Renewed funding and scientific progress reignite the biorevolution

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Key Takeaways

- Improving funding conditions, despite a September rate hike, have reopened biotech capital markets after a three-year slowdown.
- Big Pharma’s approaching $400 billion patent cliff is driving M&A and licensing demand for external innovation.
- Personalised vaccines, synthetic DNA, single-cell tools and AI-designed biologics are translating scientific progress into growth.

From post-COVID disappointment to renewed interest

Biotechnology is a business built on borrowed time. A research-stage company spends a decade and often billions of dollars before it earns a cent, which makes the cost of capital the major variable in the sector. When money is cheap, science gets funded. When it isn't, promising drug programmes get postponed.

During the 2010s, the US Federal Reserve held rates near zero for seven years after the financial crisis[1], and biotech was among the largest beneficiaries, with the Nasdaq Biotechnology Index climbing more than 400% into its July 2015 peak[2]. The unwind began that summer, as stretched biotech valuations collided with political scrutiny of drug prices. Then the Federal Reserve's first hike since 2006 arrived in December and started removing what was left of the floor.

COVID-19 rewrote the sector's fortunes again. Two vaccines developed in under a year did something no marketing campaign could. Across 2020 and 2021, drug developers raised close to US $29 billion through initial public offerings, against US $4.7 billion in 2019[3].

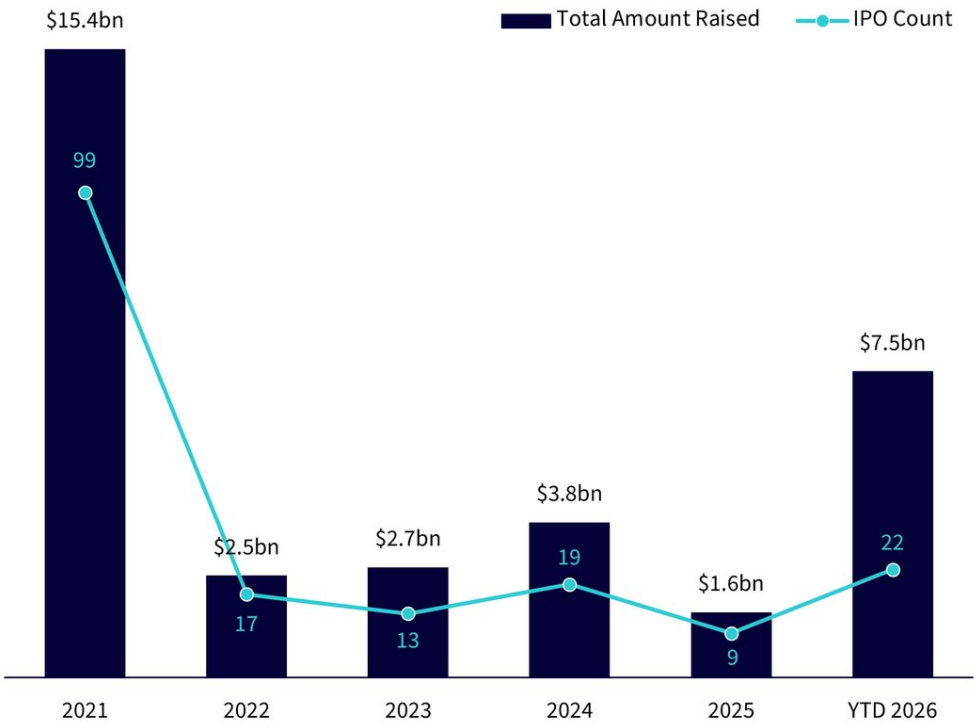
Then rates went up. The S&P Biotechnology Select Industry Index fell 63% from its February 2021 high to its June 2022 low, the deepest and longest drawdown in the index's history[2], and IPO activity collapsed to 17 deals for the whole of 2022[4]. The slowdown lasted three years, up until spring of 2025.

What changed from 2025 onwards?

The recovery began when the forces that had weighed on biotechnology started to reverse. The rate easing cycle that characterised the end of 2025 reduced pressure on long-duration valuations and made investors more willing to finance companies whose revenues remained years away.

In the first three quarters of 2026, 22 biopharma companies completed initial public offerings, raising US $7.5 billion, more than the sector had raised in any full year between 2022 and 2025. Venture funding reached US $23.9 billion across 385 rounds[4].

