

Life Sciences in Review:

Perspectives on
November Activity



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November Update

M&A



- The number of M&A and licensing transactions decreased in November
 - 3 M&A and 21 licensing transactions were announced this month, versus 6 M&A and 26 licensing transactions announced in October of 2024
 - In comparison, there were 11 M&A and 29 licensing transactions announced in November of 2023, and 11 M&A and 17 licensing transactions announced in November of 2022
- While deal size has remained on the smaller end, two deals were announced with transactions greater than \$1bn in value
- Theme of acquiring early stage (Ph. 2 or earlier) assets continues

Financing



- IPO activity continues to be sporadic, with no priced biopharma IPOs in November
 - Current backlog of 2 IPOs on file
- Follow-on market maintained its pace with 13 priced transactions in November
 - LS companies raised \$1.4bn in the aggregate in comparison to ~\$2bn in October
 - Average file-to-offer discount of (5.2%) vs. (8.8%) in October
- Private financing market slowed down with 12 deals vs. 18 in October
 - LS companies raised an aggregate of \$927mm vs. \$1.2bn in October

Industry News



- President-elect Donald J. Trump nominated several key healthcare officials to key posts, including Martin Makary to lead the FDA, Dave Weldon to lead the CDC, Mehmet Oz to lead the CMS and Robert F. Kennedy Jr. to lead the HHS
 - Most notably, the XBI notably closed down >5% following Robert F. Kennedy Jr.'s nomination
- In its Ph. 2b trial, Amgen's MariTide demonstrated significant weight loss, with overweight and obese patients, including those without T2D, experiencing approximately a 20% reduction over a year; however, investor concerns about the drug's side effect profile and its differentiation from existing blockbuster obesity drugs and next-gen therapies led to an 11% drop in Amgen's shares in midday trading
 - This was the second time this month that Amgen's stock price declined >5% in intraday trading; the first was on the heels of the discovery by an equity analyst of data suggesting bone density loss in Patients on trial
- BridgeBio's Attruby (acoramidis) was approved for transthyretin amyloid cardiomyopathy (ATTR-CM)
- Cassava Science's stock dropped 83% after failing its Ph. 3 Alzheimer's study

(1) ~60% represents the T+1 day premium from the offer price.

Source(s): Capital IQ, public filings, and news, as of 11/29/24.

Month in Review: At-a-Glance

Market Updates

Index	% Change			
	1 Week	1 Month	6 Months	YTD
S&P 500	1.1%	5.7%	14.3%	27.2%
Nasdaq Biotech (NBI)	2.5%	(0.1%)	5.5%	4.2%
Large Pharma	2.7%	(4.5%)	0.5%	3.9%
Biotech	3.9%	0.6%	15.0%	25.8%
Large-cap (\$10-50bn)	3.6%	(1.4%)	12.9%	35.0%
Mid-cap (\$2-10bn)	2.3%	5.9%	23.4%	46.4%
Small-cap (\$500mm-2bn)	3.1%	(2.6%)	12.9%	24.0%
Micro-cap (<\$500mm)	6.5%	0.7%	10.9%	(2.3%)
Specialty Pharma	(1.5%)	1.3%	(9.5%)	(8.4%)

Key Data Events and News

President-elect Donald J. Trump won the US election in early November – Trump started naming prospective cabinet-level appointments, several of whom have been to positions at senior levels of health policy. At the time of writing, the healthcare team comprises five key appointments. Notably, the U.S. Senate must confirm all appointments except the head of the Center for Disease Control (CDC).

- Robert F. Kennedy, Jr., Secretary, Department of Health and Human Services (DHHS)
- Martin Makary, MD, Commissioner, Food and Drug Administration (FDA), DHHS
- Dave Weldon, MD, Director, CDC, DHHS
- Jay Bhattacharya, MD, Director, National Institute for Health (NIH), DHHS
- Mehmet Oz, MD, Administrator, Center for Medicare and Medicaid Services (CMS), DHHS
- Janette Nesheiwat, MD, Surgeon General

Amgen's weight loss drug shows efficacy, but questions remain about competitiveness – MariTide's Phase 2 trial showed patients exhibited roughly 20% weight loss over a year treatment. These results show similar efficacy to Eli Lilly's Zepbound, although they lag the weight loss caused by Lilly's newest drug, Retatrutide, in a recent Phase 2 trial. MariTide is positioned to be more convenient than existing medications, with a monthly injection (compared to weekly injections for existing therapies). Two key questions remain concerning the tolerability at lower doses, and long-term weight loss after ending treatment.

MFO = Marketed Follow-on; CMPO = Confidentially Marketed Public Offerings.

Source(s): Capital IQ, public filings, and news, as of 11/29/24.

Key Select M&A Updates

Acquirer	Target	Phase	Ent. Value (\$mm)
 Roche	 POSEIDA THERAPEUTICS	Phase 1	\$1,500
 NOVARTIS	 KATE THERAPEUTICS	Preclinical	1,100
 BIONTECH	 BIOTHEUS 普米斯生物技术	Phase 2	950

Key Select Equity Financing Updates

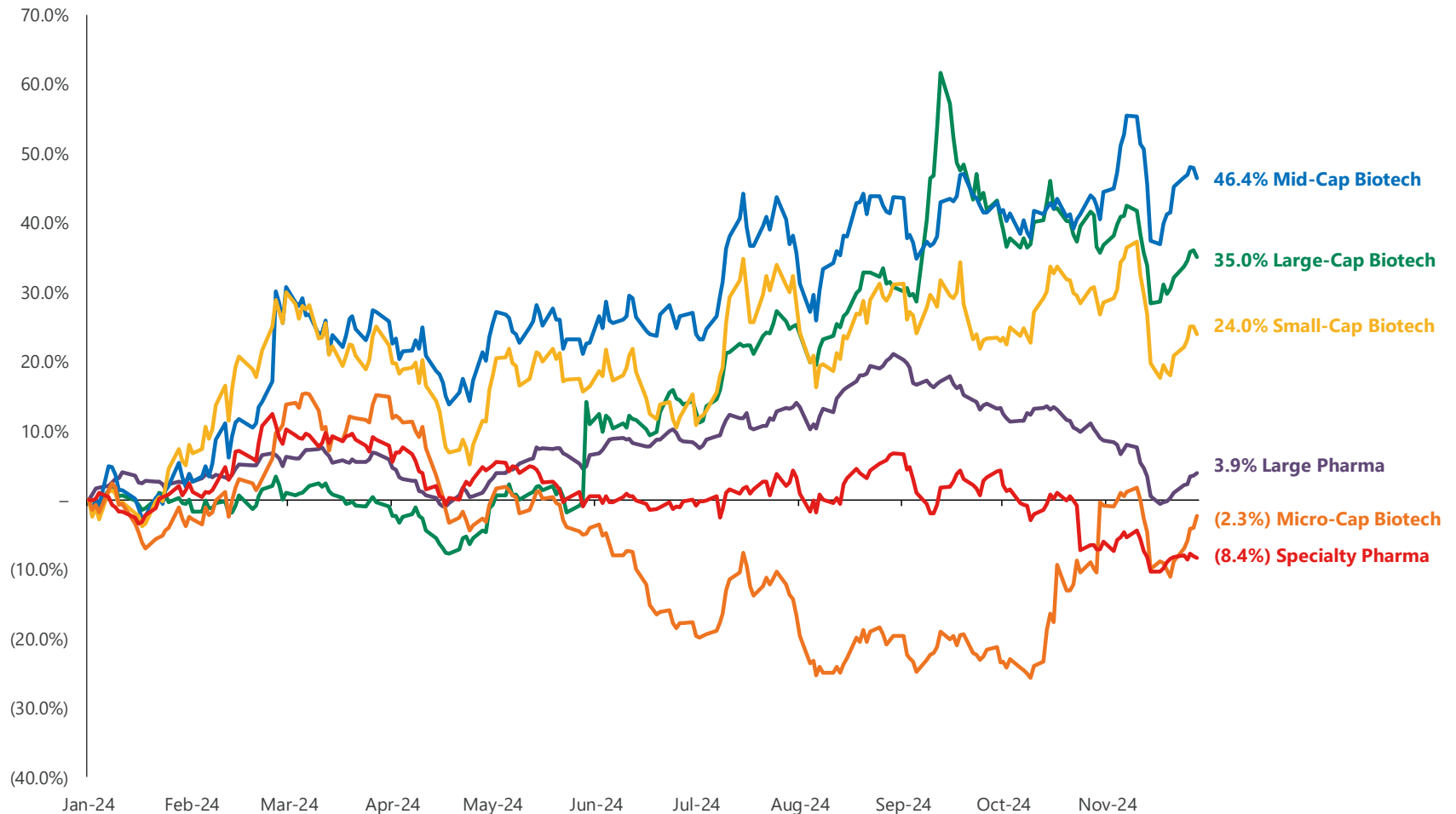
Company	Deal Type	Offer / T + 1 Day	Financing (\$mm)
 SPYRE THERAPEUTICS	CMPO	(2.2%)	\$200
 zaiLab	CMPO	4.6%	200
 NEUROGENE	PIPE	32.0%	200
 Replimune	MFO	10.6%	140
 89bio	CMPO	4.9%	125

Key Select Priced IPO Updates

Company	Offer Price	Offer / T + 1 Day	Filing Amt. (\$mm)
 invizyne	\$8.00	NA	\$15

YTD Stock Performance

By Industry Sub-vertical



Source(s): Capital IQ, as of 11/29/24.

NBI Subsector Stock Performance

Subsector Category		MoM % Change in Stock Performance	MoM % Change in Short Interest
NBI	Large Cap (>\$10bn)	(1.7%)	(1.9%)
	Mid Cap (\$2-10bn)	8.8%	(1.0%)
	Small Cap (<\$2bn)	2.2%	(7.8%)
Therapeutic Area	Oncology (N=59)	0.2%	(5.7%)
	Inflammation & Immunology (N=15)	0.7%	(1.8%)
	Endocrine & Metabolic (N=14)	10.2%	(3.0%)
	Neurology (N=14)	2.2%	2.6%
	Infectious Diseases (N=12)	0.2%	(6.5%)
	Neuropsych / Mood Disorders (N=11)	15.2%	(8.6%)
	Rare (N=10)	2.2%	(1.4%)
	Cardiovascular (N=9)	(3.2%)	(5.3%)
	Hematology (N=8)	9.8%	(10.1%)
	Pulmonology & Respiratory (N=8)	3.9%	(6.4%)
	Ophthalmology (N=6)	0.9%	(14.5%)
	Dermatology (N=5)	41.2%	1.3%
	Musculoskeletal (N=4)	13.9%	(8.3%)
	GI (N=3)	(20.8%)	(19.1%)
Modality	Small Molecule (N=88)	4.1%	(6.0%)
	Monoclonal Antibody (N=29)	0.7%	(2.2%)
	Protein & Peptide Therapeutics (N=17)	9.4%	(2.9%)
	Cell Therapy (N=11)	(0.2%)	(7.7%)
	DNA & RNA Therapeutics (N=9)	4.3%	(2.6%)
	Gene Therapy (N=7)	16.9%	(22.1%)
	Genome Editing (N=6)	2.6%	(1.0%)
	Vaccine (N=6)	(3.8%)	9.4%
	Recombinant Antibody (N=3)	(6.0%)	(10.5%)
	Plasma-derived Therapy (N=2)	3.2%	(12.9%)

Note(s): NBI constituents are equally weighted and averaged. Includes NBI constituents as of 11/29/24 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 11/29/24.

