

MASSBIO

2023 Massachusetts Biopharma Funding and Pipeline Report

massbio.org/2023-funding-report

Table of Contents

The data presented in this report references Massachusetts-headquartered companies only (except FDA Approvals, page 12)

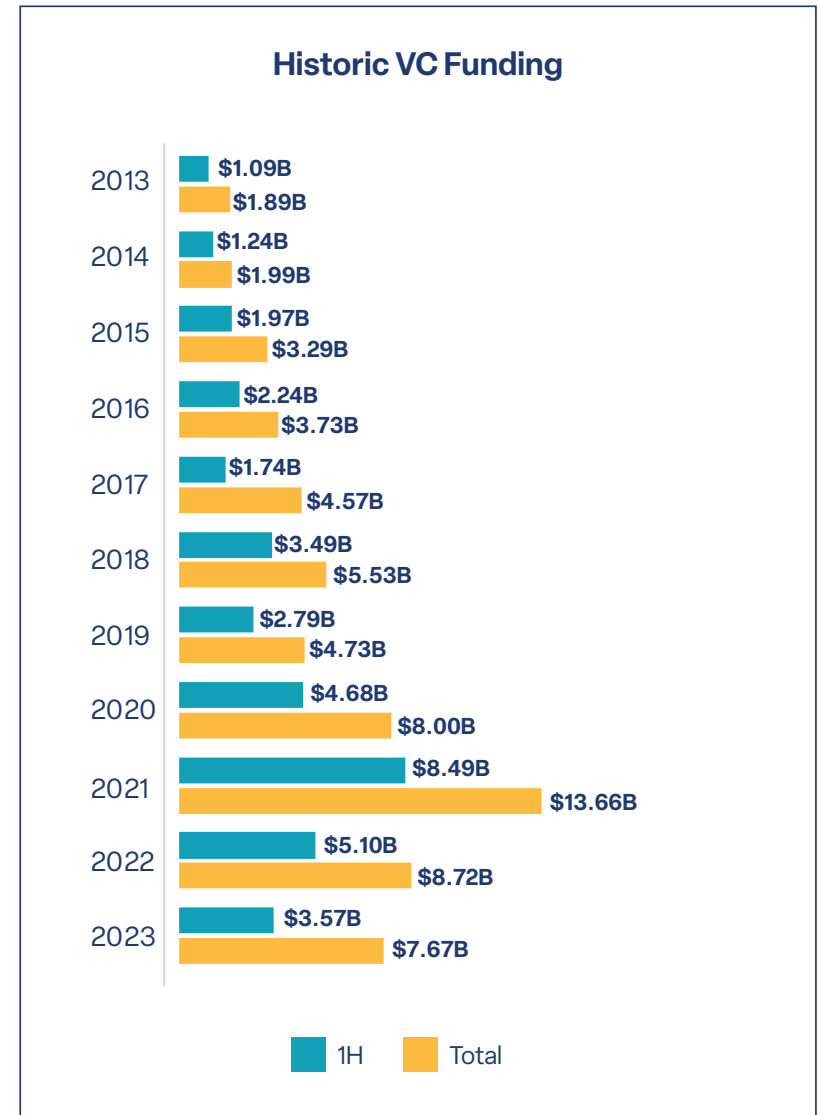
- 3** Executive Summary
- 4** Venture Capital Funding
- 5** Top VC Financing Rounds in 2023
- 6** Location of VC-Backed Companies in 2023
- 7** Biopharma IPOs in 2023
- 8** Top 2023 Biopharma Mergers and Acquisitions
- 10** Total Pipeline
- 12** FDA Approvals

