

J.P.Morgan

2024 Biopharma Industry Insights: Investment Trends, M&A Activity, and Market Dynamics

January 2025

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Executive summary

Biopharma venture investment dollars in 2024 surpassed those of 2023, helping to fuel robust transaction activity within the ecosystem.

- Biopharma deal and funding activity in 2024 concluded with robust venture investments, increased upfront payments from licensing and modest growth in the IPO asset class. However, overall M&A activity declined despite higher deal medians.
- Development partnerships and licensing deals established a minimum for upfront payments at 7%, following a multiyear trend that had been driving upfront economics lower.
- Here are a few highlights from our Q4 2024 report:
- **Venture investment:** In 2024 year-to-date, \$26.0 billion was invested in therapeutics and discovery platforms across 416 rounds, surpassing 2023 in a strong year for biopharma venture
 - **Biopharma licensing partnerships:** Through Q4 2024, biopharma licensing deals announced a total value of \$171.2 billion
 - **M&A Activity:** In Q4 2024, 18 M&A transactions for biopharma therapeutics and platform companies were announced, totaling \$5.9 billion, marking the lowest number of deals and total value per quarter since Q1 2022
 - **IPO Activity:** By Dec. 9, 2024, \$3.8 billion was raised across 19 biopharma IPOs on NASDAQ and NYSE

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Thank you for taking the time to read this report. We look forward to supporting you.

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Parameters

Biopharma companies are defined as firms developing therapeutics and technology platforms engaged in drug discovery, clinical R&D and commercialization.

Therapy areas, development stages, modalities and deal structures are segmented per the DealForma database.

Financials are based on disclosed figures curated by DealForma. Multiple tranches of the same series are counted as one together.

Data as of Dec. 9, 2024

Biopharma venture activity

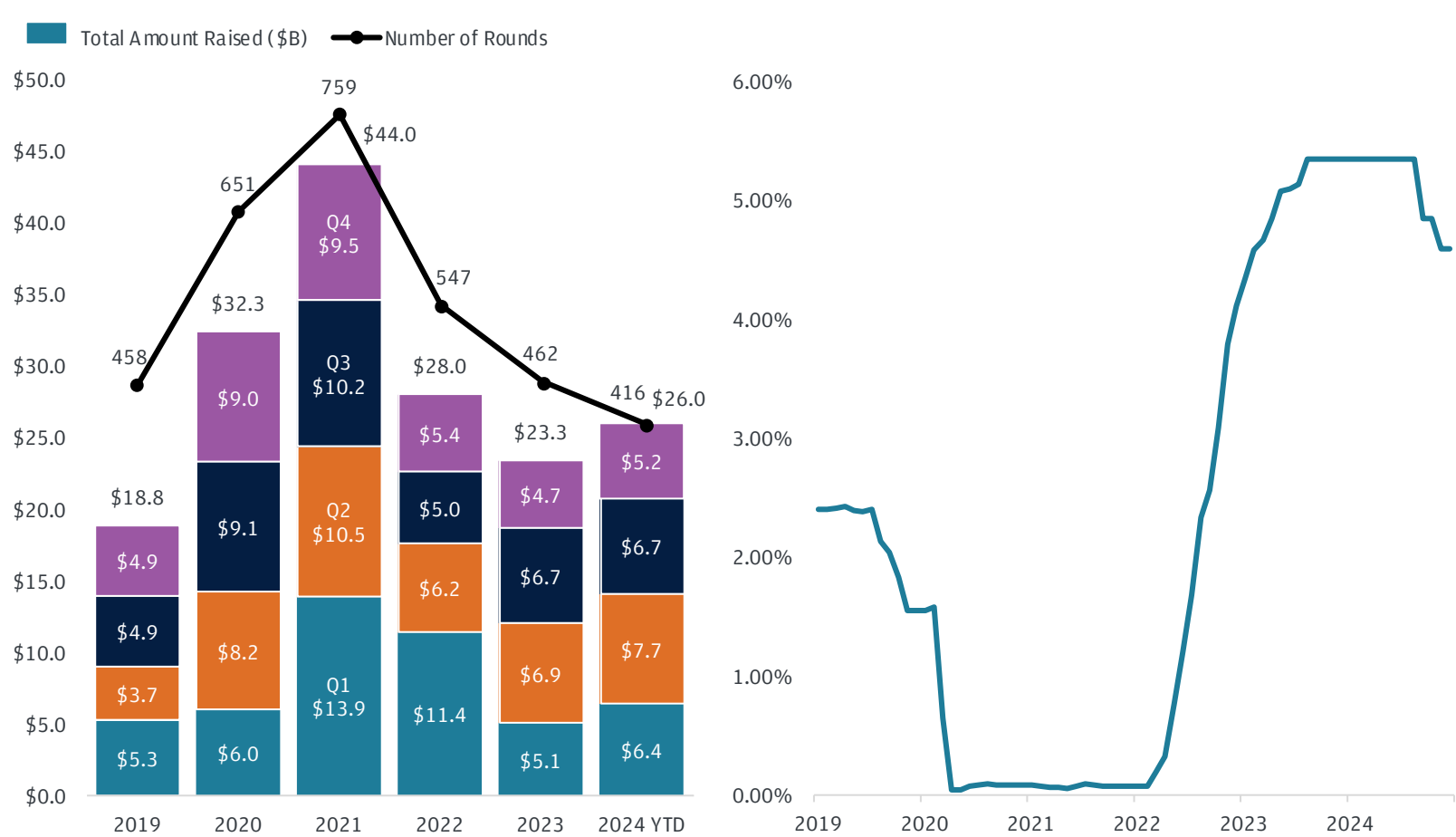
Biopharma venture investment rebounds with concentrated rounds in 2024

Biopharma venture dollar volume through reached \$26.0 billion in 2024 (through Dec. 9), breaking a two-year down-trend from the 2021 peak, although larger investments were made through fewer rounds.

- \$5.2 billion was raised in private funding rounds in Q4 2024, up from \$4.7 billion in Q4 2023. Every quarter in 2024 surpassed the corresponding quarter of the previous year in dollar value

Source: DealForma.com database; Fed rate: fred.stlouisfed.org
Financials based on disclosed figures. Data through Dec. 9, 2024.

Biopharma Therapeutics and Discovery Platforms Deal Activity vs. Federal Funds Rate



Mega rounds and upfront payments in biopharma

Biopharma venture rounds concentrated on larger, but fewer, investments; Licensing upfronts increased