M&A Update

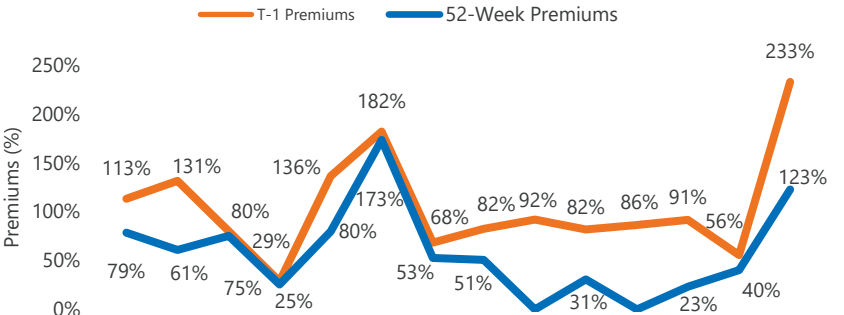
M&A Transaction Highlights

Roche to acquire Poseida Therapeutics for \$1,500mm – Roche entered into an agreement to acquire Poseida for \$1,500mm, adding allogeneic CAR-T therapies for hematologic malignancies to Roche’s pipeline. The acquisition provides Roche with Poseida’s non-viral technology platform, which is designed to generate CAR-T therapies that are rich in T stem cell memory cells. These cells are long-lived, multi-potent, and self-replicating, with potential for improved safety and efficacy profiles.

Novartis to acquire Kate Therapeutics for \$1,100mm – Novartis entered into an agreement to acquire Kate for \$1,500mm, expanding its pipeline in the neuromuscular space. The acquisition provides Novartis with multiple gene therapy candidates for disorders such as DM1, DMD, and FSHD, along with a technology platform that improves delivery of AAV capsids to skeletal muscle and cardiac tissue, while avoiding the liver. The acquisition comes in the wake of recent failures in the neuromuscular space, including Pfizer in DMD and Fulcrum in FSHD.

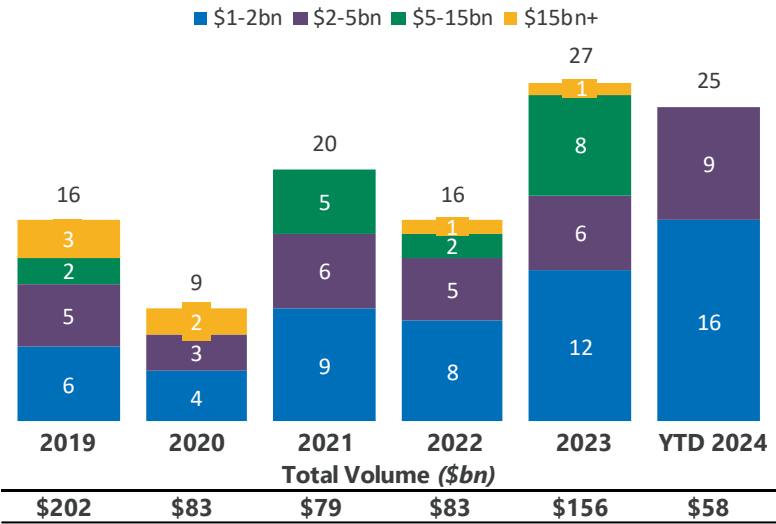
BioNTech to acquire Biotheus for \$950mm – BioNTech entered into an agreement to acquire Biotheus for \$950mm, expanding its oncology pipeline with Biotheus’ PD-L1/ VEGF-A bispecific antibody. The drug shown encouraging efficacy and tolerability in patients across various tumor types, with multiple registrational trials expected to start in the coming year. The acquisition also expands BioNTech’s footprint in China, including an R&D hub, a biologics manufacturing facility, and 300 new employees to join and strengthen BioNTech’s R&D team.

YTD 2024 Premiums Paid

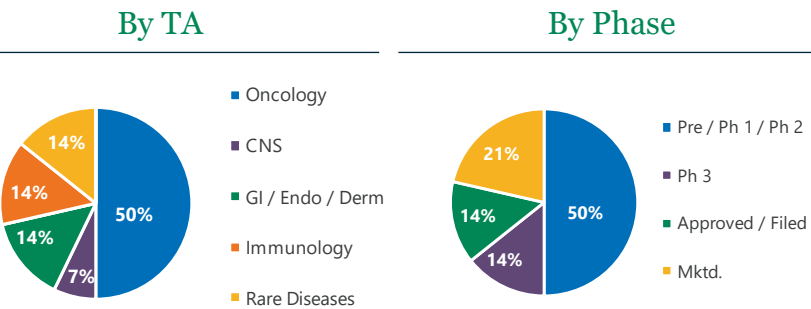


Source(s): Capital IQ, public filings, and news, as of 11/29/24.

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
11/26/24	Roche	Poseida Therapeutics	P-BCMA-ALLO1	r/r MM	Phase 1	\$1,000	\$1,500 ⁽¹⁾	67%	\$500	WW
11/21/24	Novartis	Kate Therapeutics	KT809	DMD	Preclinical	ND	1,100 ⁽²⁾	ND	ND	WW
11/13/24	BioNTech	Biotheus	PM8002	Oncology	Phase 2	800	950 ⁽³⁾	84%	150	WW

(1) Roche will commence a tender offer to acquire all of the outstanding shares of Poseida common stock at a price of \$9.00 per share in cash plus a non-tradeable CVR to receive certain milestone payments of up to \$4.00 per share in cash. The price payable at closing represents a premium of approximately 215% to Poseida's closing share price on 11/25/24.

(2) Kate Therapeutics' shareholders are entitled to receive up to \$1.1bn, comprising a cash payment that was paid at closing of the transaction and additional amounts payable on achievement of specified milestones.

(3) BioNTech will pay Biotheus shareholders an upfront consideration of \$800mm, predominantly in cash, with a small portion in American depositary shares, to acquire 100% of the issued share capital, subject to customary purchase price adjustments, plus additional performance-based contingent payments of up to \$150mm if certain milestones are met.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 11/29/24.

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		Included
11/27/24	Saniona	Acadia	SAN711	Essential tremor	Phase 1	\$28	\$610 ⁽¹⁾	5%	\$582	WW
11/26/24	Arrowhead Pharmaceuticals	Sarepta Therapeutics	TRiM platform ⁽²⁾	Multiple indications ⁽³⁾	Phase 1/2	500	10,500 ⁽⁴⁾	5%	10,000	WW
11/25/24	Aelix Therapeutics	Gilead	HTI T cell immunogen HIV vaccines ⁽⁵⁾	HIV	Phase 2a	ND	ND	ND	ND	WW
11/20/24	Vyriad	Novartis	Active targeting lentiviral vector platform ⁽⁶⁾	ND	Preclinical	ND	ND	ND	ND	WW
11/20/24	Kura Oncology	Kyowa Kirin	Ziftomenib	NPM-1 mutant AML	Phase 1/2	330	1,491 ⁽⁷⁾	22%	1,161	WW ex. US; US 50% profit share
11/20/24	Montai Therapeutics	Pfizer	CONECTA AI platform ⁽⁸⁾	NSCLC	Preclinical	ND	ND	ND	ND	ND

- (1) Saniona will receive \$28mm upfront plus potential milestone payments of up to \$582mm. In addition, Saniona is eligible to receive tiered royalties of mid-single digits to low double digits on net sales of commercial products that may result from development of SAN711.
- (2) Arrowhead's Targeted RNAi Molecule (TRiM) platform utilizes ligand-mediated delivery and is designed to enable tissue-specific targeting while being structurally simple, providing advantages that include simplified manufacturing and reduced costs, multiple routes of administration, and potential for improved safety.
- (3) The agreement covers multiple clinical and preclinical programs in rare, genetic diseases of the muscle, central nervous system (CNS), and the lungs.
- (4) Arrowhead will receive \$825mm, consisting of \$500mm cash and \$325mm as an equity investment. Arrowhead also receives \$250mm to be paid in equal installments over five years and is eligible to receive an additional \$300mm in near-term payments, which Arrowhead is on track to achieve during the next 12 months. Additionally, Arrowhead is eligible to receive royalties on commercial sales and up to approximately \$10bn in future potential milestone payments.
- (5) Aelix tested its T cell vaccines ChAdOx1.HTI and MVA.HTI along with Gilead's toll-like receptor agonist, known as vesatolimod, in people with HIV who were taking antiretroviral therapy.
- (6) Vyriad's targeted lentiviral vector platform provides T-cell specificity and activation in vivo, enabling delivery of CAR payloads to T cells in their natural environment.
- (7) Kura will receive an upfront payment of \$330mm and expects to receive up to \$420mm in near-term milestone payments, including a payment upon the launch of ziftomenib in the monotherapy relapsed/refractory setting. In addition, Kura is eligible to receive additional development, regulatory and commercial milestone payments of \$741mm, totaling up to \$1.161 bn in payments for milestones and the opt-in for solid tumor indications.
- (8) Montai's CONECTA platform integrates leading edge computational tools to decode links between hard-to-drug biological pathways and novel small molecule solutions from an untapped source of diverse human-qualified chemistry called Anthromolecules.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 11/29/24.

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 Included
					Status	Payment	Total	% of total		
11/20/24	Ampersand Biomedicines	Pfizer	AND platform ⁽¹⁾	Obesity	Preclinical	ND	ND	ND	ND	ND
11/18/24	VelaVigo	Avenzo Therapeutics	Nectin4/TROP2 bispecific ADC	ND	Preclinical ⁽²⁾	50	800 ⁽³⁾	6%	750	WW ex. Greater China
11/18/24	Ratio Therapeutics	Novartis	SSTR2 radiotherapeutic candidate ⁽⁴⁾	Oncology	Preclinical	ND	745 ⁽⁵⁾	ND	ND	WW
11/15/24	Numab	Kaken	ND081	Inflammatory Bowel Disease	Preclinical	15	15 ⁽⁶⁾	100%	0	Asia
11/14/24	LaNova Medicines	Merck	LM-299	Solid Tumors	Phase 1	588	3,288 ⁽⁷⁾	18%	2,700	WW
11/12/24	Flare Therapeutics	Roche	Multiple small molecules ⁽⁸⁾	Oncology	Preclinical	70	1,870 ⁽⁹⁾	4%	1,800	WW

(1) Ampersand is using its computationally-powered Address, Navigate, Determine (AND) platform to program biologic medicines that work only where needed in the body and nowhere else.

(2) An IND is planned for submission to the FDA and Chinese National Medical Products Administration in 2025.

(3) VelaVigo will receive an upfront fee and potential near-term milestones upon option exercise by Avenzo of up to \$50mm. In addition, VelaVigo is eligible to receive future potential development, regulatory, and commercial milestone payments of up to approximately \$750mm in total, as well as tiered royalties on sales in Avenzo's territory.

(4) Ratio will collaborate with Novartis to drive preclinical activities to research and select an SSTR2-targeting development candidate.

(5) Ratio will receive combined upfront and potential milestone payments up to \$745mm and is eligible to receive tiered royalty payments.

(6) Kaken has obtained an option to acquire commercial rights to ND081 for certain key Asian territories in exchange for funding preclinical and clinical development up to Phase 2a proof of concept. Numab will receive approximately \$13mm (~\$14.6mm) as an upfront payment and will be the main executing party of preclinical and clinical development.

