

White Paper

IQVIA Pharma Deals

Review of 2024

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Introduction

Deal values steady despite ongoing market volatility

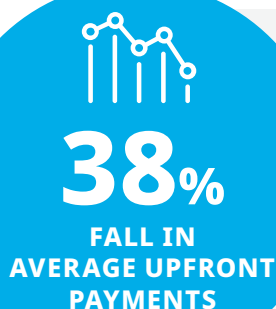
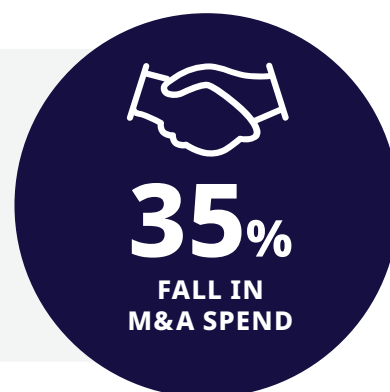
After a sluggish 2023, the slowdown in deal activity in the life sciences sector continued in 2024 as persistent macroeconomic headwinds discouraged companies from signing M&A, licensing and collaborative R&D deals over the course of the year. M&A activity continued its decline from 2023 to 2024 as high interest rates and regulatory scrutiny kept deal volumes down. In parallel, aggregate spending on M&A fell 35% to US\$128 B, with no therapeutic biopharma acquisitions exceeding the US\$5 B mark.

Licensing deal flow for life science companies remained dampened in 2024 as licensees continued to be selective in the types of assets they in-licensed as they streamlined their portfolios. Similar to 2023, clinical stage deals accounted for a greater proportion of therapeutic licensing activity in 2024 as risk averse companies looked to invest in products further down the clinical development pathway. While the aggregate licensing deal spend was somewhat maintained from 2023 to 2024, average and median deal values increased thanks to risk-mitigating deal structures involving high option-based and milestone payments.

After soaring in 2023, average upfront payments decreased by 38% in 2024, however this still exceeded the average upfronts seen in 2020 and 2021 during the COVID-19 pandemic.

Novartis joined Merck & Co. as the leading pharmaceutical dealmakers in terms of deal volume with Novartis also committing to the highest total deal spend. In terms of deal volume, oncology was once again the leading therapeutic area for partnering deals, but dealmaking in nearly all therapy areas was suppressed relative to 2023. Despite looming patent cliffs, collaborative R&D activity remained low in 2024 with values similar to 2023, as key players in the life sciences sector continued to narrow their therapeutic areas on key growth opportunities or focus on existing collaborations that complement their portfolios.

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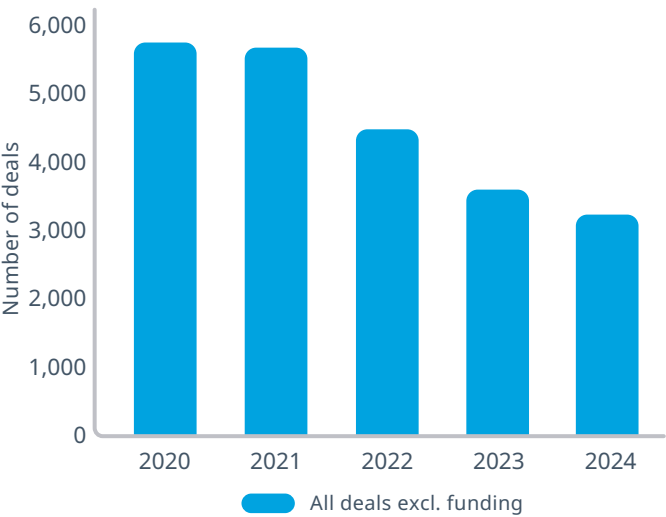


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M&A downtrend continues

Alike 2023, deal activity in the life sciences sector remained muted in 2024 as caution continued to prevail among dealmakers amid ongoing uncertain market conditions. Excluding standalone research grants, the total number of agreements signed in the life sciences sector fell by 10% from 2023 to 2024 and down 44% from the heady heights of 2020 according to the IQVIA Pharma Deals database of publicly disclosed deal activity (Figure 1). Following the usual pattern, total deal volume was highest in Q1 2024 and steadily slowed as the year progressed whereas M&A activity was stable throughout the year (Figure 2).

Figure 1: Number of deals (excluding funding awards), 2020–2024

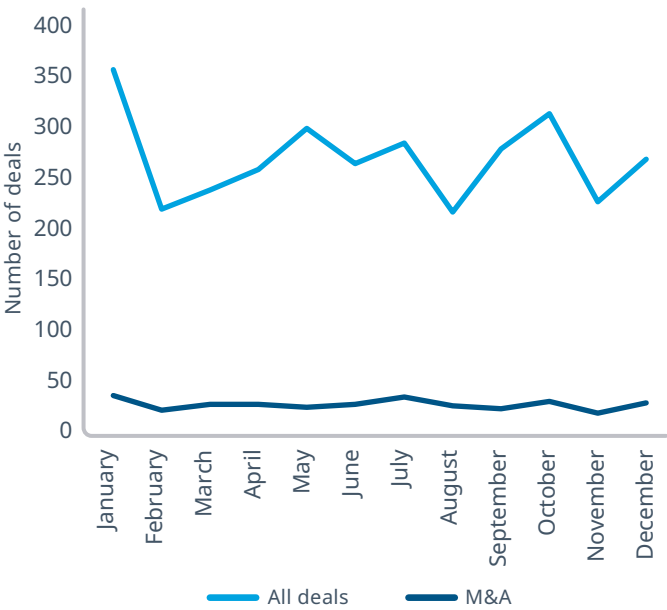


Source: IQVIA Pharma Deals.

Biotech financing showed promising signs of recovery in 2024 as market conditions began to stabilize and high growth areas such as oncology and obesity peaked investors’ appetite. Biotech indices were resilient over the course of the year with the Nasdaq Biotech Index, for example, reaching a three-year high in Q3 2024. Venture Capital (VC) funding in the biopharmaceutical sector rebounded in 2024, breaking a two-year downtrend from the 2021 peak, although larger investments were made through fewer round.¹ Similarly, IPOs in the life sciences sector saw steady year-on-year growth in 2024 following the lows of 2022. Despite these promising signs, similar to 2023,

¹ J.P. Morgan 2024 Annual Biopharma Licensing and Venture Report.

Figure 2: Deals signed in 2024 by month



Source: IQVIA Pharma Deals.

the overall market remained challenging for biotechs with many having to shut down or divest programs to focus on more advanced assets or up the pace of lay-offs in the hope to extend their cash runways.

After a downturn following the peak in 2021, M&A activity remained muted in the life sciences sector in 2024 as continued macroeconomic pressures and regulatory scrutiny discouraged buyers. With no mega-merger announced in the same vein as the Pfizer/Seagen deal in 2023, big pharma continued to opt for modestly priced bolt-on acquisitions that provided assets or capabilities in their priority therapeutic areas, as opposed to high-ticket transformational deals which could be subject to prolonged regulatory timelines.

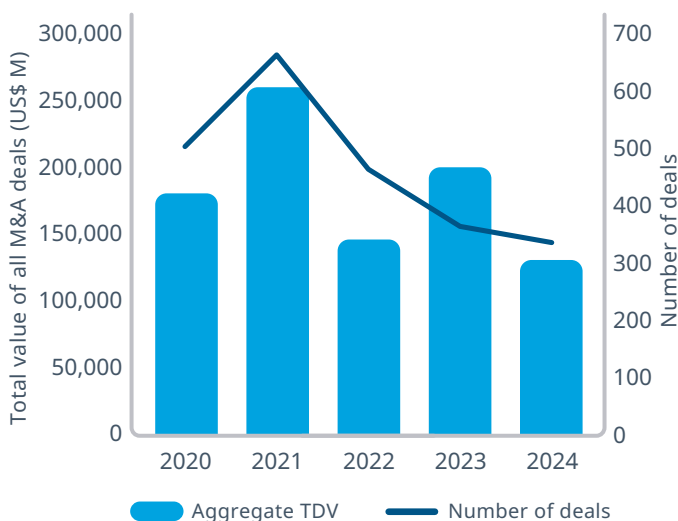
The volume of life science M&A deals (defined here as Mergers, Business Acquisitions and Divestments, signed but not necessarily completed) announced in 2024 fell 8% from 2023, in line with the slowdown in overall deal activity to reach a 5-year low (Figure 3). At US\$128 B, the aggregate total value, including contingent consideration, of all M&A deals signed in 2024 was down by 35% compared to the figure achieved in 2023. In parallel, the mean total deal value for M&A

Table 1: Aggregate, mean and median values of M&A deals, 2023 vs. 2024

ALL DEALS	2023	2024	CHANGE
Aggregate value of all M&A deals	US\$197,361 M	US\$128,661 M	-35%
Mean deal value	US\$1,226 M	US\$1,005 M	-18%
Median deal value	US\$108 M	US\$316 M	+193%

Source: IQVIA Pharma Deals.