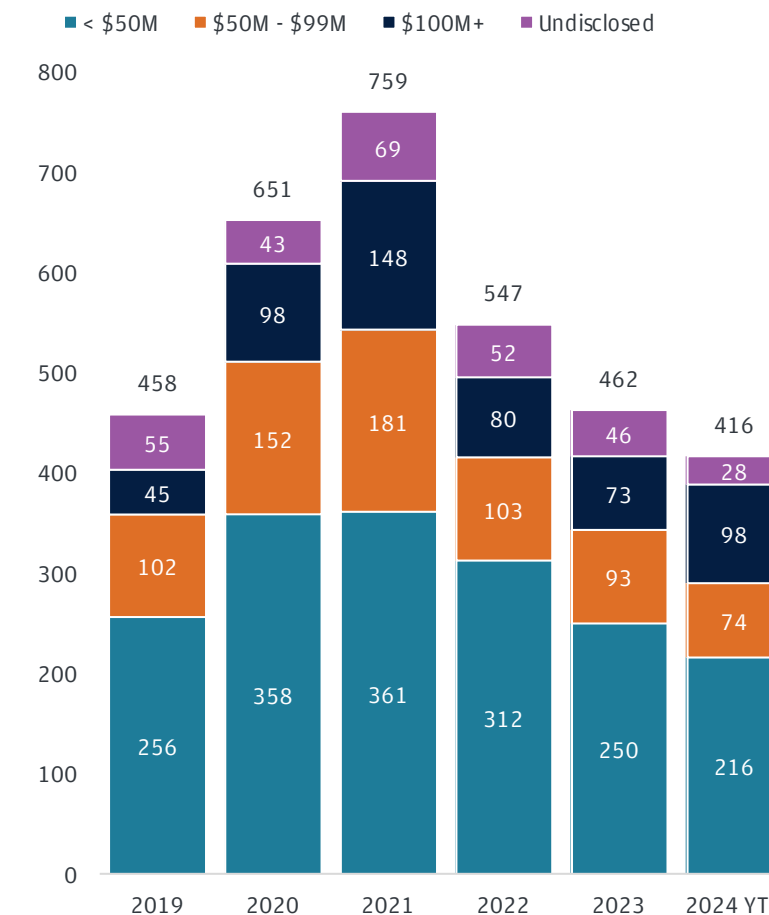
Biopharma venture investors concentrated on robust prospects and larger rounds, even as the overall number of transactions declined from prior years.

- The number of biopharma venture investments has declined year-over-year since the peak in 2021, with 416 rounds in 2024 YTD compared to 462 rounds in 2023
- In 2024, 98 biopharma companies raised venture rounds of \$100 million or more through Q4, surpassing the figures for 2022 and 2023
- Notable Q4 2024 biopharma venture rounds over \$100 million include Kailera Therapeutics' series A announced at \$400 million, Seaport Therapeutics' series B at \$225 million and Metsera Therapeutics' series B at \$215 million
- Licensing transaction volume, which had been declining since 2020, stabilized at 148 deals. Of these, 28 deals involved upfront payments of \$100 million or more. Notable transactions include Novartis's partnership with PTC Therapeutics (\$1 billion up front) and Sarepta's partnership with Arrowhead Pharmaceuticals (\$825 million up front)

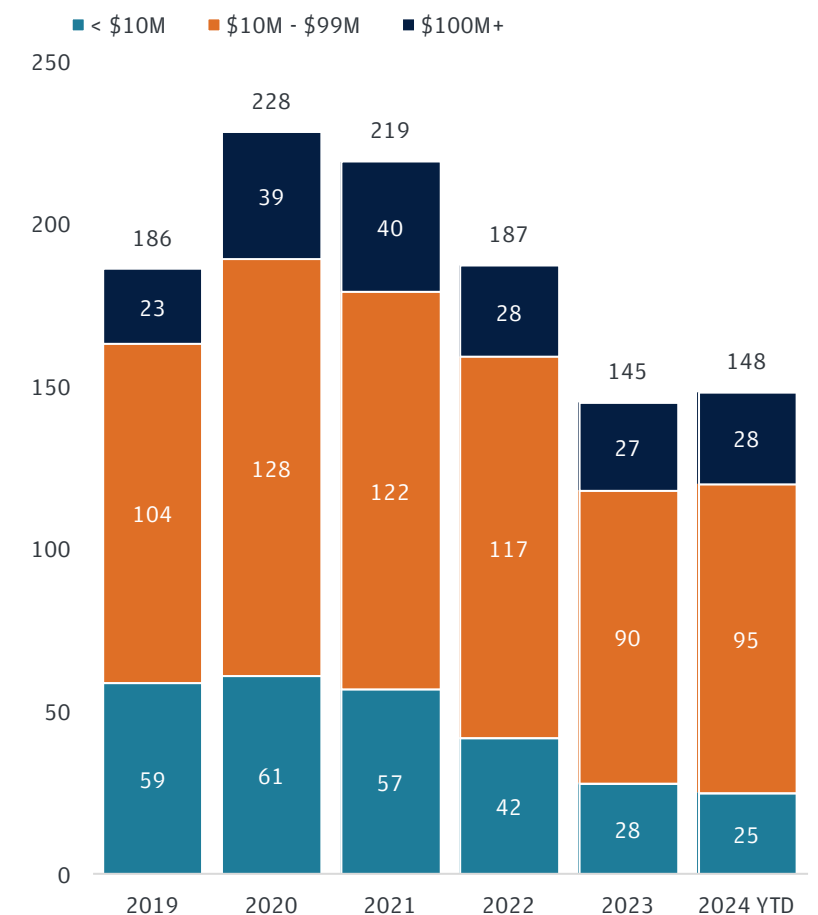
Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

Biopharma: Total Number of Venture Rounds and R&D Partnership & License Deals by Value Upfront

Number of Venture Investments by Round Size



Number of R&D Licenses by Disclosed Upfront



Biopharma funding trends: Increased totals on fewer rounds

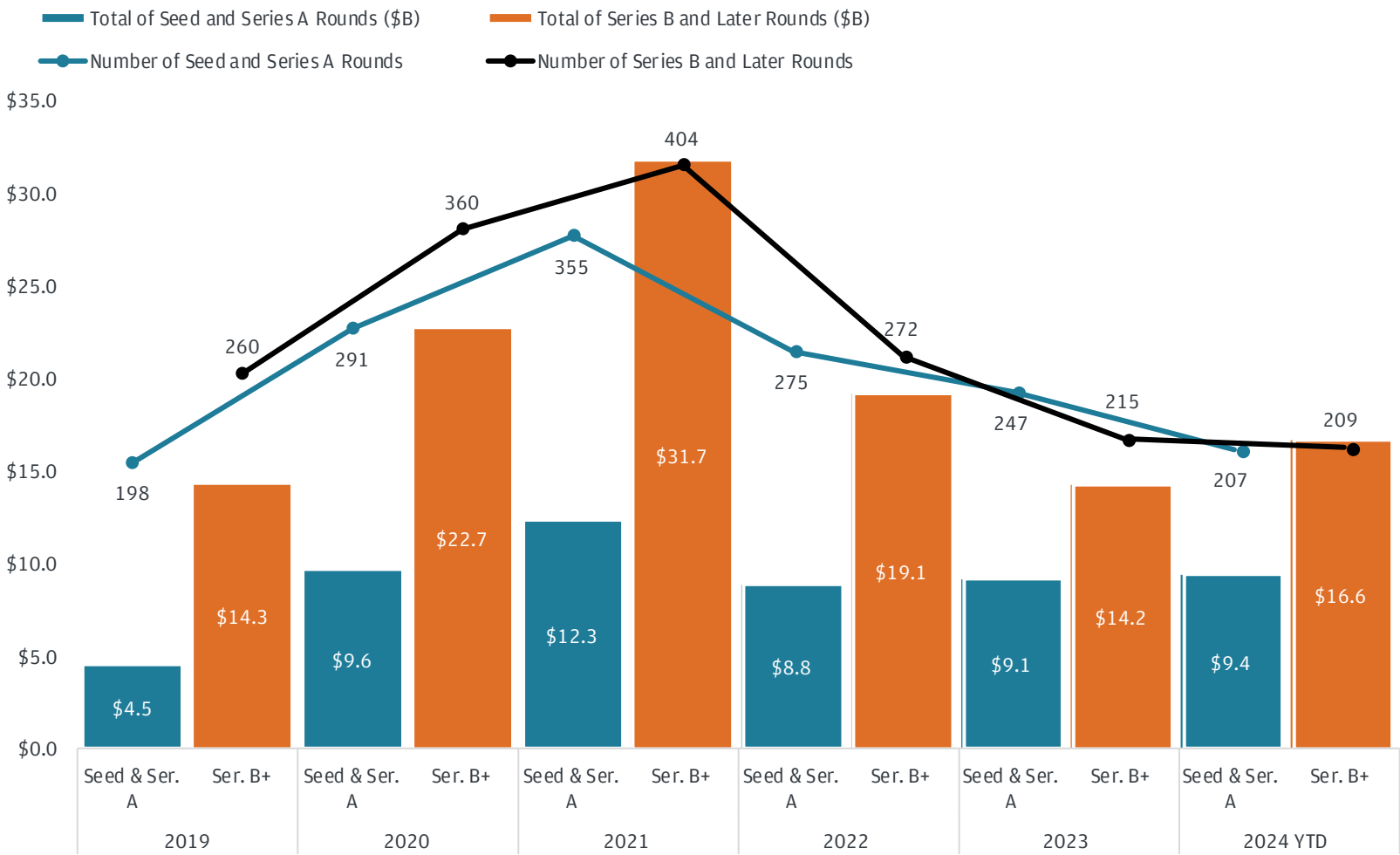
Funding totals for both seed / series A and series B / later stages grow in value despite reduced number of rounds

