

Licensing Transactions (Cont'd)

Licensing, Collaboration and Asset Sales

Ann. Date	Originator	Partner	Drugs / Asset(s)	Indications	Drugs Highest	Upfront	Projected	Upfront as	Milestones	Territories
					Status	Payment	Total	% of total		Included
10/24/24	Dyno Therapeutics ⁽¹⁾	Roche ⁽¹⁾	CapsidMap platform ⁽²⁾	ND	Preclinical	\$50	\$1,050 ⁽³⁾	5%	\$1,000	WW
10/22/24	Genevant ⁽⁴⁾	Editas ⁽⁴⁾	LNP technology	ND	Preclinical	ND	238 ⁽⁵⁾	ND	ND	WW
10/21/24	Cureverse	Angelini Pharma	CV-01	Epilepsy and Alzheimer's disease	Phase 1	ND	360 ⁽⁶⁾	ND	ND	WW ex Greater China
10/17/24	Chengdu Baiyu	Novartis	Undisclosed antitumor drug	Oncology	ND	70	1,170 ⁽⁷⁾	6%	1,100	WW
10/17/24	Orano Med ⁽⁸⁾	Sanofi ⁽⁸⁾	AlphaMedix	Neuroendocrine tumors	Phase 2	324 ⁽⁹⁾	324 ⁽⁹⁾	100%	0	ND
10/16/24	Lexicon	Viartis	Sotagliflozin	Heart failure Type 1 diabetes HCM	Marketed Filed Phase 2	25	ND ⁽¹⁰⁾	ND	ND	WW ex US & EU

(1) Dyno and Roche previously announced a research collaboration and license agreement for neurological diseases and liver-directed therapies in Oct '20. Under the terms of this new collaboration, Dyno Therapeutics will provide Roche further access to the company's field-leading platform and sequence design technologies enabling in vivo gene delivery.

(2) The CapsidMap platform uses AI to systematically and rapidly optimize AAV capsids, overcoming the limitations of naturally occurring virus capsids by improving targeting ability, payload size, immune evasion and manufacturability.

(3) Roche will pay Dyno \$50mm upfront, along with additional payments during the research phase of the collaboration, plus potential preclinical, clinical, and sales milestone payments totaling over \$1bn, and royalties on net sales of commercial products.

(4) Editas and Genevant entered into a collaboration and nonexclusive license agreement to combine Editas' CRISPR Cas12a genome editing systems with Genevant's proprietary LNP technology in the development of in vivo gene editing medicines directed to two undisclosed targets in Editas' upregulation strategy.

(5) Genevant is eligible to receive up to \$238mm in upfront and contingent milestone payments, as well as tiered royalties on future product sales.

(6) Cureverse will receive an upfront payment and additional payments upon pre-defined development and commercial milestones of up to \$360mm, as well as tiered royalties on post-approval net sales.

(7) Baiyu will receive an upfront payment of \$70mm and is eligible to receive additional development, regulatory and commercial milestones payments of up to \$1.1bn, as well as tiered royalties.

(8) Building on the expertise and radioligand pipeline of Orano Med, Sanofi and Orano will invest in a new entity, operating under the Orano Med brand, and focusing on the discovery, design, and clinical development of next-generation radioligand therapies based on ²¹²Pb alpha-emitting isotopes. This agreement follows Sanofi's announcement of an exclusive licensing agreement with Orano Med and RadioMedix to advance radioligand therapies in rare cancers with a focus on one late-stage project, AlphaMedix.

(9) Sanofi will make an equity investment of \$324mm (€300mm), approximately 16% equity stake in the new entity valued at ~\$2.05bn (€1.9bn). Based on EUR/USD: 1.08, as of 10/17/24.

(10) Viartis has acquired rights to sotagliflozin in all global markets outside of the US and Europe in exchange for an upfront payment to Lexicon of \$25mm, and the potential for contingent regulatory and sales milestone payments and tiered royalties ranging from low-double-digit to upper-teens on annual net sales.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 10/31/24.

Licensing Transactions (Cont'd)

Licensing, Collaboration and Asset Sales

Ann. Date	Originator	Partner	Drugs / Asset(s)	Indications	Drugs Highest	Upfront	Projected	Upfront as	Milestones	Territories
					Status	Payment	Total	% of total		
10/15/24	Triana Biomedicines	Pfizer	Molecular glue and E3-ligase pairing platform ⁽¹⁾	ND	Preclinical	\$49	\$1,549 ⁽²⁾	3%	\$1,500	ND
10/15/24	Molecure	Ocean Biomedical	YKL-40 inhibitor program ⁽³⁾	ND	Preclinical	1	32 ⁽⁴⁾	2%	31	WW
10/10/24	KeyBioscience	Eli Lilly	DACRA platform ⁽⁵⁾	Obesity and Osteoarthritis	Phase 2	ND	1,400 ⁽⁶⁾	ND	ND	WW
10/10/24	LigaChem	ONO	LCB97	Solid tumors	Preclinical	ND	700 ⁽⁷⁾	ND	ND	WW
10/10/24	LigaChem	ONO	ConjuAll platform ⁽⁸⁾	Oncology	Preclinical	ND	ND ⁽⁹⁾	ND	ND	WW
10/09/24	Circle Pharma	Boehringer Ingelheim	MXMO platform ⁽¹⁰⁾	Oncology	Preclinical	ND	607 ⁽¹¹⁾	ND	ND	ND

(1) Platform utilizes a machine learning algorithm to identify the optimal pairings of E3 ligases and target proteins, and a DNA-encoded library of macrocycles to screen through vast amounts of possible molecular glue structures.

(2) Triana will receive an upfront payment of \$49mm and is eligible to receive potential future milestone payments exceeding \$1.5bn as well as tiered royalties. The Company will lead the discovery and identification of potential development candidates. Pfizer has the exclusive option for an exclusive license to pursue further preclinical and clinical development.

(3) Ocean Biomedical will gain the exclusive rights to further research, develop and commercialize Molecure's OAT-3912 and other selective YKL-40 inhibitors. The deal also stretches to a pending patent for a molecular screening test that can be used to identify further candidates for the YKL-40 modulator program.

(4) Molecure will receive initial compensation of \$600K in cash and stock. Molecure will receive further milestone payments upon achievement of preclinical and clinical development, regulatory and commercial milestones. The maximum bio-dollar value of the agreement amounts to ~\$32mm.

(5) Dual amylin-calcitonin receptor agonists are an emerging new class of obesity therapies that may offer a two-pronged approach of promoting weight loss and directly targeting molecular pathways that drive osteoarthritis progression.

(6) Lilly will receive worldwide rights to develop and commercialize DACRA molecules. KeyBioscience will receive an initial payment; downstream consideration totaling up to \$1.4bn, subject to the achievement of certain development, regulatory, and commercialization milestones; and tiered mid-single digits to low double-digits royalties on net sales.

(7) Ono will have an exclusive worldwide right to develop, manufacture and commercialize LCB97 for solid tumors. Ono will make an upfront payment to LigaChem, along with milestone payments based on research and development progress and sales, up to a maximum of \$700mm, as well as tiered royalties based on net sales.

(8) The ConjuAll ADC platform provides improvements over existing ADC technologies, including site-specific stable bioconjugation, cancer selective linker activation, and cancer-selective activation of potent payload.

(9) Ono will pay LigaChem a target exclusive fee along with milestone payments based on research and development progress and sales, as well as tiered royalties based on net sales.

(10) Circle Pharma's MXMO platform combines structure-based rational drug design and advanced synthetic chemistry to develop a new generation of macrocycle therapies.

(11) Circle Pharma will receive an upfront payment and potential development, regulatory, and sales milestone payments of up to \$607mm.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 10/31/24.

Licensing Transactions (Cont'd)

Licensing, Collaboration and Asset Sales

Ann. Date	Originator	Partner	Drugs / Asset(s)	Indications	Drugs Highest	Upfront	Projected	Upfront as	Milestones	Territories
					Status	Payment	Total	% of total		Included
10/09/24	Eli Lilly	Insitro	GalNAc delivery technology ⁽¹⁾	Metabolic diseases	Preclinical	ND	ND ⁽²⁾	ND	ND	WW
10/08/24	AviadoBio	Astellas	AVB-101	Frontotemporal dementia with progranulin mutations	Phase 1/2	30	2,210 ⁽³⁾	1%	2,180	WW
10/08/24	Mestag	Merck	RAFT platform ⁽⁴⁾	I&I diseases	Preclinical	ND	1,900 ⁽⁵⁾	ND	ND	WW
10/07/24	Bridge Medicines	Galecto	BRM-1420	AML	Preclinical	ND	ND ⁽⁶⁾	ND	ND	ND
10/07/24	CSPC	Astrazeneca	YS2302018	Dyslipidaemia	Preclinical	100	2,020 ⁽⁷⁾	5%	1,920	ND
10/04/24	Sanofi	Recordati	Enjaymo	Cold agglutinin disease	Marketed	825	1,075 ⁽⁸⁾	77%	250	WW

(1) Ternary architectures of N-Acetylgalactosamine are used as targeting and internalizing ligands for oligonucleotide-based antisense and siRNA therapeutics, binding to asialoglycoprotein receptors expressed on the surface of hepatocytes in the liver.

(2) Under the first two agreements, Insitro has an option to in-license proprietary, clinical stage, ternary N-acetylgalactosamine (GalNAc) delivery technology from Lilly. Under the third agreement, Insitro and Lilly will collaborate to discover and develop an antibody for a third novel target for metabolic disease.

(3) Astellas will make a \$20mm equity investment and up to \$30mm in upfront payments for the option to license AVB-101. AviadoBio is also eligible to receive up to \$2.18bn in license fees and milestone payments plus royalties if Astellas exercises its option.

(4) Mestag will employ its Reversing Activated Fibroblast Technology (RAFT) platform, a proprietary platform purposely built to model the pathogenic role of fibroblasts in human disease, to identify novel drug targets.

(5) Mestag will provide Merck options to obtain exclusive licenses to develop and commercialize therapeutics directed against a prespecified number of potential targets identified under the collaboration. In return Mestag will receive an upfront payment and access fees and will be eligible to receive option fees as well as downstream payments with the potential to total \$1.9bn.

(6) As consideration for the acquisition of the global rights of BRM-1420, Galecto issued 62,594 shares of common stock to Bridge Medicines, representing 4.99% of the outstanding shares of Galecto's common stock as of the date of the asset purchase, and 160,562 shares of a newly-issued Series A preferred stock convertible into 160,562 shares of common stock, or approximately 12.8% of Galecto's common stock, upon receipt of stockholder approval.