Figure 3: Number and aggregate total value of M&A deals, 2020–2024

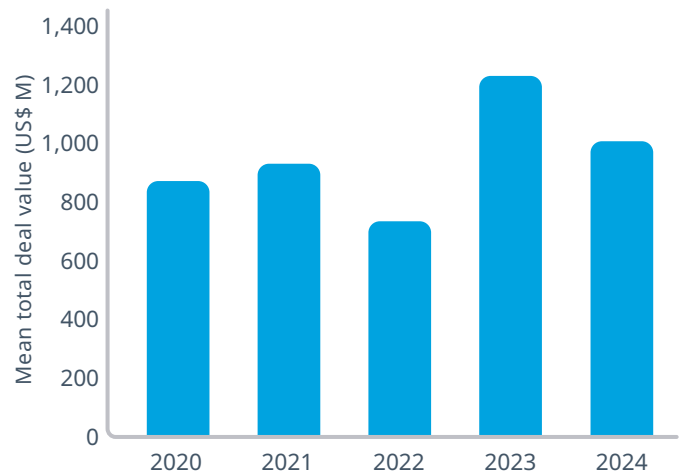


Source: IQVIA Pharma Deals.

deals decreased 18% from US\$1,226 M in 2023 to US\$1,005 M in 2024, yet still exceeded the average deal values recorded in 2020 and 2021 when the COVID-19 pandemic raged (Figure 4). It must be noted that the 2023 values are heavily influenced by Pfizer’s US\$43 B takeover of Seagen (Deal no. [118119](#)). Therefore, the median total deal value, which removes any distorting effects from outliers, increased by a staggering 193% from US\$108 M in 2023 to US\$316 M in 2024 due to a higher number of disclosed deals with values over US\$100 M in 2024.

Interestingly, of the top 10 M&A deals of 2024, as ranked by total potential deal value and recorded

Figure 4: Mean total deal value of M&A deals, 2020–2024



Source: IQVIA Pharma Deals.

in the IQVIA Pharma Deals database, eight were announced in the first half of the year demonstrating the slowdown in high-value M&A deal activity in the latter half of the year. Combined, the top 10 M&A deals of 2024 had a total value of US\$59.61 B, equivalent to 46% of the aggregate value of all M&A deals signed during the year. The top 10 M&A deals of 2023 had a combined value of US\$119.95 B and accounted for a larger proportion of the year’s total aggregate value (61%). Only two of the top 10 acquisitions of 2024 were worth in excess of US\$10 B, down from four in 2023 and, while seven M&A deals in 2023 had a value of between US\$5 B and US\$10 B, there were no deals in this price bracket in 2024.

In contrast to 2023, the largest M&A deal in 2024 was centered on manufacturing capacity as opposed to new therapeutics, where Novo Holdings purchased all outstanding shares of the CDMO giant Catalent for US\$63.50 per share in cash, representing a 16.5% premium and a total value of US\$16.5 B (Deal no. [123582](#)). The holdings and investment company operates under Novo Nordisk's owner, the Novo Nordisk Foundation, which is flush with cash thanks to the success of its GLP-1 diabetes and obesity products, Wegovy (semaglutide injection) and Ozempic (semaglutide). Since its announcement, the deal faced antitrust scrutiny from the US Federal Trade Commission (FTC) which requested further information in May. The companies managed to successfully close the deal in December, ten months after the announcement.

Big-ticket M&A remained off the cards in 2024, with no acquisitions of a biopharma company exceeding the US\$5 B mark. In its largest takeover to date and the largest therapeutic M&A deal by value in 2024, Vertex Pharmaceuticals purchased Alpine Immune Sciences for US\$65 per share, representing a 67% premium and a total equity value of approximately US\$4.8 B (Deal no. [124789](#)). The main driver of the deal was Alpine's lead molecule, povetacicept (ALPN-303), which is a dual antagonist of B cell activating factor, BAFF and a proliferation inducing ligand known as APRIL. In February, Gilead agreed to acquire CymaBay Therapeutics, at a 27% premium and a total equity value of US\$4.3 B (Deal no. [123702](#)). Through the takeover, Gilead gains access to CymaBay's oral PPAR-delta agonist, seladelpar, which has since been granted US accelerated approval for the treatment of primary biliary cholangitis, under the brand name Livdelzi.

Opting to use M&A to strengthen its late-stage oncology portfolio, Novartis agreed to acquire MorphoSys for €68 per share, reflecting an enterprise value of approximately €2.7 B (US\$2.9 B) (Deal no. [123618](#)). The primary drivers of the deal are MorphoSys' leading clinical assets, pelabresib (CPI-0610), a potential treatment option for myelofibrosis, and tulumimostat (CPI-0209),

an investigational treatment for patients with solid tumors or lymphomas. Similarly driven by a clinical-stage asset was Lilly's acquisition of Morphee at a 79% premium and total equity value of approximately US\$3.2 B (Deal no. [126453](#)). Through the takeover, Lilly gains access to lead program, MORF-057, a selective oral small molecule inhibitor of $\alpha4\beta7$ integrin currently being evaluated in two Phase II studies in ulcerative colitis and one Phase I study in Crohn's disease.

In a return to ophthalmology R&D, Merck & Co. agreed to acquire EyeBiotech in May for up to US\$3 B, including an upfront payment of US\$1.3 B in cash and a further potential US\$1.7 B in developmental, regulatory and commercial milestone payments (Deal no. [125712](#)). Merck picked up access to a pipeline of vision loss assets, including lead candidate, Restoret (EYE103), which entered a Phase Ib/III trial (BRUNELLO) for diabetic macular edema in September 2024.

M&A in the therapeutic medtech sector showed promising signs of recovery in 2024, with the second largest deal during the year being Johnson & Johnson's (J&J) takeover of Shockwave Medical for US\$335 per share in cash, for an enterprise value of approximately US\$13.1 B (Deal no. [124892](#)). Shockwave develops medical devices which break down calcium deposits in coronary arteries using sound pressure waves, a technology known as Intravascular Lithotripsy (IVL). Other medtech acquisitions in the top 10 M&A deals of 2024 include Boston Scientific's US\$3.7 B takeover of Axonics and its technology systems to treat urinary and bowel dysfunction (Deal no. [123190](#)) as well as the divestment of Edward Lifesciences' Critical Care product group consisting of advanced patient monitoring solutions to BD (Becton, Dickinson and Company) (Deal no. [125772](#)).

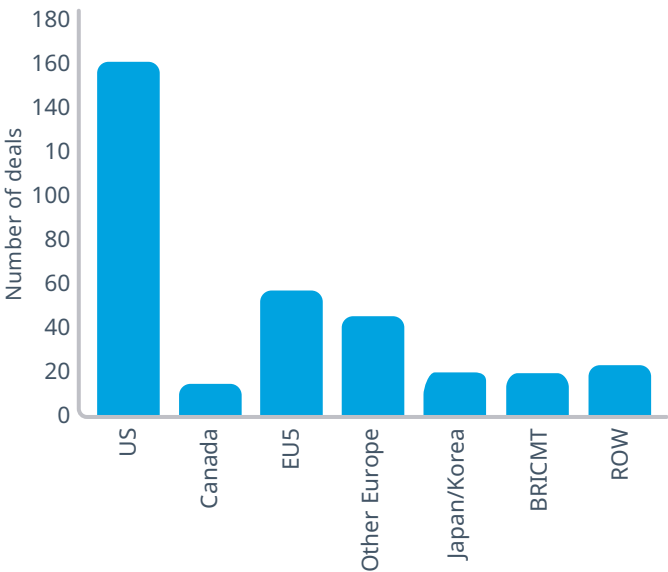
Private equity interest in the life sciences sector remained high in 2024, with Baxter agreeing to divest its kidney care unit to the global investment firm Carlyle for US\$3.8 B (Deal no. [127371](#)). Now known as Vantive, the kidney business offers products and services for peritoneal dialysis, hemodialysis, and organ support therapies, including Continuous Renal Replacement Therapy (CRRT).

Table 2: Top acquisitions of 2024 ranked by total deal value

TOTAL DEAL VALUE	COMPANIES	DEAL DRIVER
US\$16.5 B	Novo Holdings, Catalent	CDMO services, delivery technologies and manufacturing solutions
US\$13.1 B	Johnson & Johnson, Shockwave Medical	Intravascular lithotripsy technology for the treatment of coronary artery disease and peripheral artery disease
US\$4.9 B	Vertex Pharmaceuticals, Alpine Immune Sciences	Povetacicept (ALPN-303), a dual antagonist of BAFF and APRIL in Phase II development for IgA nephropathy
US\$4.3 B	Gilead, CymaBay Therapeutics	Oral PPAR δ agonist, seladelpar, for the treatment of primary biliary cholangitis
US\$4.2 B	Edwards Lifesciences, BD (Becton, Dickinson and Co.)	Divestment of Edwards' critical care product group including monitoring technologies and advanced AI-enabled clinical decision tools to BD
US\$3.8 B	Baxter, Carlyle	Divestment of Baxter's kidney-care unit Vantive including products for peritoneal dialysis, hemodialysis and organ support therapies
US\$3.7 B	Boston Scientific, Axonics	Axonics R20TM and the Axonics F15TM Systems used to deliver sacral neuromodulation therapy
US\$3.2 B	Lilly, Morphic	MORF-057, an oral small molecule inhibitor of $\alpha 4\beta 7$ integrin for the treatment of inflammatory bowel disease
US\$3 B	Merck & Co., EyeBiotech	Restoret (EYE103), an agonist of the Wnt signaling pathway for diabetic macular edema
€2.7 B (US\$2.91 B)	Novartis, MorphoSys	Pelabresib (CPI-0610), a late-stage BET inhibitor for myelofibrosis and tulumimetostat (CPI-0209), an early-stage investigational dual inhibitor of EZH2 and EZH1 for solid tumors or lymphomas

Source: IQVIA Pharma Deals.