(7) LaNova will receive an upfront payment of \$588mm, and is eligible to receive up to \$2.7bn in milestone payments associated with the technology transfer, development, regulatory approval and commercialization of LM-299 across multiple indications.

(8) This partnership will leverage Flare Therapeutics' proteomic and mass spectrometry platform and expertise, powered by its proprietary library of electrophilic compounds, to discover novel small molecule drugs aimed at previously undrugged transcription factor targets in oncology.

(9) Flare Therapeutics will receive a \$70mm upfront cash payment and is eligible to receive discovery, development, and commercialization milestone payments potentially exceeding \$1.8bn and royalties.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 11/29/24.

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
11/12/24	Schrödinger	Novartis	Multiple development candidates ⁽¹⁾	ND	Preclinical	\$150	\$2,422 ⁽²⁾	6%	\$2,272	WW
11/12/24	Vesalius	GSK	Small molecule platform ⁽³⁾	Parkinson's disease	Preclinical	80	650 ⁽⁴⁾	12%	570	WW
11/11/24	Biocytogen	Ideaya	BCG034	Solid tumors	Preclinical	307	407 ⁽⁵⁾	75%	100	WW
11/11/24	ARS Pharmaceuticals	ALK-Abelló	Neffy	Anaphylaxis	Marketed	145	465 ⁽⁶⁾	31%	320	WW ex. US, AU, NZ, JP, and CH
11/07/24	Leads Biolabs	Oblenio Bio	LBL-051	Autoimmune diseases	Preclinical	35	614 ⁽⁷⁾	6%	579	WW
11/04/24	Ascendis Pharma	Novo Nordisk	TransCon technology ⁽⁸⁾	Cardiovascular and metabolic diseases	Preclinical	ND	285 ⁽⁹⁾	ND	ND	WW

(1) Schrödinger announced a research collaboration and license agreement with Novartis to advance multiple development candidates into Novartis's portfolio for further development. The companies also announced an expanded three-year software agreement that substantially increases Novartis's access to Schrödinger's computational predictive modeling technology and enterprise informatics platform.

(2) Novartis will pay Schrödinger \$150mm upfront, and Schrödinger will also be eligible to receive up to \$892mm in research, development and regulatory milestone payments. Additionally, Schrödinger is eligible for up to \$1.38bn in commercial milestones and tiered mid single-digit to low double-digit royalties on net sales of each product commercialized by Novartis.

(3) Vesalius uses large-scale human genetics, genomics, induced pluripotent stem cell (iPSC) models and artificial intelligence to uncover causal biology and identify optimal intervention points for new therapies.

(4) Vesalius will receive \$80mm in upfront and equity payments, and is eligible to receive potential preclinical, development and commercial milestone payments of up to \$570mm along with tiered royalties for the preclinical small molecule program.

(5) Biocytogen will receive upfront and option exercise fees, along with additional development and regulatory milestone payments, commercial milestone payments, and royalties on net sales, totaling \$406.5mm, including up to \$100mm in development and regulatory milestone payments.

(6) ARS Pharma is entitled to receive an upfront payment of \$145mm from ALK. Furthermore, ARS Pharma may receive up to \$320mm related to regulatory and commercial milestones, potentially over the next 15+ years as well as tiered royalties in the teens on future sales.

(7) Leads Biolabs is eligible to receive up to \$35mm in upfront and near-term payments, \$579mm in development, regulatory, and commercialization milestone payments, as well as royalties on sales. Additionally, Leads Biolabs is entitled to receive an equity stake in Oblenio Bio.

(8) TransCon refers to "transient conjugation," or the unique ability to temporarily (transiently) link an inert carrier to a parent drug with known biology. TransCon prodrugs can be designed to act systemically or locally, and the technology is widely applicable to proteins, peptides or small molecules.

(9) Ascendis will be eligible to receive total payments of up to \$285mm in upfront, development, and regulatory milestone payments for the lead program. In addition, Ascendis will be eligible to receive sales-based milestone payments and tiered royalties on global net sales. For each additional metabolic or cardiovascular disease product candidate, Ascendis will be eligible to receive payments of up to \$77.5mm in development and regulatory milestone payments, plus sales-based milestone payments and tiered royalties on global net sales.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 11/29/24.

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		
11/04/24	Surrozen	TCGFB	TGF- β antibodies ⁽¹⁾	Idiopathic pulmonary fibrosis	Preclinical	ND	\$6 ⁽²⁾	ND	ND	WW
11/04/24	Caszyme	Integra Therapeutics	Cas12l nucleases ⁽³⁾	ND	Preclinical	0	43 ⁽⁴⁾	0%	43	WW
11/04/24	Lonza	BigHat Biosciences	Synaffix ADC platform ⁽⁵⁾	ND	Preclinical	ND	ND ⁽⁶⁾	ND	ND	ND

(1) Surrozen will provide antibody discovery services for a period of up to two years.

(2) TCGFB will pay Surrozen up to \$6 million in the aggregate, plus any third-party costs, and will issue Surrozen a warrant for up to 3.38mm shares of TCGFB common stock at an exercise price of \$0.0001 per share based on certain vesting conditions.

(3) Compared to other nucleases, Caszyme's Cas12l offers additional delivery possibilities, especially when combined with other effector domains.

(4) Caszyme will receive milestone payments up to €40mm in addition to royalties on sales. EUR/USD = 1.07 as of 11/10/24.

(5) Synaffix's proprietary ADC technology platform consists of GlycoConnect, GlycoConnect High DAR Technology, HydraSpace, and toxSYN technologies, aimed at enabling best-in-class ADCs from any antibody, with significantly enhanced efficacy and tolerability.

(6) BigHat will receive target-specific access to Synaffix's late-clinical stage, site-specific ADC technology platform and Lonza's end-to-end ADC offering.

Note: \$ in mm.

Source: Cortellis, Company websites, filings and press releases, as of 11/29/24.

IPO Update

Priced IPOs

> None

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 11/29/24.

Secondary Offerings Update

Completed Equity Offerings

Filing Date	Pricing Date	Ticker	Company	Phase	Indication	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
11/25/24	11/25/24	REPL	Replimune Group	Ph. 3	Melanoma	MFO (1-day)	\$140	\$907	15.4%	\$1,047	14.3x	\$13.00	(2.0%)	10.6%	8.3%	No
11/21/24	11/21/24	CDTX	Cidara Therapeutics	Ph. 2	Seasonal influenza	PIPE	105	107	98.5%	212	0.5x	14.91	(1.4%)	17.0%	(10.2%)	No
11/20/24	11/21/24	VRCA	Verrica Pharmaceuticals	Mktd.	Molluscum contagiosum	CMPO	42	40	103.8%	82	49.9x	0.89	0.3%	11.2%	88.8%	100.0%
11/20/24	11/20/24	FBRX	Forte Biosciences	Ph. 2	Celiac disease	PIPE	53	20	267.9%	73	1.2x	5.55	(6.3%)	144.1%	(17.5%)	No
11/20/24	11/20/24	LCTX	Lineage Cell Therapeutics	Ph. 2	Spinal cord injury	RD	30	121	24.8%	151	95.1x	0.76	(15.9%)	(15.6%)	16.0%	100.0%
11/18/24	11/18/24	SYRE	Spyre Therapeutics	Ph. 1	IBD	CMPO	200	1,475	13.6%	1,675	14.5x	27.50	(4.1%)	(2.2%)	0.7%	No
11/18/24	11/18/24	ACRS	Aclaris Therapeutics	Ph. 2	Atopic dermatitis	PIPE	80	224	35.7%	304	62.9x	2.25	9.8%	39.6%	(24.0%)	No
11/13/24	11/14/24	ZLAB	Zai Lab	Mktd.	Zejula ⁽¹⁾	CMPO	200	2,948	6.8%	3,148	1.5x	25.50	(14.9%)	4.6%	23.3%	No
11/12/24	11/12/24	ETNB	89Bio	Ph. 3	MASH	CMPO	125	960	13.0%	1,085	25.4x	8.50	(6.1%)	4.9%	(3.8%)	No
11/12/24	11/12/24	ACOG	Alpha Cognition	Mktd.	Alzheimer's disease	PIPE	50	87	57.2%	137	54.4x	5.75	(20.0%)	(0.2%)	(6.6%)	No
11/07/24	11/07/24	TVTX	Traverse Therapeutics	Mktd.	IgAN	CMPO	125	1,350	9.3%	1,475	4.9x	16.00	(9.4%)	24.1%	14.8%	No
11/04/24	11/04/24	NGNE	Neurogene	Ph. 1/2	Rett syndrome	PIPE	200	858	23.3%	1,058	36.8x	50.00	8.5%	32.0%	(9.7%)	No
11/04/24	11/04/24	KALV	KalVista Pharmaceuticals	Filed	HAE	CMPO & PIPE	60	503	11.9%	563	17.9x	10.00	(5.7%)	16.3%	17.9%	No

n = 13

Max	\$200	\$2,948	267.9%	\$3,148	95.1x	\$50.00	9.8%	144.1%	88.8%
Mean	108	738	52.4%	847	29.2x	13.89	(5.2%)	22.0%	7.5%
Median	105	503	23.3%	563	17.9x	10.00	(5.7%)	11.2%	0.7%
Min	30	20	6.8%	73	0.5x	0.76	(20.0%)	(15.6%)	(24.0%)

(1) All commercial/pipeline products are marketed/developed in China and select Asian countries.

MFO = Marketed Follow-on; CMPO = Confidentially Marketed Public Offerings; RD = Registered Direct; 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 11/29/24.

Private Financings Update

Completed Private Financings

Ann. Date	Company	Phase	Indication	Round	Deal Value	Post-\$ Valuation	Valuation Step-Up	Total Amt. Raised	Lead Investors	Other Participants
11/25/24	Kanglin Biotech	Ph. 1	Beta thalassemia	Series A	\$20	ND	ND	\$21	ND	Heda Ventures; Miyin Capital
11/25/24	Adcendo	Preclinical	Sarcoma; GIST	Series B	135	ND	ND	242	TCGX	TPG, Orbimed, Venrock, Citadel, Logos Capital, RA Capital, and others
11/25/24	Secretome Therapeutics	Ph. 1	HFpEF	Series B	20	ND	ND	29	Huffines Enterprises	Phillip Huffines
11/21/24	Enveda Therapeutics	Ph. 1	Atopic dermatitis	Series C	130	ND	ND	360	Kinnevik, FPV Ventures	Baillie Gifford, Lux Capital, The Nature Conservancy
11/21/24	Aizen Therapeutics	Preclinical	CNS disorders	Seed	13	36	N/A	13	Madrona	Wilson Hill, Cercano
11/18/24	IMPACT Therapeutics	Ph. 2	SCLC	Series D2	34	ND	ND	186	ND	ND
11/18/24	ATB Therapeutics	Preclinical	ND	Series A	57	ND	ND	60	EQT Life Sciences, MRL Ventures Fund	V-Bio, VIVES Partners, SFPIM, Wallonie Entrepreneurs, Sambrinvest
11/13/24	Metsera	Ph. 2	Obesity	Series B	215	ND	ND	565	Wellington Management, Venrock	Fidelity, Janus Henderson, T. Rowe Price, Viking Global Investors, and others
11/13/24	TRex Bio	Ph. 1	I&I diseases	Series B	84	ND	ND	172	Delos Capital	Avego BioScience Capital, Eli Lilly, SV Health Investors, Pfizer Ventures, and others
11/12/24	Alentis Therapeutics	Ph. 2	Kidney fibrosis	Series D	181	ND	ND	362	Orbimed, Novo Holdings, Jeito Capital	Frazier Life Sciences, Longitude Capital, Catalio Capital, and others
11/12/24	Zucara Therapeutics	Ph. 2a	Hypoglycemia	Series B	20	ND	ND	45	Sanofi	N/A
11/11/24	Novelty Nobility	Ph. 1	SCLC; GIST	Series C	16	ND	ND	60	Shinhan Venture Investment	Samho Green Investment, SL Investment, KB-Solidus, Brave Investment, and others

n = 12

Max	\$215	\$36	0%	\$565
Mean	77	36	NA	176
Median	46	36	NA	116
Min	13	36	0%	13

Note(s): \$ in mm. Labeled valuation step-ups > 500% as “NM”.
Source: News, Dealogic, Placement Tracker, and Capital IQ, as of 11/29/24.