(7) CSPC will receive an upfront payment of \$100mm from AstraZeneca. CSPC is also eligible to receive up to \$1.92bn for further development and commercialization milestones plus tiered royalties.

(8) Under the terms of the agreement, Recordati will make an upfront payment of \$825mm and additional commercial milestone payments of up to \$250mm.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 10/31/24.

Licensing Transactions (Cont'd)

Licensing, Collaboration and Asset Sales

Ann. Date	Originator	Partner	Drugs / Asset(s)	Indications	Drugs Highest	Upfront	Projected Upfront as		Milestones	Territories
					Status	Payment	Total	% of total		Included
10/02/24	Charles River Laboratories	Lundbeck	Logica platform ⁽¹⁾	Neurological diseases	Preclinical	ND	ND ⁽²⁾	ND	ND	ND
10/01/24	CAMP4	BioMarin	RAP platform ⁽³⁾	ND	Preclinical	ND	ND ⁽⁴⁾	ND	ND	ND

(1) Logica is an AI-powered end-to-end drug discovery solution that translates biological insights into optimized preclinical candidates by leveraging the integration of Valo Health's AI-powered Opal Computational Platform and Charles River's leading expertise in drug discovery and preclinical development.

(2) Through the agreement, Lundbeck will deploy Logica with the aim of creating optimized small molecules that lead to novel therapies for neurological research.

(3) Once a disease-associated target gene is identified, CAMP4 applies its RAP Platform to identify the controlling regRNA and rapidly generate novel antisense oligonucleotide candidates, called RNA Actuators, designed to bind to the identified regRNA and amplify the expression of the target gene in a specific and controllable way, with the goal of restoring healthy protein levels.

(4) Under the terms of the agreement, CAMP4 is to receive an upfront payment, with eligibility for additional milestones and tiered royalties. BioMarin has the right to select two targets identified by CAMP4's RAP Platform to advance into clinical development.

Note: \$ in mm.
 Source: Cortellis, Company websites, filings and press releases, as of 10/31/24.

IPO Update

Priced IPOs

Filing Date	Pricing		Company	Shares	Shares	Filing Range		Offer	File to	Filing	Deal Value	Mkt. Cap	Offer /	Offer /
	Date	Ticker		Filed	Offered	Low	High	Price	Offer	Amount	(Excl Ovl)	At Offer (\$mm)	T+1 Day	Current
10/02/24	10/24/24	SEPN	Septerna Inc	10,937,500	16,000,000	\$15.00	\$17.00	\$18.00	12.5%	\$175	\$288	\$756	18.9%	18.9%
09/18/24	10/10/24	UPB	Upstream Bio Inc	12,500,000	15,000,000	\$15.00	- \$17.00	\$17.00	6.3%	\$200	\$255	\$830	29.4%	(100.0%)
09/20/24	10/10/24	CAMP	CAMP4 Therapeutics Corp	5,000,000	6,820,000	\$14.00	- \$16.00	\$11.00	(26.7%)	\$75	\$75	\$215	(2.5%)	(100.0%)

n = 3

Max	12.5%	\$200	\$288	\$830	29.4%	18.9%
Mean	(2.6%)	\$150	\$206	\$600	15.3%	(60.4%)
Median	6.3%	\$175	\$255	\$756	18.9%	(100.0%)
Min	(26.7%)	\$75	\$75	\$215	(2.5%)	(100.0%)

OVL = Overallotment.
Note(s): \$ in mm except per share values Minimum deal value of \$15mm. Completed equity offerings include CMPOs, RD and PIPEs.
Source: News, Dealogic, Placement Tracker, and Capital IQ, as of 10/31/24.

Secondary Offerings Update

Completed Equity Offerings

Filing Date	Pricing		Company	Deal Sub Type	Deal Value	Pre-\$ Mkt. Cap	Value as % of Pre-\$ Mkt. Cap	Mkt. Cap At Offer (\$mm)	Deal Size Multiple of 90-Day ADTV	Offer Price	% Price Change Initial/Offer	Offer / T+1 Day	Offer / Current	Warrant Coverage
10/28/24	10/29/24	EYPT	EyePoint Pharmaceuticals	MFO (1-day)	\$140	\$508	27.5%	\$648	17.3x	\$11.00	(9.2%)	4.2%	4.9%	No
10/28/24	10/29/24	VERA	Vera Therapeutics	MFO (1-day)	\$300	\$2,253	13.3%	2,553	12.5x	\$42.00	(11.3%)	(3.2%)	2.3%	No
10/25/24	10/25/24	MOLN	Molecular Partners	RD	\$20	\$211	9.5%	231	NM (>100x)	\$5.49	(0.5%)	4.6%	2.0%	No
10/25/24	10/25/24	ENGN	enGene Holdings	PIPE	\$60	\$401	15.0%	461	34.9x	\$8.90	0.0%	1.9%	1.1%	No
10/22/24	10/22/24	PRQR	ProQR Therapeutics	CMPO	\$63	\$309	20.4%	372	16.2x	\$3.50	(7.4%)	(0.3%)	(1.4%)	No
10/18/24	10/18/24	DRUG	Bright Minds Biosciences	PIPE	\$35	\$332	10.5%	367	33.8x	\$21.70	0.0%	117.6%	107.5%	No
10/16/24	10/17/24	CAPR	Capricor Therapeutics	CMPO	\$75	\$827	9.1%	902	1.7x	\$17.00	(17.1%)	8.8%	29.4%	No
10/14/24	10/14/24	IVA	Inventiva	PIPE	\$103	\$145	71.0%	248	NM (>100x)	\$1.47	(10.4%)	72.1%	70.1%	No
10/09/24	10/09/24	IKT	Inhibikase Therapeutics	PIPE	\$110	\$9	1,169.6%	119	NM (>100x)	\$1.37	15.1%	(8.0%)	92.7%	141.9%
10/08/24	10/08/24	CRNX	Crinetics Pharmaceuticals	CMPO	\$500	\$4,138	12.1%	4,638	15.8x	\$50.00	(3.3%)	1.4%	12.5%	No
10/07/24	10/08/24	SRRK	Scholar Rock	MFO (1-day)	\$300	\$2,744	10.9%	3,044	14.1x	\$28.25	(17.6%)	(1.7%)	9.5%	No
10/04/24	10/04/24	HUMA	Humacyte	RD	\$30	\$649	4.6%	679	1.8x	\$5.28	0.0%	3.0%	0.8%	100.0%
09/30/24	10/01/24	BHVN	Biohaven	CMPO	\$250	\$4,724	5.3%	4,974	5.6x	\$47.50	(4.9%)	2.3%	7.3%	No

n = 13

Max	\$500	\$4,724	1,169.6%	\$4,974	34.9x	\$50.00	15.1%	117.6%	107.5%
Mean	\$153	\$1,327	106.1%	\$1,480	15.4x	\$18.73	(5.1%)	15.6%	26.0%
Median	\$103	\$508	12.1%	\$648	14.9x	\$11.00	(4.9%)	2.3%	7.3%
Min	\$20	\$9	4.6%	\$119	1.7x	\$1.37	(17.6%)	(8.0%)	(1.4%)

MFO = Marketed Follow-on; CMPO = Confidentially Marketed Public Offerings; RD = Registered Direct; BD = Bought Deal; ADTV = Average Daily Trading Volume.

Note(s): \$ in mm. Minimum deal value of \$15mm. Completed equity offerings include CMPOs, RD and PIPEs.

Source: News, Dealogic, Placement Tracker, and Capital IQ, as of 10/31/24.

Private Financings Update

Completed Private Financings

Ann. Date	Company	Round	Deal Value	Post-\$ Valuation	Valuation Step-Up	Total Amt. Raised	Lead Investors	Other Participants
10/23/24	Alpha-9 Theranostics	Series C	\$175	ND	ND	\$261	Lightspeed Venture Partners, Ascenta Capital	General Catalyst, a16z, RA Capital, Janus Henderson, Delos Capital, abrdn, and others
10/22/24	AvenCell Therapeutics	Series B	\$112	\$227	0%	\$112	Novo Holdings	F-Prime, Blackstone Life Sciences, Eight Roads Ventures Japan, and others
10/22/24	Be Biopharma	Venture	\$82	ND	ND	\$264	ARCH, Atlas, RA Capital, Alta Partners, Longwood, BMS, Takeda	NA
10/18/24	Lanova Pharmaceutical	Series C1	\$42	\$445	0%	\$201	Sino Biopharmaceuticals	Pudong Innovation, Zhangjiang Haocheng, Qiming, Shanghai Healthcare Capital
10/17/24	Seaport Therapeutics	Series B	\$225	\$740	47%	\$329	General Atlantic	T. Rowe Price, Foresite Capital, ARCH, Sofinnova, PureTech Health, and others
10/17/24	Terray Therapeutics	Series B	\$120	\$352	(7%)	\$201	Bedford Ridge Capital, NVentures (NVIDIA's venture arm)	Alexandria Ventures, Maverick Capital, Two Sigma Ventures, and others
10/15/24	Tolerance Bio	Seed	\$17	ND	ND	\$17	Columbus Venture Partners	Criteria Bio Ventures, Sessa Capital, BioAdvance, Ben Franklin Technology Partners
10/15/24	Shift Bioscience	Seed	\$16	ND	ND	\$23	BGF	F-Prime Capital, Kindred Capital, Jonathan Milner
10/10/24	Booster Therapeutics	Seed	\$15	ND	ND	\$15	Apollo Health Ventures, Novo Holdings	NA
10/08/24	Orasis Pharmaceuticals	Series D	\$68 ⁽¹⁾	ND	ND	\$131	Arboretum Ventures, Johnson & Johnson Innovation	NA
10/08/24	Somagenetix	Series A	\$12	ND	ND	\$14	Vi Partners	Schroders Capital, Zürcher Kantonalbank, Verve Ventures
10/08/24	City Therapeutics	Series A	\$135	\$285	NM	\$140	ARCH	FMR, Invus, Slate Path Capital, Rock Springs, Regeneron Ventures, AN Ventures
10/07/24	Rege Nephro	Series B	\$17	ND	ND	\$35	DCI Partners	JIC Venture, Nippon Venture Capital, Asahi Kasei, Mitsubishi UFJ, and others
10/07/24	March Biosciences	Series A	\$28	ND	ND	\$33	Mission BioCapital, 4BIO Capital	Alexandria Venture, KdT Ventures, Volnay Therapeutics, Modi Ventures, and others
10/03/24	Resolution Therapeutics	Series B	\$83	ND	ND	\$134	Syncona	NA
10/03/24	Enara Bio	Series B	\$33	ND	ND	\$83	Pfizer Ventures and M Ventures	RA Capital, Samsara BioCapital and SV Health Investors, other existing investors
10/03/24	Integrated Biosciences	Seed	\$17	ND	ND	\$17	Sutter Hill Ventures	Mission BioCapital, Root Ventures, Civilization Ventures, Illumina Ventures, and others
10/02/24	LoQus23 Therapeutics	Series A	\$43	ND	ND	\$67	Forbion	SV Health Investors' Dementia Discovery Fund (DDF) and Novartis Venture Fund (NVF)

n = 18

Max	\$225	\$740	47%	\$329
Mean	\$69	\$410	10%	\$115
Median	\$43	\$352	0%	\$97
Min	\$12	\$227	(7%)	\$14

(1) Concurrently raised \$15mm in structured capital from Catalio Capital Management, with \$10mm drawn at closing.
Note(s): \$ in mm. Labeled valuation step-ups > 500% as “NM”.
Source: News, Dealogic, Placement Tracker, and Capital IQ, as of 10/31/24.