Figure 5: M&A deals in 2024 by target company territory



Source: IQVIA Pharma Deals.

Once again, the M&A landscape was dominated by the US, with acquisitions of US-based companies accounting for 48% of all life science M&A deals signed in 2024 (Figure 5). With a 17% volume share, companies located in one of Europe's five largest markets (France, Germany, Italy, Spain and the UK) comprised the second largest group of acquired parties. Of the EU5 M&A deals, 43% involved the acquisition of companies located in the UK and 23% involved German firms. The vast majority of the deals for target companies located in BRICMT countries — namely Brazil, Russia, India, China, Mexico and Turkey — involved Indian (50%) or Chinese (44%) companies being acquired.

Novartis joins Merck & Co. as the most prolific dealmakers

Despite a 17% reduction in its deal volume year-on-year, Merck & Co. retained its position as the most prolific dealmaker in the life sciences sector in 2024 with 34 publicly disclosed deals, in joint position with Novartis that saw an increase of 48% in its dealmaking volume (Figure 6). Climbing five places in the deal activity rankings, Sanofi was the third most active dealmaker in terms of deal volume in 2024, with J&J falling one place to fourth position. Pfizer recorded the highest percentage decline in deal volume of the top 15 dealmakers with its number of disclosed deals falling 43%, from 30 in 2023 to 17 in 2024.

Just over 40% of the deals that Merck & Co signed in 2024 were clinical trial collaborations pairing Keytruda® (pembrolizumab) with third-party oncology assets, thus bolstering the already sizeable portfolio of co-development deals centered on this asset that the company has accumulated in recent years. However, with Keytruda's patent expiry fast approaching in 2028, Merck looked to deploy its cash on external innovation to secure future revenue drivers. Aside from its takeover of EyeBiotech (Deal no. [125712](#)), Merck bolstered its oncology portfolio through multiple small-scale bolt-on acquisitions in 2024 including its purchase of Modifi Biosciences and its preclinical asset for glioblastoma (GBM) for US\$30 M upfront and up to US\$1.3 B in milestones (Deal no. [128071](#)).

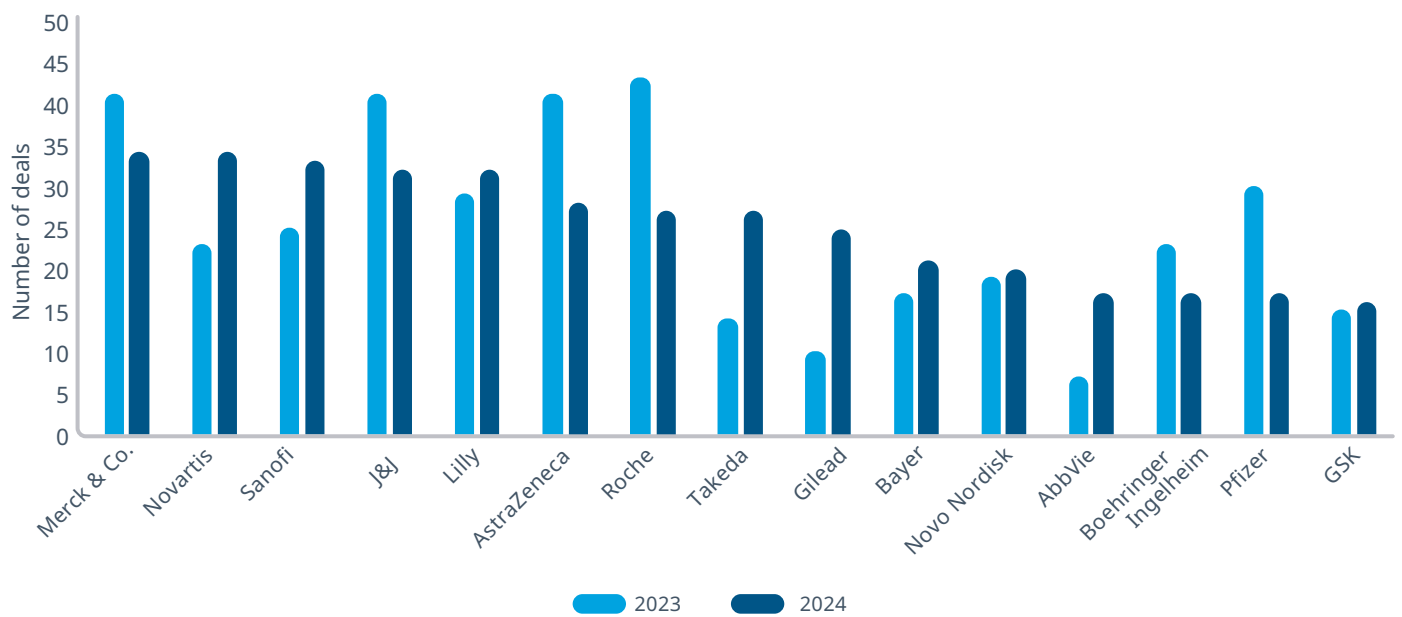
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Cancer therapies were also the primary drivers of the company's licensing and collaborative dealmaking in 2024, including its agreement with LaNova Medicines for over US\$3 B discussed below (Deal no. [128408](#)) and its partnership with Pearl Bio worth up to US\$1 B to identify new biologic therapies for cancer (Deal no. [124227](#)). Attempting to diversify its offerings and catch up with its peers, in December, Merck paid Hansoh Pharma US\$112 M upfront for HS-10535, an investigational preclinical oral small molecule GLP-1 receptor agonist (Deal no. [129010](#)).

Joining Merck at the top spot is Novartis, which saw its deal activity jump by 48% in 2024, climbing three places in the deal activity rankings. The company's largest deals were primarily partnerships focused on innovative modalities and technologies for the treatment of cancer and neurology indications. Already having a strong presence in the radiopharmaceutical space with its marketed products Pluvicto (lutetium vipivotide tetraxetan) and Lutathera (lutetium oxodotreotide), Novartis agreed to acquire Mariana Oncology in May for US\$1 B upfront and up to an additional US\$750 M in milestones for the latter's actinium-based radioligand therapy MC-339 in small cell lung cancer (Deal no. [125185](#)). Other notable Novartis radiopharma deals include its US\$745 M pact with Ratio Therapeutics (Deal no. [128438](#)) and the option and asset purchase agreement with 3B Pharmaceuticals for its Prostate-Specific Membrane Antigen (PSMA) radioligand program (Deal no. [128006](#)).

Sanofi took third position in the deal activity rankings in 2024 with 33 deals, up 32% on the previous year. In terms of overall value, Sanofi's largest deal was its US\$2.2 B acquisition of all assets and liabilities associated with Inhibrx's INBRX-101, a recombinant alpha-1 antitrypsin (AAT) augmentation therapy for the treatment of patients with alpha-1 antitrypsin deficiency (AATD) (Deal no. [123391](#)). Aiming to gain a stronger presence in the immunology field following a major pipeline restructure, Sanofi paid Belharra Therapeutics US\$40 M in upfront and near-term milestone payments to discover new small molecule therapeutics for immunological diseases (Deal no. [126083](#)).

Figure 6: Most prolific dealmakers, 2023 vs. 2024



Source: IQVIA Pharma Deals.

In a stark contrast to 2023, nine out of the 15 companies shown in Figure 5 demonstrated an increase in the number of publicly announced deals in 2024. Gilead recorded the biggest increase in the number of deals publicly disclosed, with 25 deals in 2024 compared to 10 deals in 2023. Joining in on the industry's hype around Antibody-Drug Conjugates (ADCs), Gilead paid Munich-based biotech Tubulis US\$20 M upfront and up to US\$415 M in milestones to leverage the latter's Tubutecan and Alco5 platforms for the development of a topoisomerase I inhibitor-based ADC candidate (Deal no. [128714](#)).