Executive Summary

- It appears that the biopharma industry has emerged from the post-pandemic reset and has begun to adjust to new realities including higher interest rates and investors seeking more data prior to closing on large funding deals. Despite a down year for funding, the local industry has continued to make headlines for getting into the clinic, positive trial results, and FDA approvals, proving their resiliency in the face of headwinds and in taking on some of the most vexing health care challenges. Though a full comeback is not likely for another year, positive trends in venture funding and M&A activity bode well for the health of the local ecosystem.
- Biopharma companies headquartered in Massachusetts received \$7.67 billion in venture capital (VC) funding in 2023. Though down from annual totals of 2020-2022, this amount is significantly larger than the pre-pandemic high of \$5.53 billion in 2018 and close to 2020's \$8.0 billion. Massachusetts companies received 31% of all national VC investments, second only to California (38%) and higher than last year's percentage total (25%).
- In a continuation of last year's trends that found biopharma investors seeking more data on a longer time horizon, the total number of rounds declined to 242 in 2023 (from 273 in 2022), with 221 companies being funded (versus 246 in 2022). The average round declined from \$35.3 million in 2022 to \$31.7 million in 2023. We also saw the average value of seed rounds decrease year-over-year, while the value of non-seed rounds increased, indicating a pain point at the earliest stage of company formation.
- With biopharma clusters continuing to grow outside of Kendall Square with new purpose-built space coming online, it is not surprising that 58% of VC funding went to companies not headquartered in Cambridge (an increase of 7 percentage points over 2022). Boston, Natick, Newton, and Watertown each increased their share of dollars, while Burlington (Platinum BioReady) stormed onto the list this year with \$531 million or 7% of all VC funding coming to their local companies in 2023.
- This year was a difficult one for private companies looking for an exit via IPO. Just two Massachusetts headquartered companies went public, though their IPOs each rank in the top 5 of all deals in 2023 and both were trading above their initial price per share at year's end. The larger Series B rounds and beyond in 2023 could be attributed to the backlog of IPO-ready companies seeking more funding while they wait for a window to open. M&A activity, on the other hand, did see a noticeable uptick in 2023, with 38 local companies being acquired for a total of \$13.04 billion (an increase from 26 and \$5.89 billion, respectively, over 2022). Massachusetts based companies were also in a buying mood, spending \$8.92 billion to acquire 30 companies.
- Massachusetts remains on the cutting edge of drug development, with nearly 2,000 drugs in the pipelines of local companies, including over 800 in clinical trials, good enough for 14.9% of the national pipeline and second only to California in volume. Nineteen companies located in Massachusetts or with a significant presence here received FDA approvals, including groundbreaking treatments for Alzheimer's disease, RSV, post-partum depression, and sickle cell disease.
- Massachusetts has the density of biotechs, the presence of large pharmaceutical companies and investors, and an unmatched innovation engine to remain a global powerhouse in drug research and development, a position validated by ARPA-H's selection of the Commonwealth to host its Investor Catalyst Hub and enhanced by an expected renewal of the state's Life Sciences Initiative. As a leader, however, disruptions to the drug development life cycle are felt more acutely, including those created by the drug pricing provisions of the IRA, uncertainty around the approval of mergers and acquisitions, and the seizing of patents and intellectual property in the name of lowering prices. Mitigating these impacts will be essential both on a state and a national level to keep biopharma investments flowing and innovation happening domestically.

Venture Capital Funding

- The \$7.67 billion of venture capital (VC) invested in Massachusetts-headquartered companies in 2023 represents the 4th highest year ever, surpassing the pre-pandemic record of \$5.53 billion in 2018.
- Massachusetts-headquartered biopharma companies received 31% of all VC dollars invested in the industry – up from 25% last year – second only to California (38%) and more than all other states combined.
- Of the Massachusetts-headquartered companies that received VC funding in 2023, 33% of R&D programs were focused on oncology, 17% on CNS, and 12% on anti-infectives.

