

J.P.Morgan

# 2023 Annual Biopharma Licensing and Venture Report

December 2023

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# Executive summary

## Despite a more discerning financing environment, 2023 saw bright spots with substantial opportunities for clinical stage biotechs

The fourth quarter of 2023 saw declines in the number of licensing deals, venture investments, IPOs and M&A transactions. Challenges continued from earlier in the year as buyers focused on de-risked late-stage deals and favored technologies that can solve more tangible patient populations versus broad applicability.

The focus on later-stage dealmaking drove specific deal values higher despite fewer deals overall. Big Pharma remains hungry and eager for deals at the earliest stages. However, clinical stage biotechs can now generally enjoy larger upfront collaboration payments over 2022.

Here are a few highlights from our annual report:

- **Biopharma licensing partnerships:** \$63.0 billion in total announced deal value from 108 deals signed in Q4, with \$22 billion from one deal—but a larger quarter regardless.
- **Venture investment into therapeutics:** \$3.5 billion across 79 venture rounds in Q4 2023 to close the year at \$17.0 billion from 350 rounds in 2023.
- **IPOs:** Biopharma saw one \$300 million IPO in Q4 and 12 IPOs for \$2.5 billion on U.S. exchanges for all of 2023.
- **M&A:** Biopharma M&A deal values closed higher at \$37.6 billion in Q4 and \$128.8 billion in total biopharma upfront M&A value across 112 acquisitions for all of 2023.

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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. Biotech refers to pre-commercial businesses specifically.

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

Data as of 12/15/2023

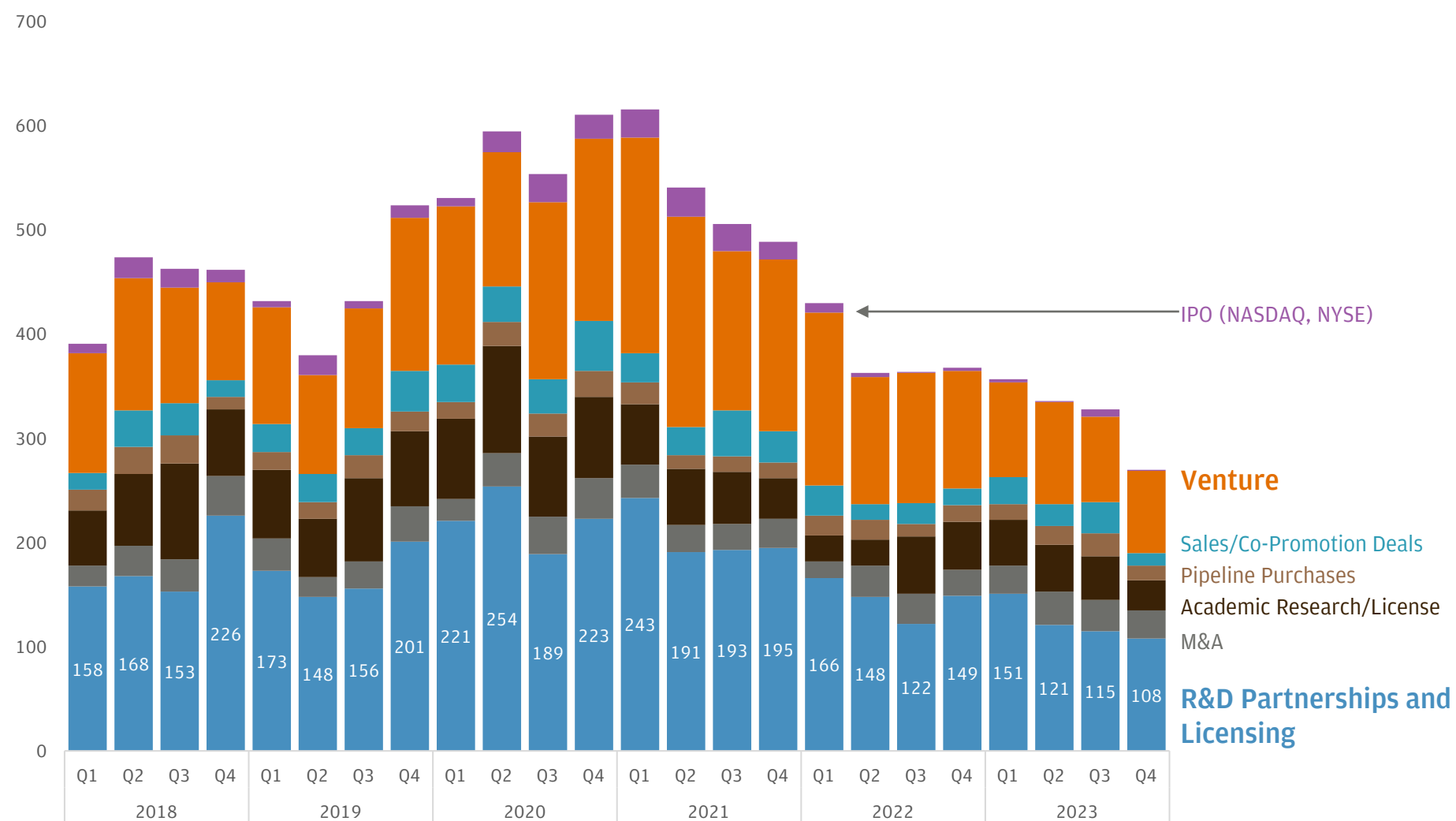
# Biopharma dealmaking in perspective

Biopharma's overall deal flow tapered off again in the fourth quarter of 2023 as there were fewer licensing deals than earlier in the year. IPO activity also tracked lower to round out a tight IPO window in 2023. Venture deals remained somewhat consistent in Q4'23 relative to the prior quarter but saw 30% fewer transactions when compared to Q4'22.

- 270 total transactions across venture rounds, IPOs, licensing deals, and M&A in the fourth quarter, trending lower than Q3.
- 108 biopharma R&D licensing partnerships signed in Q4, representing the fewest number of license deals on a quarterly basis in over five years.
- 79 venture rounds completed for drug discovery companies which was similar to Q3, though dollar totals tracked lower.

Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

## Biopharma Deal Flow: Total Number of Deals and Funding Rounds

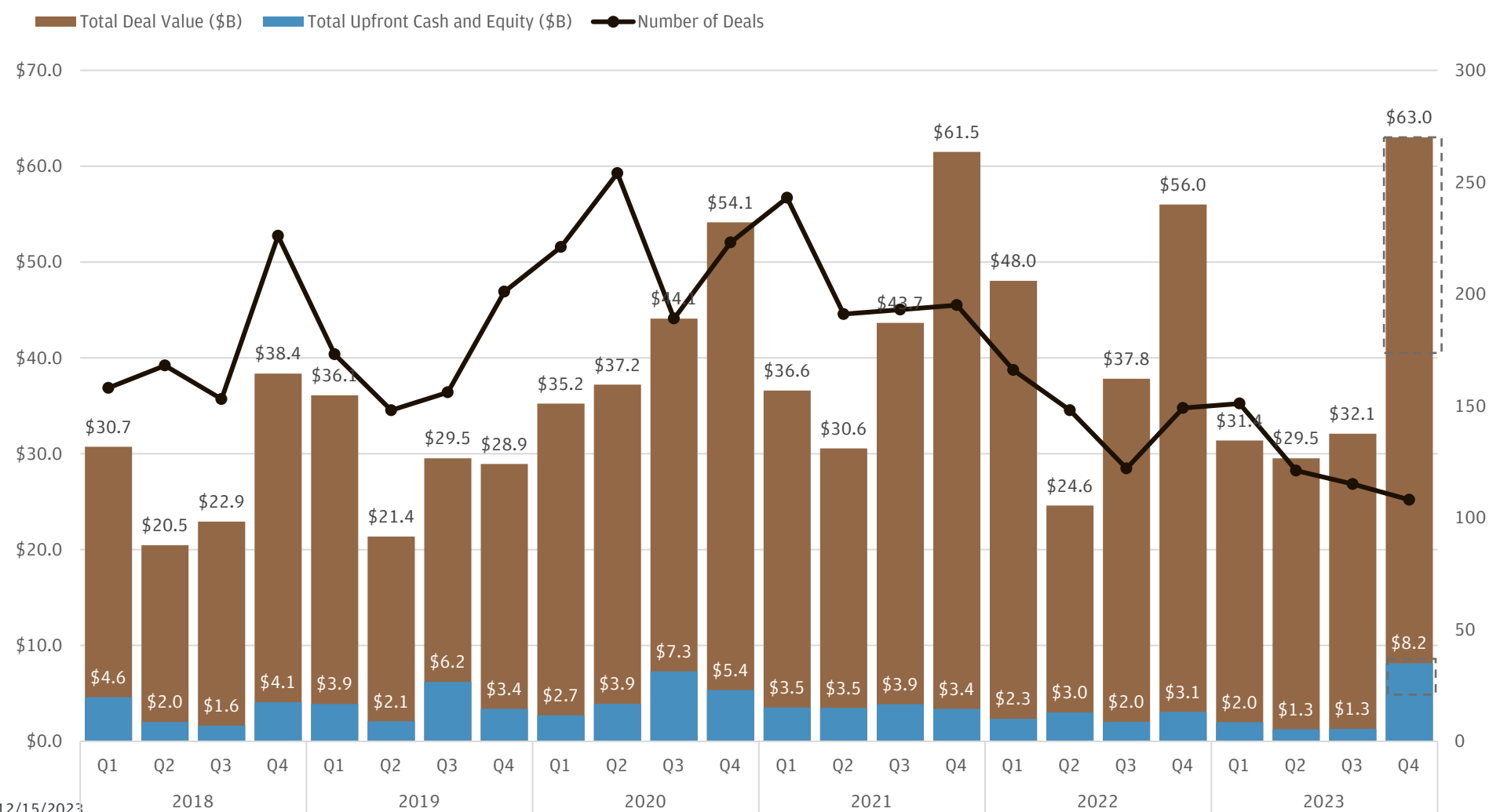


# Spike in licensing proceeds bolstered by big pharma ADC collaboration

Quarterly biopharma licensing and partnership activity saw a slightly smaller deal count in the fourth quarter to continue the decline started in Q2 2023. The spike in Q4 2023 deal value was driven by Daiichi and Merck's October 2023 deal for three ADC programs with \$4 billion upfront and \$22 billion in potential deal value. However, even after excluding this outlier, deal value still had a 28% increase QoQ.

- 108 biopharma R&D licensing partnerships were signed in fourth quarter 2023, down from 115 in Q3.
- \$8.2 billion in total upfront cash and equity for therapeutics licensing reaching the highest value since 2018.
- \$63 billion in total announced deal values promising a strong end of Q4 2023.
- Other notable collaborations include Monte Rosa Therapeutics/Roche and C4 Therapeutics/Merck.

## Biopharma Therapeutics and Platforms: R&D Partnership/Licensing Totals (\$B) and Number of Deals



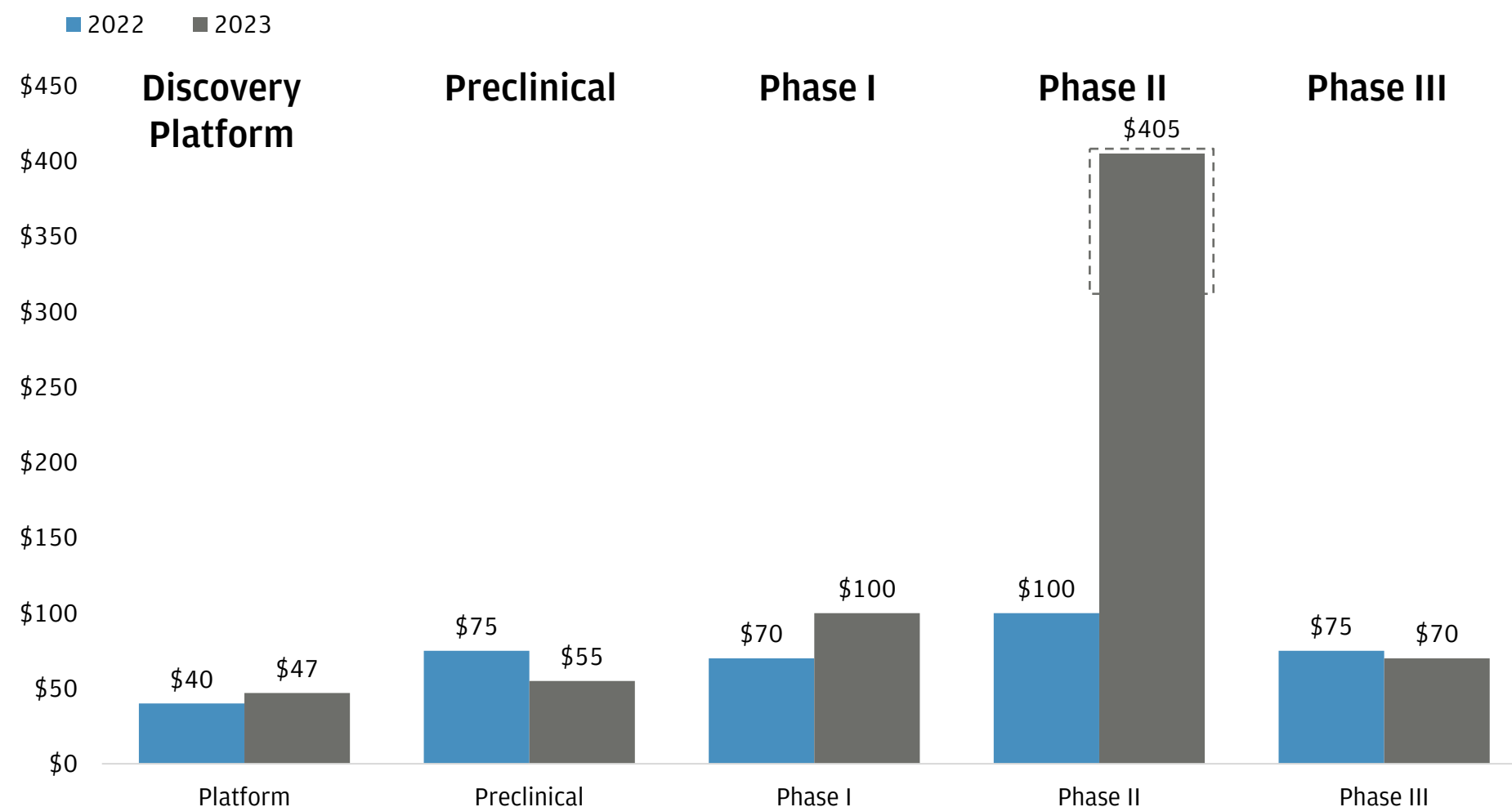
Source: DealForma.com database  
Q4 2023 Daiichi/Merck \$22B Total, \$4B Upfront. Financials based on disclosed figures. Data through 12/15/2023.

# Big pharma continues to pay well for clinical-stage biotechs with meaningful growth in upfront payments for Phase I/II assets

Opportunity remains abundant for hopeful out-licensors. 2023 saw upward pressure on big pharma to dole out larger upfront payments for biotechs with early safety/efficacy data in hand.

- Median upfront cash and equity payments from big pharma were up to \$405 million across five deals signed in Phase II in 2023, up from a median of \$100 million from four deals in 2022.
- The Phase II median upfront of \$405 million counts the \$4 billion upfront in the Daiichi/Merck deal; it totals \$310 million without.
- Phase III asset deals, which are often signed for less-than-worldwide licensed territories, saw the median upfront drop slightly to \$70 million in 2023 from \$75 million in 2022.
- Phase I biotechs also enjoyed a hefty 42% increase in upfront payments year over year.