Industry and Company News

UK's NICE announces donanemab does not provide good value

- “The National Institute for Health and Care Excellence said in draft guidance released Wednesday that the drug, Eli Lilly’s donanemab, “cannot currently be considered good value for the taxpayer,” given the “relatively small benefit” it offers and the costs of the drug. Those include not just the price of the medicine, but also the expenses of delivering it as a monthly infusion and monitoring for the drug’s known side effects... While clinical trial data suggest donanemab can slow the progression of Alzheimer’s by four to seven months, Knight said, NICE’s cost-effectiveness estimate for the drug found it was five to six times above what the agency generally considers an acceptable use of NHS resources. NICE also said the long-term benefits of donanemab are unclear. With the draft guidance issued, NICE now has a consultation period open through Nov. 20. It will then review any responses and additional analyses before making its final recommendation.” [STAT News | 10.23.24](#)

Novo asks FDA to bar compounders from making Ozempic copies

- “Novo Nordisk has asked the Food and Drug Administration to bar compounding pharmacies from making copies of its blockbuster weight loss drug semaglutide, arguing that the medication is too complex for the pharmacies to safely make... In documents it submitted to the FDA, Novo said that its testing of compounded products showed impurities, which it argued could risk immunogenicity, in which patients may develop an immune response against the drug and, at least in theory, might not experience certain intended benefits of the treatment. The Alliance for Pharmacy Compounding was quick to respond to Novo’s petition. Scott Brunner, CEO of the trade group, posed the question that if Novo is concerned about patient safety, why has it taken them so long into the shortage to nominate semaglutide to the difficult to compound lists.” [STAT News | 10.22.24](#)

Seaport Therapeutics raised \$225mm in Series B round

- “Seaport Therapeutics, the startup launched earlier this year by the team behind Karuna Therapeutics, has raised another \$225mm just six months after its most recent fundraising round. Seaport raised the Series B funds from General Atlantic, Foresite Capital, T. Rowe Price Associates, and other investors. The startup, which is based in Boston, is developing a new cohort of what executives hope will be faster-acting, more effective treatments for depression, anxiety, and other mental health conditions... The biotech had closed a \$100mm Series A round in April, and now has around \$325mm in the bank.” [STAT News | 10.21.24](#)

Sanofi enters exclusive negotiations with CD&R to sell Opella

- “Sanofi is now in “exclusive negotiations” with US private equity firm Clayton, Dubilier & Rice (CD&R) to sell a 50% controlling stake in its consumer health business Opella. With the French government saying that it has received assurances from New York City-based CD&R that it will keep Opella’s manufacturing facilities intact in France and that the supply of medicines to the country will not be hindered, one potential roadblock to the sale appears to have been cleared. The proposed deal values Opella at €16bn, Sanofi said, noting that CD&R’s offer to buy the 50% share is “binding and fully financed.” Helping facilitate the spinoff is French public sector investment bank Bpifrance, which will buy up a 2% stake in Opella and take over a seat on its board under the current plan. With the proposed transaction, which could close in the second quarter of next year “at the earliest,” Sanofi will double down on its innovative medicines and vaccines.” [Fierce Pharma | 10.21.24](#)

John Maraganore raises \$135mm for “next-generation RNAi” startup

- John Maraganore, the former CEO of Alnylam Pharmaceuticals turned biotech elder statesman and venture capitalist, is launching a new startup that he hopes can expand upon his previous company’s success. His new venture, City Therapeutics, launched Tuesday with \$135mm from ARCH Venture Partners, Fidelity, Invus, Rock Springs Capital, Regeneron Ventures, and others...Maganore isn’t yet disclosing which disease areas City Therapeutics will go after first, but said there are no near-terms plans to work on kidney-associated conditions. The biotech expects to begin clinical trials next year and plans to push one to two new drugs towards the clinic annually, starting in 2026. “One of the reasons I love [RNAi] as a modality is that, once you know how to do it, you can turn the crank really quickly,” he said. ” [STAT News | 10.08.24](#)

Starboard Value takes a \$1bn activist stake in Pfizer

- “Activist investor Starboard Value has taken a roughly \$1bn stake in Pfizer and wants the struggling drugmaker to make changes to turn its performance around, according to people familiar with the matter. Pfizer had a market value of about \$162bn as of Friday. Its shares have been roughly cut in half from a record high notched in late 2021 after the company delivered the world’s first Covid-19 vaccine. They are little changed so far this year, compared with a 21% rise in the S&P 500. Starboard has approached two former Pfizer executives, Ian Read and Frank D’Amelio, to aid in its efforts, and they have expressed interest in helping...[as] Pfizer’s Bourla has been under pressure from investors to right the ship at the drugmaker, especially after it overestimated future demand for pandemic-related products once the health emergency subsided.” [WSJ | 10.06.24](#)

Upcoming PDUFAs (Next Twelve Months)

(N=102)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Zhuhai Beihai Biotechnology	Private	BH-009	Microtubules (Tubulin)	Solid Tumors	11/01/2024
Journey Medical	119	Minolira	Bacterial ribosome, Protein synthesis	Rosacea	11/04/2024
PTC Therapeutics	3,135	Upstaza	Aromatic L-amino acid decarboxylase (AADC)	Neurology - Other	11/13/2024
Autolus Therapeutics	1,181	Obe-cel	Autologous Chimeric Antigen Receptor T-cells (CAR-T), Cluster of Differentiation 19 (CD19), Immune System, Stem Cells/Other Cell Therapies, T lymphocytes	Acute Lymphoblastic Leukemia (ALL)	11/16/2024
Applied Therapeutics	968	Govorestat	Aldose Reductase	Metabolic - General	11/28/2024
Jazz Pharmaceuticals	6,765	Zanidatamab	HER2/neu or ErbB-2	Biliary Tract Cancer	11/29/2024
BridgeBio Pharma	4,483	Acoramidis	Transthyretin (TTR)	Transthyretin Amyloid Cardiomyopathy (ATTR-CM, Wild Type Or Hereditary)	11/29/2024
Humacyte	699	Humacyl	Tissue Scaffolding	Peripheral Arterial Disease (PAD)	11/30/2024
Nevakar	Private	NVK-002	Muscarinic acetylcholine receptor	Myopic Macular Degeneration (MMD)/Pathological Myopia (Ophthalmology)	11/30/2024
Visiox Pharma	Private	PDP-716	Alpha 2 Adrenergic Receptor	Glaucoma / Ocular Hypertension (Ophthalmology)	11/30/2024
Lupin	11,688	Armlupeg (pegfilgrastim)	Granulocyte Macrophage Colony-Stimulating Factor Receptor (GM-CSFR)/CD116	Leukopenia / Neutropenia	11/30/2024
Almatica Pharma	Private	ALM004	Unknown	Undisclosed	11/30/2024

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.
 Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Azurity Pharmaceuticals	Private	AZ-06	Unknown	Neurology - Other	11/30/2024
Scienture	63	SCN-102	Unknown	Cardiovascular Disease	11/30/2024
Galderma	Private	Nemluvio	IL-31/IL-31R (Interleukin-31/Interleukin-31 Receptor)	Atopic Dermatitis (Eczema)	12/14/2024
Neurotech Pharmaceuticals	Private	Renexus	Ciliary Neurotrophic Factor Receptor (CNTFR)	Macular Telangiectasia	12/17/2024
CSPC Pharmaceutical Group	9,345	Irinotecan Liposome (CSPC)	Topoisomerase I (Topo-I)	Pancreatic Cancer	12/18/2024
Akcea Therapeutics	Private	Olezarsen	Apolipoprotein C-III (apoCIII, apo-CIII, apo-C3)	Familial Chylomicronemia Syndrome (FCS)/Lipoprotein Lipase Deficiency (LPLD)	12/19/2024
Lexicon Pharmaceuticals	651	Inpefa	SGLT, Solute Carrier Family 5 Member 2 (SLC5A2)	Diabetes Mellitus, Type I	12/20/2024
Zealand Pharma	8,658	Glepaglutide	GLP-2 Receptor	Short Bowel Syndrome (SBS)	12/20/2024
Daiichi Sankyo	59,787	Datopotamab Deruxtecan	Immune System, Trop-2	Non-Small Cell Lung Cancer (NSCLC)	12/20/2024
Soleno Therapeutics	2,135	DCCR	Potassium channels	Prader-Willi Syndrome	12/27/2024
Bristol Myers Squibb	105,262	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Melanoma	12/27/2024
Bristol Myers Squibb	105,262	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Bladder Cancer	12/27/2024