Industry and Company News

Cassava Sciences' simufilam fails Alzheimer's trial

- “The Cassava Sciences story ended Monday exactly as many knew it would — with the company's experimental drug for Alzheimer's disease, simufilam, proving to be nothing more than a placebo in a large clinical trial. The negative outcome is devastating for the nearly 2,000 participants in this study and a second study also shut down Monday. Clinical trials in Alzheimer's fail all too frequently, but simufilam was built on falsified research and misleading efficacy claims. In the randomized study of more than 800 participants conducted over one year, treatment with simufilam led to a 0.39-point difference from placebo on a 70-point scale that assesses cognitive function. The drug was similarly futile on a second scale that assessed the daily living activities of participants. In another analysis, simufilam was ineffective for subgroups of participants who entered the study with either mild or moderate Alzheimer's.”
[STAT News | 11.25.24](#)

BridgeBio wins FDA approval for heart disease drug

- “The Food and Drug Administration approved on Friday a new medicine from BridgeBio for patients with a progressive heart disease — the first new treatment for the condition in over five years and the company's first significant commercial product. The drug, known scientifically as acoramidis, will be sold by BridgeBio under the brand name Attruby. The FDA cleared Attruby to treat patients with the heart condition known as transthyretin amyloid cardiomyopathy, or ATTR-CM... Out of the gate, BridgeBio will compete against Pfizer, which has done well to entrench its two drugs as standard treatment for ATTR-CM. Next year, Alnylam Pharmaceuticals is expected to win approval for its own ATTR-CM therapy. “We're like the David versus these two massive Goliaths in this space,” Kumar said. Investors have not been betting on the underdog, at least not yet. BridgeBio's stock has fallen 42% this year, while Alnylam is up 25%” [STAT News | 11.22.24](#)

FDA approves Syndax's leukemia treatment Revuforj

- “Revuforj was approved to treat adults and children with relapsed or refractory leukemias that have a genetic “rearrangement” called KMT2A. This particular genetic type of leukemia is present in approximately 10% of cases, and is difficult to treat, leading to high relapse rates and survival of less than a year... Revuforj will cost \$39,500 per month, or \$474,000 annually, before customary insurance discounts and rebates. Based on its approved label, Syndax estimates there are approximately 2,000 patients in the U.S. eligible for the medicine — an addressable commercial market opportunity of approximately \$750mm. In a clinical trial, Revuforj led to complete remissions, or remissions with partial blood-count recovery, in 21% of patients that lasted for a median of 6.4 months. Twenty-three percent of patients in the study underwent potentially curative stem-cell transplants after receiving Revuforj.”
[STAT News | 11.18.24](#)

Intellia's gene editing therapy shows promising data in ATTR-CM

- “The therapy, called nex-z, was already a profound scientific success. It was the first drug to ever directly use CRISPR in the human body and successfully knocked out of patients' livers a gene called TTR that leads to the buildup of damaging, misfolded proteins in the heart. TTR protein levels in the blood fell by 90%... Alnylam has already shown it can reduce TTR levels by around 81% by giving a gene-silencing drug, made from small strands of RNA, every 12 weeks. Did an extra nine percentage points of knockdown matter? Intellia's data suggested it might. Across 36 patients, a marker of heart disease called NT-proBNP stayed virtually flat, where it increased very slightly in one Alnylam study... Marianna Fontana, a professor of cardiology at the National Amyloidosis Centre at the University College of London and lead author on the study, said doctors will ultimately prescribe whatever therapy has the highest level of knockdown.” [STAT News | 11.16.24](#)

PTC wins FDA approval for first brain-delivered gene therapy

- “Innovation in the [cell and gene therapy] space has hit new heights with PTC Therapeutics' Kebilidi, the first U.S. gene therapy that's administered directly in the brain. The one-time therapy picked up an FDA nod to treat the ultra-rare disease aromatic L-amino acid decarboxylase (AADC) deficiency... AADC deficiency is hallmarked by patients' inability to synthesize essential dopamine and is usually managed through physical, occupational and speech therapy, plus surgical interventions. Kebilidi, alternatively, delivers a functioning human DDC gene directly into the brain's putamen to boost the AADC enzyme and restore dopamine production. In studies, de novo synthesis of dopamine was observed after Kebilidi delivery through a minimally invasive neurosurgical procedure, leading to the progressive completion of motor development milestones, according to PTC.”
[Fierce Pharma | 11.14.24](#)

Abbvie's schizophrenia drug fails in Phase 2 trial

- “AbbVie said Monday that its experimental treatment for schizophrenia failed to significantly help patients in two trials, a blow to the company, which got the drug through its recent \$9 billion acquisition of Cerevel Therapeutics. In Phase 2 studies, patients on different doses of the drug, called emraclidine, did not experience significant improvements on a test called the Positive and Negative Syndrome Scale (PANSS) compared with the placebo group... The new results are also a setback for the company's efforts to pivot more into neuroscience. AbbVie shares dropped over 11% in early trading Monday. The news comes as Bristol Myers Squibb recently got approval for a new type of schizophrenia treatment called Cobenfy. With the updates on emraclidine, which would have been a key competitor for Cobenfy, BMS' stock rose nearly 14% in early trading.” [STAT News | 11.11.24](#)

Upcoming PDUFAs (Next Twelve Months)

(N=93)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Galderma	Private	Nemluvio	IL-31/IL-31R (Interleukin-31/Interleukin-31 Receptor)	Atopic dermatitis (Eczema)	12/14/2024
CSPC Pharmaceutical	7,560	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
Zealand Pharma	7,299	Glepaglutide	GLP-2 Receptor	Short bowel syndrome (SBS)	12/20/2024
Lexicon Pharmaceuticals	291	Inpefa	Unknown	Diabetes mellitus, Type I	12/20/2024
Bristol Myers Squibb	120,109	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Bladder cancer	12/27/2024
Bristol Myers Squibb	120,109	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Renal cell cancer (RCC)	12/27/2024
Bristol Myers Squibb	120,109	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Solid tumors	12/27/2024
Bristol Myers Squibb	120,109	Opdivo (Subcutaneous)	Immune System, Programmed death-1 receptor (PD-1)	Melanoma	12/27/2024
Jiangsu Vcare PharmaTech	Private	Vicagrel	Adenosine Diphosphate P2Y12 Receptor	Cardiovascular disease	12/28/2024
Xcovery	Private	Ensacove	Anaplastic lymphoma kinase (ALK), Ephrin Receptor EphA2 , Hepatocyte growth factor receptor (c-Met, HGFR), ROS kinase	Non-small cell lung cancer (NSCLC)	12/28/2024
Checkpoint Therapeutics	214	Cosibelimab	Immune System, Programmed death-ligand 1 (PD-L1)	Squamous cell carcinoma (SCC)	12/28/2024