**In-Licensing by Big Pharma: Median Upfront Cash & Equity by Stage at Signing. 2022 vs. 2023**



Source: DealForma.com database

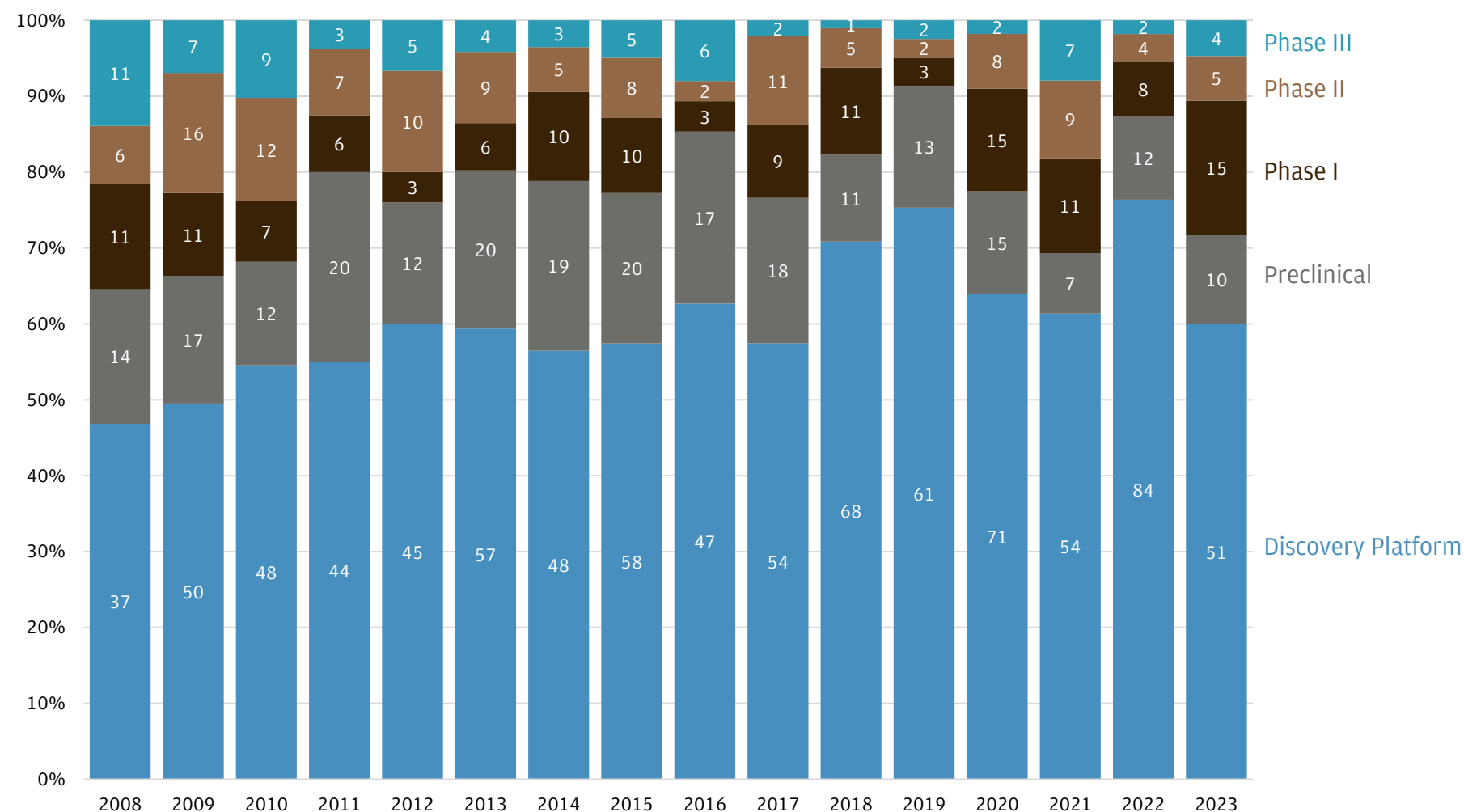
Q4 2023 Daiichi/Merck \$22B Total, \$4B Upfront. Financials based on disclosed figures. Stage of lead asset in multi-asset deals. Phase III deals are more often regional rather than worldwide, hence the smaller upfront. Data through 12/15/2023.

# Big pharma started shifting to later stage in-licensing to mitigate risk

Big pharma dealmaking saw a rotation into incrementally more later-stage deals, despite early-stage discovery companies continuing to take the lion's share of deal flow. Early-stage licensing deals are often the riskiest deals but provide substantial support and control over program development. The shift to later-stage, clinical program deals at signing, however, supports the need to mitigate risk and fill pipelines.

- 51 biopharma R&D licensing deals were signed in 2023 for platforms and discovery programs. This is significantly less than 2022 where early-stage deals with big pharma were 84.
- 15 Phase I deals were signed in 2023, which is almost double compared to 2022.

## In-Licensing by Big Pharma: Share of Development and Commercialization Deals by Stage at Signing



Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

# Oncology and biologics continued to lead biopharma deal totals in 2023

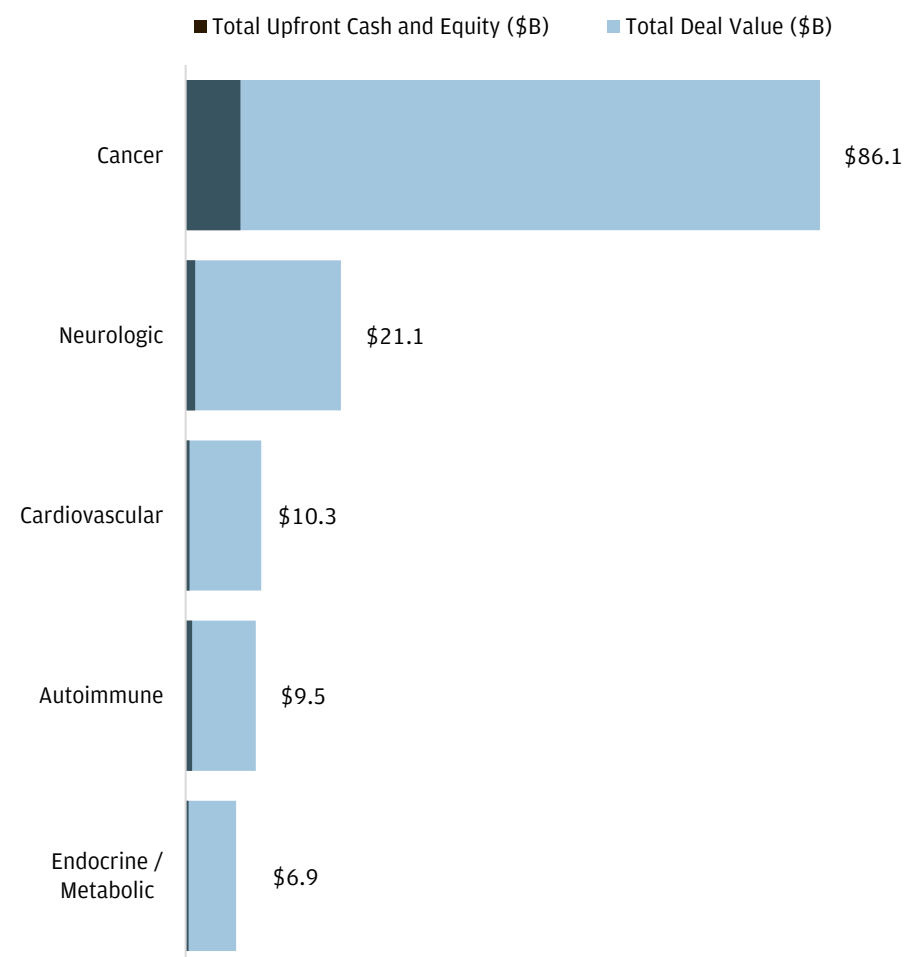
R&D licensing activity for cancer therapies consistently ranks highest among therapeutic areas, reaching a new highest total deal value in 2023. Therapies developed in the largest deals are often advanced biologics, antibodies, and complex molecular programs.

- \$86.1 billion in 2023 total announced deal values for cancer program.
- \$80.3 billion in total deal value for biologics and complexed molecules in 2023 through the fourth quarter.