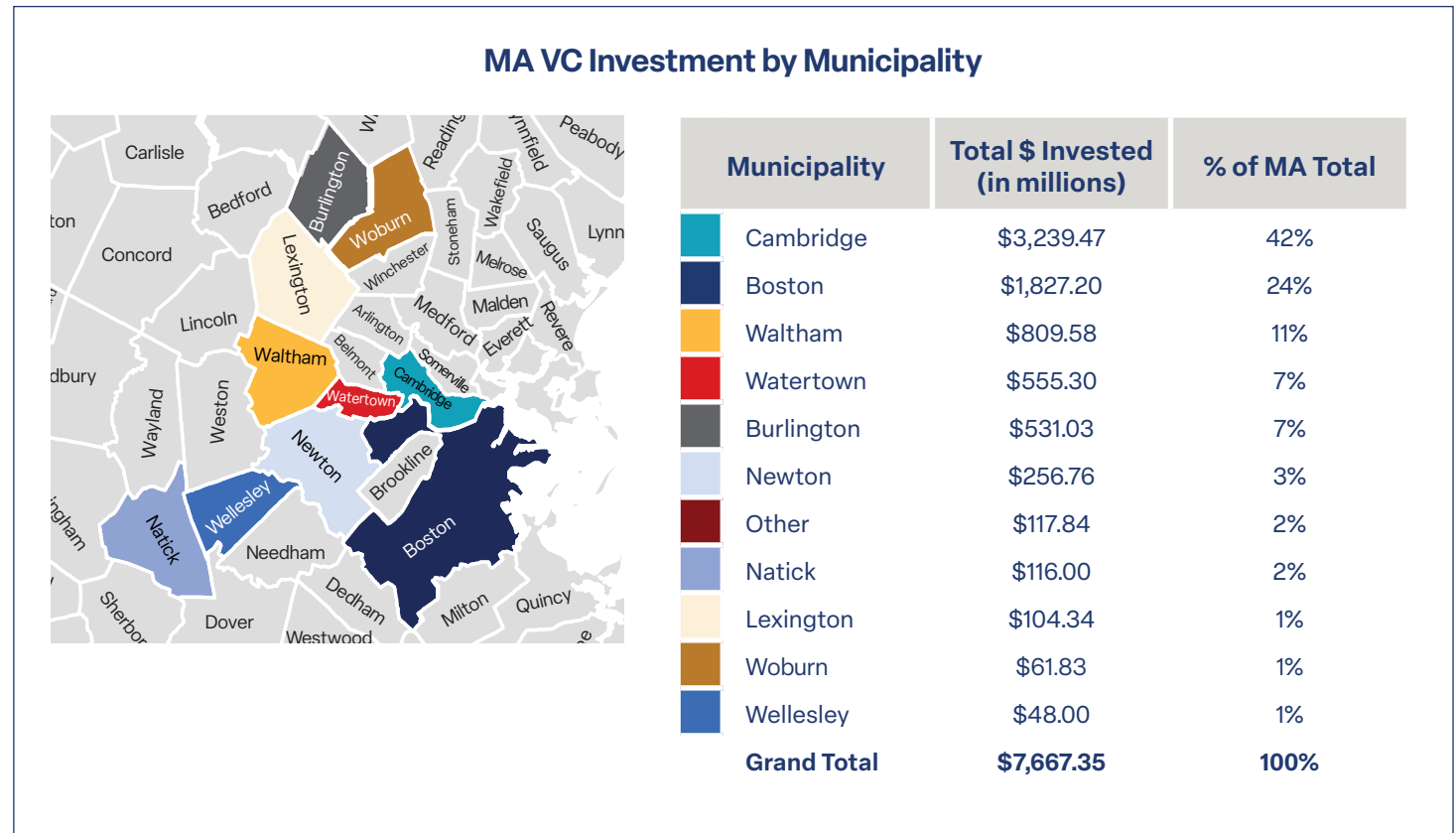


Top VC Financing Rounds in 2023

- 221 companies received 242 rounds of investment in 2023, down from 246 companies and 273 rounds of investment in 2022.
- The average round was \$31.7 million for Massachusetts companies, while the national average was \$16.6 million.
- The average seed round for Massachusetts companies was \$10.1 million, down from \$11.1 million in 2022.
- The average Series A was \$56 million, up from \$50.9 million in 2022.
- Post-Series A rounds averaged \$108.6 million, up from \$83.3 million in 2022.

Organization	Location	Series	Funding Amount (in millions)
ElevateBio	Waltham	Series D	\$401.00
Cardurion Pharma	Burlington	Series A	\$300.00
Generate Biomedicines	Cambridge	Series C	\$273.00
Orbital Therapeutics	Cambridge	Series A	\$270.00
Aiolos Bio	Boston	Series A	\$245.00
MapLight	Burlington	Series C	\$225.00
Nimbus Therapeutics	Boston	Series E	\$210.00
Upstream Bio	Waltham	Series B	\$200.00
Aera Therapeutics	Cambridge	Series B	\$193.00
Mariana Oncology	Watertown	Series B	\$173.94
Bicara Therapeutics	Cambridge	Series C	\$165.00
Abcuro	Newton	Series B	\$155.00
Alkeus Pharmaceuticals	Cambridge	Series B	\$150.00
Rapport Therapeutics	Boston	Series B	\$150.00
ROME Therapeutics	Boston	Series B	\$149.00
Chroma Medicine	Boston	Series B	\$135.00
Ensoma	Boston	Series B	\$135.00
Cognito Therapeutics	Cambridge	Series B	\$129.10
Flare Therapeutics	Cambridge	Series B	\$123.00
Seismic Therapeutic	Cambridge	Series B	\$121.00

Location of VC-Backed Companies in 2023



Source: Pitchbook, January 2023

- 58% of VC money went to companies headquartered outside of Cambridge—up from 51% in 2022.
- 9 municipalities outside of Cambridge received at least 1% of the total VC funding statewide in 2023, down from 12 the previous year.