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Bristol Myers Squibb	\$105,262	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Renal Cell Cancer (RCC)	12/27/2024
Bristol Myers Squibb	105,262	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Solid Tumors	12/27/2024
Xcovery	Private	Ensacove	Anaplastic lymphoma kinase (ALK)	Non-Small Cell Lung Cancer (NSCLC)	12/28/2024
Checkpoint Therapeutics	165	Cosibelimab	Immune System, Programmed death-ligand 1 (PD-L1)	Skin Cancer - Squamous Cell Carcinoma (SCC)	12/28/2024
Jiangsu Vcare PharmaTech	Private	Vicagrel	Adenosine Diphosphate P2Y12 Receptor	Cardiovascular Disease	12/28/2024
Neurocrine Biosciences	11,721	Crinecerfont	Corticotropin Releasing Factor -Receptor1 (CRF-R1), Corticotropin Releasing Factor -Receptor2 (CRF-R2)	Congenital Adrenal Hyperplasia (CAH)	12/29/2024
GSK	76,706	Brexafemme	Beta (1, 3)-D-Glucan	Fungal Infections - Systemic	12/31/2024
Novo Nordisk	504,080	Alhemo	Tissue Factor Pathway Inhibitor (TFPI)	Hemophilia A and B - General Clotting Products	12/31/2024
CSL	94,283	Garadacimab	Coagulation Factor XII	Hereditary Angioedema (HAE)	12/31/2024
Amneal Pharmaceuticals	2,600	K127	Cholinesterases	Myasthenia Gravis (MG)	12/31/2024
Laboratorios Salvat	Private	Clotrimazole	Unknown	Ear Infections (Antibacterial)	12/31/2024
AstraZeneca	233,590	Evusheld	SARS-CoV-2	COVID-19 Treatment	12/31/2024

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Quoin Pharmaceuticals	\$3	QRX-003	LEKTI/SPINK5	Congenital Ichthyosis	12/31/2024
StemCyte	Private	HPC-Cord Blood Therapy	Unknown	Ischemic Stroke	12/31/2024
Vertex Pharmaceuticals	123,295	Vanzacaftor/tezacaftor/deutivacaftor	CF transmembrane conductance regulator (CFTR)	Cystic Fibrosis (CF)	01/02/2025
OWP Pharmaceuticals	Private	SUBVENITE	Sodium and Calcium Channels	Partial / Focal Seizures (Epilepsy)	01/03/2025
OWP Pharmaceuticals	Private	SUBVENITE	Sodium and Calcium Channels	Bipolar Disorder	01/03/2025
Merus	3,619	Zenocutuzumab	ErbB3/HER3, HER2/neu or ErbB-2	Pancreatic Cancer	01/06/2025
Merus	3,619	Zenocutuzumab	ErbB3/HER3, HER2/neu or ErbB-2	Non-Small Cell Lung Cancer (NSCLC)	01/06/2025
Mesoblast	957	Ryoncil	Stem Cells/Other Cell Therapies	Graft vs. Host Disease (GVHD) - Treatment	01/07/2025
Pierre Fabre	Private	Tabelecleucel	Epstein Barr Virus (EBV), Immune System, Stem Cells/Other Cell Therapies, T lymphocytes	Hematologic Cancer	01/15/2025
Stealth BioTherapeutics	Private	Elamipretide (Systemic Delivery)	Mitochondria, Reactive Oxygen Species/Free Radicals	Cardiomyopathy - Dilated	01/29/2025
Daiichi Sankyo	59,787	Datopotamab Deruxtecán	Immune System, Trop-2	HR+/HER2- Breast Cancer	01/29/2025
Vertex Pharmaceuticals	123,295	VX-548	Sodium Channel Nav1.8 (SCN10A)	Postsurgical Pain	01/30/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product			
		Drug	Target	Indication	PDUFA Date
Luye Pharma	\$1,481	LY03005	Dopamine Reuptake, Norepinephrine (Noradrenaline) Reuptake/Transporter, Serotonin Reuptake	Major Depressive Disorder (MDD)	01/31/2025
Axsome Therapeutics	4,314	AXS-07	Cyclooxygenase 2 (COX2) / Prostaglandin-Endoperoxide Synthase 2 (PTGS2), Serotonin 5-HT1B receptor , Serotonin 5-HT1D receptor	Migraine and Other Headaches	01/31/2025
Supernus Pharmaceuticals	1,870	SPN-830	Alpha 1 Adrenergic Receptor , Alpha 2 Adrenergic Receptor, Dopamine 1 (D1) Receptor, Dopamine 2 (D2) Receptor, Dopamine 3 (D3) Receptor	Parkinson's Disease (PD)	01/31/2025
GSK	76,706	MenABCWY (GSK)	Immune System, Neisseria meningitidis - Group B, Neisseria meningitidis - Groups A, C, Y, and W-135	Meningococcal Vaccines and Other Meningococcus-Specific Agents (Antibacterial)	02/14/2025
Bavarian Nordic	2,498	CHIKV VLP	Immune System	Chikungunya Virus	02/14/2025
Johnson & Johnson	387,338	Amivantamab SC	EGFR (Epidermal Growth Factor Receptor), Tyrosine Kinases	Non-Small Cell Lung Cancer (NSCLC)	02/17/2025
Ono Pharmaceutical	5,931	Vimseltinib	Macrophage Colony Stimulating Factor 1 (M-CSF1)/M-CSF Receptor/FMS/CD115/CSF-1/CSF1R	Tenosynovial Giant Cell Tumor (TGCT) / Pigmented Villonodular Synovitis (PVNS)	02/17/2025
SpringWorks Therapeutics	2,176	Mirdametinib	Mitogen-activated ERK kinase (MEK, MAPKK, MAP2K)	Neurofibromatosis (NF)	02/28/2025
Eton Pharmaceuticals	210	ET-400	Unknown	Endocrine Disorder	02/28/2025
Celltrion	27,711	Omlyclo	Immunoglobulin E (IgE)	Chronic Rhinosinusitis	03/10/2025
Celltrion	27,711	Omlyclo	Immunoglobulin E (IgE)	Food Allergies	03/10/2025
Celltrion	27,711	Omlyclo	Immunoglobulin E (IgE)	Nasal Polyposis	03/10/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Celltrion	\$27,711	Omlyclo	Immunoglobulin E (IgE)	Asthma	03/10/2025
Celltrion	27,711	Omlyclo	Immunoglobulin E (IgE)	Urticaria	03/10/2025
Elevar Therapeutics	Private	Rivoceranib	RET, Tyrosine Kinases, VEGF Receptor (VEGFR)	Hepatocellular (Liver) Cancer (HCC) (Including Secondary Metastases)	03/20/2025
Telix Pharmaceuticals	4,638	TLX007-CDx	Unknown	Prostate Cancer - Imaging	03/24/2025
GSK	76,706	GSK2140944	Gram-Negative Bacteria, Topoisomerase II (DNA gyrase)	Urinary Tract and Reproductive Tract Infections (Antibacterial)	03/26/2025
Milestone Pharmaceuticals	95	Cardamyst	Calcium Channel	Supraventricular Tachycardia	03/26/2025
Sanofi	135,778	Fitusiran	Thrombin (Coagulation Factor IIa)	Hemophilia A and B - General Clotting Products	03/28/2025
SERB	Private	Bentracimab	Anti-platelet drugs	Drug Toxicity	03/31/2025
Telix Pharmaceuticals	4,638	Pixclara	Carbonic Anhydrase	Brain Cancer - Imaging	04/26/2025
Aldeyra Therapeutics	316	Reproxalap	Aldehydes	Dry Eye (Ophthalmology)	04/30/2025
UroGen Pharma	510	VesiGel	DNA, Tumor Cells	Bladder Cancer	04/30/2025
Curium Pharma	Private	Lutetium Lu 177 Dotatate (Curium)	Somatostatin Receptors	Neuroendocrine Tumors (NET)	05/09/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.
 Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Ferring Pharmaceuticals	Private	SI-6603	Extracellular Matrix (ECM)	Sciatica	05/14/2025
Aerie Pharmaceuticals	Private	AR-15512	TRPM8 (CMR1)	Dry Eye (Ophthalmology)	05/30/2025
Telix Pharmaceuticals	4,638	TLX250-CDx	Carbonic Anhydrase	Renal Cell Cancer (RCC) - Imaging	06/02/2025
KalVista Pharmaceuticals	505	Sebetralstat	Kinin-Kallikrein System	Hereditary Angioedema (HAE)	06/17/2025
Mirum Pharmaceuticals	1,855	Chenodal	Farnesoid X receptor (FXR)/NR1H4	Cerebrotendinous Xanthomatosis (Cerebral Cholesterosis)	06/28/2025
Novartis	230,573	Atrasentan	Endothelin Receptor Type A (EDNRA)	Immunoglobulin A (IgA) Nephropathy (Berger's Disease)	06/30/2025
Unicycive Therapeutics	39	Renazorb	Iron, Phosphate	Hyperphosphatemia	07/03/2025
AbbVie	331,808	Rinvoq	JAK/STAT , Tyrosine Kinases	Giant Cell Arteritis	07/11/2025
PTC Therapeutics	3,135	Sepiapterin	phenylalanine hydroxylase	Phenylketonuria (PKU)	07/29/2025
PTC Therapeutics	3,135	Translarna	RNA translation	Duchenne Muscular Dystrophy (DMD)	07/31/2025
Novartis	230,573	Lutathera	Somatostatin Receptors	Neuroendocrine Tumors (NET)	07/31/2025
Bayer	27,378	BAY-342	Neurokinin Receptor	Menopause (including Hormone Replacement Therapy [HRT])	08/01/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
George Medicines	Private	GMRx2	Unknown	Hypertension (Systemic)	08/06/2025
LENZ Therapeutics	743	LNZ-100	Muscarinic acetylcholine receptor	Presbyopia	08/08/2025
Johnson & Johnson	387,338	Nipocalimab	Neonatal Fc Receptor	Myasthenia Gravis (MG)	08/29/2025
Jiangsu Hengrui Pharmaceuticals	42,867	Camrelizumab	Immune System, Programmed death-1 receptor (PD-1)	Hepatocellular (Liver) Cancer (HCC) (Including Secondary Metastases)	09/23/2025
AbbVie	331,808	Telisotuzumab Vedotin	Hepatocyte growth factor receptor (c-Met, HGFR), Microtubules (Tubulin)	Non-Small Cell Lung Cancer (NSCLC)	09/26/2025
Crinetics Pharmaceuticals	5,218	Paltusotine	Somatostatin Receptors	Acromegaly	09/26/2025
Neuvivo	Private	NP-001	Macrophages	Amyotrophic Lateral Sclerosis (ALS)	10/07/2025
Verastem	128	Avutometinib	Mitogen-activated ERK kinase (MEK, MAPKK, MAP2K), Raf kinase	Ovarian Cancer	12/31/2025
Tonix Pharmaceuticals	23	Tonmya	Alpha 2 Adrenergic Receptor, Serotonin 5-HT2A receptor	Fibromyalgia	12/31/2025
Verastem	128	Defactinib	Protein Tyrosine Kinase 2 (PTK2)/ Focal Adhesion Kinase (FAK)	Ovarian Cancer	12/31/2025
Nippon Shinyaku	1,800	Deramiocel	Stem Cells/Other Cell Therapies	Duchenne Muscular Dystrophy (DMD)	12/31/2025
Rakuten Medical	Private	ASP-1929	EGFR (Epidermal Growth Factor Receptor)	Head and Neck Cancer	12/31/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.
 Source: Citeline, as of 10/31/24.