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Neurocrine Biosciences	\$12,833	Crinecerfont	Corticotropin Releasing Factor-Receptor 1 (CRF-R1), Corticotropin Releasing Factor-Receptor 2 (CRF-R2)	Congenital adrenal hyperplasia (CAH)	12/29/2024
Laboratorios Salvat	Private	Clotrimazole	Unknown	Bacterial ear infections	12/31/2024
Novo Nordisk	474,193	Alhemo	Tissue factor pathway inhibitor (TFPI)	Hemophilia A and B	12/31/2024
CSL	88,996	Garadacimab	Coagulation factor XII	Hereditary angioedema (HAE)	12/31/2024
GSK	69,208	Brexafemme	Beta (1, 3)-D-Glucan	Fungal infections - systemic	12/31/2024
Amneal Pharmaceuticals	2,562	K127	Cholinesterases	Myasthenia gravis (MG)	12/31/2024
Quoin Pharmaceuticals	3	QRX-003	LEKTI/SPINK5	Congenital ichthyosis	12/31/2024
Vertex Pharmaceuticals	120,557	Vanzacaftor, tezacaftor and deutevacaftor	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
Mesoblast	1,316	Ryoncil	Stem cells/other cell therapies	Graft vs. host disease (GVHD)	01/07/2025
Pierre Fabre	Private	EBVALLO (Tabelecleucel)	Epstein Barr Virus (EBV), immune system, stem cells/other cell therapies, T lymphocytes	Hematologic cancer	01/15/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Stealth BioTherapeutics	Private	Elamipretide (Systemic Delivery)	Mitochondria, reactive oxygen species/free radicals	Cardiomyopathy	01/29/2025
Daiichi Sankyo	59,654	Datopotamab Deruxtecan	Immune system, Trop-2	HR+/HER2- breast cancer	01/29/2025
Vertex Pharmaceuticals	120,557	VX-548	Sodium channel Nav1.8 (SCN10A)	Postsurgical pain	01/30/2025
Medexus Pharmaceuticals	48	Ovastat	DNA	Bone marrow transplant and stem cell transplant	01/30/2025
Axsome Therapeutics	4,760	AXS-07	Cyclooxygenase 2 (COX2) / Prostaglandin-Endoperoxide Synthase 2 (PTGS2), Serotonin 5-HT1B receptor , Serotonin 5-HT1D receptor	Migraine	01/31/2025
PTC Therapeutics	3,384	Translarna	RNA translation	Duchenne muscular dystrophy (DMD)	01/31/2025
Supernus Pharmaceuticals	2,019	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
Luye Pharma	1,218	LY03005	Dopamine reuptake, norepinephrine (noradrenaline) reuptake/transporter, serotonin reuptake	Major depressive disorder (MDD)	01/31/2025
Merus	3,070	Zenocutuzumab	ErbB3/HER3, HER2/neu or ErbB-2	Non-small cell lung cancer (NSCLC)	02/04/2025
Merus	3,070	Zenocutuzumab	ErbB3/HER3, HER2/neu or ErbB-2	Pancreatic cancer	02/04/2025
GSK	69,208	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	2,150	CHIKV VLP	Immune system	Chikungunya virus	02/14/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Johnson & Johnson	\$373,206	Amivantamab SC	EGFR, tyrosine kinases	Non-small cell lung cancer (NSCLC)	02/17/2025
Ono Pharmaceutical	5,405	Vimseltinib	Macrophage colony stimulating factor 1 (M-CSF1)/M-CSF Receptor/FMS/CD115/CSF-1/CSF1R, tyrosine kinases	Tenosynovial giant cell tumor (TGCT) / pigmented villonodular synovitis (PVNS)	02/17/2025
Almatica Pharma	Private	ALM004	Unknown	Undisclosed	02/28/2025
Azurity Pharmaceuticals	Private	AZ-06	Unknown	Neurology	02/28/2025
Nevakar	Private	NVK-002	Muscarinic acetylcholine receptor	Myopic macular degeneration (MMD) / pathological myopia (Ophthalmology)	02/28/2025
SpringWorks Therapeutics	3,085	Mirdametinib	Mitogen-activated ERK kinase (MEK, MAPKK, MAP2K)	Neurofibromatosis (NF)	02/28/2025
Humacyte	582	Humacyl	Tissue scaffolding	Peripheral arterial disease (PAD)	02/28/2025
Eton Pharmaceuticals	350	ET-400	Unknown	Endocrine disorder	02/28/2025
Scienture	63	SCN-102	Unknown	Cardiovascular disease	02/28/2025
Neurotech Pharmaceuticals	Private	Renexus	Ciliary neurotrophic factor receptor (CNTFR)	Macular telangiectasia	03/18/2025
Elevar Therapeutics	Private	Rivoceranib	RET, tyrosine kinases, VEGF receptor	Hepatocellular cancer (HCC)	03/20/2025
Telix Pharmaceuticals	5,392	TLX007-CDx	Unknown	Prostate cancer - imaging	03/24/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
GSK	\$69,208	GSK2140944	Gram-negative bacteria, Topoisomerase II (DNA gyrase)	Urinary tract and reproductive tract infections (Antibacterial)	03/26/2025
Milestone Pharmaceuticals	132	Cardamyst	Calcium channel	Supraventricular tachycardia	03/26/2025
Soleno Therapeutics	2,273	DCCR	Potassium channels	Prader-willi syndrome	03/27/2025
Sanofi	121,801	Fitusiran	Thrombin (coagulation factor IIa)	Hemophilia A and B	03/28/2025
SERB Pharmaceuticals	Private	Bentracimab	Anti-platelet drugs	Drug toxicity	03/31/2025
Visiox Pharma	Private	PDP-716	Alpha 2 adrenergic receptor	Glaucoma / ocular hypertension	03/31/2025
Aldeyra Therapeutics	292	Reproxalap	Aldehydes	Dry eye (Ophthalmology)	04/02/2025
Telix Pharmaceuticals	5,392	Pixclara	Carbonic anhydrase	Brain cancer - imaging	04/26/2025
Abeona Therapeutics	278	EB-101	Collagen	Epidermolysis bullosa	04/29/2025
Shin Nippon Biomedical Laboratories	442	STS101	Alpha 1 Adrenergic Receptor , Alpha 2 Adrenergic Receptor, Dopamine 2 (D2) Receptor, Dopamine 3 (D3) Receptor, Serotonin 5-HT1 receptor, Serotonin 5-HT2A receptor, Serotonin 5-HT2C receptor	Migraine	04/30/2025
Curium Pharma	Private	Lutetium Lu 177 Dotatate (Curium)	Somatostatin receptors	Neuroendocrine tumors (NET)	05/09/2025
Ferring Pharmaceuticals	Private	SI-6603	Extracellular matrix	Sciatica	05/14/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Aerie Pharmaceuticals	Private	AR-15512	TRPM8 (CMR1)	Dry eye (Ophthalmology)	05/30/2025
Telix Pharmaceuticals	5,392	TLX250-CDx	Carbonic anhydrase	Renal cell cancer (RCC) - imaging	06/02/2025
UroGen Pharma	536	VesiGel	DNA	Bladder cancer	06/13/2025
Tonix Pharmaceuticals	35	Tonmya	Unknown	Fibromyalgia	06/16/2025
KalVista Pharmaceuticals	495	Sebetralstat	Kinin-kallikrein system	Hereditary angioedema (HAE)	06/17/2025
Mirum Pharmaceuticals	2,219	Chenodal	Unknown	Cerebrotendinous xanthomatosis (cerebral cholesterosis)	06/28/2025
Novartis	211,467	Atrasentan	Endothelin receptor type A (EDNRA)	Immunoglobulin A (IgA) nephropathy (Berger's disease)	06/30/2025
Unicycive Therapeutics	72	Renazorb	Iron, phosphate	Hyperphosphatemia	07/03/2025
Immedica	Private	Loargys	Arginine	Urea cycle disorders and derangements (UCD)	07/05/2025
AbbVie	323,263	Rinvoq	JAK/STAT, tyrosine kinases	Giant cell arteritis	07/11/2025
PTC Therapeutics	3,384	Sepiapterin	Phenylalanine hydroxylase	Phenylketonuria (PKU)	07/29/2025
Novartis	211,467	Lutathera	Somatostatin receptors	Neuroendocrine tumors (NET)	07/31/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.
 Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product			PDUFA Date
		Drug	Target	Indication	
Bayer	\$20,096	BAY-342	Neurokinin receptor	Menopause (including hormone replacement therapy [HRT])	08/01/2025
George Medicines	Private	GMRx2	Unknown	Hypertension (systemic)	08/06/2025
LENZ Therapeutics	979	LNZ-100	Muscarinic acetylcholine receptor	Presbyopia	08/08/2025
Ionis Pharmaceuticals	5,642	Donidalorsen	Kinin-kallikrein system	Hereditary angioedema (HAE)	08/21/2025
Johnson & Johnson	373,206	Nipocalimab	Neonatal Fc Receptor	Myasthenia gravis (MG)	08/29/2025
EmphyCorp	Private	N115	IL-6 Receptor (IL-6R)	Idiopathic pulmonary fibrosis (IPF)	09/12/2025
Replimune Group	963	RP-1	Immune system, oncolytic virus therapy	Melanoma	09/21/2025
Jiangsu Hengrui Pharmaceuticals	44,505	Camrelizumab	Immune system, programmed death-1 receptor (PD-1)	Hepatocellular cancer (HCC)	09/23/2025
AbbVie	323,263	Teliso-V	Hepatocyte growth factor receptor (c-Met, HGFR), Microtubules (Tubulin)	Non-small cell lung cancer (NSCLC)	09/26/2025
Crinetics Pharmaceuticals	5,305	Paltusotine	Somatostatin receptors	Acromegaly	09/26/2025
Verastem	238	Avutometinib	Mitogen-activated ERK kinase (MEK, MAPKK, MAP2K), Raf kinase	Ovarian Cancer	09/30/2025
Verastem	238	Defactinib	Protein tyrosine kinase 2 (PTK2)/focal adhesion kinase (FAK)	Ovarian Cancer	09/30/2025

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.
 Source: Citeline, as of 11/29/24.

Upcoming PDUFAs (Next Twelve Months)

(N=93) (Cont'd)

Company	Mkt Cap	Product		Indication	PDUFA Date
		Drug	Target		
Neuvivo	Private	NP-001	Macrophages	Amyotrophic lateral sclerosis (ALS)	10/07/2025
Jiangsu Pharmaceutical	2,775	Sunvozertinib	EGFR	Non-small cell lung cancer (NSCLC)	11/07/2025
Daiichi Sankyo	59,654	Datopotamab Deruxtecan	Immune system, Trop-2	Non-small cell lung cancer (NSCLC)	11/12/2025
Arrowhead Pharmaceuticals	3,239	Plozasiran	Apolipoprotein C-III (apoCIII, apo-CIII, apo-C3)	Familial chylomicronemia syndrome (FCS) / lipoprotein lipase deficiency (LPLD)	11/18/2025
LEO Pharma	Private	Anzupgo	JAK/STAT	Atopic dermatitis (Eczema)	12/31/2025
Rakuten Medical	Private	ASP-1929	EGFR	Head and neck cancer	12/31/2025
Cytokinetics	6,120	Aficamten	Myosin	Cardiomyopathy - hypertrophic	12/31/2025
Nippon Shinyaku	1,951	Deramiocel	Stem cells/other cell therapies	Duchenne muscular dystrophy (DMD)	12/31/2025
Sedana Medical	117	SEDACONDA (ISOFLURANE)	Unknown	Anesthesia	04/30/2026

Note(s): \$ in mm. PDUFA dates based on Citeline analysts' data, as of 11/29/24.
 Source: Citeline, as of 11/29/24.

Upcoming Key Catalysts (Coming Quarter)

(N=211)