Biopharma IPOs in 2023

Company	Date	Deal Size	Initial Price per Share	Price per Share at Close on 12/31
 APOGEE THERAPEUTICS	Jul 13, 2023	\$300M	\$17	\$27.93
 Neumora™	Sept 15, 2023	\$250M	\$17	\$17.05

- While no Massachusetts-headquartered biotechs went public in the first half of 2023, two did have initial public offerings (IPOs) in Q3.
- The two Massachusetts IPOs, Apogee and Neumora, rank in the top 5 deals of all national IPOs in 2023 and are both trading above the initial price per share as of December 31, 2023.

Top 2023 Biopharma Mergers and Acquisitions

MA HQ Companies Acquired in 2023

Aquiring Company	Target Company	Amount
		\$6.0B
		\$1.8B
		\$1.07B
		\$952M
		\$571M
		\$566M













* Nimbus Lakshmi, Inc., a subsidiary of Nimbus Therapeutics, LLC.

Source: Pitchbook, December 2023

- 38 companies from Massachusetts were acquired for a total of \$13.04 billion, up significantly from 26 companies and a total of \$5.89 billion in 2022.

MA HQ Companies Making Acquisitions in 2023

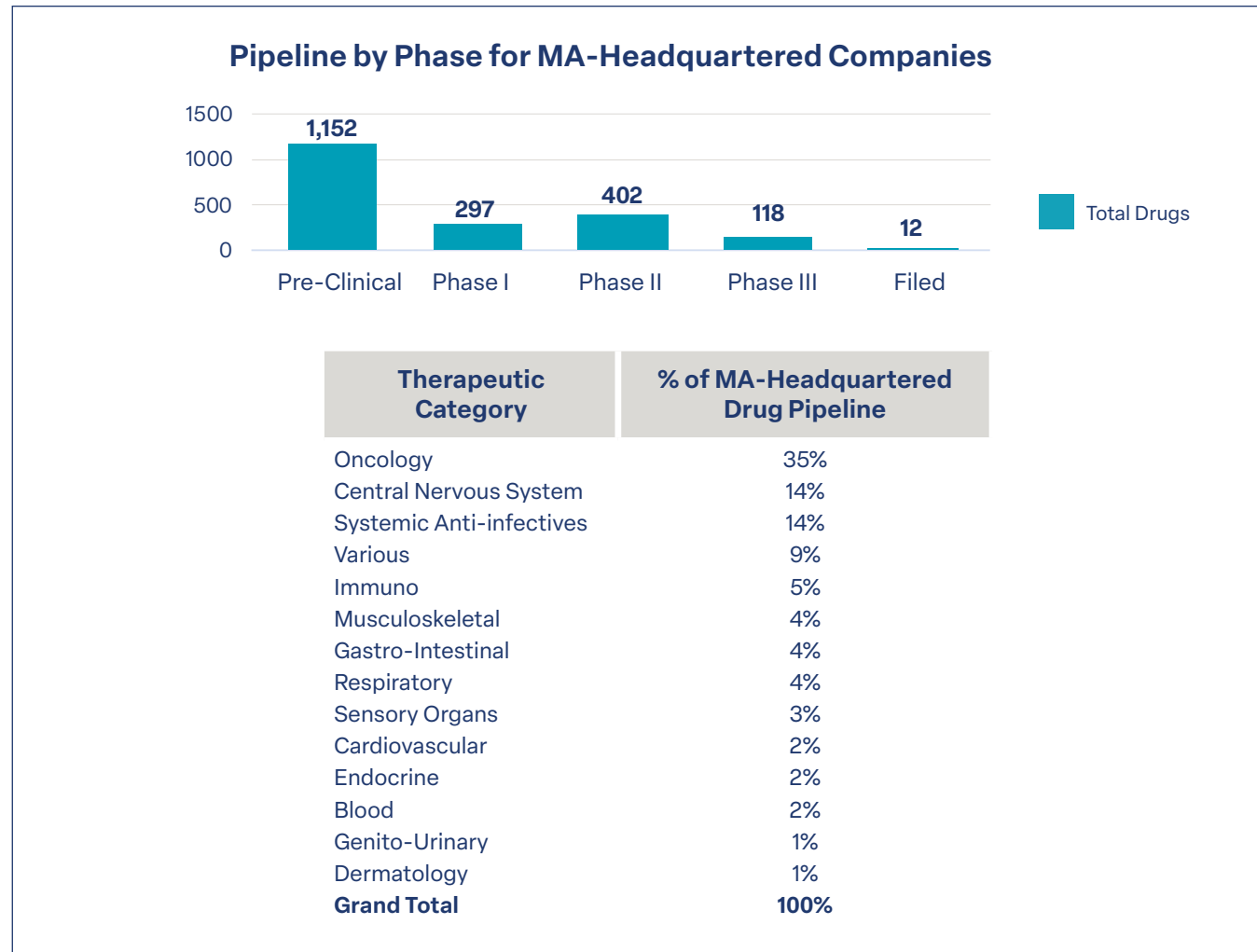
Top 2023
Biopharma
Mergers and
Acquisitions