Upcoming PDUFAs (Next Twelve Months)

(N=102) (Cont'd)

Company	Mkt Cap	Product			Indication	PDUFA Date
		Drug	Target			
LEO Pharma	Private	Anzupgo	JAK/STAT		Atopic Dermatitis (Eczema)	12/31/2025
Cytokinetics	6,038	Aficamten	Myosin		Cardiomyopathy - Hypertrophic	12/31/2025
Organon	4,418	Biosimilar Pertuzumab (Henlius)	HER2/neu or ErbB-2		HER2+ Breast Cancer	12/31/2025
Organon	4,418	HLX-14	RANK Ligand (RANKL)		Osteoporosis / Osteopenia	12/31/2025
Sedana Medical	140	SEDACONDA (ISOFLURANE)	Unknown		Anesthesia	04/30/2026

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 10/31/24.
Source: Citeline, as of 10/31/24.

Upcoming Key Catalysts (Coming Quarter)

(N=225)

Company	Mkt Cap	Product		Phase	Data	
		Drug	Indication		Event	Timing
Context Therapeutics, Inc.	\$175	CTIM-76	Cancer	I	Data at SITC	11/09/2024 - 11/09/2024
Neurogene Inc.	629	NGN-401	Rett Syndrome	I/II	Phase I/II - Interim Efficacy Data (Low Dose Cohort) at CNS	11/12/2024 - 11/12/2024
Alnylam Pharmaceuticals Inc.	36,570	VIR-2218	Hepatitis B (HBV) Treatment (Antiviral)	II	Phase IIa w/GS-9688 + Nivolumab - Top-Line Results	11/15/2024 - 11/19/2024
Gilead Sciences, Inc.	110,804	GS-9688	Hepatitis B (HBV) Treatment (Antiviral)	II	Phase IIa - w/ALN-HBV02 + Nivolumab - Top-Line Results	11/15/2024 - 11/19/2024
Biomea Fusion, Inc.	440	BMF-219	Diabetes Mellitus, Type I	II	Phase IIa COVALENT-111 - Top-Line Results at ATTD-ASIA	11/19/2024 - 11/19/2024
Aldeyra Therapeutics, Inc.	316	Reproxalap	Dry Eye (Ophthalmology)	NDA	Chamber Crossover Trial (SPA) - Top-line Results	By 11/30/2024
Johnson & Johnson	387,338	NBTR3	Non-Small Cell Lung Cancer (NSCLC)	I/II	Phase I/II - Lung/Liver Metastases - Top-line Results	By 11/30/2024
Johnson & Johnson	387,338	JNJ-2113	Psoriasis	III	Phase III - Topline Results	11/01/2024 - 11/30/2024
Ionis Pharmaceuticals, Inc.	6,173	IONIS-AGT-LRx	Hypertension (Systemic)	II	Phase IIb - Top-Line Results	By 11/30/2024
Evotec SE	1,247	EVT894	Infectious Disease	I	Phase I 18-0006 - Top-Line Results	By 11/30/2024
Bristol Myers Squibb Company	105,262	EVT8683	Neurology - Other	I	Phase I - Top-Line Results	By 11/30/2024
Actuate Therapeutics, Inc.	166	Erlaglusib	Myelofibrosis (MF)	II	Phase II w/Ruxolitinib - Top-Line Results	By 11/30/2024
Celldex Therapeutics, Inc.	1,786	CDX-1140	Cancer	II	Phase II w/ Odetiglucon - Topline Results	By 11/30/2024
Novartis AG	230,573	Atrasentan	Alport Syndrome	II	Phase II AFFINITY - Top-Line Results	By 11/30/2024
iTeos Therapeutics Inc.	318	Inupadenant	Non-Small Cell Lung Cancer (NSCLC)	II	Phase II - A2A-005 - Clinical Data at ESMO-IO	12/12/2024 - 12/12/2024
Incyte Corporation	12,532	Zymyz	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III POD1UM-304 - Top-Line Results	By 12/31/2024
Zentalis Pharmaceuticals	201	ZN-d5	Acute Myelogenous Leukemia (AML)	I/II	Phase I/II - Preliminary Data	By 12/31/2024
Incyte Corporation	12,532	Zilurgesitib	Myelofibrosis (MF)	I/II	Phase III POC - Top-Line Results (w/Jakafi)	By 12/31/2024
Bicycle Therapeutics, plc	1,706	Zelenectide Pevedotin	Bladder Cancer	II/III	Phase II/III Duravelo-2 - Data Update	By 12/31/2024
GSK plc	76,706	ZeJula	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III ZEAL-1L - Topline Results	By 12/31/2024
Novartis AG	230,573	XXB750	Hypertension (Systemic)	II	Phase II CXXB750B12201 - Top-Line Results	By 12/31/2024
Mersana Therapeutics, Inc.	233	XMT-1660	Solid Tumors	I	Phase Ib - Top-Line Results	By 12/31/2024
GSK plc	76,706	WVE-006	Alpha-1 Antitrypsin Deficiency (A1AD or AATD)	I/II	Phase I/II U.S. - Top-Line Results	By 12/31/2024
argenx N.V.	33,716	Vyvgart Hytrulo	Autoimmune Disorders	II/III	Phase II/III ALKIVIA - Top-Line Results	By 12/31/2024
Vertex Pharmaceuticals Incorporated	123,295	VX-548	Neuropathic Pain	II	Phase II PLSR - Top-Line Results	By 12/31/2024
Genfit SA	274	VS-01	Liver Failure / Cirrhosis	I	Phase II UNVEIL-IT - Data	By 12/31/2024
Viridiant Therapeutics, Inc.	1,760	VRDN-002	Thyroid Eye Disease (TED)	I	Phase II POC Trial - Topline Results	By 12/31/2024
Vir Biotechnology, Inc.	1,022	VIR-2482	Influenza (excluding vaccines)	I/II	Phase Ib - Prophylaxis - Top-Line Results	By 12/31/2024
Vir Biotechnology, Inc.	1,022	VIR-1388	HIV Prevention	I	Phase I First-in-Human - Top-Line Results	By 12/31/2024
Viridiant Therapeutics, Inc.	1,760	Veligrotug	Thyroid Eye Disease (TED)	III	Phase III THRIVE-2 - Topline Results	By 12/31/2024
PTC Therapeutics, Inc.	3,135	Utrexlostatat	Amyotrophic Lateral Sclerosis (ALS)	II	Phase II CardinalS - Top-Line Results	By 12/31/2024
UCB S.A.	36,702	UCB1381	Atopic Dermatitis (Eczema)	I/II	Phase I/IIa Single-Ascending Dose/Repeat-Dose - Top-Line Results	By 12/31/2024
UCB S.A.	36,702	UCB0599	Parkinson's Disease (PD)	II	Phase IIa Early PD - Top-line Results	By 12/31/2024
Tyra Biosciences, Inc.	1,158	TYRA-300	Bladder Cancer	I/II	Phase I/II - SURF301 - Initial Results	By 12/31/2024
TScan Therapeutics	257	TSC-203	Solid Tumors	I	Phase I - Top-Line Results	By 12/31/2024
TScan Therapeutics	257	TSC-200	Solid Tumors	I	Phase I w/TSC-204 - Top-Line Results	By 12/31/2024
AstraZeneca PLC	233,590	Truqap	Prostate Cancer	III	Phase III CAPtello-281 - Top-Line Results	By 12/31/2024
Biohaven Ltd.	5,315	Troniluzole	Obsessive-Compulsive Disorder (OCD)	III	Phase III 303 - Top-Line Results	By 12/31/2024
Amgen, Inc.	170,323	Tezspire	Chronic Rhinosinusitis	III	Phase III WAYPOINT - Top Line Results	By 12/31/2024
Terms Pharmaceuticals, Inc.	563	TERN-701	Chronic Myelogenous Leukemia (CML)	I	Phase I - Initial Interim Data (Dose Escalation Cohorts)	By 12/31/2024
AbbVie Inc.	331,808	Tavapadon	Parkinson's Disease (PD)	III	Phase III TEMPO-2 - Top-Line Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,314	Sunos1	Attention Deficit Hyperactivity Disorder (ADHD)	III	Phase III FOCUS - Top-line Results	By 12/31/2024
Spyre Therapeutics, Inc.	1,773	SPY001	Inflammatory Bowel Disease (IBD)	I	Phase I Healthy Volunteers - PK/PD/Safety Data	By 12/31/2024
Bristol Myers Squibb Company	105,262	Sotyktu	Psoriatic Arthritis (PsA)	III	Phase III - Top-Line Results	By 12/31/2024
Corvus Pharmaceuticals, Inc.	520	Sequelitinib	Atopic Dermatitis (Eczema)	I	Phase I - Top line Results	By 12/31/2024
Ascendis Pharma A/S	7,788	Skytrofa	Turner Syndrome	II	Phase II New InsIGHTS - Top-Line Results	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, Company press releases, Company websites and filings, as of 10/31/24.