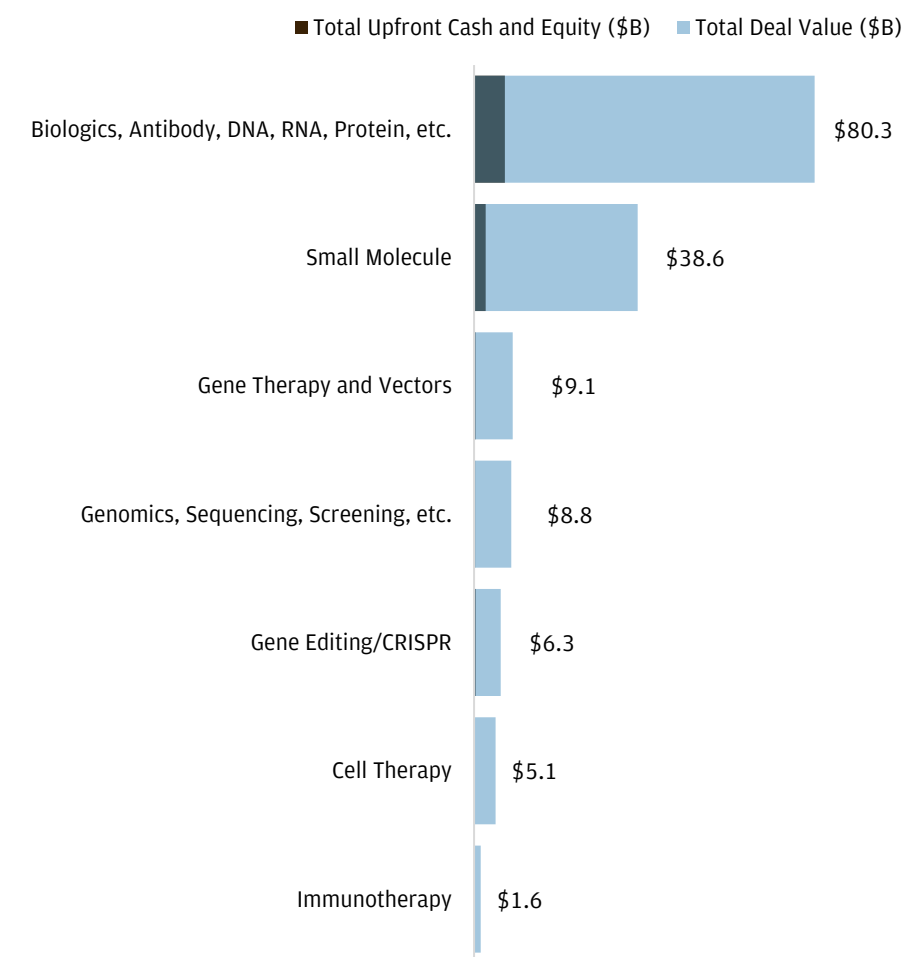
Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

## Top Therapy Areas and Modalities for Licenses among Biopharma, 2023: Total Announced Deal Value (\$B)

### Top Therapy Areas - Total Deal Values (\$B)



### Top Modalities - Total Deal Values (\$B)



# Deal values for antibody-drug conjugates are up; Cell and gene therapy dropped

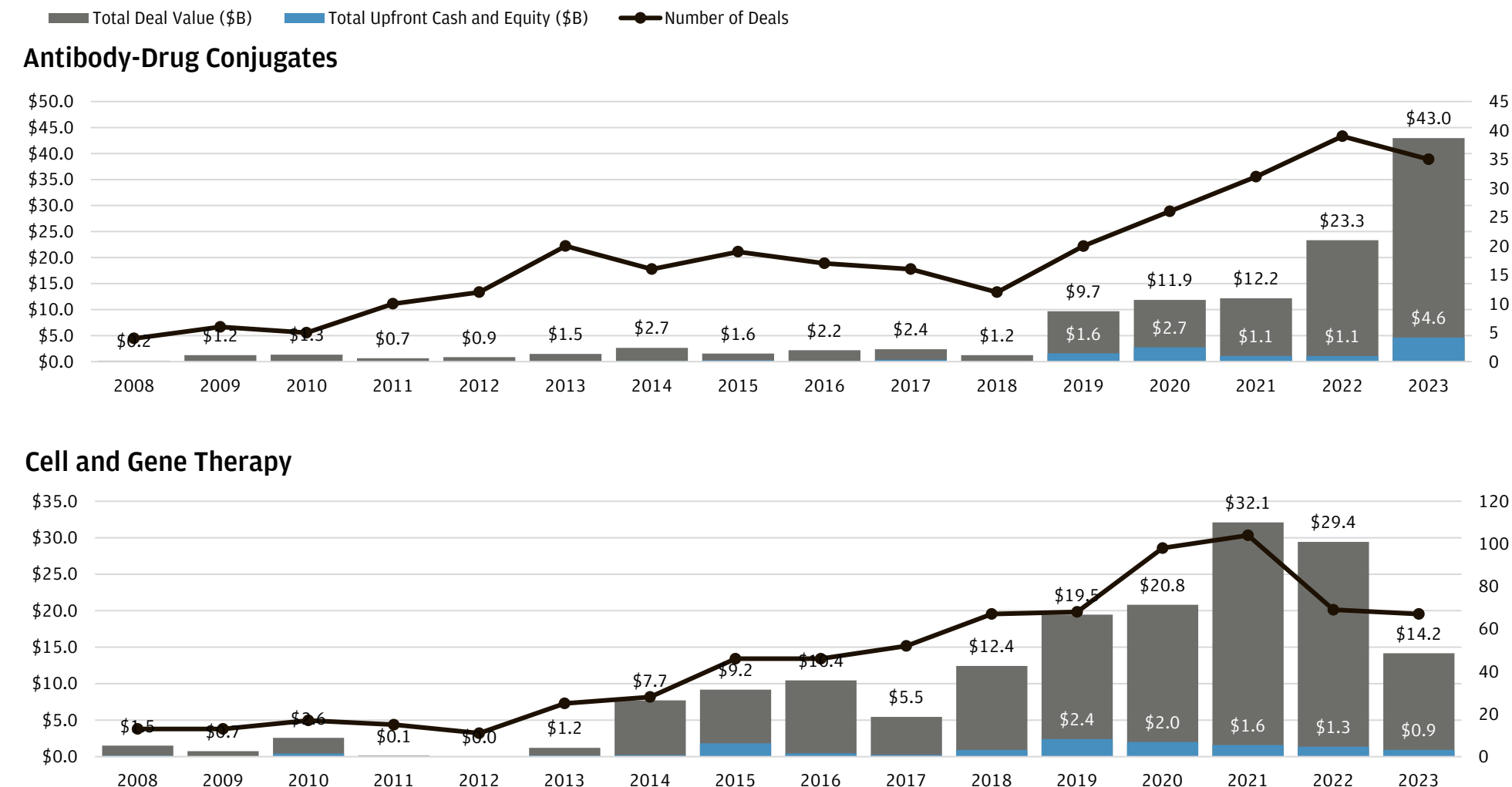
Antibody-drug conjugates observed a significant spike in total deal value despite the slightly fewer deals compared to 2022.

Cell and gene therapy is another area that attracts the largest deals. However, there were fewer deals here and values declined in 2022 and 2023.

- \$4.6 billion total upfront cash and equity for ADC licensing deals in 2023, reaching a new all time high since the data has been collected. There have been 35 deals in 2023, which is slightly less than 2022.
- The total upfront for cell and gene therapy program licensing fell to \$900 million in 2023 from \$1.3 billion in 2022 on smaller deal values. There have been 67 deals for cell and gene therapy this year compared to 69 in 2022.
- ADCs are positioned as a more proven technology relative to newer game-changing modalities seen with cell and gene therapy programs—speaking to the current appetite of big pharma for relatively de-risked programs.

Source: DealForma.com database  
Q4 2023 Daiichi/Merck \$22B Total, \$4B Upfront. Financials based on disclosed figures. Data through 12/15/2023.