Seed and series A funding into biopharma companies totaled \$9.4 billion across 207 rounds through Dec. 9, 2024. Series B and later rounds increased in total dollars to \$16.6 billion across 209 rounds

- The largest biopharma seed and Series A rounds in Q4 2024 included significant investments in Kailera Therapeutics at \$400 million and Avenzo Therapeutics at \$150 million
- Over the past two years, first-time financings in the biopharma space have experienced annual growth in line with the broader U.S. economy, approximately 3%

Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

Seed and Series A vs. Later Series Venture Totals in Biopharma Therapeutics and Discovery Platforms



Venture Rounds by Clinical Stage

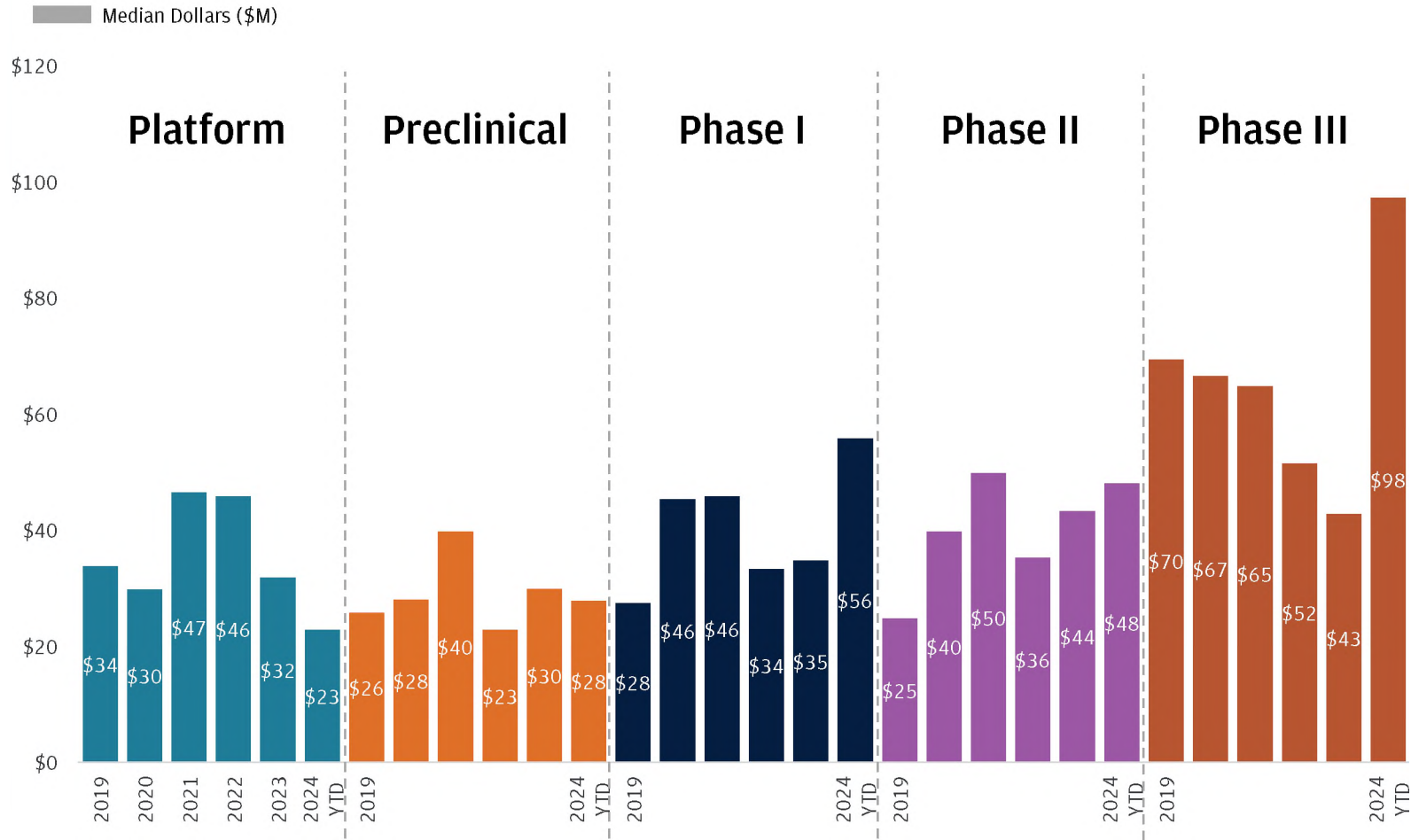
Biopharma venture investments concentrated on clinical-stage companies, resulting in higher median investment amounts

Biopharma venture investors increasingly focused on companies with lead programs in Phase I, II, or III, driving up median investment round values through Dec. 9, 2024. In contrast, platform and preclinical companies experienced smaller rounds compared to previous years, indicating a shift in investor preferences.

- Phase I biopharma companies saw an increase in median funding rounds to \$56 million through Q4 2024. A total of 89 companies disclosed Phase I funding rounds, ranging from \$1.3 million to \$325 million, with ArsenalBio's series C being the largest. There were 20 rounds in Q4 2024 that reached \$100 million or more
- Phase III biopharma companies reported median venture round values of \$98 million through Q4 2024, more than double the median for the same stage in 2023. Fourteen companies disclosed Phase III funding rounds, with amounts ranging from \$10.8 million to \$425 million, the latter being Areteia Therapeutics' series A

Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

Biopharma Therapeutics and Platforms: Median Venture Rounds by Company Stage at Funding