Aquiring Company	Target Company	Amount
		\$7.3B
		\$1.18B
		\$85M
		\$79M
		\$62.8M
		\$50M

Source: Pitchbook, December 2023

- 30 companies from Massachusetts made acquisitions totaling \$8.92 billion in 2023, compared to 41 companies spending \$2.27 billion in 2022.

Total Pipeline

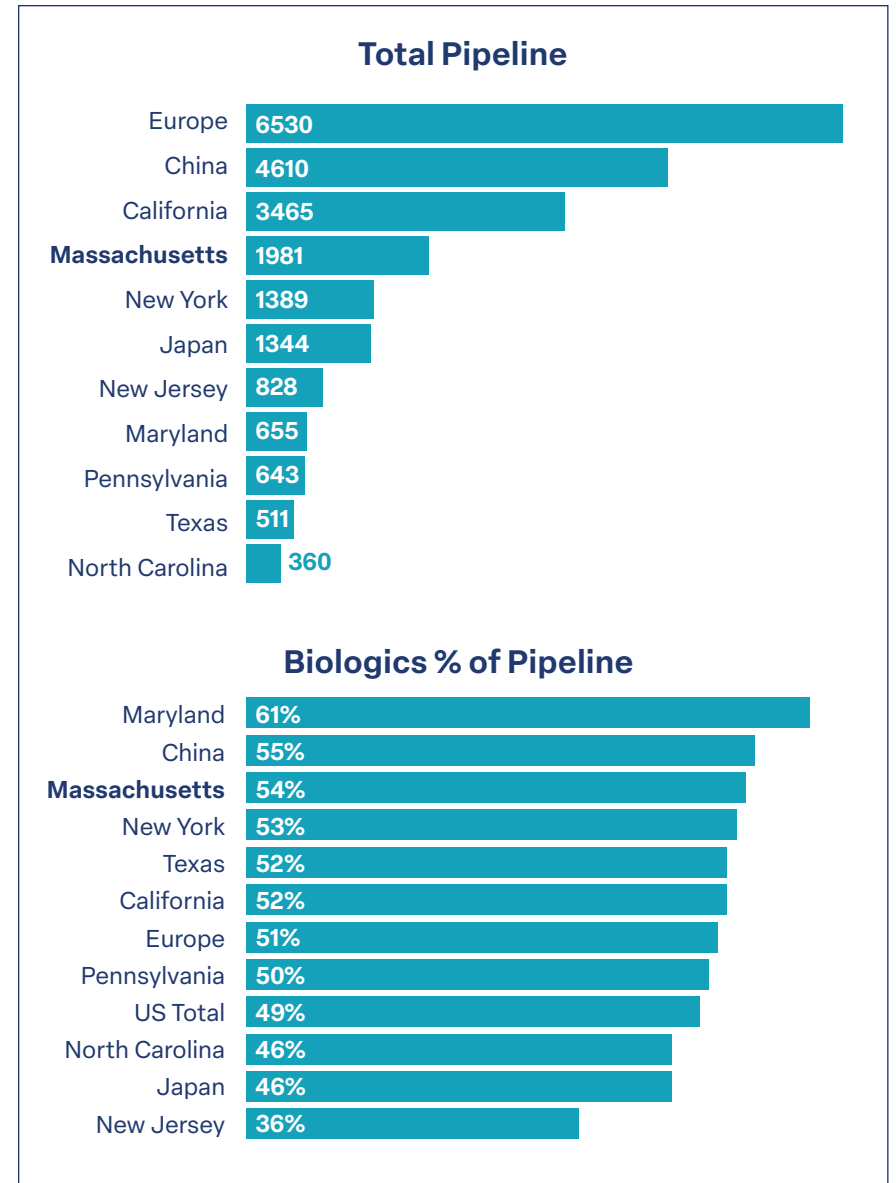


Source: Evaluate, December 2023

- The drug pipelines of MA-headquartered companies make up 14.9% of the US pipeline and 6.4% of the global pipeline as of December 18, 2023.
- The most common therapeutic areas of the MA pipeline are oncology (35%), CNS (14%), and anti-infectives (14%).