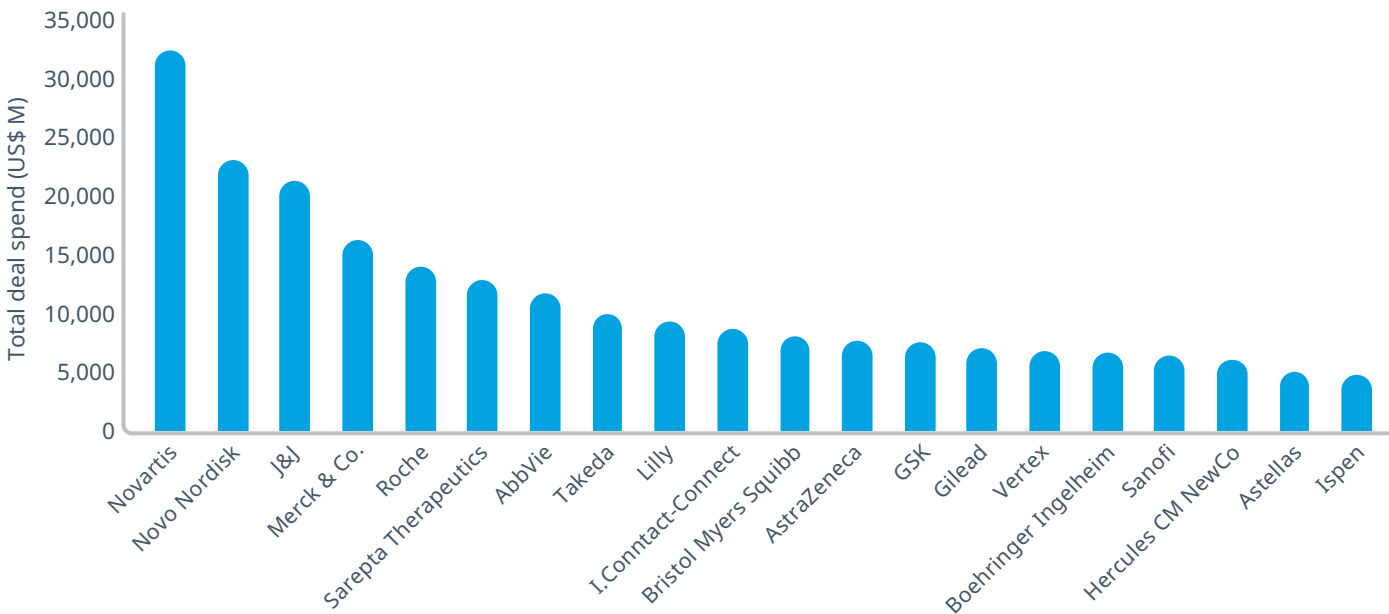
AbbVie's deal activity also surged in 2024 and announced 17 deals compared to only 7 in 2023. Faced with rising competition from Humira (adalimumab) biosimilars, the company's elevated dealmaking was largely driven by licensing and R&D collaborations for pipeline-enhancing assets to secure its future growth. In June, AbbVie partnered with FutureGen Biopharmaceutical to develop FG-M701, a preclinical next-generation TL1A antibody for the treatment of Inflammatory Bowel Disease (IBD), in a deal worth up to US\$1.7 B (Deal no. [126007](#)). Similarly driven by a preclinical asset, AbbVie also signed a partnership with OSE Immunotherapeutics in February for the latter's

Each of the 20 companies committed to invest at least more than US\$4 B on the deals they signed in 2024, with seven companies each pledging more than US\$10 B.

monoclonal antibody, OSE-230, for the treatment of chronic and severe inflammation (Deal no. [123986](#)).

Figure 7 presents an analysis of the leading dealmakers as ranked by the aggregate potential value of each company's deals in 2024, excluding those deals where the company is itself receiving payment e.g. out-licensing agreements or divestments. Each of the 20 companies committed to invest at least more than US\$4 B on the deals they signed in 2024, with seven companies each pledging more than US\$10 B. Novartis was the leading company in terms of deal spend, with fourteen deals with a total deal value exceeding US\$1 B each. Three US\$1 B+ dollar deals accounted for over 80% of Novo Nordisk's deal spend in 2024 including the already discussed US\$16.5 B takeover of Catalent.

Figure 7: Top 20 companies ranked by aggregate total value of all disclosed deals in 2024 (excluding out-licensing deals and divestments by such companies)



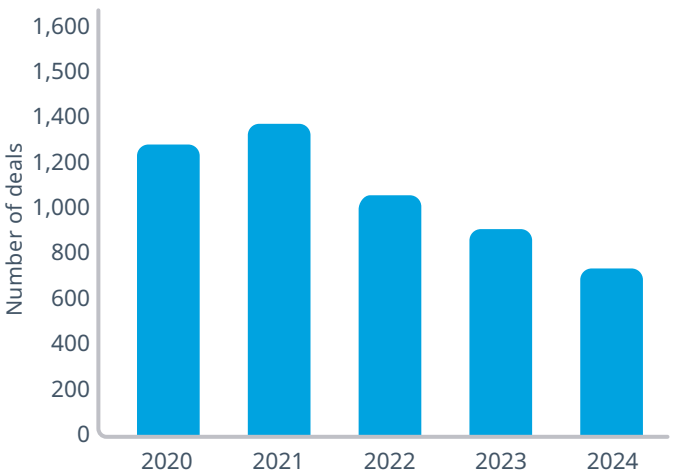
Source: IQVIA Pharma Deals.

Over 50% of Roche’s deal spend in 2024 was accounted for by four US\$1 B+ dollar licensing and collaboration deals for discovery and preclinical stage assets, including its US\$1.87 B oncology-focused collaboration with Flare Therapeutics (see below) (Deal no. [128369](#)). In its largest deal of 2024, in January, Roche signed a 5-year discovery collaboration with MOMA Therapeutics worth up to US\$2.066 B to leverage the latter’s knowledgebase platform for the identification and prosecution of new drug targets involved in promoting cancer cell growth and survival (Deal no. [123078](#)).

Cautious licensees drive upfront payments down yet deal values up

Licensing activity in the life sciences sector diminished further in 2024 as big pharma companies remained selective in the types of assets they in-licensed. Slightly outpacing the decline in overall deal activity, the volume of licensing deals in the life sciences sector dropped 18% from 2023 to 2024, as cautious dealmakers reprioritized their portfolios and invested in only high growth areas (Figure 8).

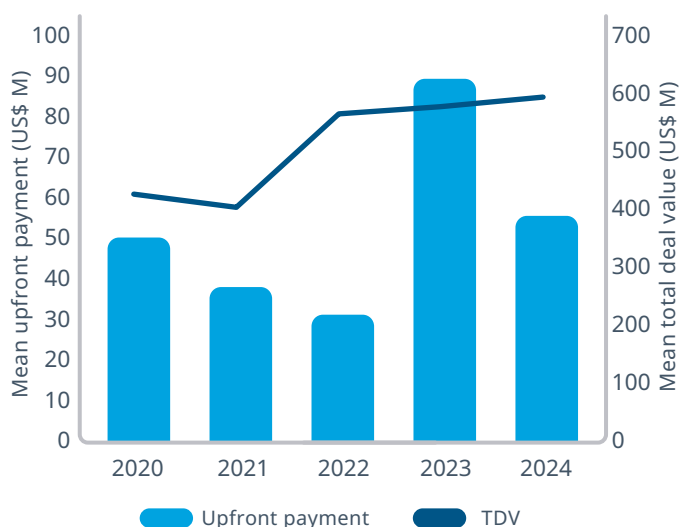
Figure 8: Number of licensing deals, 2020–2024



Source: IQVIA Pharma Deals.

Despite the continued downturn in licensing deal volume, the level of licensing spend in 2024 was somewhat sustained compared to previous years, with the aggregate potential value of all licensing deals with disclosed financials amounting to US\$152.2 B, just shy of the US\$160.1 B spent in 2023 and the US\$161.5 B achieved in 2022. The mean licensing deal value jumped 3% in 2024 to US\$606 M, while the median deal value rose 45% to US\$272 M (Figure 9).

Figure 9: Mean total deal value and mean upfront payment for licensing deals, 2020–2024



Source: IQVIA Pharma Deals.

Deal structures with option-based and milestone payments helped to bolster the total deal values as cautious licensees opted to spread the risk throughout development and commercialization.

The mean cash upfront payment for licensing deals signed in 2024 decreased by 38%, whereas the median upfront payment decreased by only 4%. In total, licensees committed to pay US\$9.5 B in guaranteed upfront payments in 2024, down by 39% on the US\$15.5 B paid by licensees to in-license life science assets in 2023. It must be noted that the 2023 values are heavily skewed by the inclusion of Merck & Co.’s US\$22 B deal with Daiichi Sankyo, which involved a US\$5.5 B upfront payment (Deal no. [121795](#)).

By removing this outlier deal from the 2023 analysis, the average value of licensing deals in 2024 increased by 19% and the average upfront payment decreased by only 5%.