Licensing Upfront Payments: Stability Amid Fewer Deals

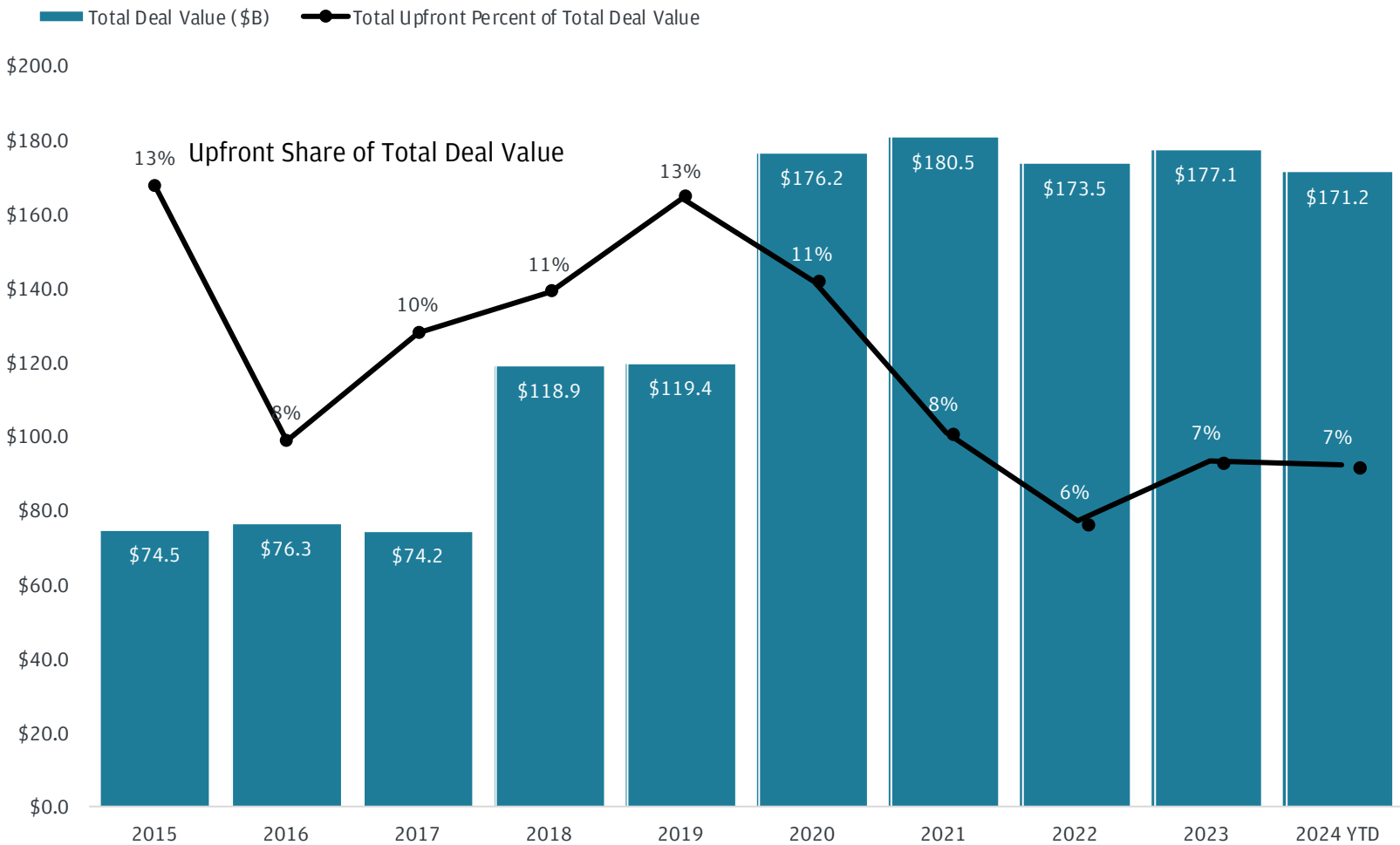
Upfront payments in biopharma licensing remain steady and low, despite rising total deal values among fewer transactions

Total announced licensing deal values for biopharma have remained within the range of \$171.2 billion to \$180.5 billion since 2020, despite a decline in the annual number of deals. The share of these headline values paid upfront has held steady at 7% through Dec. 9, 2024, providing stabilization to upfront deal economics after years of downward pressure. The 30 deals signed in 2024 with upfront payments exceeding \$100 million supported this trend.

- In 2024, 7% of the \$171.2 billion in total announced biopharma licensing deal value was in upfront payments, a decrease from the recent peak of 13% in 2019
- Deal option payments, along with development, regulatory and sales milestone payments, help bolster larger deal sheets by distributing more of the risk throughout the development and commercialization phases

Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

Biopharma Therapeutics and Platforms: R&D Licensing Totals (\$B) and Percentage Upfront



Investment and licensing trends in therapeutic modalities

Biologics and small molecules are at the forefront of early-stage investment and licensing deal values

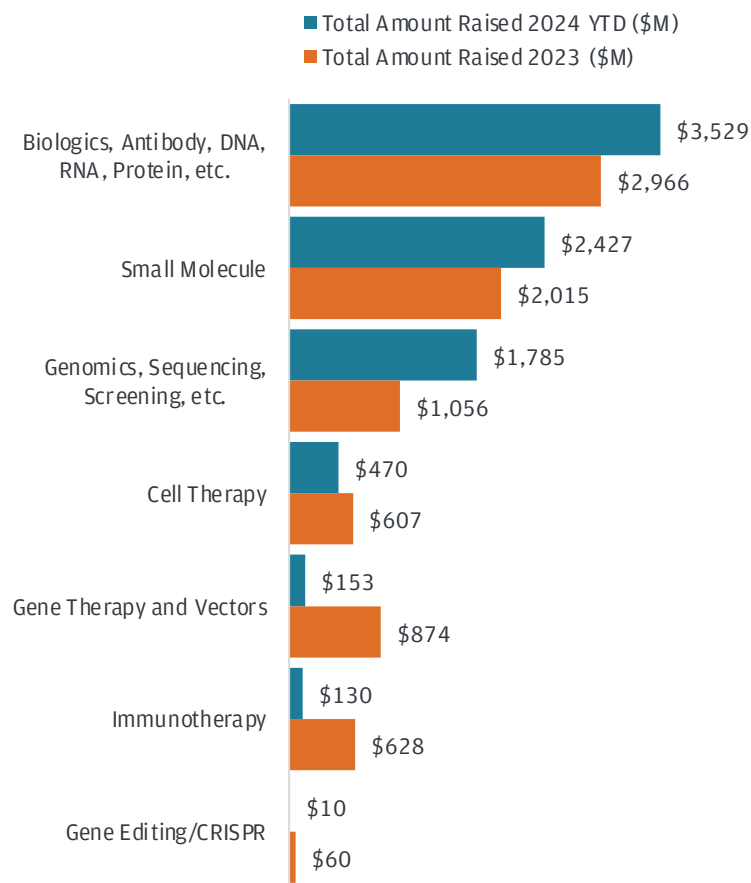
Biologics, including antibodies, conjugates and nucleic acid-based therapies, ranked highest among biopharma modalities for investment and licensing deal flow. This was followed by small-molecule approaches, with more advanced modalities such as cell and gene therapies trailing behind.