Upcoming Key Catalysts (Coming Quarter)

(N=225) (Cont'd)

Company	Mkt Cap	Product		Data		
		Drug	Indication	Phase	Event	Timing
Cassava Sciences, Inc.	\$1,274	Simufilam	Alzheimer's Disease (AD)	III	Phase III RETHINK-ALZ - Top-line Results	By 12/31/2024
Solid Biosciences Inc.	220	SGT-003	Duchenne Muscular Dystrophy (DMD)	I/II	Phase I/II SGT-003-101 - Top-line Results	By 12/31/2024
Edgewise Therapeutics, Inc.	3,280	Sevasemten	Duchenne Muscular Dystrophy (DMD)	II	Phase II Top-Line Results	By 12/31/2024
Centessa Pharmaceuticals plc	1,993	SerpinPC	Hemophilia A and B - General Clotting Products	IIb	Phase II Present-2 - Top-Line Results	By 12/31/2024
Novo Nordisk A/S	504,080	Semaglutide (NASH)	MASH	III	Phase III ESSENCE – Topline Results	By 12/31/2024
Sana Biotechnology, Inc.	836	SC291	Autoimmune Disorders	I	Phase I - Preliminary Clinical Data	By 12/31/2024
Sana Biotechnology, Inc.	836	SC-262	Non-Hodgkin's Lymphoma (NHL)	I	Phase I First-in-Human - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	RYZ101	Small Cell Lung Cancer (SCLC)	I	Phase I U.S. - Top-Line Results	By 12/31/2024
Amgen, Inc.	170,323	Rocatinimab	Atopic Dermatitis (Eczema)	III	Phase III ROCKET - Topline Results	By 12/31/2024
Revolution Medicines, Inc.	7,754	RMC-6291	Solid Tumors	I/II	Phase I/Ib w/RMC-6236 - Top-Line Results	By 12/31/2024
Revolution Medicines, Inc.	7,754	RMC-6236	Solid Tumors	I/II	Phase III RMC-6236 vs Docetaxel - Top-Line Results	By 12/31/2024
Sanofi	135,778	Rilzabrutinib	Autoimmune Hemolytic Anemia (AIHA)	IIb	Phase IIb wAIHA - Top-Line Results	By 12/31/2024
Corcept Therapeutics Incorporated	4,940	Relacorilant	Ovarian Cancer	III	Phase III - Top-Line Results	By 12/31/2024
Regeneron Pharmaceuticals, Inc.	100,705	REGN-4336	Prostate Cancer	I/II	Phase I/II w/ Cemiplimab - Top-Line Results	By 12/31/2024
Recursion Pharmaceuticals, Inc.	1,821	REC-2282	Neurofibromatosis (NF)	II/III	Phase II/III POPLAR - Phase II Preliminary Data	By 12/31/2024
Rapport Therapeutics Inc.	886	RAP-219	Partial / Focal Seizures (Epilepsy)	II	Phase I MAD Results	By 12/31/2024
Rigel Pharmaceuticals, Inc.	249	R835	Autoimmune Disorders	I	Phase Ib - Top Line Results	By 12/31/2024
Pyxis Oncology	217	PYX-201	Solid Tumors	I	Phase I Dose Escalation - Top-Line Results	By 12/31/2024
Pyxis Oncology	217	PYX-106	Solid Tumors	I	Phase I - Dose Escalation - Top-Line Results	By 12/31/2024
Sanofi	135,778	PRV-3279	Systemic Lupus Erythematosus (SLE)	II	Phase IIa PREVAIL-2 - Top-Line Results	By 12/31/2024
Praxis Precision Medicines, Inc.	1,270	PRAX-944	Essential Tremor	III	Phase III - Top-Line Results	By 12/31/2024
Merck & Co., Inc.	263,569	PRA-052	Ulcerative Colitis (UC)	I	Phase I - Top-Line Results	By 12/31/2024
PepGen Inc.	250	PGN-EDODM1	Myotonic Muscular Dystrophy	I	Phase I FREEDOM-DM1 - Top-Line Results	By 12/31/2024
Poseida Therapeutics, Inc.	234	P-CD19CD20-ALLO1	Hematologic Cancer	I	Phase I - Top-Line Results	By 12/31/2024
Ocular Therapeutix, Inc.	1,737	OTX-DED	Dry Eye (Ophthalmology)	II	Phase II OTX-DED-2022-C01 - Top-Line Results	By 12/31/2024
SpringWorks Therapeutics Inc.	2,176	Osgiveo	Ovarian Cancer	II	Phase II - NIR-OGT-201 - Topline Results	By 12/31/2024
Ocugen Inc.	266	OCU410ST	Stargardt Disease (Ophthalmology)	I/II	Phase I/II Top Line Results - (Phase I Part)	By 12/31/2024
Ocugen Inc.	266	OCU410	Dry Age-Related Macular Degeneration (Dry AMD)/Geographic Atrophy (Ophthalmology)	I/II	Phase I/II - ArMaDa - Top line Results	By 12/31/2024
Oculus S.A.	660	OCS-05	Optic Neuritis (Ophthalmology)	II	Phase II - ACUITY - Top-Line Results	By 12/31/2024
Oculus S.A.	660	OCS-01	Ocular Pain and/or Inflammation (Ophthalmology)	III	Phase III OPTIMIZE-2 - Top Line Results	By 12/31/2024
NewAmsterdam Pharma BV	1,718	Obicetrapib	Dyslipidemia / Hypercholesterolemia	III	Phase III BROADWAY - Top-Line Results	By 12/31/2024
AbbVie Inc.	331,808	NX-13	Ulcerative Colitis (UC)	II	Phase II - Top-Line Results	By 12/31/2024
Amgen, Inc.	170,323	Nplate	Thrombocytopenia	III	Phase III RECITE- Top-Line Results	By 12/31/2024
Novo Nordisk A/S	504,080	NN-6019	Hereditary Transthyretin (hATTR) Amyloidosis With Polyneuropathy (Familial Amyloid Polyneuropathy)	II	Phase II NN6019-4940 - Top-Line Results	By 12/31/2024
Neumora Therapeutics, Inc.	1,964	NMRA-140	Major Depressive Disorder (MDD)	III	Phase III - KOASTAL-1 - Top-Line Results	By 12/31/2024
Johnson & Johnson	387,338	NM26	Atopic Dermatitis (Eczema)	I	Phase I - MAD Study Results	By 12/31/2024
Nektar Therapeutics	243	NKTR-255	Diffuse Large B-Cell Lymphoma (DLBCL) - NHL	II/III	Phase II/III R/R LBCL - Top-Line Results	By 12/31/2024
Neurogene Inc.	629	NGN-101	Neuronal Ceroid Lipofuscinosis (NCL)	I/II	Phase I/II - Preliminary Data	By 12/31/2024
AbbVie Inc.	331,808	Navitoclax	Myelofibrosis (MF)	III	Phase III TRANSFORM-2 - Top-Line Results	By 12/31/2024
Cabaletta Bio, Inc.	191	MuSK-CAART	Myasthenia Gravis (MG)	I	Phase I - Top-Line Results (6-month Data Combination Cohort)	By 12/31/2024
Bristol Myers Squibb Company	105,262	MRTX1133	Solid Tumors	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	MRTX-0902	Solid Tumors	I/II	Phase I/II - Initial Data	By 12/31/2024
Moderna, Inc.	20,408	mRNA-1647	Cytomegalovirus (CMV) Infection (Antiviral)	III	Phase III CMVictory - Topline Results	By 12/31/2024
Moderna, Inc.	20,408	mRNA-1018	Pandemic Influenza Vaccines	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Novo Nordisk A/S	504,080	Monlunabant	Diabetic Nephropathy	II	Phase II - Top-Line Results	By 12/31/2024
MannKind Corporation	1,798	MNKD-201	Idiopathic Pulmonary Fibrosis (IPF)	I	Phase I - Top-Line Results	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, Company press releases, Company websites and filings, as of 10/31/24.

Upcoming Key Catalysts (Coming Quarter)

(N=225) (Cont'd)