Company	Mkt Cap	Product		Phase	Data	
		Drug	Indication		Event	Timing
Regeneron Pharmaceuticals, Inc.	\$80,716	Cemdisiran	Paroxysmal Nocturnal Hemoglobinuria (PNH)	III	Phase III ACCESS-1 - Top-Line Results at ASH	12/07/2024 - 12/07/2024
Regeneron Pharmaceuticals, Inc.	80,716	Veopoz	Paroxysmal Nocturnal Hemoglobinuria (PNH)	III	Phase III ACCESS-EXT - Top-Line Results at ASH	12/07/2024 - 12/07/2024
Merck & Co., Inc.	257,112	VLS-101	Mantle Cell Lymphoma - NHL	II	Phase II - Top-Line Results at ASH	12/08/2024 - 12/08/2024
Roche Holding AG	232,719	RG6076	Diffuse Large B-Cell Lymphoma (DLBCL) - NHL	I	Phase I w/Obinutuzumab & RO7082859 - Top-Line Results at ASH	12/09/2024 - 12/09/2024
Novartis AG	211,467	VAY-736	Immune Thrombocytopenic Purpura (ITP)	III	Phase II VAYHIT3 - Top-Line Results at ASH	12/09/2024 - 12/09/2024
Regeneron Pharmaceuticals, Inc.	80,716	Ordspono	Follicular Lymphoma (FL)	III	Phase III OLYMPIA-1 - Top-Line Results at ASH	12/09/2024 - 12/09/2024
Lyell Immunopharma Inc.	264	IMPT-314	Non-Hodgkin's Lymphoma (NHL)	I/II	Phase I/II US - Initial Clinical Data at ASH	12/09/2024 - 12/09/2024
Fate Therapeutics, Inc.	361	FT819	Systemic Lupus Erythematosus (SLE)	I	Phase I - Top-Line Results	12/07/2024 - 12/10/2024
Eli Lilly and Company	716,159	LOXO-783	Breast Cancer	I	Phase I PIKASSO-01 - Top-Line Results at SABCS	12/11/2024 - 12/11/2024
Eli Lilly and Company	716,159	Imlunestrant	HR+/HER2- Breast Cancer	III	Phase III EMBER-3 - Top-Line Results at SABCS	12/11/2024 - 12/11/2024
Jazz Pharmaceuticals plc	7,351	Zanidatamab	HER2+ Breast Cancer	III	Phase Ib/II - - w/ALX148 - Top-Line Results at SABCS	12/12/2024 - 12/12/2024
iTeos Therapeutics Inc.	312	Inupadenant	Non-Small Cell Lung Cancer (NSCLC)	II	Phase II - A2A-005 - Clinical Data at ESMO-IO	12/12/2024 - 12/12/2024
Eli Lilly and Company	716,159	DC-806	Psoriasis	IIb	Phase IIb Illuminate - Top-Line Results	By 12/31/2024
Novo Nordisk A/S	474,193	Monlunabant	Diabetic Nephropathy	II	Phase II - Top-Line Results	By 12/31/2024
Novo Nordisk A/S	474,193	NN-6019	Hereditary Transthyretin (hATTR) Amyloidosis With Polyneuropathy (Familial Amyloid Polyneuropathy)	II	Phase II NN6019-4940 - Top-Line Results	By 12/31/2024
Novo Nordisk A/S	474,193	CagriSema	Obesity	III	Phase III - Topline Results	By 12/31/2024
Novo Nordisk A/S	474,193	Ozempic	Peripheral Arterial Disease (PAD)	III	Phase IIIb STRIDE - Topline Results	By 12/31/2024
Johnson & Johnson	373,206	NBTRX3	Esophageal Cancer	I	Phase Ib/II - Top-Line Results	By 12/31/2024
Johnson & Johnson	373,206	NM26-2198	Atopic Dermatitis (Eczema)	I	Phase I - MAD Study Results	By 12/31/2024
Johnson & Johnson	373,206	JNJ-4804	Psoriatic Arthritis (PsA)	II	Phase II AFFINITY - Top-Line Results	By 12/31/2024
Johnson & Johnson	373,206	Aticaprant	Major Depressive Disorder (MDD)	III	Phase III Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	ABBV-453	Multiple Myeloma (MM)	I	Phase I - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	ABBV-CLS-484	Solid Tumors	I	Phase I - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	ABBV-154	Crohn's Disease	II	Phase II - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	CVL-865	Seizure Disorders (Epilepsy)	II	Phase II REALIZE - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	CVL-871	Neuropsychiatric Symptoms in Alzheimer's Disease	II	Phase IIa - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	Elezanumab	Ischemic Stroke	II	Phase II EAISE - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	NX-13	Ulcerative Colitis (UC)	II	Phase II - Top-Line Results	By 12/31/2024
AbbVie Inc.	323,263	Tavapadon	Parkinson's Disease (PD)	III	Phase III TEMPO-2 - Top-Line Results	By 12/31/2024
Merck & Co., Inc.	257,112	PRA-052	Ulcerative Colitis (UC)	I	Phase I - Top-Line Results	By 12/31/2024
Merck & Co., Inc.	257,112	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.	257,112	MK-8189	Schizophrenia	II	Phase II MK-8189-008 - Top-Line Results	By 12/31/2024
Roche Holding AG	232,719	Prasinezumab	Parkinson's Disease (PD)	II	Phase IIb PADOVA - Top-Line Results	By 12/31/2024
Roche Holding AG	232,719	GYM329	Spinal Muscular Atrophy	I/III	Phase I/III MANATEE - Topline Results	By 12/31/2024
Roche Holding AG	232,719	Tecentriq	Triple-Negative Breast Cancer (TNBC)	III	Phase III NeoTRIPaPDL1 - Top-Line Results	By 12/31/2024
Roche Holding AG	232,719	Tiragolumab	Esophageal Cancer	III	Phase III SKYSCRAPER-08 - Top-Line Results	By 12/31/2024
Novartis AG	211,467	LNA043	Osteoarthritis	II	Phase II ONWARDS - Top-Line Results	By 12/31/2024
Novartis AG	211,467	KAF156	Malaria	IIb	Phase II KALUMI - Top-Line Results	By 12/31/2024
Novartis AG	211,467	Beovu	Diabetic Retinopathy (Ophthalmology)	III	Phase III Vs Panretinal Photocoagulation Laser - Top-Line Results	By 12/31/2024
Novartis AG	211,467	Fabhalta	Hemolytic Uremic Syndrome (HUS)	III	Phase III APPELHUS - Top-Line Results	By 12/31/2024
Novartis AG	211,467	JDQ-443	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III KontraST-02 - Top-Line Results	By 12/31/2024
AstraZeneca PLC	209,013	AZD1390	Brain Cancer (Malignant Glioma; AA and glioblastoma (GBM))	I	Phase I - Top-Line Results	By 12/31/2024
AstraZeneca PLC	209,013	FPI-1966	Head and Neck Cancer	I/II	Phase I - Top-Line Results	By 12/31/2024
AstraZeneca PLC	209,013	AZD5718	Asthma	II	Phase II FLASH - Top-Line Results	By 12/31/2024
Amgen, Inc.	152,052	Nplate	Thrombocytopenia	III	Phase III RECITE - Top-Line Results	By 12/31/2024
Amgen, Inc.	152,052	Rocatinlimab	Atopic Dermatitis (Eczema)	III	Phase III ROCKET - Topline Results	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, Company press releases, Company websites and filings, as of 11/29/24.

Upcoming Key Catalysts (Coming Quarter)

(N=211) (Cont'd)

Company	Mkt Cap	Drug	Product		Data	
			Indication	Phase	Event	Timing
Amgen, Inc.	\$152,052	Tezspire	Chronic Rhinosinusitis	III	Phase III WAYPOINT - Top Line Results	By 12/31/2024
Pfizer Inc.	148,532	BNT167	Chickenpox and Shingles - Vaccines and Treatments	I/II	Phase I/II - Top-line Results	By 12/31/2024
Sanofi	121,801	AlphaMedix	Neuroendocrine Tumors (NET)	II	Phase II Naive Patients - Top-line Results	By 12/31/2024
Sanofi	121,801	PRV-3279	Systemic Lupus Erythematosus (SLE)	II	Phase IIa PREVAIL-2 - Top-Line Results	By 12/31/2024
Sanofi	121,801	Duvakitug	Crohn's Disease	IIb	Phase IIb - Top-Line Results	By 12/31/2024
Sanofi	121,801	Rilzabrutinib	Autoimmune Hemolytic Anemia (AIHA)	IIb	Phase IIb wAIHA - Top-Line Results	By 12/31/2024
Vertex Pharmaceuticals Incorporated	120,557	VX-548	Neuropathic Pain	II	Phase II PLSR - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	CC-97540	Systemic Lupus Erythematosus (SLE)	I	Phase I - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	RYZ101	Small Cell Lung Cancer (SCLC)	I	Phase I U.S. - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	BBP-398	Solid Tumors	I/II	Phase I/II - w/Sotorasib - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	BMS-986288	Solid Tumors	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	MRTX-0902	Solid Tumors	I/II	Phase I/II - Initial Data	By 12/31/2024
Bristol Myers Squibb Company	120,109	MRTX1133	Solid Tumors	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	Opdualag IV	Hepatocellular (Liver) Cancer (HCC) (Including Secondary Metastases)	I/II	Phase I/II RELATIVITY-106 - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	BL-B01D1	Non-Small Cell Lung Cancer (NSCLC)	II	Phase I BL-B01D1-LUNG-101 - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	Camzyos	Chronic Heart Failure - Preserved Ejection Fraction (Chronic HFpEF)	II	Phase II EMBARK-HFpEF - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	Cendakimab	Eosinophilic Esophagitis (EoE)	III	Phase III EoE - Top-Line Results	By 12/31/2024
Bristol Myers Squibb Company	120,109	Sotyktu	Psoriatic Arthritis (PsA)	III	Phase III - Top-Line Results	By 12/31/2024
Gilead Sciences, Inc.	115,379	GS-1614	HIV / AIDS Treatment	I	Phase I - Topline Results	By 12/31/2024
Gilead Sciences, Inc.	115,379	GS-6212	HIV / AIDS Treatment	I	Phase I - Topline Results	By 12/31/2024
Gilead Sciences, Inc.	115,379	GS-2872	HIV / AIDS Treatment	II	Phase II - w/GS-5423 & Lenacapavir - Topline Results	By 12/31/2024
Gilead Sciences, Inc.	115,379	GS-5423	HIV / AIDS Treatment	II	Phase II - w/GS-2872 & Lenacapavir - Topline Results	By 12/31/2024
Regeneron Pharmaceuticals, Inc.	80,716	bbT369	Non-Hodgkin's Lymphoma (NHL)	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Regeneron Pharmaceuticals, Inc.	80,716	REGN-4336	Prostate Cancer	I/II	Phase I/II w/ Cemiplimab - Top-Line Results	By 12/31/2024
GSK plc	69,208	WVE-006	Alpha-1 Antitrypsin Deficiency (A1AD or AATD)	I/II	Phase I/II U.S. - Top-Line Results	By 12/31/2024
GSK plc	69,208	AFX3772	Pneumococcal (Streptococcus pneumoniae) Vaccines (Antibacterial)	II	Phase II Healthy Infants (42-90 days) - Topline Results	By 12/31/2024
GSK plc	69,208	Jemperli	Ovarian Cancer	III	Phase III FIRST - Top-Line Results	By 12/31/2024
GSK plc	69,208	ZeJula	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III ZEAL-1L - Topline Results	By 12/31/2024
Merck KGaA	64,955	Enpatoran	Systemic Lupus Erythematosus (SLE)	II	Phase II WILLOW LTE - CLE Readout	By 12/31/2024
UCB S.A.	37,101	UCB1381	Atopic Dermatitis (Eczema)	I/II	Phase I/IIa Single-Ascending Dose/Repeat-Dose - Top-Line Results	By 12/31/2024
UCB S.A.	37,101	Fintepla	CDKL5 Deficiency Disorder (CDD) (Epilepsy)	II	Phase III CDKL5 Deficiency Disorder - Topline Results	By 12/31/2024
UCB S.A.	37,101	UCB0599	Parkinson's Disease (PD)	II	Phase IIa Early PD - Top-line Results	By 12/31/2024
BioNTech SE	28,383	BNT-165	Malaria	I/II	Phase I - Top-line Results	By 12/31/2024
Moderna, Inc.	16,570	mRNA-1018	Pandemic Influenza Vaccines	I/II	Phase I/II - Top-Line Results	By 12/31/2024
Moderna, Inc.	16,570	mRNA-1647	Cytomegalovirus (CMV) Infection (Antiviral)	III	Phase III CMVictory - Topline Results	By 12/31/2024
Incyte Corporation	14,370	INC857643	Myelofibrosis (MF)	I	Phase III POC - Top-Line Results (w/Jakafi)	By 12/31/2024
Incyte Corporation	14,370	Zilugisertib	Myelofibrosis (MF)	I/II	Phase III POC - Top-Line Results (w/Jakafi)	By 12/31/2024
Incyte Corporation	14,370	Zynyz	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III POD1UM-304 - Top-Line Results	By 12/31/2024
Neurocrine Biosciences, Inc.	12,833	Ingrezza	Schizophrenia	III	Phase III - Journey Study (Adjunctive Treatment) - Top-Line Results	By 12/31/2024
Revolution Medicines, Inc.	9,731	RMC-6236	Solid Tumors	I/II	Phase III RMC-6236 vs Docetaxel - Top-Line Results	By 12/31/2024
Revolution Medicines, Inc.	9,731	RMC-6291	Solid Tumors	I/II	Phase I/IIb w/RMC-6236 - Top-Line Results	By 12/31/2024
Ascendis Pharma A/S	8,132	Skytrofa	Turner Syndrome	II	Phase II New Insights - Top-Line Results	By 12/31/2024
Jazz Pharmaceuticals plc	7,351	DSP-0187	Narcolepsy	I	Phase I - Top-Line Results	By 12/31/2024
Zealand Pharma A/S	7,299	Glepaglutide	Short Bowel Syndrome (SBS)	NDA	Phase III EASE 3- First Interim Data	By 12/31/2024
Corcept Therapeutics Incorporated	6,043	CORT113176	Amyotrophic Lateral Sclerosis (ALS)	II	Phase II - DAZALS - Top-Line Results	By 12/31/2024
Corcept Therapeutics Incorporated	6,043	Relacorilant	Ovarian Cancer	III	Phase III - ROSELLA - Top-Line Results	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, Company press releases, Company websites and filings, as of 11/29/24.