## ADCs and Cell and Gene Therapy In-Licensing: Number, Total Deal Values, and Upfront Cash and Equity (\$B)





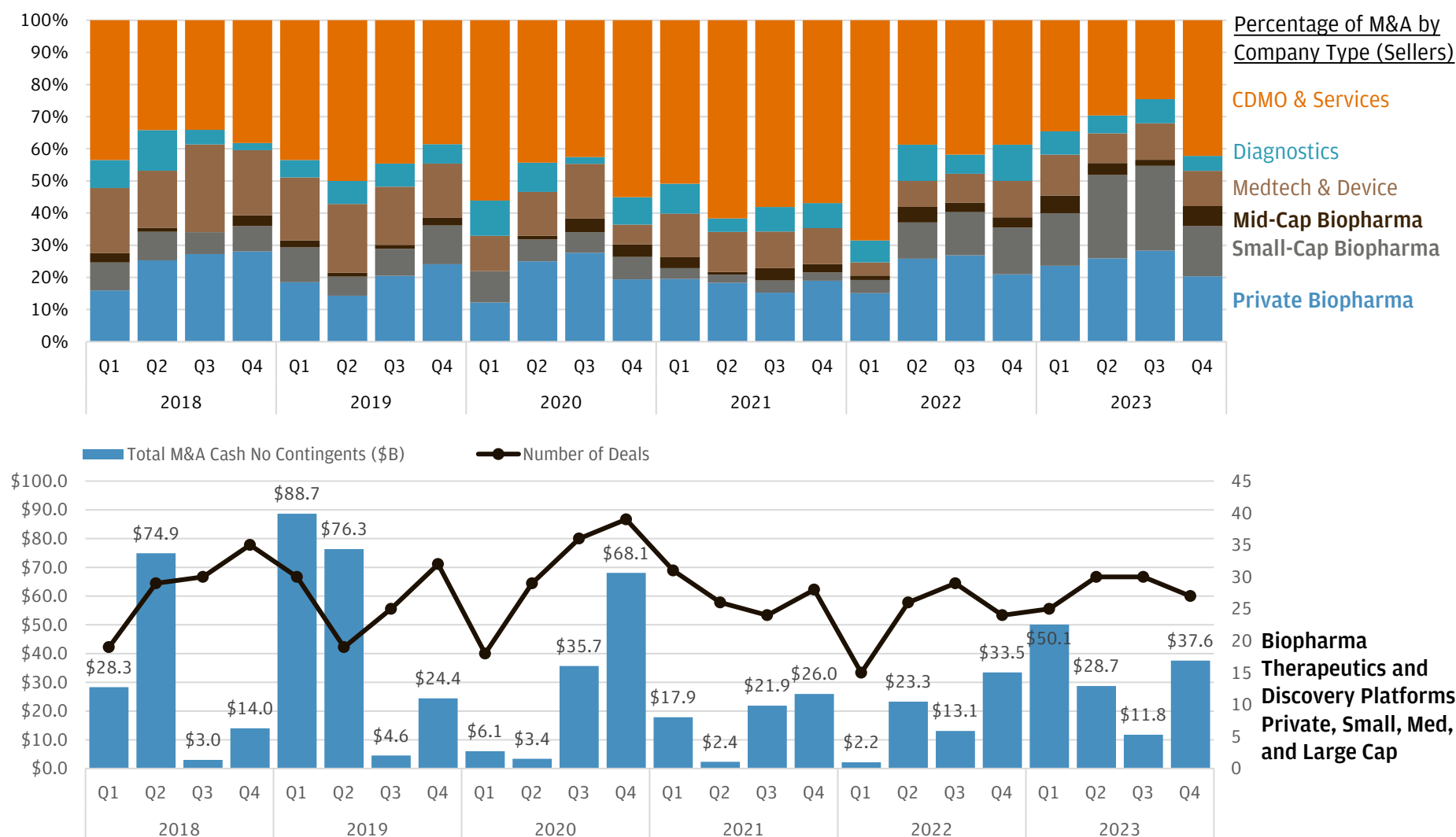
# Biopharma acquisitions posted healthy value totals despite fewer deals in Q4

Biopharma M&A deal values returned higher in the fourth quarter, though on fewer deals.

- 27 M&A transactions for biopharma therapeutics and platform companies were announced in the fourth quarter of 2023.
- \$37.6 billion in upfront M&A value for biopharma companies in the fourth quarter of 2023, a strong return thanks to a few headline deals.
- \$128.8 billion in total biopharma upfront M&A value across 112 acquisitions.
- AbbVie was the buyer on the two largest acquisitions of the quarter (ImmunoGen in November followed by Cerevel Therapeutics in December).

Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

## Biopharma M&A Activity Compared to Other Life Sciences Subsectors



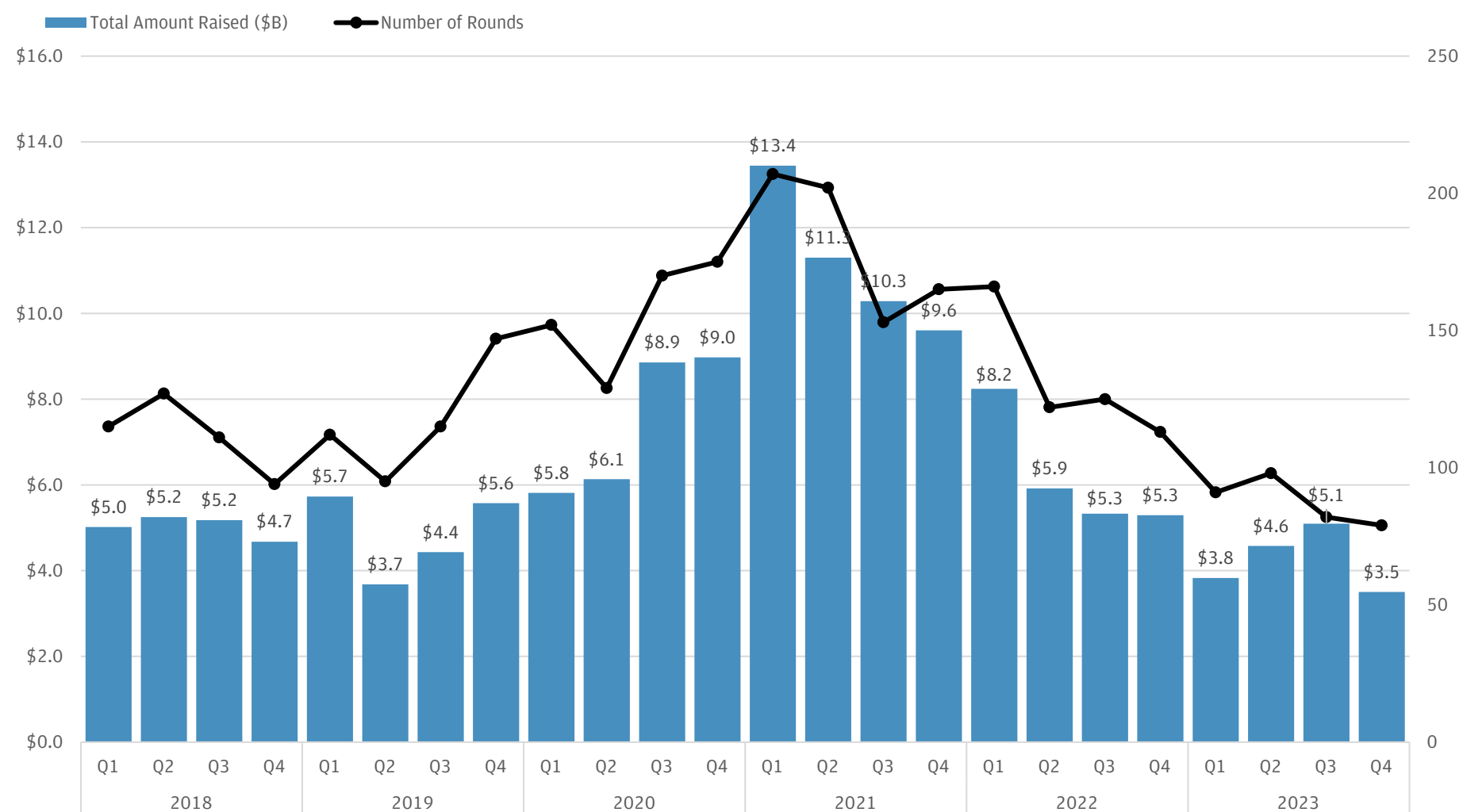
# Venture investment activity into biopharma therapies and platforms cooled in Q4

Venture investors remained sidelined throughout 2023 watching other factors affecting potential investment returns and exits.