- **Biologics investment:** \$3.5 billion in seed and series A investments were made into biologics through Dec. 9, 2024. A notable transaction includes Jade Biosciences’s \$80 million round, marking it as the fourth company to launch based on assets discovered by Paragon Therapeutics
- **Licensing deals:** From 2023 to Q3 2024, \$4.9 billion in total announced upfront cash and equity was directed towards deals developing biologics, with an additional \$3.1 billion for small molecules
- **Gene and cell therapy:** Companies focusing on gene therapy and cell therapy faced a challenging financing environment, with ongoing concerns around manufacturing and distribution

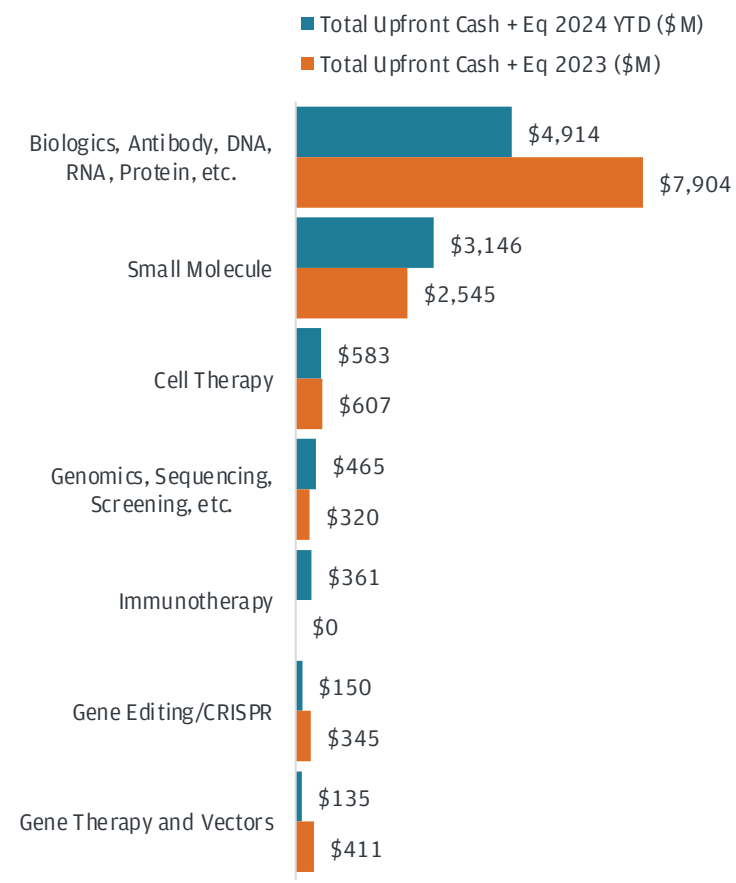
Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

Top Biopharma Modalities: Seed and Series A Venture Rounds and Total Licensing Upfront Value

Top Modalities
Seed-Series A (\$M)



Top Modalities
Licensing Upfront Cash & Equity (\$M)



Trends in Big Pharma Licensing

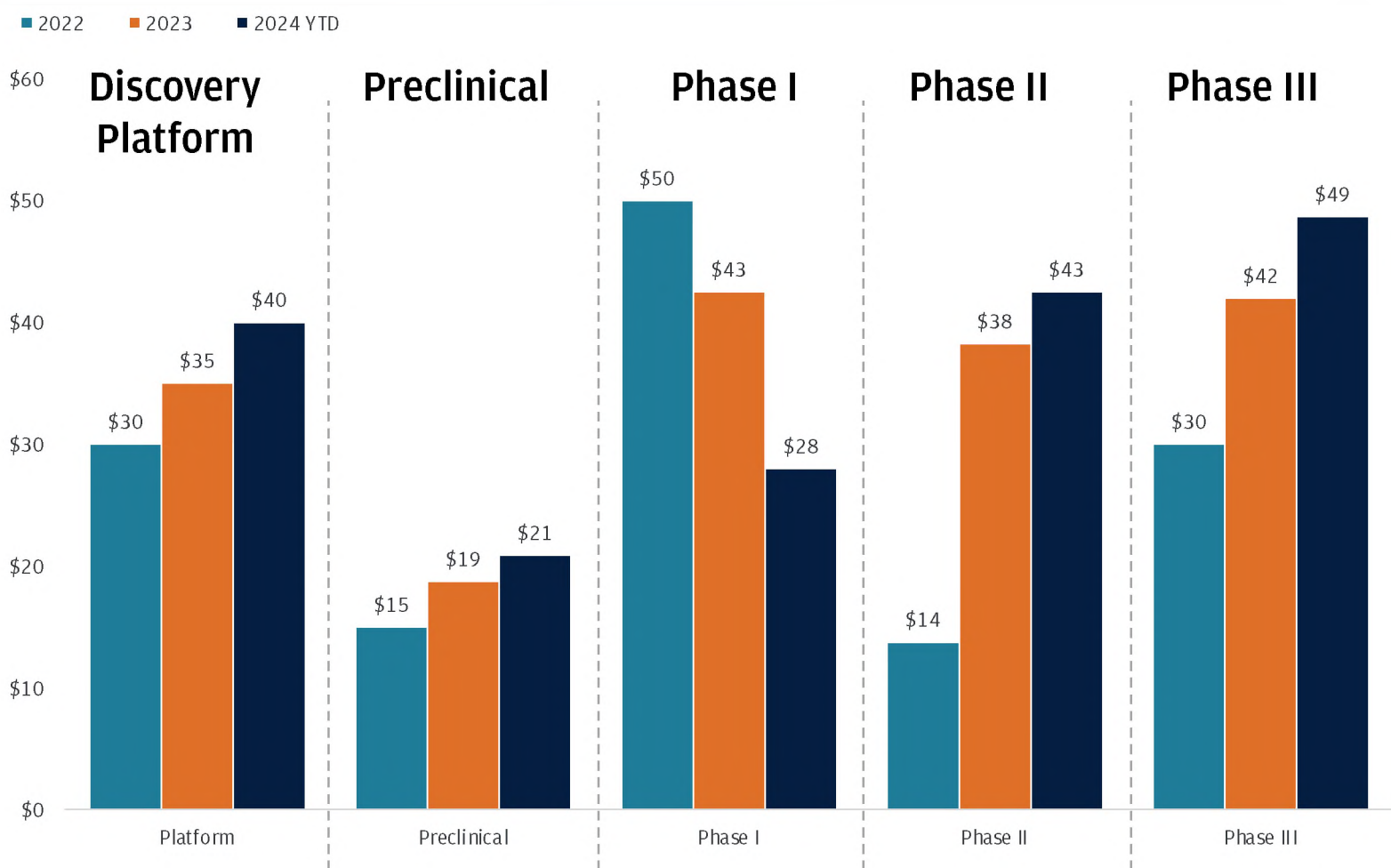
Big pharma’s urgency to in-license clinically advanced therapies drives increased value to Phase III programs nearing approval

Large-cap biopharma companies, with market caps exceeding \$50 billion, are increasingly focused on in-licensing later-stage clinical compounds to bolster their pipelines with therapies nearing approval. This shift towards later-stage clinical programs has resulted in smaller median licensing upfront payments for Phase I and preclinical companies in 2024 year-to-date.

- Median upfront cash and equity payments from Big Pharma were notably higher for Phase II and Phase III deals, as well as for earlier-stage discovery platforms and preclinical stages
- The largest median disclosed upfront payments through Q4 2024 were seen in Phase III deals, including Idorsia Pharmaceuticals/Viatris (\$350 million upfront) and Keros Therapeutics/Takeda (\$200 million upfront).

Source: DealForma.com database
Financials based on disclosed figures. Stage of lead asset in multi-asset deals. Data through Dec. 9, 2024.