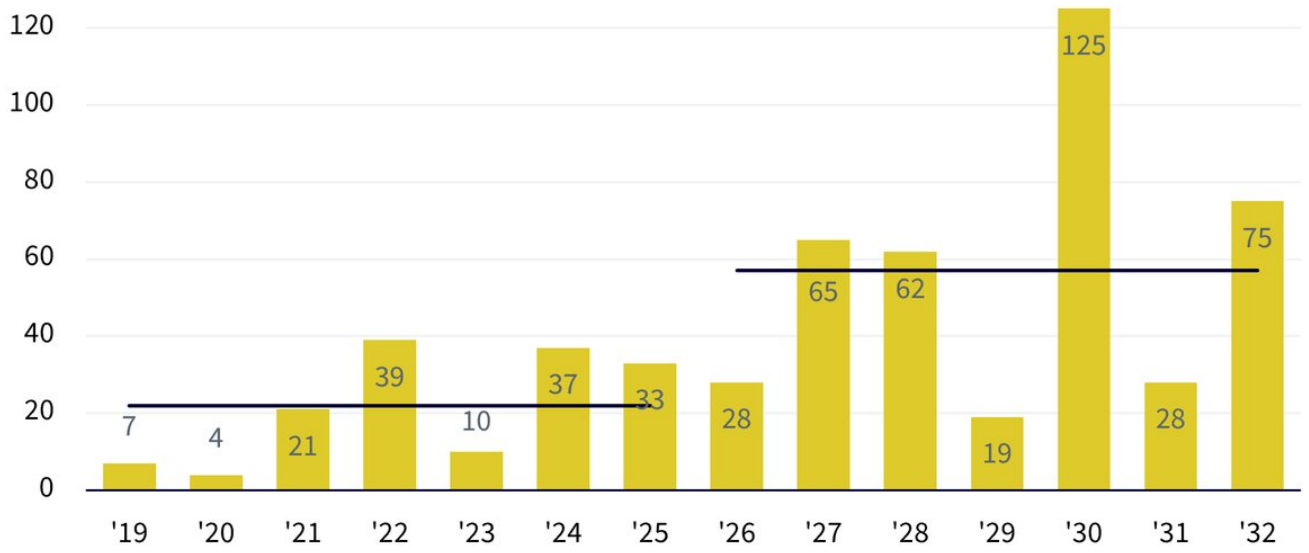
Figure 1: Nasdaq and NYSE completed IPOs in Biopharma therapeutics and platforms



Note: Financials based on disclosed figures. Data through 30 September 2026. Includes only NASDAQ and NYSE IPOs over $15 million. Excludes Kenvue, Inc. (Q2 2023, US $4.4B) and other OTC focused companies. IPOs by completion date.
Source: J.P. Morgan, Q3 2026 Biopharma Licensing and Venture Report. **Historical performance is not an indication of future results and any investments may go down in value.**

A more structural force has been developing alongside this cyclical recovery. Large pharmaceutical companies now face a wave of patent expiries that threatens around $400 billion in sales over the coming years[5]. For example, Merck's Keytruda alone brought in US $31.7 billion in 2025, roughly 48.7% of the company's sales, but its US patents on the intravenous formulation expire in 2028[6].

Figure 2: Global sales at risk from loss of exclusivity (US $BN). Key products shown in the year before loss of exclusivity



Notes: At-risk sales represent total projected sales for the year prior to patent expiry. Inspired by Atlas Venture's "Year in Review (2025)" report; "Large pharma" includes Eli Lilly, Novo Nordisk, AbbVie, Sanofi, Roche, GSK, AstraZeneca, J&J, Novartis, Pfizer, Merck, and BMS; 3. Sourced from Evaluate's "Portfolio Tactics to Scale the $300 BN Patent Cliff" report - Evaluate calculates growth gap as the difference between consensus analyst projections for large pharma (excluding COVID-19 products due to their one-time distortion effects) and the hypothetical scenario in which company sales grow at a market-average CAGR of 7.5%. Source: Evaluate: "Portfolio Tactics to Scale the $300 BN Patent Cliff" (13 October 2025); Evaluate – Historical and projected sales (pulled 03.11.2026); Oliver Wyman analysis. **Forecasts are not an indicator of future performance and any investments are subject to risks and uncertainties.**

Replacing that revenue through internal research is slow and uncertain, prompting pharmaceutical companies to use M&A as a faster route to replenishing their pipelines. Biopharma mergers and acquisitions reached $138.9 billion across 113 transactions in the first three quarters of 2026. Licensing has followed, at $221.1 billion of announced research and development value, already about 81% of FY2025's US $274.3bn[7].

Regulation has provided another source of support. Recent approvals have demonstrated that gene editing and cell therapy can progress from experimental platforms to approved treatments. The Food and Drug Administration (FDA) has also introduced greater flexibility for developers seeking to use existing scientific and manufacturing knowledge in gene-editing applications[8].

The recovery therefore rests on more than cheaper money. Better financing conditions reopened the capital markets, while patent expiries, dealmaking and regulatory progress have strengthened the industry's demand for innovation regardless of where policy rates settle.