- \$3.5 billion was raised in private funding rounds in the fourth quarter of 2023 across just 79 investments. The total invested declined from a recent peak of \$5.1 billion in 82 rounds in Q3 2023.
- \$17.0 billion was raised across 350 rounds in 2023, down from \$24.8 billion and 526 rounds in 2022.
- With both the total proceeds and number of deals declining year over year, companies that do receive funding are still raising meaningful runway. Average proceeds per deal in 2023 was \$48.5 million, a small increase over 2022 where average proceeds were \$47.1 million.
- Aiolos Bio was both the largest announced financing of the quarter as well as the largest Series A (\$245 million). Investors include Atlas Venture, Bain Capital, Forbion, Sofinnova, RA Capital, and others.

Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

## Biopharma Therapeutics and Platforms: Venture Totals (\$B) and Number of Rounds

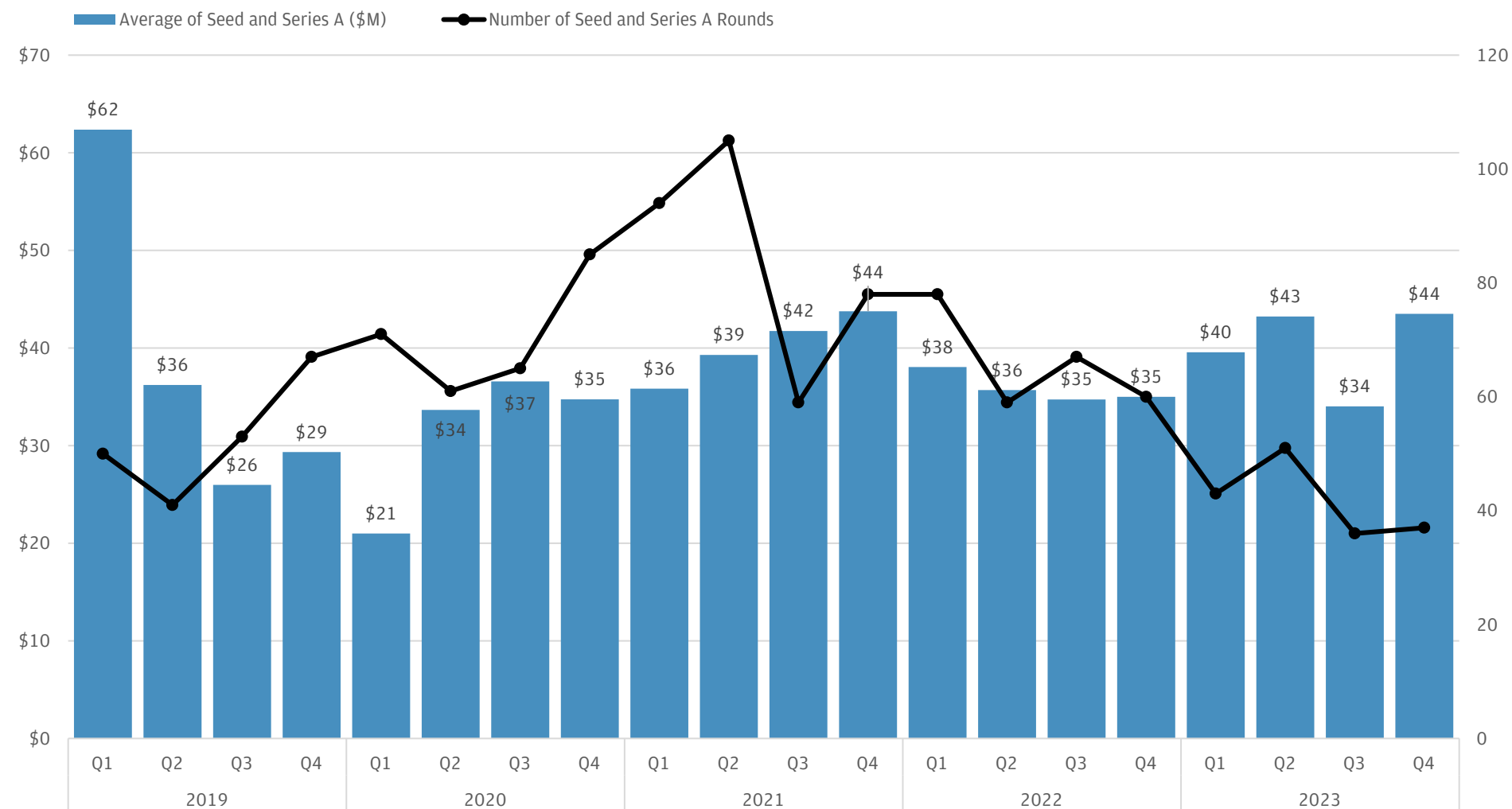


# Seed and Series A averages into biopharma are steady, but there are fewer investments

Investments into newly formed biopharma companies drives early innovation. Average per-investment values tracked higher to \$44 million to hit levels not seen since 2021 and 2019, when there were many more venture rounds closing.

- Beyond Aiolos Bio, VectorY Therapeutics had a notable \$138MM Series A financing in November.
- VectorY Therapeutics counted EQT Life Sciences and Forbion as investors. The Amsterdam-based neuro company claims the largest biotech financing in Europe in 2023.

## Average Seed and Series A Venture Rounds into Biopharma Therapeutics and Discovery Platforms



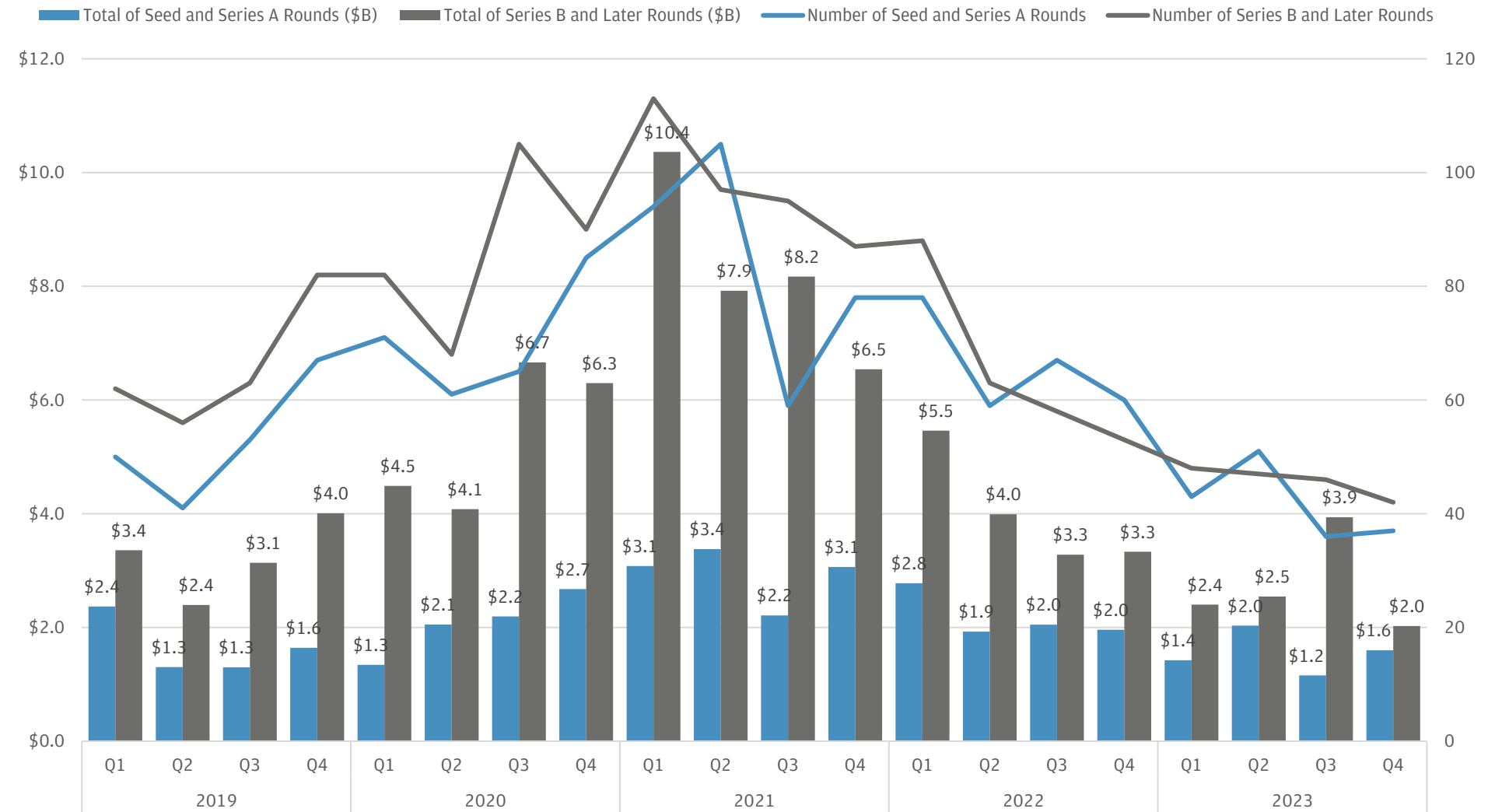
Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

# First time venture financing totals increased from Q3

Seed and Series A funding totaled \$1.6 billion across 37 rounds in the fourth quarter of 2023, better than in the previous quarter. Second- and later-round investments declined to \$2.0 billion across 42 rounds in Q4.