In-Licensing by Big Pharma: Median Upfront Cash & Equity by Stage at Signing. 2022 to 2024 YTD (\$M)



Top Modalities in Partnerships

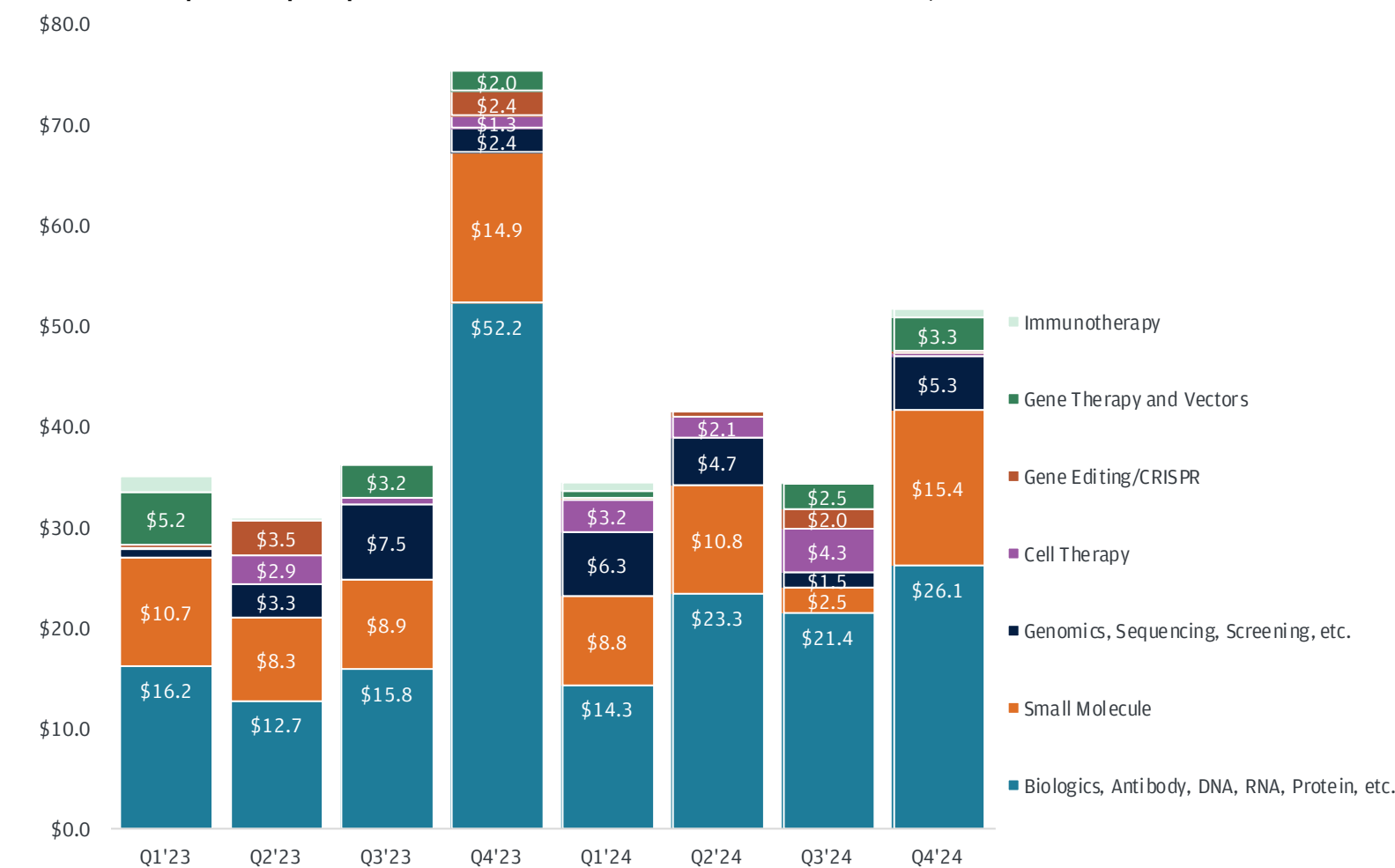
Bispecific antibody therapies boost biologics deal values; small molecules also see growth

Bispecific antibody-based therapies and antibody-drug conjugates (ADCs) continued to achieve larger deal totals through Dec. 9, 2024 driving total announced partnership deal values higher. Small-molecule therapies also recorded the largest quarterly total deal value, underscoring their significance in the market.

- **Biologics licensing growth:** Licensing deal values for biologics increased from \$21.4 billion in Q3 2024 to \$26.1 billion in Q4 2024, with antibody and ADC deals leading in upfront payments and potential milestone totals
- **Notable deal:** The Daiichi Sankyo/Merck deal announced in October 2023 for a Phase II ADC program stands out with a total deal value of up to \$22 billion, including \$4 billion upfront, contributing to the exceptional performance in the sector

Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

R&D Partnerships for Top Biopharma Modalities: Total Announced Deal Value (\$B)



GLP-1 and GIP Therapies Drive Dealmaking in 2024

Recent advances in GLP-1 and GIP receptor-targeted therapies propel dealmaking in obesity, diabetes and beyond

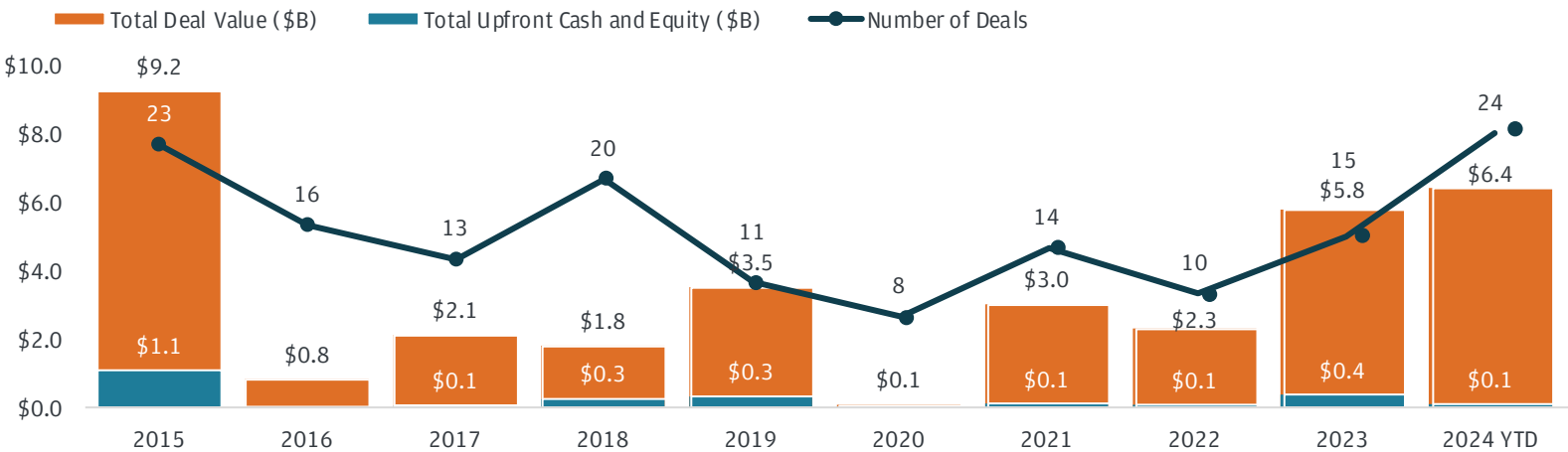
The recent approvals of Ozempic, Wegovy, Mounjaro and Zepbound have heightened biopharma interest in GLP-1 and GIP receptor-targeted therapies. These targets are now actively pursued for their potential in treating obesity and diabetes, as well as other indications beyond metabolic diseases. This surge in interest has led to increased development partnership activity.