Company	Product			Data		
	Mkt Cap	Drug	Indication	Phase	Event	Timing
Merck & Co., Inc.	\$263,569	MK-8189	Schizophrenia	II	Phase II MK-8189-008 - Top-Line Results	By 12/31/2024
Merck & Co., Inc.	263,569	MK-7240	Systemic Sclerosis-Associated Interstitial Lung Disease (SSc-ILD)	II	Phase II ATHENA-SSc-ILD - Top-Line Results	By 12/31/2024
Merck & Co., Inc.	263,569	MK-3475A	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III MK-3475A-D77 (SC vs. IV) - Top-Line Results	By 12/31/2024
MBX Biosciences, Inc.	709	MBX 1416	Hyperinsulinemia/Hypoglycemia	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Amgen, Inc.	170,323	MarTide	Obesity	II	Phase II - Top-Line Results	By 12/31/2024
PureTech Health plc	470	LYT-100	Idiopathic Pulmonary Fibrosis (IPF)	II	Phase IIb - Top-Line Results	By 12/31/2024
Lyell Immunopharma Inc.	237	LYL845	Solid Tumors	I	Phase I - Topline Results	By 12/31/2024
Lexeo Therapeutics	314	LX2020	Cardiovascular Disease	I	Phase I/II HEROIC-PKP2 - Top-Line Results (Cohort 1)	By 12/31/2024
Novartis AG	230,573	LNA043	Osteoarthritis	II	Phase II ONWARDS - Top-Line Results	By 12/31/2024
Belite Bio, Inc.	2,048	LBS-008	Stargardt Disease (Ophthalmology)	III	Phase III DRAGON - Top-Line Results	By 12/31/2024
Immunocore, Ltd.	1,641	Kimmtrak	Melanoma	III	Phase II/III TEBE-AM - Topline Results	By 12/31/2024
Krystal Biotech, Inc.	5,042	KB707	Solid Tumors	I	Phase I FIH Study - Top Line Results	By 12/31/2024
Krystal Biotech, Inc.	5,042	KB408	Alpha-1 Antitrypsin Deficiency (A1AD or AATD)	I	Phase I Serpentine-1 - Top-Line Results	By 12/31/2024
Krystal Biotech, Inc.	5,042	KB407	Cystic Fibrosis (CF)	I	Phase I - CORAL-1/US - Data	By 12/31/2024
Novartis AG	230,573	KAF156	Malaria	IIb	Phase II KALUMI - Top-Line Results	By 12/31/2024
Johnson & Johnson	387,338	JNJ-4804	Psoriatic Arthritis (PsA)	II	Phase II AFFINITY - Top-Line Results	By 12/31/2024
GSK plc	76,706	Jemperli	Ovarian Cancer	III	Phase III FIRST - Top-Line Results	By 12/31/2024
Novartis AG	230,573	JDQ-443	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III KontRASt-02 - Top-Line Results	By 12/31/2024
Acelyrin, Inc.	596	Izokibep	Uveitis (Ophthalmology)	II/III	Phase IIb/III - Top-Line Results	By 12/31/2024
Inozyme Pharma Inc.	300	INZ-701	Metabolic - General	III	Phase Ib ENERGY-1 - Interim Results	By 12/31/2024
Neurocrine Biosciences, Inc.	11,721	Ingrezza	Neurology - Other	III	Phase III - Registrational Study - Top-Line Results	By 12/31/2024
Incyte Corporation	12,532	INC857643	Myelofibrosis (MF)	I	Phase III POC - Top-Line Results (w/Jakafi)	By 12/31/2024
AstraZeneca PLC	233,590	Imfinzi	Bladder Cancer	III	Phase III NILE - Top-Line Results	By 12/31/2024
Trevi Therapeutics, Inc.	226	Haduvio	Chronic Cough	II	Phase IIb CORAL - Top-line Results (SSRE Analysis)	12/01/2024 - 12/31/2024
GSK plc	76,706	GSK2330672	Primary Biliary Cholangitis (PBC)	III	Phase III GLISTEN - Top-Line Results	By 12/31/2024
Gilead Sciences, Inc.	110,804	GS-6212	HIV / AIDS Treatment	I	Phase I - Topline Results	By 12/31/2024
Gilead Sciences, Inc.	110,804	GS-5423	HIV / AIDS Treatment	II	Phase II - w/GS-2872 & Lenacapavir – Topline Results	By 12/31/2024
Gilead Sciences, Inc.	110,804	GS-2872	HIV / AIDS Treatment	II	Phase II - w/GS-5423 & Lenacapavir – Topline Results	By 12/31/2024
Gilead Sciences, Inc.	110,804	GS-1614	HIV / AIDS Treatment	I	Phase I - Topline Results	By 12/31/2024
Zealand Pharma A/S	8,658	Glepaglutide	Short Bowel Syndrome (SBS)	NDA	Phase III EASE 3- First Interim Data	By 12/31/2024
Celcuity, Inc.	578	Gedatolisib	HR+/HER2- Breast Cancer	III	Phase III VIKTORIA-1 - Top-Line Results	By 12/31/2024
Y-mAbs Therapeutics Inc.	645	GD2-SADA	Solid Tumors	I	Phase I SAD/MAD - Top-line Results at the Medical Meeting	By 12/31/2024
Fate Therapeutics, Inc.	302	FT825	Solid Tumors	I	Phase I FT825-101 (U.S.) - Topline Results	By 12/31/2024
Fate Therapeutics, Inc.	302	FT819	Systemic Lupus Erythematosus (SLE)	I	Phase I Autoimmunity Study - Topline Results	By 12/31/2024
AstraZeneca PLC	233,590	FPI-1966	Bladder Cancer	I/II	Phase I - Top-Line Results	By 12/31/2024
Amgen, Inc.	170,323	Fipaxalparant	Idiopathic Pulmonary Fibrosis (IPF)	IIb	Phase IIb - Topline Results	By 12/31/2024
UCB S.A.	36,702	Fintepla	CDKL5 Deficiency Disorder (CDD) (Epilepsy)	II	Phase III CDKL5 Deficiency Disorder - Topline Results	By 12/31/2024
AstraZeneca PLC	233,590	Fasenra	Hypereosinophilic Syndrome (HES)	III	Phase III - Top-Line Results	By 12/31/2024
Novartis AG	230,573	Fabhalta	Hemolytic Uremic Syndrome (HUS)	III	Phase III APPELHUS - Top-Line Results	By 12/31/2024
Erasca, Inc.	745	ERAS-007	Hematologic Cancer	I/II	Phase I/II HERKULES-4 - Top-Line Results	By 12/31/2024
iTeos Therapeutics Inc.	318	EOS-984	Solid Tumors	I	Phase I - Top-Line Results	By 12/31/2024
Merck KGaA	73,545	Enpatoran	Systemic Lupus Erythematosus (SLE)	II	Phase II WILLOW LTE - CLE Readout	By 12/31/2024
AbbVie Inc.	331,808	Emraclidine	Schizophrenia	III	Phase II - Top-Line Results	By 12/31/2024
AbbVie Inc.	331,808	Elezanumab	Ischemic Stroke	II	Phase II EAISE - Top-Line Results	By 12/31/2024
Enanta Pharmaceuticals, Inc.	247	EDP-938	Respiratory Syncytial Virus (RSV) Treatment	IIb	Phase II RSVPEDs - Top-Line Results	By 12/31/2024
Dynavax Technologies Corporation	1,403	DV2-PLG-01	Vaccines (General)	II	Phase II - Top-Line Results	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, Company press releases, Company websites and filings, as of 10/31/24.

Upcoming Key Catalysts (Coming Quarter)

(N=225) (Cont'd)

Company	Mkt Cap	Product		Data		
		Drug	Indication	Phase	Event	Timing
Sanofi	\$135,778	Duvakitug	Ulcerative Colitis (UC)	IIb	Phase IIb - Top-Line Results	By 12/31/2024
Jazz Pharmaceuticals plc	6,765	DSP-0187	Narcolepsy	I	Phase I - Top-Line Results	By 12/31/2024
Arcus Biosciences, Inc.	1,492	Domvanalimab	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III VELOCITY-Lung - Topline Results	By 12/31/2024
Disc Medicine, Inc.	1,368	DISC-1459	Anemia	I/II	Phase I/II - Topline Results	By 12/31/2024
Sagimet Biosciences	178	Denifanstat	MASH	II	Phase I Hepatic Impairment - Results	By 12/31/2024
Eli Lilly and Company	803,810	DC-806	Psoriasis	IIb	Phase IIb Illuminate - Top-Line Results	By 12/31/2024
Y-mAbs Therapeutics Inc.	645	Danyelza	Osteosarcoma	I/II	Phase II 15-096 - Topline Results	By 12/31/2024
Sage Therapeutics, Inc.	489	Dalzanemdor	Huntington's Disease	III	Phase III PURVIEW - Data Read-Out	By 12/31/2024
AbbVie Inc.	331,808	CVL-871	Neuropsychiatric Symptoms in Alzheimer's Disease	II	Phase IIa - Top-Line Results	By 12/31/2024
AbbVie Inc.	331,808	CVL-865	Seizure Disorders (Epilepsy)	II	Phase II REALIZE - Top-Line Results	By 12/31/2024
CRISPR Therapeutics AG	4,192	CTX112	Non-Hodgkin's Lymphoma (NHL)	I/II	Phase I/II CRSP-ONC-006 - Topline Results	By 12/31/2024
Compass Therapeutics Inc.	237	CTX-009	Biliary Tract Cancer	II/III	Phase II/III COMPANION-002 - Top-Line Results	By 12/31/2024
Larimar Therapeutics, Inc.	511	CTI-1601	Friedreich's Ataxia	II	Phase II Open Label Extension - Top Line Results	By 12/31/2024
Corcept Therapeutics Incorporated	4,940	CORT113176	Amyotrophic Lateral Sclerosis (ALS)	II	Phase II - DAZALS - Top-Line Results	By 12/31/2024
COMPASS Pathways	429	COMP360	Major Depressive Disorder (MDD)	III	Phase III COMP 005 - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	Cendakimab	Eosinophilic Esophagitis (EoE)	III	Phase III EoE - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	CC-97540	Systemic Lupus Erythematosus (SLE)	I	Phase I - Top-Line Results	By 12/31/2024
Caribou Biosciences, Inc.	160	CB-011	Multiple Myeloma (MM)	I	Phase I - CaMMouflage - Top-Line Results	By 12/31/2024
Candel Therapeutics, Inc.	180	CAN-2409	Prostate Cancer	III	Phase II ULYSSES - Read Out	By 12/31/2024
Bristol Myers Squibb Company	105,262	Camzyos	Chronic Heart Failure - Preserved Ejection Fraction (Chronic HFpEF)	II	Phase II EMBARK-HFpEF - Top-Line Results	By 12/31/2024
Rhythm Pharmaceuticals, Inc.	2,968	CAM4072	Metabolic - General	III	Phase III Weekly Vs Daily Formulations - Weekly PK/Tolerability Data	By 12/31/2024
Novo Nordisk A/S	504,080	CagriSema	Obesity	III	Phase III - Topline Results	By 12/31/2024
Cabaletta Bio, Inc.	191	CABA-201	Myasthenia Gravis (MG)	I/II	Phase I/II RESET-MG - Topline Results	By 12/31/2024
Jasper Therapeutics, Inc.	295	Briquilimab	Urticaria	I/II	Phase Ib/IIa SPOTLIGHT - Top-Line Results	By 12/31/2024
Pfizer Inc.	161,217	BNT167	Chickenpox and Shingles - Vaccines and Treatments	I/II	Phase I/II - Top-line Results	By 12/31/2024
BioNTech SE	26,268	BNT-165	Malaria	I/II	Phase I - Top-line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	BMS-986288	Solid Tumors	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Biohaven Ltd.	5,315	BMS-986089	Spinal Muscular Atrophy	III	Phase III RESILIENT - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	BL-B01D1	Non-Small Cell Lung Cancer (NSCLC)	II	Phase I BL-B01D1-LUNG-101 - Top-Line Results	By 12/31/2024
Novartis AG	230,573	Beovu	Diabetic Retinopathy (Ophthalmology)	III	Phase III Vs Panretinal Photocoagulation Laser - Top-Line Results	By 12/31/2024
iTeos Therapeutics Inc.	318	Belrestotug	Head and Neck Cancer	I/II	Phase I/II - TIG-006 - Top-Line Results	By 12/31/2024
Galectin Therapeutics Inc.	156	Belapectin	Esophageal Varices	II/III	Phase IIb/III - NAVIGATE - Top-Line Results	By 12/31/2024
Beam Therapeutics Inc.	1,704	BEAM-201	Acute Lymphoblastic Leukemia (ALL)	I/II	Phase I/II R/R T-ALL/T-LL - Top-Line Results	By 12/31/2024
Beam Therapeutics Inc.	1,704	BEAM-101	Sickle Cell Anemia	I/II	Phase I/II BEACON - Top-Line Results	By 12/31/2024
Bicara Therapeutics, Inc.	1,224	BCA101	Non-Small Cell Lung Cancer (NSCLC)	I	Phase I/Ib KEYNOTE-E28 - Topline Results	By 12/31/2024
Regeneron Pharmaceuticals, Inc.	100,705	bbT369	Non-Hodgkin's Lymphoma (NHL)	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	105,262	BBP-398	Solid Tumors	I/II	Phase I/II - w/Sotorasib - Top-Line Results	By 12/31/2024
AstraZeneca PLC	233,590	AZD5718	Asthma	II	Phase II FLASH - Top-Line Results	By 12/31/2024
AstraZeneca PLC	233,590	AZD1390	Brain Cancer (Malignant Glioma; AA and glioblastoma (GBM))	I	Phase I - Top-Line Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,314	AXS-12	Narcolepsy	III	Phase III SYMPHONY OLE - Topline Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,314	AXS-07	Migraine and Other Headaches	NDA	Phase III EMERGE - Topline Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,314	Auvelity	Neuropsychiatric Symptoms in Alzheimer's Disease	II/III	Phase III ACCORD-2 - Topline Results	By 12/31/2024
Johnson & Johnson	387,338	Aticaprant	Major Depressive Disorder (MDD)	III	Phase III VENTURA-2 - Top-Line Results	By 12/31/2024
Arcturus Therapeutics Ltd.	512	ARCT-810	Ornithine Transcarbamylase (OTC) Deficiency	II	Phase II - Safety & Biomarker Data	By 12/31/2024
Apellis Pharmaceuticals, Inc.	3,249	APL-3007	Undisclosed	I	Phase I Dose Escalation - Top-Line Results	By 12/31/2024
Apogee Therapeutics, LLC	3,113	APG-808	Chronic Obstructive Pulmonary Disease (COPD)	I	Phase I - Interim Data	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 10/31/24.