Table 3 presents the top 10 partnering deals of 2024 as ranked by total upfront consideration (including both cash and equity). Despite ongoing macroeconomic challenges, big pharma continued to show signs of willingness in 2024 to deploy its accumulated cash in return for access to promising and innovative assets. Alike 2023, four licensing deals in 2024 involved an

upfront consideration of US\$500 M or more. The largest licensing deal of 2024 in terms of upfront cash by a significant margin was Novartis’ agreement to pay US\$1 B upfront for PTC Therapeutics’ HTT mRNA splice modulator, PTC518, for the treatment of Huntington’s disease (HD) (Deal no. [128676](#)). Committing up to US\$1.9 B more in milestones, Novartis will assume responsibility for PTC518’s development, manufacturing and commercialization, following the completion of the placebo-controlled portion of the Phase II PIVOT-HD study, which is expected to occur in the first half of the year 2025. Developed by leveraging the same splicing platform that generated Roche’s spinal muscular atrophy drug Evrysdi (risdiplam) (Deal no. [44261](#)), Novartis is hopeful that PTC518 will see similar success after it discontinued development of its own HD drug, branaplam, in 2023.

In an attempt to bolster its hemato-oncology portfolio, Kyowa Kirin handed over US\$330 M upfront and committed up to US\$1.1 B more to Kura Oncology for a co-exclusive license to develop and commercialize ziftomenib in the US for the treatment, diagnosis and prevention of hematologic malignancies (Deal no. [128498](#)). Kura has already initiated a Phase II study of ziftomenib in patients with relapsed or refractory acute leukemia and hopes to submit an NDA to the US FDA in 2025. With its blockbuster PD-1 inhibitor Keytruda set to face biosimilar competition in upcoming years, Merck & Co. also opted to license an oncology asset in 2024, paying US\$588 M upfront for Shanghai-based LaNova Medicines’ PD-1/VEGF bispecific antibody, LM-299 (Deal no. [128408](#)).

Despite ongoing macroeconomic challenges, big pharma continued to show signs of willingness in 2024 to deploy its accumulated cash in return for access to promising and innovative assets.

Also partnering with a Chinese biotech, Novartis paid Shanghai Argo Biopharmaceutical US\$185 M upfront as part of two license and collaboration deals for cardiovascular assets that were developed using Argo's RNAi platform technology (Deal no. [123098](#)). The largest partnering deal in 2024 by total deal value was also driven by RNAi therapies, with Sarepta Therapeutics paying Arrowhead Pharmaceuticals US\$500 M upfront, US\$325 M in equity and up to over US\$11 B in potential milestone payments (Deal no. [128593](#)). In return, Sarepta obtains the global rights to four Phase I/II and three preclinical programs for the treatment of rare, genetic diseases of the muscle, Central Nervous System (CNS), and the lungs developed using Arrowhead's Targeted RNAi Molecule (TRiM™) platform.

Restructuring their existing collaborations signed in 2020 (Deal no. [99670](#)) (Deal no. [104071](#)), GSK and Curevac entered into a new licensing pact worth up to €1450 M (US\$1556.41 M) in July to focus on their respective mRNA vaccine development activities (Deal no. [126365](#)). The deal provides GSK with the opportunity to develop flu and COVID-19 combination vaccines while Curevac is provided with a much-needed revenue boost following several setbacks. Similarly joining the race to bring a combined vaccine to market, Sanofi partnered with Novavax to co-commercialize the latter's COVID-19 vaccine and to develop new flu-COVID-19 combination vaccines (Deal no. [125343](#)). As part of the agreement, Sanofi is also taking a minority (<5%) equity investment in the biotech, which has recently struggled to maintain its position in the COVID-19 market as demand for vaccines has significantly declined.

Takeda features twice in the top partnering deals of 2024 as it looked to mitigate revenue losses from the ongoing generic erosion of its ADHD drug Vyvanse (lisdexamfetamine). In December, Takeda pledged up to US\$1.31 B to obtain an exclusive global license to Keros Therapeutics' elritercept (KER-050) excluding China, Hong Kong and Macau (Deal no. [128710](#)). The company also paid Protagonist Therapeutics US\$300 M upfront for the development and commercialization of rusfertide, an investigational injectable hepcidin mimetic peptide of the natural hormone hepcidin,

currently in a pivotal Phase III trial for the treatment of polycythemia vera (Deal no. [123528](#)).

Two Phase III assets also gained the attention of Viatris in February, when it paid Idorsia US\$350 M upfront for the global development and commercialization rights to selatogrel, a potential life-saving self-administered medicine for patients with a history of acute myocardial infarction, or heart attack and cenerimod, a new immunology, oral therapy for the treatment of systemic lupus erythematosus (Deal no. [123978](#)).

Mirroring the overall decline in licensing deal flow in the life sciences sector, the volume of licensing deals for therapeutic programs fell 15% from 2023 to 2024. Figure 10 presents an analysis of licensing activity for therapeutic programs in 2023 and 2024 by development stage. Where deals concern multiple assets or assets in different stages of development for different indications, the highest achieved development phase of the licensed asset has been selected for the analysis, irrespective of the licensing territory.

Licensing activity relating to preregistration assets remained muted in 2024, with deals involving assets in this development phase recording the largest percentage decrease in volume. Commercial-stage deals saw a smaller decline and were mainly focused on single territory or regional licenses to products that had already gained regulatory approval in major markets. Licensing deal count at the discovery stage dropped 17% from 2023 to 2024, while the level of licensing activity for preclinical programs fell 26% over the same period. It must be noted that option-based platform deals are not included in this analysis.

Life science companies showed willingness in 2024 to invest in clinical-stage assets, with an abundance of Phase I through to Phase III product deals being disclosed. Similar to 2023, big pharma continued to out-license their deprioritized clinical-stage assets as they attempted to streamline their portfolios, including Novartis (Deal no. [127569](#)), Bayer (Deal no. [128942](#)), Gilead (Deal no. [127540](#)) and AstraZeneca (Deal no. [127080](#)). Chinese companies also continued to be active in out-licensing programs for development

Table 3: Top partnering deals (excluding settlements and product acquisitions) of 2024 by upfront consideration

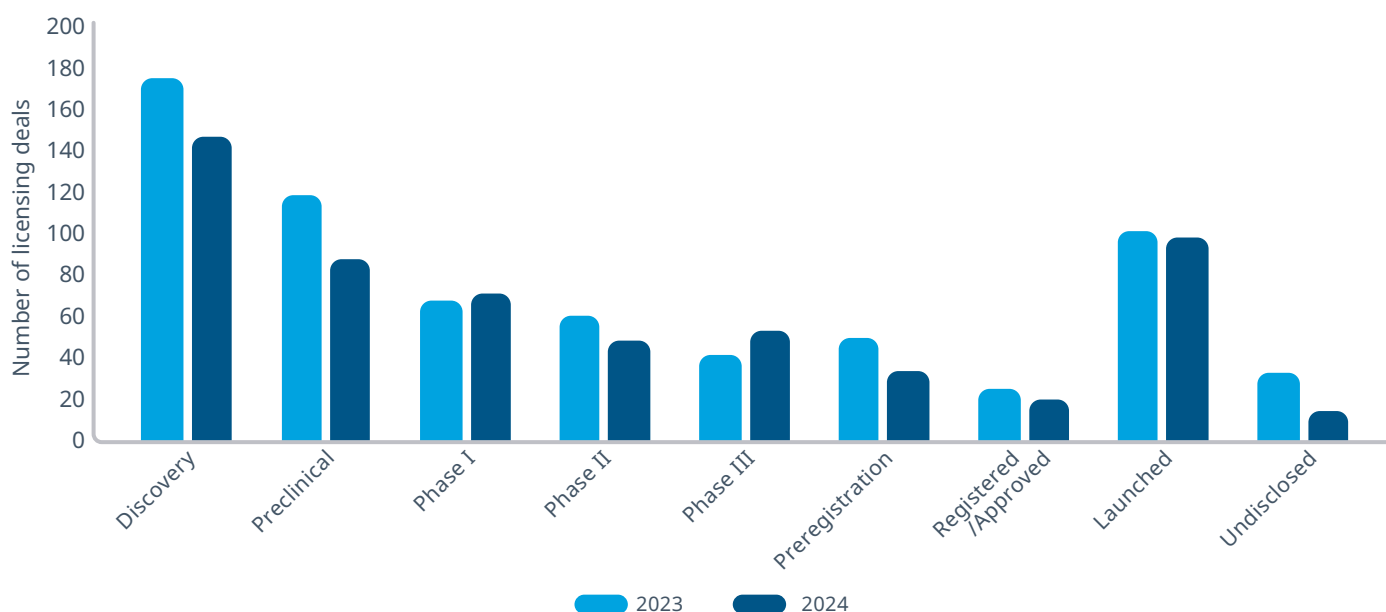
TOTAL DEAL VALUE	UPFRONT PAYMENT	COMPANIES	INTEREST AREA	DEVELOPMENT PHASE
US\$2900 M	US\$1000 M	PTC Therapeutics, Novartis	PTC518 for Huntington's disease	Phase II
US\$3288 M	US\$588 M	LaNova Medicines, Merck & Co.	LM-299, a programmed cell death protein 1/vascular endothelial growth factor bispecific antibody	Phase I
US\$1410 M	US\$500 M	Sanofi, Novavax	COVID-19 vaccine, Nuvaxovid, and new flu-COVID-19 combination vaccines	Launched; Discovery
US\$12815 M	US\$500 M	Arrowhead Pharmaceuticals, Sarepta Therapeutics	siRNA-based treatments for muscle, central nervous system, and rare pulmonary disorders	Preclinical; Discovery; Phase I/II
€1450 M (US\$1556.41 M)	€400 M (US\$429.36)	GSK, Curevac	mRNA vaccine candidates for seasonal influenza, avian influenza and COVID-19	Phase II; Phase I
Undisclosed	US\$350 M	Viatis, Idorsia	Selatogrel, for acute myocardial infarction and cenerimod, for the treatment of systemic lupus erythematosus	Phase III
US\$1719 M	US\$330 M	Kura Oncology, Kyowa Kirin	Ziftomenib, a selective oral menin inhibitor, for the treatment of patients with acute myeloid leukemia	Phase II
US\$2005 M	US\$300 M	Protagonist Therapeutics, Takeda	Rusfertide, a hepcidin mimetic peptide for the treatment of polycythemia vera	Phase III
US\$1310 M	US\$200 M	Keros Therapeutics, Takeda	Elritercept (KER-050), a treatment for anemia in hematologic cancers	Phase II
US\$4165 M	US\$185 M	Shanghai Argo Biopharmaceutical, Novartis	Cardiovascular RNAi-based therapeutics	Discovery; Phase I; Phase I/II