- **Obesity and diabetes deals:** In 2024 year-to-date, 24 R&D partnerships and licensing deals have been signed for obesity and diabetes, totaling \$6.4 billion in announced potential deal value
- **GLP-1 and GIP-targeted therapies:** Eight deals focusing on GLP-1-, GLP-1R- and GIP-targeted therapies have been signed in 2024 year-to-date, with a total announced potential deal value of \$8.0 billion

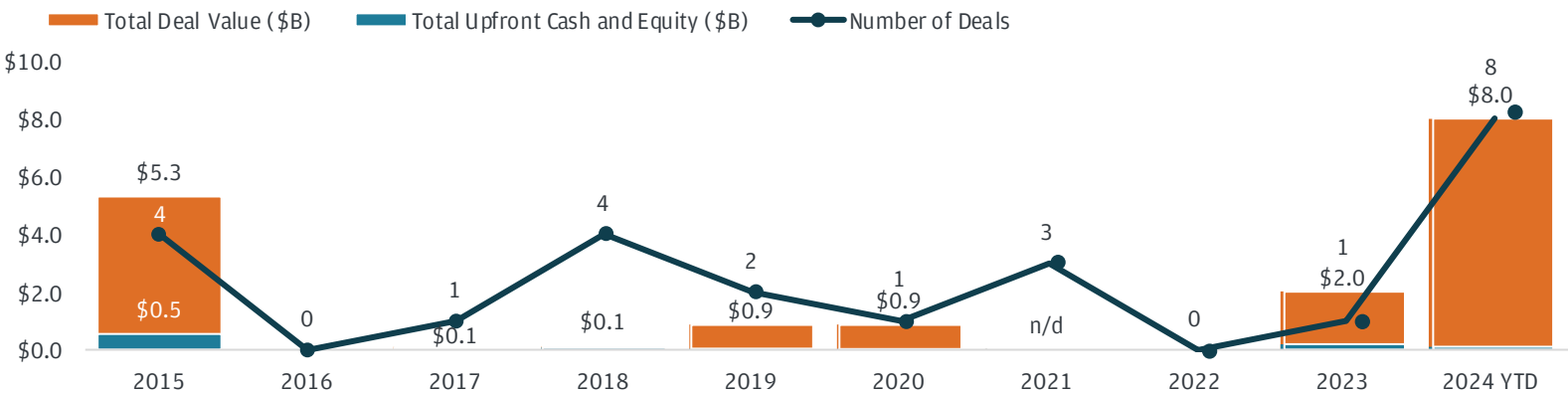
Source: DealForma.com database
Financials based on disclosed figures. Data through Dec. 9, 2024.

R&D Partnerships for Biopharma Therapeutics and Drug Discovery in Obesity, Diabetes, and a Focus on GLP-1

Obesity and Diabetes



GLP-1, GLP-1R, and GIP Targeted Therapeutics



Decline in Biopharma M&A Activity

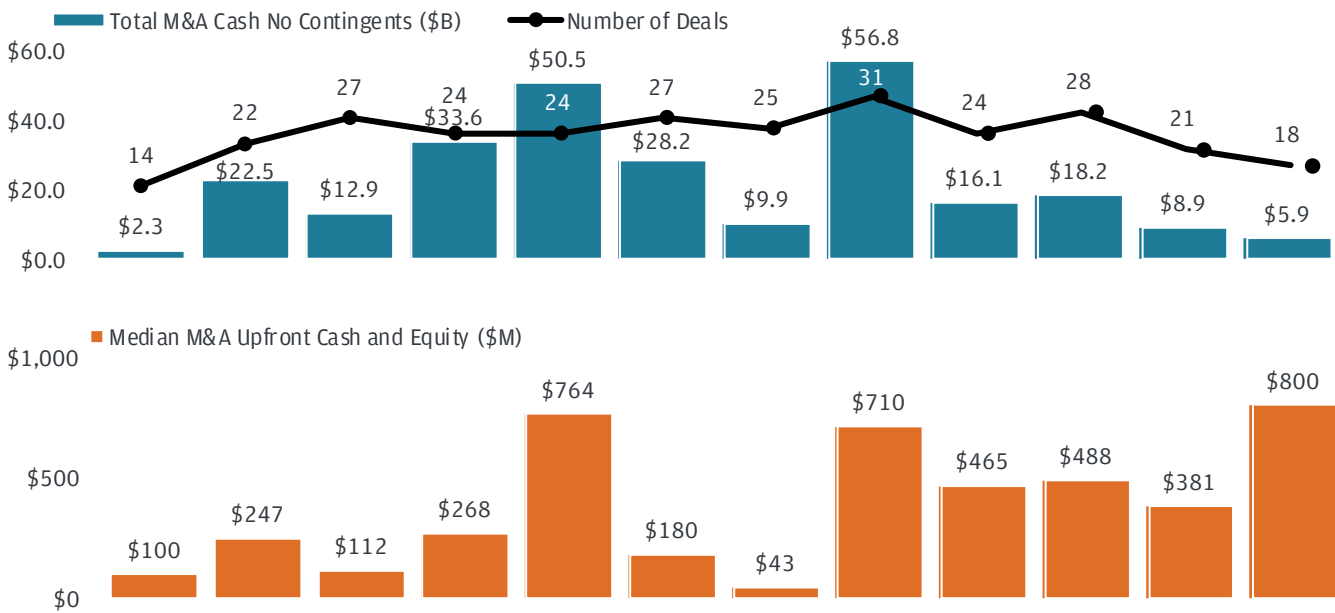
Biopharma acquisition activity falls in Q4 2024 to lowest levels since early 2022

Fewer biopharma companies were acquired in Q4 2024, with smaller total dollar amounts. This trend was partly driven by depressed public valuations, with acquisitions largely remaining in the \$1 billion to \$2 billion range.

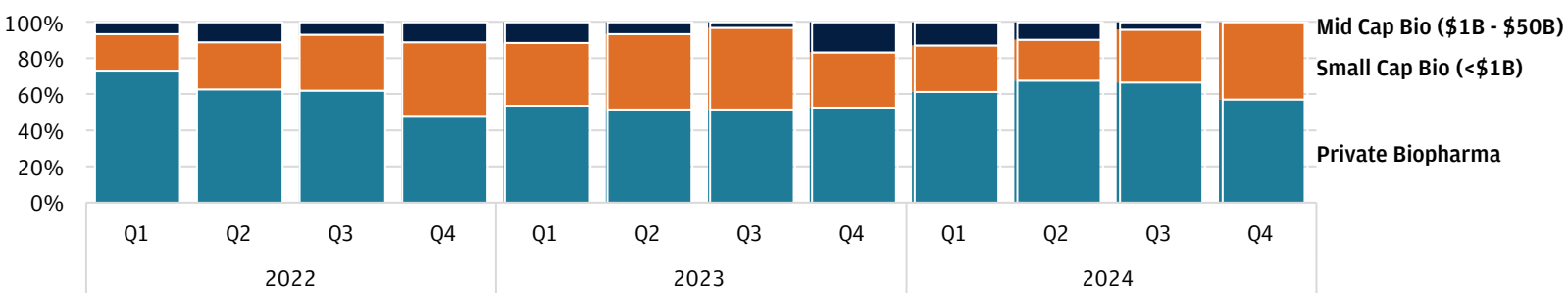
- **M&A activity:** In Q4 2024, 18 M&A transactions for biopharma therapeutics and platform companies were announced, totaling \$5.9 billion. This represents the lowest number of deals and total value since early 2022, despite a busy Q2 2024
- **Median deal value:** The median biopharma M&A deal in Q4 2024 was \$800 million, marking the highest median since Q1 2022
- **Notable acquisitions:** Clinical-stage acquisitions in 2024 year-to-date include Vertex’s acquisition of Seattle-based Alpine Immune Sciences for \$4.9 billion and CymaBay’s acquisition by Gilead for \$4.3 billion in northern California

Source: DealForma.com database
Financials based on disclosed figures. Biopharma-to-biopharma M&A, acquisition options, and reverse mergers. Data through Dec. 9, 2024.