Total Pipeline

- With a strong pipeline in biologics, Massachusetts is primed for continued expansion into biomanufacturing.
- Despite a population of fewer than 7 million residents, Massachusetts has a drug development pipeline approaching half (43%) of China’s pipeline, a country with 1.3 billion people.



Source: Evaluate, December 2023

FDA Approvals

We are highlighting both companies that are headquartered in Massachusetts and those with a presence here to better represent the scale of drug development happening locally. This should not be construed as indicating that a specific drug was developed here for companies not headquartered here.

Company	Drug Name	Modality	Disease Area	MA Presence
Abbvie	Epkinly	Monoclonal antibody	Non-Hodgkin Lymphoma	R&D, Manufacturing
Astellas	Veozah	Small molecule	Menopause	R&D
AstraZeneca	Beyfortus	Recombinant Antibody	RSV	R&D
AstraZeneca	truqap	Small molecule	Breast Cancer	R&D
Biogen	Leqembi	Monoclonal antibody	Alzheimer's Disease	HQ, R&D
Biogen	Qalsody	DNA/RNA	ALS	HQ, R&D
bluebird bio	Lyfgenia	Gene Therapy	Sickle Cell	R&D
BMS	Augtyro	Small molecule	Non-small cell lung cancer	R&D, Manufacturing
Chiesi	Lamzede	Protein/Peptide	Alpha-mannosidosis	Administrative
Crispr	Casgevvy	Gene Editing	Sickle Cell/Thalassaemia	HQ, R&D, Manufacturing
GSK	Jesduvroq	Small molecule	Chronic Kidney Disease	R&D
GSK	Ojjaara	Small molecule	Myelofibrosis	R&D
Ipsen	Sohonos	Small molecule	Bone Repair	R&D
Janssen	Talvey	Monoclonal antibody	Multiple Myeloma	R&D
Lilly	OmvoH	Monoclonal antibody	Ulcerative Colitis	R&D
Novartis	fabhalta	Small molecule	Paroxysmal nocturnal haemoglobinuria	R&D
Novo Nordisk	Rivfloza	DNA/RNA	Kidney Stones	R&D
Pfizer	Zavzpret	Small molecule	Migraine	R&D, Manufacturing
Pfizer	Paxlovid	Small molecule	COVID-19	R&D, Manufacturing
Pfizer	Litfulo	Small molecule	Alopecia	R&D, Manufacturing
Pfizer	Ngenla	Protein/Peptide	Growth Hormone Deficiency	R&D, Manufacturing
Pfizer	Elrexio	Monoclonal antibody	Multiple Myeloma	R&D, Manufacturing
Pfizer	Velsipitl	Small molecule	Ulcerative Colitis	R&D, Manufacturing
Sage	Zurzuvae	Small molecule	Postpartum Depression	HQ, R&D
Takeda	Fruzaqla	Small molecule	Colorectal Cancer	R&D, Manufacturing
UCB	Rystiggo	Monoclonal antibody	Myasthenia Gravis	R&D
UCB	Zilbrysq	Small molecule	Myasthenia gravis	R&D
UCB	Bimzalex	Monoclonal antibody	Ankylosing spondylitis, psoriatic arthritis, Psoriasis	R&D
Vertex	Casgevvy	Gene Editing	Sickle Cell/Thalassaemia	HQ, R&D, Manufacturing

Source: FDA.gov, January 2023

About MassBio

MassBio's mission is to advance Massachusetts' leadership in the life sciences to grow the industry, add to the healthcare system, and improve patient lives. MassBio represents the premier global life sciences and healthcare hub, with 1,600+ members dedicated to preventing, treating, and curing diseases through transformative science and technology that brings value and hope to patients.

Learn more at massbio.org.

For more information, contact **Ben Bradford**, Head of External Affairs,
Ben.Bradford@massbio.org.

with support from  

MASSBIO