Source: IQVIA Pharma Deals.

and commercialization in overseas markets. Aside from the Novartis-Argo and Merck-LaNova deals discussed earlier, other notable licensing deals for innovative China-originated clinical stage assets include Hercules CM New Co's (now known as Kailera Therapeutics) US\$100 M upfront licensing agreement for Jiangsu Hengrui's GLP-1 diabetes and obesity treatments (Deal no. [125571](#)) as well as Roche's US\$1 B global license agreement with MediLink Therapeutics for next-generation ADC, YL211 (Deal no. [122982](#)).

An analysis of cash upfront payments for therapeutic licensing deals by development stage, restricted to those deals involving a global license or rights in the US, Europe, Japan or China, suggests that there was a maintained tolerance for high upfront expenditure on licensing deals in 2024. On average, Phase II assets commanded the highest upfront payments in 2024, increasing by 40% compared to 2023 thanks in part to the US\$1 B upfront payment made by Novartis to PTC Therapeutics in the previously discussed licensing pact

Figure 10: Therapeutic licensing deals by development stage, 2023 vs. 2024

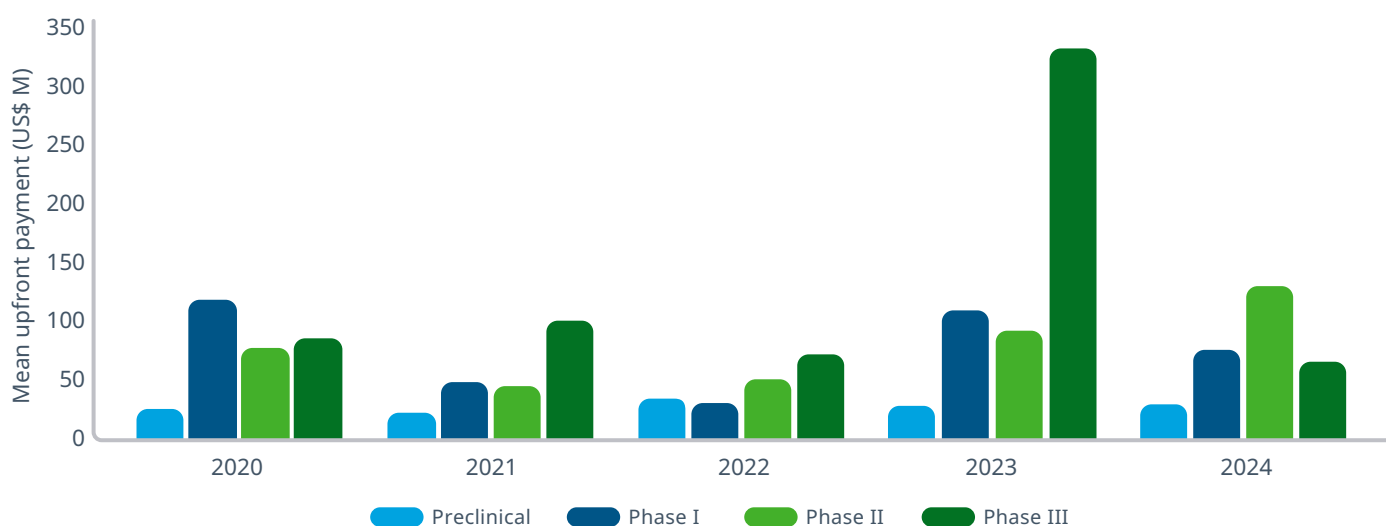


Source: IQVIA Pharma Deals.

for PTC518 (Deal no. [128676](#)) (Figure 11). The average upfront payment for Phase III assets seemingly plummeted in 2024 compared to 2023, however the 2023 average is heavily skewed by the record breaking US\$5.5 B upfront payment from Merck & Co. to Daiichi Sankyo (Deal no. [121795](#)). Excluding this mega deal, the mean upfront payment for Phase III licensing deals in 2024 soared by 150%, thanks to three deals each having triple-digit million licensing fees.

Phase I programs continued to command high upfront values in 2024, with the mean upfront payment for deals at this development stage reaching US\$74 M, mainly due to the Merck-LaNova and Arrowhead-Sarepta deals both with upfront payments exceeding US\$500 M. However, licensors remained less willing to invest larger sums upfront for preclinical assets in 2024, with the mean licensing fee for this development phase remaining the same as 2023, with only two deals disclosing upfront fees of US\$100 M and above.

Figure 11: Mean upfront payment for licensing deals by development stage, 2020–2024



Source: IQVIA Pharma Deals.

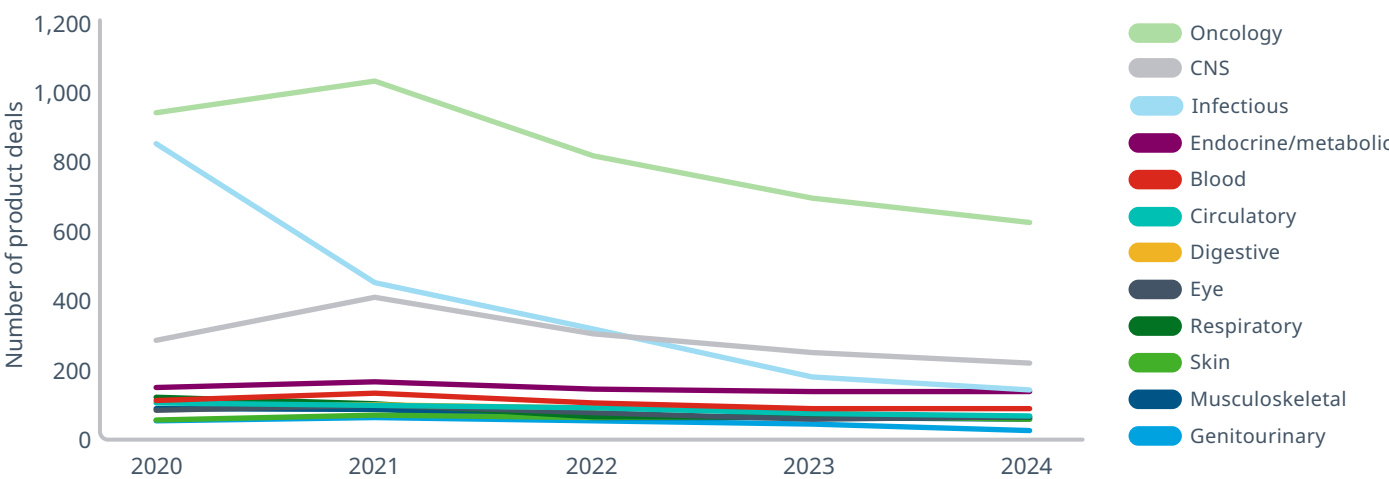
Product deals remain focused on oncology

Figure 12 presents an analysis of product deals (including product acquisitions, licensing, option to license, co-development and collaborative R&D deals) by indication area. Oncology was once again the most popular therapy area for dealmaking in the life sciences sector in 2024, although deal volume was reduced on an annualized basis broadly in line with overall deal activity. Of the deals signed in 2024 that could be ascribed an indication, approximately 40% involved therapeutics, diagnostics or medical devices for cancer, the same proportion as in 2023. CNS diseases remained the second most popular therapy area for deals signed in 2024 with endocrine/metabolic diseases and diseases of the blood comprising fourth and fifth place, respectively. After surging in 2020 to an unprecedented level in the COVID-19 pandemic, the number of product-focused infectious disease deals fell a further 20% from 2023 to 2024, outpacing the decline in overall deal activity and relegating it to third place in the rankings. Nine out of the twelve therapy areas included in the analysis recorded a decline in deal activity from 2023 to 2024, with infectious diseases and genitourinary diseases showing the largest percentage decreases (20% and 36%, respectively).