Biopharma M&A: Number of Deals, Total Deal Value (\$B), and Median M&A Upfront Cash and Equity (\$M)



Number of M&A Deals by Acquired Company Type



Biopharma IPO Activity Continues Upward Trend From Lows of 2022

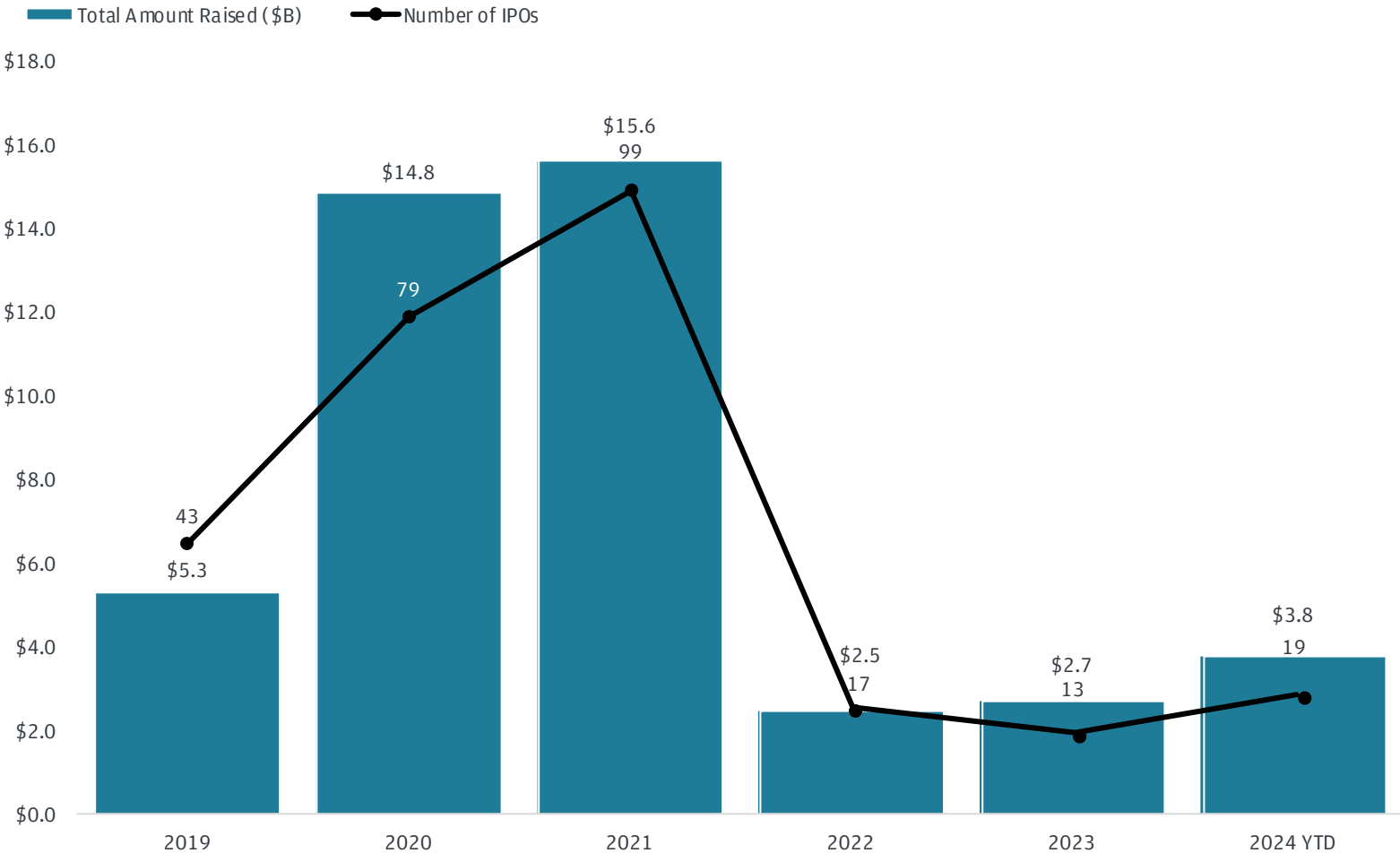
Steady year-over-year growth in biopharma IPO activity in 2024

In Q4 2024, three biopharma IPOs were completed on U.S. exchanges, compared to six in Q3, three in Q2 and seven in Q1—bringing the annual total to 19 IPOs.

- **Total IPO value:** The 19 biopharma IPOs on NASDAQ and NYSE collectively raised \$3.8 billion through Q4 2024
- **Stage of companies:** Among these IPOs, 16 companies had clinical programs at the time of their IPO, while three were in the preclinical/IND stage
- **Notable Q4 IPOs:** The Q4 2024 IPOs included Septerna (\$331 million), Upstream Bio (\$293 million) and CAMP4 (\$75 million), all of which priced in October

Source: DealForma.com database
Financials based on disclosed figures. IPOs over \$15 million. Excludes Kenvue, Inc. (Q2 2023, \$4.4B) and other OTC focused companies. IPOs by completion date. Data through Dec. 9, 2024.

NASDAQ and NYSE Completed IPOs in Biopharma Therapeutics and Platforms: Totals (\$B) and Count



Client spotlight: Element Biosciences



Element
Biosciences

July 2017

Element Biosciences is founded by three scientists who seek to disrupt and democratize genomic sequencing.

January 2020

Series B financing accelerates development of the sequencing platform

February 2022

Element closes acquisition of Loop Genomics

July 2024

Element raises over \$277M series D to develop and commercialize differentiated products and continue rapid growth

June 2019

Series A financing

June 2021

Element closes \$276M series C financing to deliver on the promise of disruptive genomic sequencing
January 2023

Element announces the \$200 genome with the AVITI™ benchtop sequencing system

ABOUT

Element Biosciences is a multidisciplinary San Diego startup focused on innovating genetic-analysis tools for the research market. Founded in 2017, three passionate scientists—Molly He, Michael Previte, and Matthew Kellinger—came together because they had a dream to democratize access to genomic sequencing and advanced biological tools.

AN ELEMENTAL APPROACH TO SUCCESS

In 2022, Element Biosciences launched its first product, the AVITI™, a DNA benchtop sequencing platform powered by avidite base chemistry (ABC), which increased access to genomic sequencing in labs all over the world. The AVITI platform allows a range of industries—from academia to biotech, cancer research and agriculture—to conduct sophisticated genomic research in-house, reducing dependence on external sequencing facilities and speeding up research, collaboration and scientific discoveries. Over the past seven years, the company grew from three employees to 320.

PUSHING THE BOUNDARY OF INNOVATION

In 2024, Element Biosciences raised more than \$277 million in series D funding to continue its work. The company is creating a culture of continued learning and is focused on finding people who are never satisfied with the status quo, according to CEO and Co-Founder Molly He. “We have a saying in the company. It’s ‘Always be learning. Always be growing,’” says He. “We have a really strong team consistently pushing the boundary of innovation.” The future of the company has been on He’s mind since Day One. When Element Biosciences started, the company’s founders knew it wasn’t going to be limited to DNA sequencing. As the technology develops, the equipment can help customers study the molecular components that form and act upon DNA. “DNA is one piece of the puzzle, but there are proteins, epigenetics and all the different things that come together,” He said. “When we made the innovation, we already thought ahead to looking at the proteins. We built these instruments to be futureproof.”

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Molly He

CEO and Co-Founder
Element Biosciences

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