Source: Citeline, Company press releases, Company websites and filings, as of 10/31/24.

Upcoming Key Catalysts (Coming Quarter)

(N=225) (Cont'd)

Company	Mkt Cap	Product		Data		
		Drug	Indication	Phase	Event	Timing
Arcellx, Inc.	\$4,532	Anito-cel	Multiple Myeloma (MM)	III	Phase II iMMagine-1 - Top-Line Results	By 12/31/2024
AnaptysBio, Inc.	967	ANB032	Atopic Dermatitis (Eczema)	II	Phase IIb - Top-line Interim Data	By 12/31/2024
Sanofi	135,778	AlphaMedix	Neuroendocrine Tumors (NET)	II	Phase II Naive Patients - Top-line Results	By 12/31/2024
Alector Inc.	463	AL-002	Alzheimer's Disease (AD)	II	Phase II INVOKE-2 - Topline Results	By 12/31/2024
GSK plc	76,706	AFX3772	Pneumococcal (Streptococcus pneumoniae) Vaccines (Antibacterial)	II	Phase II Healthy Infants (42-90 days) - Topline Results	By 12/31/2024
Aldeyra Therapeutics, Inc.	316	ADX-629	Alcoholic Liver Disease / Alcoholic Hepatitis	I/II	Phase II (Moderate Alcoholic Hepatitis) - Top-Line Results (First Cohort)	By 12/31/2024
Adaptimmune Therapeutics plc	189	ADP-A2M4CD8	Ovarian Cancer	II	Phase II SURPASS-3 - Top-Line Results	By 12/31/2024
AC Immune SA	302	ACI-24	Down Syndrome	I	Phase Ib/II - ABATE (UK) - Interim Data	By 12/31/2024
AbbVie Inc.	331,808	ABBV-CLS-484	Solid Tumors	I	Phase I - Top-Line Results	By 12/31/2024
AbbVie Inc.	331,808	ABBV-453	Multiple Myeloma (MM)	I	Phase I - Top-Line Results	By 12/31/2024
AbbVie Inc.	331,808	ABBV-154	Crohn's Disease	II	Phase II - Top-Line Results	By 12/31/2024
4D Molecular Therapeutics Inc.	424	4D-150	Diabetic Macular Edema (Ophthalmology)	II	Phase II SPECTRA - Top-Line Results	By 12/31/2024
Atossa Therapeutics, Inc.	179	(Z)-Endoxifen	HR+/HER2- Breast Cancer	II	Phase II Karisma Endoxifen Study - Top-Line Results	By 12/31/2024
Valneva SE	474	Shigella4V	Antibacterial and Antifungal - Miscellaneous Vaccines and Treatments	II	Phase I/II Dose Finding Study - Top-Line Results	By 01/31/2025
Omeros Corporation	243	OMS906	Paroxysmal Nocturnal Hemoglobinuria (PNH)	I	Phase Ib PNH - Preliminary Data	By 01/31/2025
Corcept Therapeutics Incorporated	4,940	Miricorilant	Weight Gain from Antipsychotic Use	II	Phase II - GRATITUDE - Top-Line Results	By 01/31/2025
AbbVie Inc.	331,808	AGN-151586	Wrinkles	III	Phase III - M21-509 - Topline Results	By 01/31/2025
Vertex Pharmaceuticals Incorporated	123,295	VX-147	Focal Segmental Glomerulosclerosis (FSGS)	II/III	Phase IIb/III - Topline Results	12/01/2024 - 02/28/2025
Viatrix Inc.	13,654	Tyrvaya	Neutrophic Keratopathy	II	Phase II - OLYMPIA - Topline Results	By 02/28/2025
Eli Lilly and Company	803,810	PR006	Frontotemporal Dementia (FTD)	I/II	Phase I/II PROCLAIM - Top-Line Results	By 02/28/2025
Eli Lilly and Company	803,810	Mazdutide	Obesity	II	Phase III High Dose - Top-Line Results	By 02/28/2025
Iovance Biotherapeutics, Inc.	3,238	IOV-4001	Non-Small Cell Lung Cancer (NSCLC)	I/II	Phase I/II IOV-GM1-201 - Top-Line Results	By 02/28/2025
Novo Nordisk A/S	504,080	IcoSema	Diabetes Mellitus, Type II	III	Phase III Combine 2 - Topline Results	By 02/28/2025
Arvinas, Inc.	1,779	ARV-110	Prostate Cancer	I/II	Combination Trial - Top-Line Results	By 02/28/2025
Arvinas, Inc.	1,779	Vepdegestrant	HR+/HER2- Breast Cancer	III	Phase III VERITAC-2 - Topline Results	By 03/31/2025
Vaxcyte, Inc.	13,970	VAX-24	Pneumococcal (Streptococcus pneumoniae) Vaccines (Antibacterial)	II	Phase II Pediatric - Top-Line Data (Primary Three-dose Immunization Series)	By 03/31/2025
Minerals Therapeutics, Inc.	677	Lorundrostat	Chronic Kidney Disease (CKD)	II	Phase II w/SGLT2 - Top-Line Results	By 03/31/2025
Immunovant, Inc.	4,423	Batoclimab	Myasthenia Gravis (MG)	III	Phase III SAD - Top-Line Results	By 03/31/2025
Pliant Therapeutics, Inc.	860	PLN-101095	Solid Tumors	I	Phase I - Top-Line Results	By 04/30/2025
Allogene Therapeutics Inc.	510	Cemacabtagene Ansedgleleucel	Chronic Lymphocytic Leukemia (CLL)/Small Cell Lymphocytic Lymphoma (SL) - NHL	I	Phase I ALPHA2 - Topline (CLL) Results	By 04/30/2025
Vertex Pharmaceuticals Incorporated	123,295	ALPN-303	Autoimmune Hemolytic Anemia (AIHA)	I	Phase Ib RUBY-4 - Top-Line Results	By 04/30/2025
Prothena Corporation plc	823	Birtamimab	Amyloid light-chain (AL) Amyloidosis	III	Phase III AFFIRM-AL - Top-Line Results	By 06/30/2025
Zentalis Pharmaceuticals	201	Azenoserib	Ovarian Cancer	I/II	Phase I/II MAMMOTH - Top-Line Results	By 06/30/2025
Valneva SE	474	VLA-15	Antibacterial and Antifungal - Miscellaneous Vaccines and Treatments	III	Phase III - Top-Line Results	By 12/31/2025
Regeneron Pharmaceuticals, Inc.	100,705	Veopoz	Paroxysmal Nocturnal Hemoglobinuria (PNH)	III	Phase III ACCESS-1 - Topline Results	By 12/31/2025
Schrödinger, Inc.	1,287	SGR-2921	Myelodysplastic Syndrome (MDS)	I	Phase I - Top-Line Results	By 12/31/2025
Recursion Pharmaceuticals, Inc.	1,821	REC-3964	Clostridium difficile-Associated Diarrhea/Infection (CDAD/CDI)	II	Phase II Study - Top-Line Results	By 12/31/2025
Merck & Co., Inc.	263,569	Reblozyl	Myelofibrosis (MF)	III	Phase III - INDEPENDENCE - Top-Line Results	By 12/31/2025
Bristol Myers Squibb Company	105,262	Opdualag IV	Hepatocellular (Liver) Cancer (HCC) (Including Secondary Metastases)	I/II	Phase II RELATIVITY-073 - Top-Line Results	By 12/31/2025
Regeneron Pharmaceuticals, Inc.	100,705	Libtayo	Melanoma	III	Phase III - w/ Fianlimab Vs Pembrolizumab - Top-Line Results	By 12/31/2025
Bayer AG	27,378	Kerendia	Chronic Kidney Disease (CKD)	III	Phase III - FIND-CKD - Topline Results	By 12/31/2025

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 10/31/24.

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Schedule of Key Biotech Conferences

November 2024 – April 2025

November						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

January						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

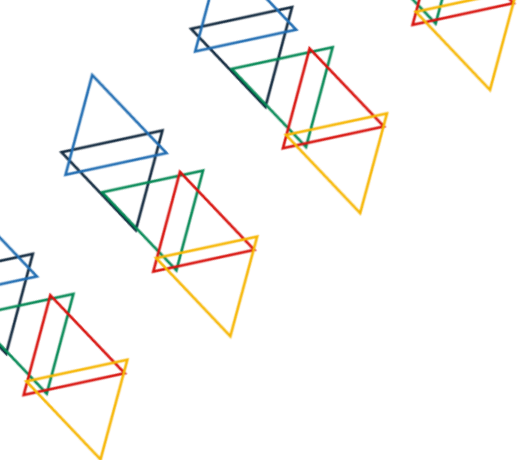
February						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Key Conferences

- Nov 3-6: ObesityWeek (Austin, TX)
- Nov 15-19: AASLD (San Diego, CA)
- Nov 16-18: AHA (Chicago, IL)
- Nov 19-21: Jefferies Healthcare Conference (London, UK)
- Dec 7-10: ASH (San Diego, CA)
- Dec 10-14: SABCS (San Antonio, TX)
- Jan 13-16: JPM Healthcare Conference (San Francisco, CA)
- Jan 22: BioSeed (London, UK)
- Feb 10-11: BIO CEO & Investor Conference (New York, NY)
- Feb 26-27: ELSF (Zurich, Switzerland)
- Feb 27 – Mar 2: ICBCB (Seoul, South Korea)
- Mar 2-5: ECFG17 (Dublin, Ireland)
- Mar 3-5: Cowen Healthcare Conference (Boston, MA)
- Mar 10-12: Leerink Healthcare Conference (Miami, FL)
- Mar 13-14: LSX RNA Leaders Europe (Basel, Switzerland)
- Mar 18-20: Bioprocessing Summit (Barcelona, Spain)
- Mar 19-22: ATTD (Amsterdam, Netherlands)
- Apr 9-11: Reuters Pharma (Barcelona, Spain)



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