CNS diseases retained its second-place position in 2024 as key players looked to expand their presence in the increasingly competitive market. Investments in the field were primarily driven by novel delivery technologies that can help overcome the challenges associated with delivering therapies to the CNS. With a particular focus on Adeno-Associated Virus (AAV) capsid technologies, in October, Astellas committed up to US\$2.23 B for AviadoBio’s investigational, AAV-based gene therapy, AVB-101, in Phase I/II development for patients with frontotemporal dementia with progranulin mutations (FTD-GRN) (Deal no. [127836](#)). Other notable deals in the CNS space driven by AAVs include Novartis’ US\$1.3 B collaboration with Voyager Therapeutics to advance potential gene therapies for HD and Spinal Muscular Atrophy (SMA) (Deal no. [122986](#)), and Roche’s US\$50 M upfront payment to Dyno Therapeutics to develop next-generation AAV vectors for gene therapies targeting neurological diseases (Deal no. [128097](#)).

Of the therapy areas included in the analysis presented in Figure 12, endocrine, nutritional and metabolic diseases maintained the same deal volume in 2024 compared to 2023. Flush with cash from its diabetes and weight-loss business, Novo Nordisk continued to dominate the field, disclosing a total of ten deals centered around new therapeutic modalities and

Figure 12: Number of product deals by therapeutic area, 2020–2024



Source: IQVIA Pharma Deals.

drug delivery technologies targeting cardiometabolic diseases. In September, the Danish firm signed a collaboration with NanoVation Therapeutics worth up to US\$600 M to advance genetic medicines targeting cardiometabolic and rare diseases leveraging NanoVation’s long-circulating lipid nanoparticle (LNP) (IcLNPTM) technology (Deal no. [127602](#)). In the same month, Novo Nordisk also signed a US\$530 M licensing pact with Korro Bio to develop RNA editing products to treat cardiometabolic diseases utilizing Korro’s Oligonucleotide Promoted Editing of RNA (OPERA) platform (Deal no. [127561](#)). Similarly buoyed by cash from the success of its diabetes and obesity drugs, Lilly entered into a multiyear agreement with Haya Therapeutics worth up to US\$1 B to leverage the latter’s RNA-guided regulatory genome platform to support drug discovery efforts in obesity and related and metabolic conditions (Deal no. [127414](#)).

R&D alliances remain steady as broad platform deals take precedence

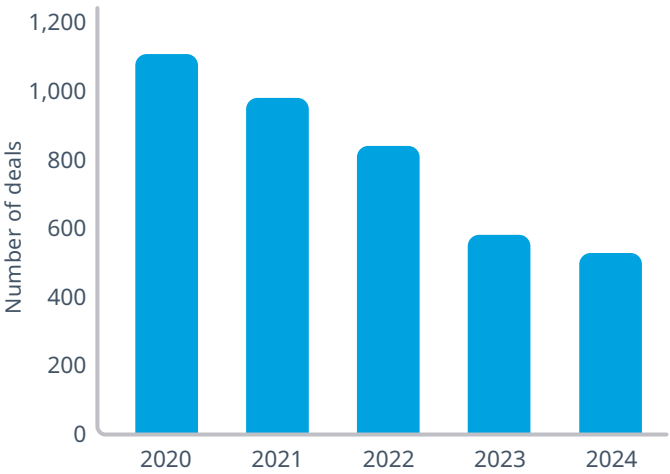
The number of collaborative R&D alliances (defined here as discovery or preclinical-stage deals that involve two or more parties actively collaborating on R&D) fell 10% from 2023 to 2024, reaching a 5-year low (Figure 13). Alike 2023, the year saw several big pharma companies divest deprioritized assets and terminate existing non-progressive collaborations in order to cut costs and streamline their operations. Despite pressures to drive long-term innovation, key players in the life sciences sector remained vigilant and only invested in alliances that offered a strong therapeutic proposition in line with their already sizeable R&D portfolios.

The aggregate total value of all the collaborative R&D deals signed in 2024 fell by 10% to US\$58.27 B compared to 2023, with multitarget and multimodality alliances continuing to drive interest (Figure 14). As was the case in 2023, approximately 40% of the aggregate value for 2024 was contributed by just 10 high-value R&D alliances. The mean total deal value of collaborative R&D deals with disclosed financial terms fell 15% year-on-year to US\$719.3 M, after the

US\$849.7 M recorded in 2023 and the all-time high recorded in 2022 of US\$1,067 M. However, the median deal value increased by 8%, from US\$507 M in 2023 to US\$550 M in 2024. During the year, 21 deals were signed with a headline value of US\$1 B or more, the same number of deals announced in 2023.

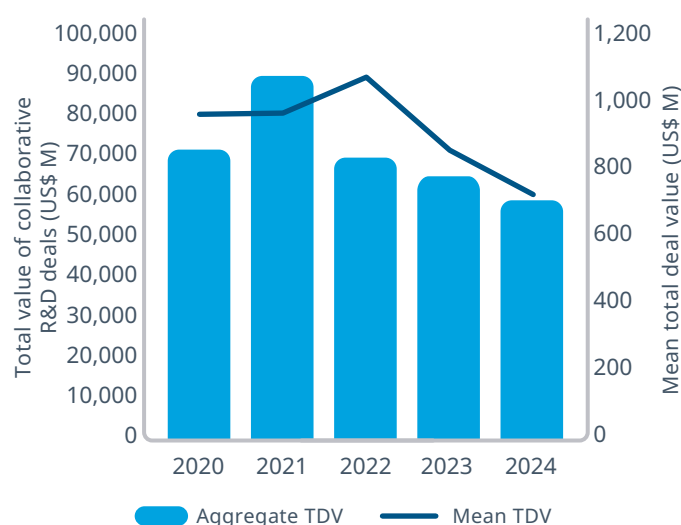
Indicative of inflationary pressures, upfront payments for collaborative R&D deals increased 16% on average, from US\$40.5 M in 2023 to US\$46.9 M in 2024, surprisingly exceeding the level seen in 2020 and 2021 when COVID-19 drove high-valued collaborations (Figure 15). An aggregate of US\$1.5 B was committed in upfront fees for collaborative R&D alliances in 2024, up from US\$1.3 B in 2023. It must be noted that this analysis does not include payments made in 2024 to expand collaborative R&D alliances that were signed in previous years. In May, Boehringer Ingelheim expanded its existing immuno-oncology collaboration with OSE Immunotherapeutics, paying €13.5 M upfront and a potential near-term milestone of €17.5 M for the purchase of a new, cis-targeting anti-PD-1/cytokine asset in preclinical stage (Deal no. [84645](#)). Moreover, in October, argenx paid Halozyne Therapeutics US\$7.5 M upfront and US\$85 M in milestones per nominated target for four new targets under its existing collaboration for Halozyne’s Enhance® drug delivery technology (Deal no. [90293](#)).

Figure 13: Number of collaborative R&D deals, 2020–2024



Source: IQVIA Pharma Deals.

Figure 14: Aggregate value and mean total deal value of collaborative R&D deals, 2020–2024

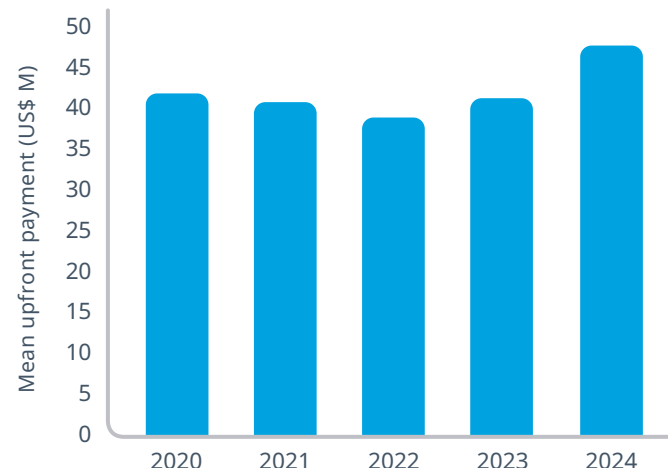


Source: IQVIA Pharma Deals.

Table 4 presents the top 10 collaborative R&D deals of 2024 as ranked by total potential deal value. Despite the continued slowdown in dealmaking activity, life sciences companies were still willing to sign off on large deal values for potential future revenue-generating programs and technologies. The largest collaborative R&D alliance of the year saw Bristol Myers Squibb (BMS) pay US\$55 M upfront in cash plus an equity investment of US\$55 M to collaborate with Prime Medicine to develop reagents for ex vivo T-cell therapies (Deal no. [127714](#)). Under the terms of the agreement, Prime will design optimized Prime editor reagents for a select number of targets, including reagents that leverage its Prime Assisted Site-Specific Integrase Gene Editing (PASSIGE) technology.