Upcoming Key Catalysts (Coming Quarter)

(N=211) (Cont'd)

Company	Mkt Cap	Product		Data		
		Drug	Indication	Phase	Event	Timing
Krystal Biotech, Inc.	\$5,678	KB407	Cystic Fibrosis (CF)	I	Phase I - CORAL-1/US - Data	By 12/31/2024
Krystal Biotech, Inc.	5,678	KB408	Alpha-1 Antitrypsin Deficiency (A1AD or AATD)	I	Phase I Serpentine-1 - Top-Line Results	By 12/31/2024
Krystal Biotech, Inc.	5,678	KB707	Solid Tumors	I/II	Phase I FIH Study - Top Line Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,760	Auvelity	Neuropsychiatric Symptoms in Alzheimer's Disease	II/III	Phase III - Topline Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,760	AXS-12	Narcolepsy	III	Phase III SYMPHONY OLE - Topline Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,760	Sunosil	Attention Deficit Hyperactivity Disorder (ADHD)	III	Phase III FOCUS - Top-line Results	By 12/31/2024
Axsome Therapeutics, Inc.	4,760	AXS-07	Migraine and Other Headaches	NDA	Phase III EMERGE - Topline Results	By 12/31/2024
Biohaven Ltd.	4,653	Troniluzole	Obsessive-Compulsive Disorder (OCD)	III	Phase III 303 - Top-Line Results	By 12/31/2024
CRISPR Therapeutics AG	4,368	CTX112	Non-Hodgkin's Lymphoma (NHL)	I/II	Phase I/II CRSP-ONC-006 - Topline Results	By 12/31/2024
Apellis Pharmaceuticals, Inc.	4,221	APL-3007	Undisclosed	I	Phase I Dose Escalation - Top-Line Results	By 12/31/2024
Apellis Pharmaceuticals, Inc.	4,221	Syfovre	Transplant-Associated Thrombotic Microangiopathy (TA-TMA)	II	Phase II - Top-Line Results	By 12/31/2024
Rhythm Pharmaceuticals, Inc.	3,813	CAM4072	Metabolic - General	III	Phase III Weekly Vs Daily Formulations - Weekly PK/Tolerability Data	By 12/31/2024
Edgewise Therapeutics, Inc.	3,125	Sevasemten	Duchenne Muscular Dystrophy (DMD)	II	Phase II LYNX - Top-Line Results	By 12/31/2024
SpringWorks Therapeutics Inc.	3,085	Osgiveo	Multiple Myeloma (MM)	I/II	Phase I - Top-Line Results (w/BCMA-directed therapies)	By 12/31/2024
Apogee Therapeutics, LLC	2,569	APG-808	Chronic Obstructive Pulmonary Disease (COPD)	I	Phase I - Interim Data	By 12/31/2024
Beam Therapeutics Inc.	2,178	BEAM-101	Sickle Cell Anemia	I/II	Phase I/II BEACON - Top-Line Results	By 12/31/2024
Beam Therapeutics Inc.	2,178	BEAM-201	Acute Lymphoblastic Leukemia (ALL)	I/II	Phase I/II R/R T-ALL/T-LL - Top-Line Results	By 12/31/2024
Reursion Pharmaceuticals, Inc.	2,028	REC-2282	Neurofibromatosis (NF)	II/III	Phase II/III POPLAR - Phase II Preliminary Data	By 12/31/2024
Belite Bio, Inc.	1,953	LBS-008	Stargardt Disease (Ophthalmology)	III	Phase III DRAGON - Top-Line Results	By 12/31/2024
Disc Medicine, Inc.	1,888	DISC-1459	Anemia	I/II	Phase I/II - Topline Results	By 12/31/2024
MannKind Corporation	1,870	MNKD-201	Idiopathic Pulmonary Fibrosis (IPF)	I	Phase I - Top-Line Results	By 12/31/2024
NewAmsterdam Pharma BV	1,834	Obicetrapib	Dyslipidemia / Hypercholesterolemia	III	Phase III BROADWAY - Top-Line Results	By 12/31/2024
Viridian Therapeutics, Inc.	1,707	VRDN-002	Thyroid Eye Disease (TED)	I	Phase II POC Trial - Topline Results	By 12/31/2024
Viridian Therapeutics, Inc.	1,707	Veligrotag	Thyroid Eye Disease (TED)	III	Phase III THRIVE-2 - Topline Results	By 12/31/2024
Dynavax Technologies Corporation	1,691	DV2-PLG-01	Vaccines (General)	II	Phase II - Top-Line Results	By 12/31/2024
Immunocore, Ltd.	1,638	Kimmtrak	Melanoma	III	Phase II/III TEBE-AM - Topline Results	By 12/31/2024
Neumora Therapeutics, Inc.	1,606	NMRA-140	Major Depressive Disorder (MDD)	III	Phase III - KOASTAL-1 - Top-Line Results	By 12/31/2024
Ocular Therapeutix, Inc.	1,555	OTX-DED	Dry Eye (Ophthalmology)	II	Phase II OTX-DED-2022-C01 - Top-Line Results	By 12/31/2024
Praxis Precision Medicines, Inc.	1,494	PRAX-944	Essential Tremor	III	Phase III - Top-Line Results	By 12/31/2024
Arcus Biosciences, Inc.	1,413	Domvanalimab	Non-Small Cell Lung Cancer (NSCLC)	III	Phase III VELOCITY-Lung - Topline Results	By 12/31/2024
Bicycle Therapeutics, plc	1,409	Zelenectide Pevedotin	Bladder Cancer	II/III	Phase II/III Duravelo-2 - Data Update	By 12/31/2024
Bicara Therapeutics, Inc.	1,131	BCA101	Non-Small Cell Lung Cancer (NSCLC)	I	Phase I/Ib KEYNOTE-E28 - Topline Results	By 12/31/2024
Vir Biotechnology, Inc.	1,096	VIR-1388	HIV Prevention	I	Phase I First-in-Human - Top-Line Results	By 12/31/2024
Vir Biotechnology, Inc.	1,096	VIR-2482	Influenza (excluding vaccines)	I/II	Phase Ib - Prophylaxis - Top-Line Results	By 12/31/2024
Rapport Therapeutics Inc.	835	RAP-219	Partial / Focal Seizures (Epilepsy)	II	Phase I MAD Results	By 12/31/2024
Tyra Biosciences, Inc.	829	TYRA-300	Bladder Cancer	I/II	Phase I/II - SURF301 - Initial Results	By 12/31/2024
Erasca, Inc.	809	ERAS-007	Hematologic Cancer	I/II	Phase I/II HERKULES-4 - Top-Line Results	By 12/31/2024
AnaptysBio, Inc.	759	ANB032	Atopic Dermatitis (Eczema)	II	Phase IIb - Top-line Interim Data	By 12/31/2024
Oculus S.A.	673	OCS-05	Optic Neuritis (Ophthalmology)	II	Phase II - ACUITY - Top-Line Results	By 12/31/2024
Oculus S.A.	673	OCS-01	Ocular Pain and/or Inflammation (Ophthalmology)	III	Phase III OPTIMIZE-2 - Top Line Results	By 12/31/2024
Mineralys Therapeutics, Inc.	636	Lorundrostat	Hypertension (Systemic)	III	Phase II CKD Population - Top-Line Results	By 12/31/2024
Corvus Pharmaceuticals, Inc.	584	Soquelitinib	Atopic Dermatitis (Eczema)	I	Phase I - Top line Results	By 12/31/2024
Y-mAbs Therapeutics Inc.	534	GD2-SADA	Solid Tumors	I	Phase I SAD/MAD - Top-line Results at the Medical Meeting	By 12/31/2024
Y-mAbs Therapeutics Inc.	534	Danyelza	Osteosarcoma	I/II	Phase II 15-096 - Topline Results	By 12/31/2024
Terms Pharmaceuticals, Inc.	530	TERN-701	Chronic Myelogenous Leukemia (CML)	I	Phase I - Initial Interim Data (Dose Escalation Cohorts)	By 12/31/2024
PureTech Health plc	507	LYT-100	Idiopathic Pulmonary Fibrosis (IPF)	II	Phase IIb - Top-Line Results	By 12/31/2024

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, Company press releases, Company websites and filings, as of 11/29/24.

Upcoming Key Catalysts (Coming Quarter)

(N=211) (Cont'd)