Rates still matter, though. The Fed raised rates in September for the first time since 2023 and has held them at 3.75% to 4.00% while inflation remains elevated. Further tightening would make capital for research-stage companies more expensive and sentiment towards the sector could turn quickly, as it did in 2022. The structural drivers would not disappear in that scenario, but they would take longer to show up in share prices.

Scientific progress is translating into market momentum

That demand is now being met by tangible scientific progress. Several of the theme's strongest performers show how quickly these innovations are becoming embedded in research, creating new opportunities to discover and develop better treatments:

- **Personalised cancer vaccines** - Moderna (+595% year to Date YTD): announced that its custom mRNA vaccine, intismeran (developed with Merck), met its Phase 3 endpoints in melanoma patients at high risk of recurrence after surgery.
- **Writing DNA at scale** - Twist Bioscience (+267% YTD): uses silicon chips to manufacture high-volume synthetic DNA for drug discovery and storage. It acts as the physical wet-lab engine that builds and validates digital artificial intelligence (AI)-designed proteins.
- **Mapping disease cell by cell** - 10x Genomics (+247% YTD): develops single-cell and spatial imaging technologies that map exactly which genes are active within tissues, giving researchers a molecular view of how tumours respond to treatment.
- **Designing medicines with AI** - Absci (+140% YTD): operates an AI drug discovery engine that designs biologics from scratch. Its breakthrough Origin-1 platform creates precise, physical therapeutic antibodies against "undruggable" targets in as few as 14 months[9].

From healthcare to the wider BioRevolution

Healthcare currently provides the clearest evidence that these technologies can generate clinical and commercial value. However, the ability to engineer biology is also creating longer-term opportunities across the wider biorevolution theme.

Bio-enabled agriculture employs gene editing and engineered microbes to produce stronger and better crops. In food, precision fermentation is used to brew specific animal-free molecules like dairy proteins, fats, and vitamins. Cultivated meat and seafood grow real animal cells inside bioreactors to create meat without farming animals. These tools aim to improve taste, texture and the economics of alternative foods while reducing reliance on animal agriculture[10]. As climate change intensifies, and with an El Niño now under way and forecast to be among the strongest on record, these alternatives and innovations could help humanity adapt to a changing environment[11].

The same design-build-test cycle is being applied beyond food. Synthetic biology can engineer microbes to manufacture chemicals, plastics, materials and renewable fuels from biomass or waste, offering potential alternatives to petroleum-based production. Furthermore, synthetic DNA could provide a highly compact

medium for long-term data storage, while DNA-based computing could enable new biological interfaces for search, analytics and machine learning.

Our differentiated BioRevolution investment approach

Although recent biotech returns remain tied to clinical and regulatory milestones, innovation is advancing rapidly across human health, agriculture and food, materials, chemicals and energy. Investing in the biorevolution is therefore not simply a matter of identifying the next successful drug, as future winners could emerge from very different parts of this expanding ecosystem.

The WisdomTree BioRevolution UCITS ETF (WDNA) is designed to capture this breadth without requiring investors to predict which individual technology will succeed. The fund tracks the WisdomTree BioRevolution ESG Screened Index, whose specialist-led process identifies publicly listed companies that we believe will be leading the transformations and advancements in genetics and biotechnology. Building on a framework developed with input from Dr Jamie Metzl, a recognised technology futurist and BioRevolution expert, the index seeks to distinguish businesses with meaningful involvement in the theme from those with only a peripheral association.

Because biorevolution technologies will reach commercial maturity at different speeds, WDNA spreads exposure across sectors, company sizes and stages of development. Its modified equal-weighting methodology helps limit concentration in the largest constituents, while semi-annual reconstitution keeps the portfolio responsive to scientific and commercial progress. Physically replicated and UCITS compliant, the fund offers a disciplined way to capture innovation within and beyond healthcare without depending on the success of any one company or technology.

Investing in the biorevolution involves risks. Shares in companies operating in this area may experience significant price volatility. These companies may also face regulatory uncertainty, clinical trial failures and difficulties commercialising new technologies. The Fund invests across a range of companies and industries, but its focus on a single theme exposes it to concentration risk. Investors may lose some or all of their investment.

[1] Board of Governors of the Federal Reserve System (US), Federal Funds Effective Rate
[2] Bloomberg, November 2026.
[3] Biopharma Dive
[4] J.P. Morgan
[5] Oliver Wyman
[6] Merck & Co.
[7] JP Morgan
[8] U.S. Food & Drug Administration
[9] Bloomberg, as of 18 November 2026.
[10] World Economic Forum
[11] UK MET Office

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