Big pharma interest in protein degradation continued in 2024, with key players such as Biogen (Deal no. [128222](#)), Novo Nordisk (Deal no. [123968](#)) and Eisai (Deal no. [127046](#)) signing US\$1 B+ collaborations driven by these innovative modalities. Reaching the top 10 list of alliances in 2024, Pfizer committed US\$49 M upfront as well as up to US\$1.5 B in milestones in a collaboration and licensing agreement with Triana Biomedicines to discover molecular glue degraders for multiple targets in several disease areas, including oncology (Deal no. [127931](#)). Similarly looking to bolster its oncology pipeline, Roche signed a pact with Flare

Figure 15: Mean upfront payment for collaborative R&D deals, 2020–2024



Source: IQVIA Pharma Deals.

Therapeutics worth over US\$1.8 B to discover new small molecules for transcription factor targets in cancer (Deal no. [128369](#)). The partnership will leverage Flare Therapeutics' proteomic and mass spectrometry platform, powered by its library of electrophilic compounds, to discover new small molecule drugs aimed at earlier undrugged transcription factor targets in oncology.

On the same day as the Roche-Flare deal, Novartis announced its multi-year, multi-target alliance with Schrödinger to apply the latter's computational predictive modeling technology and enterprise informatics platform to identify and advance therapeutics for undisclosed targets in Novartis's core therapeutic areas (Deal no. [128382](#)). Other standout alliances signed by Novartis in 2024 include its US\$2.89 B multiprogram agreement with long-term partner PeptiDream to leverage the latter's PDPS (peptide discovery platform system) technology to identify and optimize new macrocyclic peptides (Deal no. [125157](#)) as well as its US\$125 M upfront payment to Dren Bio to discover therapeutic bispecific antibodies for cancer using the latter's targeted myeloid engager and phagocytosis platform (Deal no. [126848](#)).

Table 4: Top therapeutic collaborative R&D deals of 2024 by total potential deal value

TOTAL DEAL VALUE	UPFRONT PAYMENT	COMPANIES	INTEREST AREA	DEVELOPMENT PHASE (NO. PROGRAMS/TARGETS)
US\$3595M	US\$55 M	Prime Medicine, Bristol Myers Squibb	Ex vivo T-cell therapies leveraging Prime Assisted Site-Specific Integrase Gene Editing (PASSIGE™) technology	Discovery (multiple)
US\$3000 M	US\$125 M (incl. US\$25 M equity)	Dren Bio, Novartis	Therapeutic bispecific antibodies for cancer	Discovery (multiple)
US\$2890 M	US\$180 M	PeptiDream, Novartis	Macrocyclic peptides using PDPS (peptide discovery platform system) technology	Discovery (multiple)
US\$2422 M	US\$150 M	Schrödinger, Novartis	Small molecule development for undisclosed targets	Discovery (multiple)
US\$2015 M	US\$65 M	Gilgamesh Pharmaceuticals, AbbVie	Next-generation neuroplastogens for psychiatric disorders	Discovery (multiple)
US\$2000 M	Undisclosed	Suzhou Ribo Life Science, Ribocure Pharmaceuticals, Boehringer Ingelheim	siRNA Therapeutics for non-alcoholic or metabolic dysfunction-associated steatohepatitis	Discovery (multiple)
US\$1900 M	Undisclosed	Mestag Therapeutics, Merck & Co.	Identify targets for the development of therapies against inflammatory diseases using RAFT (reversing activated fibroblast technology)	Discovery (multiple)
US\$1870 M	US\$70 M	Flare Therapeutics, Roche	Small molecules for transcription factor targets in oncology	Discovery (multiple)
US\$1581 M	US\$56 M	Merus, Gilead Sciences	Dual tumor-associated antigens targeting trispecific antibodies	Discovery (up to 3)
US\$1549 M	US\$49 M	Triana Biomedicines, Pfizer	Molecular glue degraders for multiple targets in several disease areas, including oncology	Discovery (multiple)

Source: IQVIA Pharma Deals.

2024 saw a proliferation of early-stage collaboration deals focused on discovery platforms relating to next-generation therapeutic modalities. Boehringer Ingelheim kicked off the year by announcing its US\$2 B partnership with Ribocure Pharmaceuticals and Suzhou Ribo Life Science to develop novel treatments for metabolic dysfunction-associated steatohepatitis (MASH) (Deal no. [123059](#)). The deal will leverage Ribo's RIBO-GalSTAR platform which enables the development of RNAi therapeutics that target disease-causing genes specifically in hepatocytes by silencing their mRNAs. Later, in March, Gilead paid Merus US\$56 M upfront to discover new dual tumor-associated antigens targeting trispecific antibodies leveraging Merus' Triclonics platform (Deal no. [124123](#)) while in October, Merck & Co. signed a US\$1.9 B deal with Mestag Therapeutics to utilize the latter's RAFT (reversing activated fibroblast technology), a platform built to model the pathogenic role of fibroblasts in human disease, to identify drug targets against inflammatory diseases (Deal no. [127840](#)).

The recent advancements in the psychedelic space have led to a new wave of interest in modalities that can effectively treat neuropsychiatric conditions. Most notably, in May, AbbVie handed over US\$64 M upfront and pledged up to US\$1.95 B in option and milestone fees to leverage Gilgamesh Pharmaceuticals' research platform for the development of next generation neuroplastogen compounds that can improve neuroplasticity (Deal no. [125399](#)). According to Gilgamesh, these compounds hold substantial promise for treating a variety of psychiatric conditions, including mood and anxiety disorders, without the side effects commonly seen with first-generation drugs.

The looming patent expirations of some of the industry's leading blockbuster medicines means that drugmakers will need to rely on dealmaking to acquire medium and near-term revenue generators to mitigate any future losses.

Outlook for 2025

After 2024 fell short of expectations, there is cautious optimism surrounding the expected deal flow in the life sciences sector in 2025 with many observers bullish that it will be a more active year for the industry. Despite ongoing macroeconomic uncertainties, several key drivers of deal activity persist, compelling companies to adapt strategically and deploy their accumulated capital. Most notably, the looming patent expirations of some of the industry's leading blockbuster medicines means that drugmakers will need to rely on dealmaking to acquire medium and near-term revenue generators to mitigate any future losses.

With this in mind, there are grounds for optimism for M&A activity in 2025 as strategic acquisitions will allow companies to expand and diversify their portfolios. After a somewhat underwhelming 2024, a clearer understanding on anti-trust regulations could pave the way for an uptick in transformative deals announced in 2025. Already meeting these expectations is J&J's acquisition of Intra-Cellular Therapies announced in January for US\$132 per share in cash, representing a total equity value of approximately US\$14.6 B (Deal no. [129390](#)). If successfully completed, the deal will mark the largest takeover of a biotech since Pfizer's US\$43 B purchase of Seagen in March 2023. Nevertheless, big pharma will be keen to continue pursuing smaller, asset-driven bolt-on transactions in the sub- US\$10 B range as a way to secure future revenue generators at modest prices. An early example of this in 2025 is GSK's US\$1.15 B purchase of IDRx and its pipeline of precision therapeutics for gastrointestinal stromal tumors (Deal no. [129377](#)).

As the market began to stabilize, the funding environment for emerging biotech companies showed promising signs of recovery in 2024 with further improvements expected in 2025. However, early-stage companies will continue to rely on partnerships and collaborations with established companies to maintain cash flow and fulfill their growth ambitions. Heavily backloaded deals with modest upfronts will continue to be preferred by risk-averse licensees, as evidenced in Roche's recent licensing agreement with Innovent Biologics to advance Phase I delta-like ligand 3-targeted ADC, IBI3009 for small cell lung cancer, which involved a US\$80 M upfront payment yet up to US\$1 B in milestones (Deal no. [129159](#)). However, investments in less risky clinical stage assets will continue to drive licensing fees up such as Nippon Shinyaku's US\$110 M upfront payment for Regenxbio's late-stage gene therapies, RGX-121 for the treatment of Hunter syndrome, and RGX-111 for Hurler syndrome (Deal no. [129407](#)).

Oncology is expected to continue to dominate the therapeutic dealmaking landscape in 2025, although notable deal activity is expected in immunology, neurology and metabolic indications due to the rising demand for new, pioneering therapies. After the continued slowdown in 2024, collaborative R&D activity is expected to remain stable in 2025 as major pharma players continue to streamline their business and narrow their R&D portfolios. Broad and heavily-backloaded alliances that span multiple targets will continue to attract the highest collaborative deal values, such as Vertex's three-year partnership with Orna Therapeutics for gene editing therapeutics for sickle cell disease and transfusion-dependent beta thalassemia, which involves a US\$65 M upfront payment and up to over US\$4 B in option fees and milestone payments (Deal no. [129289](#)). Novel therapeutic modalities, particularly those that are able to access targets previously deemed as "undruggable", will continue to attract big pharma's attention, with AbbVie already partnering up with Neomorph and committing up to US\$1.64 B to develop new molecular glue degraders for multiple targets across oncology and immunology (Deal no. [129520](#)).



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