Company	Mkt Cap	Product		Data		
		Drug	Indication	Phase	Event	Timing
Arcturus Therapeutics Ltd.	\$497	ARCT-810	Ornithine Transcarbamylase (OTC) Deficiency	II	Phase II - Safety & Biomarker Data	By 12/31/2024
Rigel Pharmaceuticals, Inc.	486	R835	Autoimmune Disorders	I	Phase Ib - Top Line Results	By 12/31/2024
Celcuity, Inc.	475	Gedatolisib	HR+/HER2- Breast Cancer	III	Phase III VIKTORIA-1 - Top-Line Results	By 12/31/2024
Aura Biosciences, Inc.	465	AU-011	Solid Tumors	IND	Phase II Topline Results - Choroidal Metastasis	By 12/31/2024
Acelyrin, Inc.	456	Izokibep	Uveitis (Ophthalmology)	II/III	Phase IIb/III - Top-Line Results	By 12/31/2024
Larimar Therapeutics, Inc.	404	CTI-1601	Friedreich's Ataxia	II	Phase II Open Label Extension - Top Line Results	By 12/31/2024
4D Molecular Therapeutics Inc.	362	4D-150	Diabetic Macular Edema (Ophthalmology)	II	Phase II SPECTRA - Top-Line Results	By 12/31/2024
Jasper Therapeutics, Inc.	342	Briquilimab	Myelodysplastic Syndrome (MDS)	I/II	Phase I Dose Escalation (U.S.) - Top-Line Results	By 12/31/2024
AC Immune SA	336	ACI-24	Down Syndrome	I	Phase Ib/II - ABATE (UK) - Interim Data	By 12/31/2024
Allergy Therapeutics plc	322	VLP Peanut	Food Allergies	I	Phase I PROTECT - Top-Line Results	By 12/31/2024
iTeos Therapeutics Inc.	312	EOS-984	Solid Tumors	I	Phase I - Top-Line Results	By 12/31/2024
iTeos Therapeutics Inc.	312	Belrestotug	Head and Neck Cancer	I/II	Phase I/II - TIG-006 - Top-Line Results	By 12/31/2024
Aldeyra Therapeutics, Inc.	292	ADX-629	Alcoholic Liver Disease / Alcoholic Hepatitis	II	Phase II (Moderate Alcoholic Hepatitis) - Top-Line Results (First Cohort)	By 12/31/2024
Aldeyra Therapeutics, Inc.	292	ADX-246	Atopic Dermatitis (Eczema)	IND	Phase I/II - Top-Line Results	By 12/31/2024
Tenaya Therapeutics, Inc.	283	TN-201	Cardiomyopathy - Hypertrophic	II	Phase Ib - Initial Data	12/01/2024 - 12/31/2024
Mersana Therapeutics, Inc.	282	XMT-1660	Solid Tumors	I	Phase Ib - Top-Line Results	By 12/31/2024
Lexeo Therapeutics	272	LX2020	Cardiovascular Disease	I	Phase I/II HEROIC-PKP2 - Top-Line Results (Cohort 1)	By 12/31/2024
TScan Therapeutics	270	TSC-200	Solid Tumors	I	Phase I w/TSC-204 - Top-Line Results	By 12/31/2024
TScan Therapeutics	270	TSC-203	Solid Tumors	I	Phase I - Top-Line Results	By 12/31/2024
Zentalis Pharmaceuticals	257	ZN-d5	Acute Myelogenous Leukemia (AML)	I/II	Phase I/II - Preliminary Data	By 12/31/2024
Zentalis Pharmaceuticals	257	Azenosertib	Solid Tumors	II	Phase II ZN-c3-004 - Top-Line Results	By 12/31/2024
Verastem, Inc.	238	Avutemetinib	Non-Small Cell Lung Cancer (NSCLC)	II	Phase I/II - RAMP204 - Top-Line Results	By 12/31/2024
Solid Biosciences Inc.	228	SGT-003	Duchenne Muscular Dystrophy (DMD)	I/II	Phase I/II SGT-003-101 - Top-line Results	By 12/31/2024
Compass Therapeutics Inc.	224	CTX-009	Biliary Tract Cancer	II/III	Phase II/III COMPANION-002 - Top-Line Results	By 12/31/2024
Trevi Therapeutics, Inc.	221	Haduvio	Chronic Cough	II	Phase IIb CORAL - Top-line Results (SSRE Analysis)	12/01/2024 - 12/31/2024
Nektar Therapeutics	210	NKTR-255	Diffuse Large B-Cell Lymphoma (DLBCL) - NHL	II/III	Phase II/III R/R LBCL - Top-Line Results	By 12/31/2024
Caribou Biosciences, Inc.	198	CB-011	Multiple Myeloma (MM)	I	Phase I - CaMMouflage - Top-Line Results	By 12/31/2024
Cabaletta Bio, Inc.	187	MuSK-CAART	Myasthenia Gravis (MG)	I	Phase I - Top-Line Results (6-month Data Combination Cohort)	By 12/31/2024
Cabaletta Bio, Inc.	187	CABA-201	Myasthenia Gravis (MG)	I/II	Phase I/II RESET-MG - Topline Results	By 12/31/2024
Egetis Therapeutics AB	185	Emcitate	Endocrine Disorder	II/III	Phase III ReTRIAct - Top-Line Results	By 12/31/2024
Adaptimmune Therapeutics plc	184	ADP-A2M4CD8	Ovarian Cancer	II	Phase II SURPASS-3 - Top-Line Results	By 12/31/2024
Sagimet Biosciences	183	Denifanstat	Non-Alcoholic Steatohepatitis (NASH)	II	Phase I Hepatic Impairment - Results	By 12/31/2024
Enanta Pharmaceuticals, Inc.	182	EDP-938	Respiratory Syncytial Virus (RSV) Treatment	IIb	Phase II RSVPEDs - Top-Line Results	By 12/31/2024
Galectin Therapeutics Inc.	181	Belapectin	Esophageal Varices	II/III	Phase IIb/III - NAVIGATE - Top-Line Results	12/01/2024 - 12/31/2024
Inozyme Pharma Inc.	174	INZ-701	Metabolic - General	III	Phase Ib ENERGY-1 - Interim Results	By 12/31/2024
Puma Biotechnology, Inc.	166	Alisertib	Small Cell Lung Cancer (SCLC)	II	Phase II ALISCA-Lung1 - Top-Line Results	By 12/31/2024
PepGen Inc.	165	PGN-EDODM1	Myotonic Muscular Dystrophy	I	Phase I FREEDOM-DM1 - Top-Line Results	By 12/31/2024
Atossa Therapeutics, Inc.	164	(Z)-Endoxifen	HR+/HER2- Breast Cancer	II	Phase II Karisma Endoxifen Study - Top-Line Results	By 12/31/2024
Candel Therapeutics, Inc.	153	CAN-2409	Prostate Cancer	III	Phase II ULYSSES - Read Out	By 12/31/2024
AbbVie Inc.	323,263	AGN-151586	Wrinkles	III	Phase III - M21-509 - Topline Results	By 01/31/2025
GSK plc	69,208	GSK4023393A	Meningococcal Vaccines and Other Meningococcus-Specific Agents (Antibacterial)	I/II	Phase I/II FIH - Top-Line Results	By 01/31/2025
argenx N.V.	37,349	Vyvgart Hytrulo	Sjogren's Syndrome	II	Phase II RHO (PoC) - Top-Line Results	By 01/31/2025
Corcept Therapeutics Incorporated	6,043	Miricorilant	Weight Gain from Antipsychotic Use	II	Phase II - GRATITUDE - Top-Line Results	By 01/31/2025
Valneva SE	316	Shigella4V	Antibacterial and Antifungal - Miscellaneous Vaccines and Treatments	II	Phase I/II Dose Finding Study - Top-Line Results	By 01/31/2025
Eli Lilly and Company	716,159	PR006	Frontotemporal Dementia (FTD)	I/II	Phase I/II PROCLAIM - Top-Line Results	By 02/28/2025
Eli Lilly and Company	716,159	Mazdutide	Obesity	II	Phase III High Dose - Top-Line Results	By 02/28/2025

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, Company press releases, Company websites and filings, as of 11/29/24.

Upcoming Key Catalysts (Coming Quarter)

(N=211) (Cont'd)

Company	Product			Data		
	Mkt Cap	Drug	Indication	Phase	Event	Timing
Novo Nordisk A/S	\$474,193	IcoSema	Diabetes Mellitus, Type II	III	Phase III Combine 2 - Topline Results	By 02/28/2025
Vertex Pharmaceuticals Incorporated	120,557	VX-147	Focal Segmental Glomerulosclerosis (FSGS)	II/III	Phase IIb/III - Topline Results	12/01/2024 - 02/28/2025
Bristol Myers Squibb Company	120,109	EVT8683	Neurology - Other	I	Phase I - Top-Line Results	By 02/28/2025
Viartis Inc.	15,624	Tyrvaia	Neurotrophic Keratopathy	II	Phase II - OLYMPIA - Topline Results	By 02/28/2025
Iovance Biotherapeutics, Inc.	2,841	IOV-4001	Non-Small Cell Lung Cancer (NSCLC)	I/II	Phase I/II IOV-GM1-201 - Top-Line Results	By 02/28/2025
Arvinas, Inc.	1,836	ARV-110	Prostate Cancer	I/II	Combination Trial - Top-Line Results	By 02/28/2025
Evotec SE	1,652	EVT894	Infectious Disease	I	Phase I 18-0006 - Top-Line Results	By 02/28/2025
Omeros Corporation	658	OMS906	C3 Glomerulopathy (C3G), including Dense Deposit Disease (DDD) and C3 Glomerulonephritis (C3GN)	I	Phase Ib - Preliminary Data	By 02/28/2025
Vaxcyte, Inc	11,758	VAX-24	Pneumococcal (Streptococcus pneumoniae) Vaccines (Antibacterial)	II	Phase II Pediatric - Top-Line Data (Primary Three-dose Immunization Series)	By 03/31/2025
Immunovant, Inc.	4,139	Batoclimab	Myasthenia Gravis (MG)	III	Phase III SAD - Top-Line Results	By 03/31/2025
Arvinas, Inc.	1,836	Vepdegestrant	HR+/HER2- Breast Cancer	III	Phase III - Topline Results	By 03/31/2025
Celldex Therapeutics, Inc.	1,820	CDX-1140	Cancer	II	Phase Ib w/ Odetiglucon - Topline Results	By 03/31/2025
Actuate Therapeutics, Inc.	159	Eraglusib	Myelofibrosis (MF)	II	Phase II w/Ruxolitinib - Top-Line Results	By 03/31/2025
Vertex Pharmaceuticals Incorporated	120,557	ALPN-303	Autoimmune Hemolytic Anemia (AIHA)	I	Phase Ib RUBY-4 - Top-Line Results	By 04/30/2025
Ultragenyx Pharmaceutical Inc.	4,395	setrusumab	Osteogenesis Imperfecta (OI)	III	Phase III - Top-Line Results (Interim Analysis 1)	By 04/30/2025
Pliant Therapeutics, Inc.	840	PLN-101095	Solid Tumors	I	Phase I - Top-Line Results	By 04/30/2025
Allogene Therapeutics Inc.	520	Cemacabtagene Ansegedleucl	Chronic Lymphocytic Leukemia (CLL)/Small Cell Lymphocytic Lymphoma (SLL) - NHL	I	Phase I ALPHA2 - Topline (CLL) Results	By 04/30/2025
Prothena Corporation plc	872	Birtamimab	Amyloid light-chain (AL) Amyloidosis	III	Phase III AFFIRM-AL - Top-Line Results	By 06/30/2025
Merck & Co., Inc.	257,112	Reblozyl	Myelofibrosis (MF)	III	Phase III - INDEPENDENCE - Top-Line Results	By 12/31/2025
Bayer AG	20,096	Kerendia	Chronic Kidney Disease (CKD)	III	Phase III - FIND-CKD - Topline Results	By 12/31/2025
Bausch Health Companies Inc.	3,079	Mytesi	Short Bowel Syndrome (SBS)	IND	Phase I Proof of Concept - Top-Line Results	By 12/31/2025
Recursion Pharmaceuticals, Inc.	2,028	REC-3964	Clostridium difficile-Associated Diarrhea/Infection (CDAD/CDI)	II	Phase II Study - Top-Line Results	By 12/31/2025
Schrodinger, Inc.	1,644	SGR-2921	Myelodysplastic Syndrome (MDS)	I	Phase I - Top-Line Results	By 12/31/2025
Sana Biotechnology, Inc.	621	SC291	Autoimmune Disorders	I	Phase I GLEAM - Preliminary Clinical Data	By 12/31/2025
Valneva SE	316	VLA-15	Antibacterial and Antifungal - Miscellaneous Vaccines and Treatments	III	Phase III - Top-Line Results	By 12/31/2025
Genfit SA	206	VS-01	Liver Failure / Cirrhosis	I	Phase II UNVEIL-IT - Data	By 12/31/2025
Bausch Health Companies Inc.	3,079	Rifaximin SSD	Hepatic Encephalopathy (HE)	III	Phase III - Top-Line Data	By 04/30/2026

Note(s): \$ in mm. Catalyst dates based on Citeline analysts' data, as of 11/29/24.

Source: Citeline, Company press releases, Company websites and filings, as of 11/29/24.

Schedule of Key Biotech Conferences

December 2024 – May 2025

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	

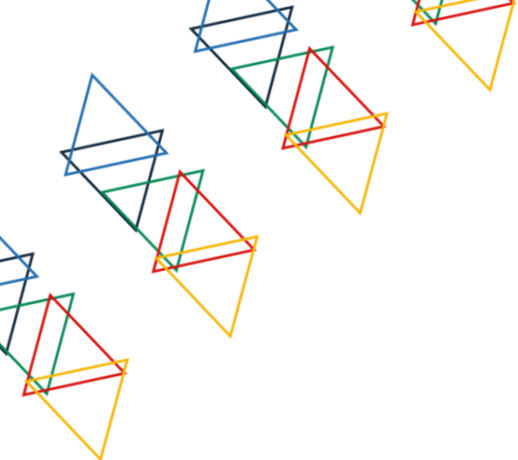
March						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

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		

May						
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

- 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 2-4: Bio-IT World Conference & Expo (Boston, MA)
- Apr 9-11: Reuters Pharma (Barcelona, Spain)
- Apr 25-30: AACR Annual Meeting (Chicago, IL)
- May 12-14: BioEquity Europe (Bruges, Belgium)
- May 14-15: Pharma Partnering Summit (San Diego, CA)



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