- \$1.6 billion across 37 seed and Series A rounds in the fourth quarter of 2023 on an upward tick from Q3 2023.
- \$2.0 billion across 42 second and later rounds in Q4, down substantially from the \$3.9 billion total in Q3 continuing downward from the peak in Q2 2021.

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



Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

# Biologics and oncology-focused companies continued to attract new investments

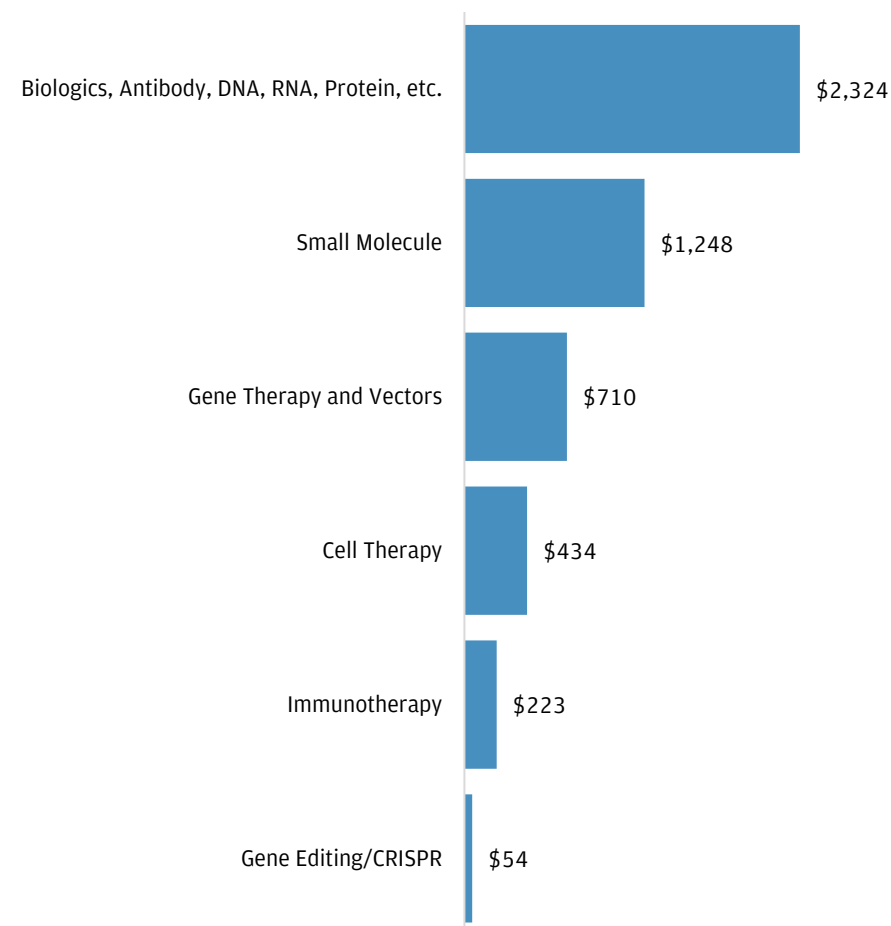
Biopharma companies developing cancer therapies attracted the largest share of all initial venture funding in 2023. Biologics and advanced molecular therapies also led seed and Series A rounds among the top modalities. This is similar to licensing rankings.

- \$2.3 billion in seed and Series A rounds for biologic programs in 2023 in development at biopharma companies.
- \$1.4 billion in seed and Series A rounds focused on cancer in 2023.

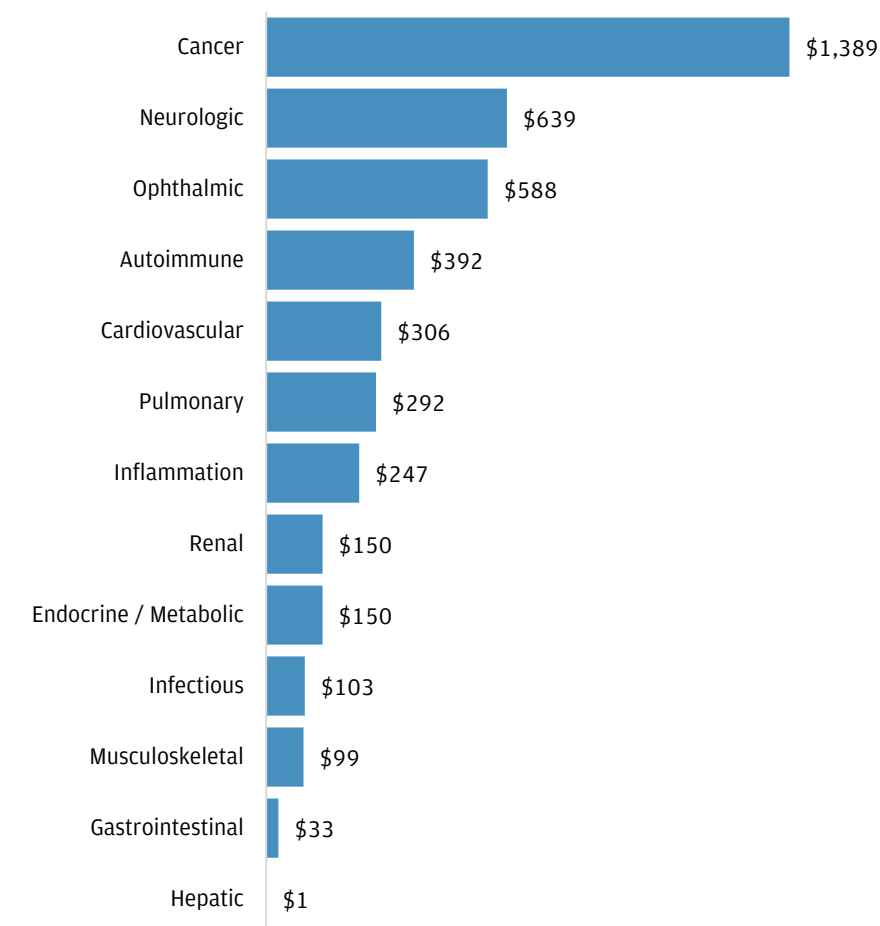
Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

## Top Biopharma Modalities and Therapeutics Areas: Total Seed and Series A for 2023 (\$M)

### Top Biopharma Modalities - Seed and Series A



### Top Therapeutic Areas - Seed and Series A

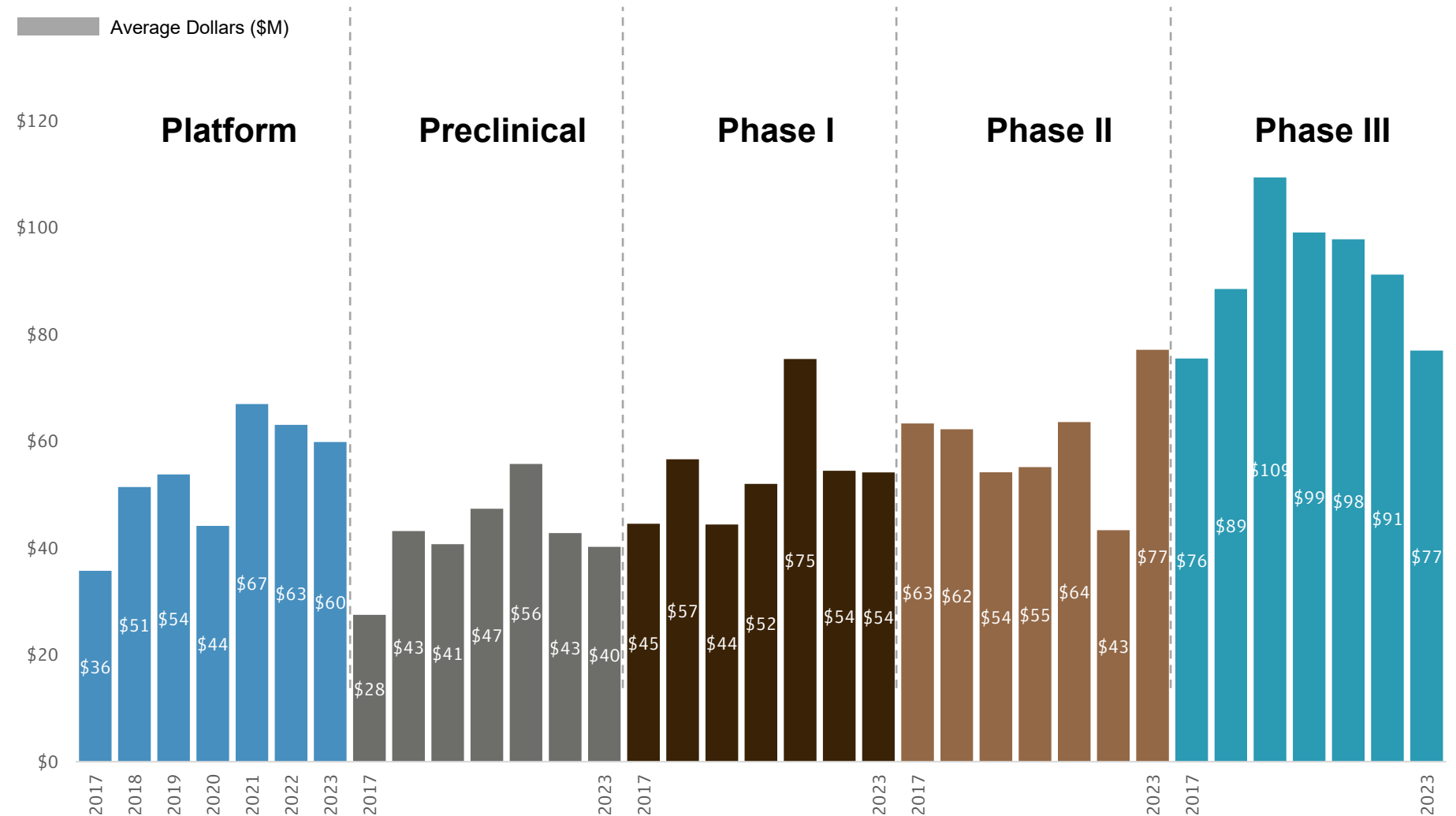


# Venture round averages closed 2023 mixed; larger investments into Phase II companies

Biopharma companies with their lead programs in Phase II saw higher average investment rounds in 2023. Dollar averages here increased the most for Phase II companies. The declines were felt in earlier companies.

- Phase II biopharma companies raised on average \$77 million rounds in 2023, higher than the \$43 million average in 2022.
- Phase III biopharma companies also saw \$77 million average venture rounds in 2023, a decrease from \$91 million in 2022.

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



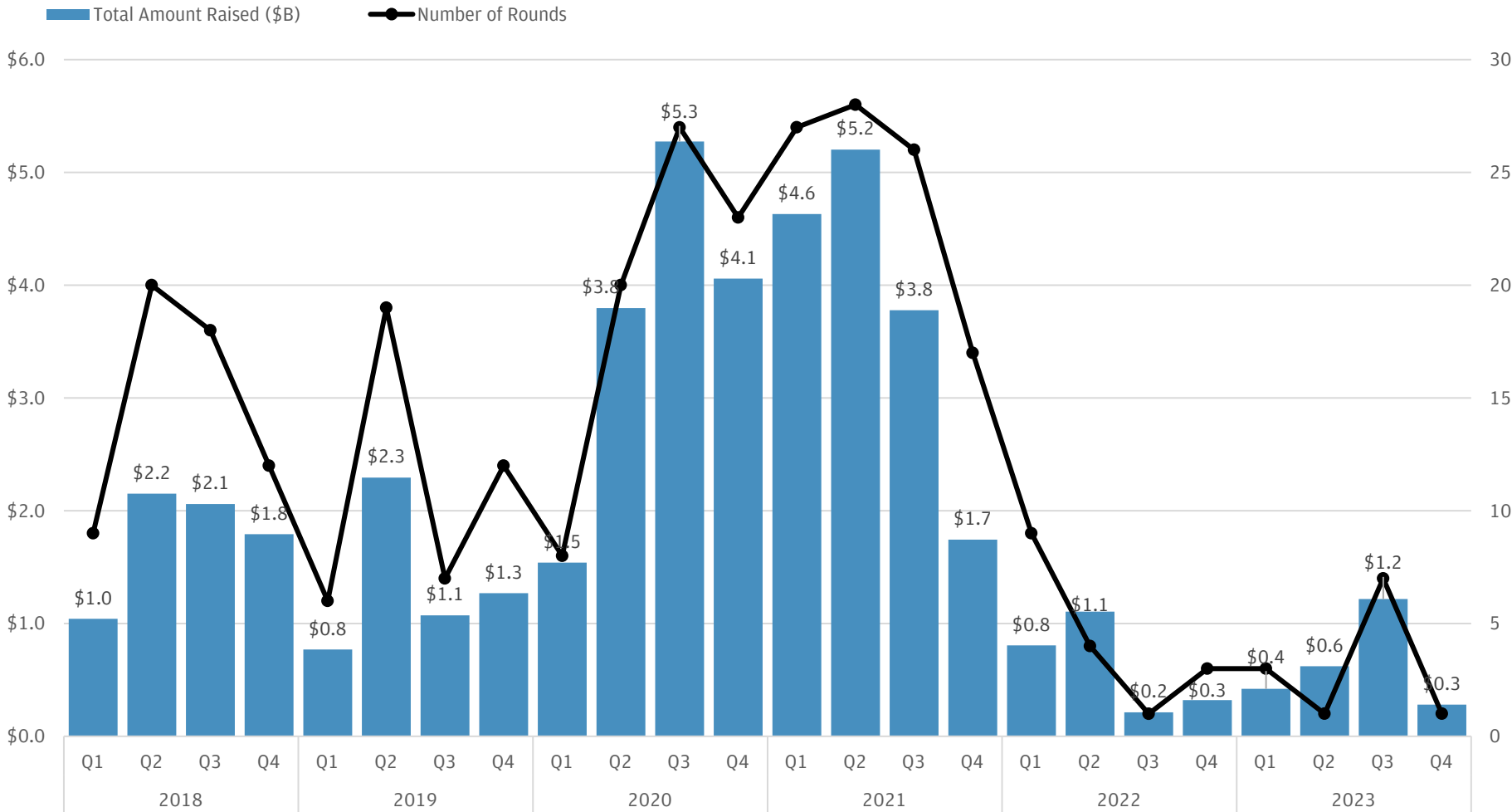
Source: DealForma.com database  
Financials based on disclosed figures. Data through 12/15/2023.

# Biopharma IPOs were back down in Q4 after a recent four quarter run

One biopharma company, Cargo Therapeutics, completed its \$300 million IPO on NASDAQ in the fourth quarter of 2023, bringing the full-year totals to **12 companies and \$2.5 billion**. 2022 had 17 IPOs for a total of \$2.4 billion.

- \$300 million in one completed biopharma IPO in the fourth quarter of 2023 on NASDAQ.
- \$2.5 billion in 12 completed biopharma IPOs in 2023 on NASDAQ and NYSE.
- 9 of the 12 companies had clinical programs at IPO.
- Out of the 12 IPOs in 2023, five are trading above their IPO price as of Dec. 13, 2023.

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



Source: DealForma.com database  
 Financials based on disclosed figures. Kenvue, Inc. (Q2 2023, \$4.4B) and other OTC focused companies excluded in this chart. IPOs by completion date. Data through 12/15/2023.

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