

Scientific AI trends in biopharma

Challenges mount for biopharma

R&D productivity is declining

From 2013 to 2022¹

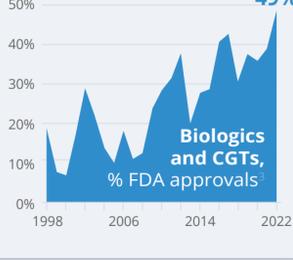


The rise of new modalities complicates manufacturing

Drugs derived from living cells are **more costly and difficult to manufacture** than small molecules

17 New drug modalities in the last 20 years

- Antibody-drug conjugates
- Bispecific proteins
- Cell and gene therapies (CGTs)



The industry looks to AI for help

AI promises huge impacts in biopharma



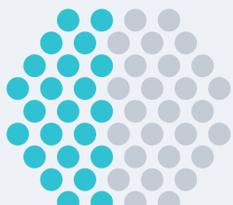
Generative AI in the industry could unlock the equivalent of **2.6 – 4.5%** of annual revenue⁵

The entire value chain is poised for transformation

Scientific use cases for AI in biopharma



Biopharma leaders are bullish on AI



23 of the top 50 biopharma companies mentioned AI on earnings calls in the last 5 years⁶

“[AI can] improve the biggest challenge of the sector, which is the productivity of R&D.”

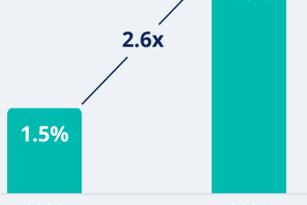
Emma Walmsley
CEO, GSK

“AI will reduce the cost of R&D [per] molecule. It has to.”⁶

Christophe Weber
CEO, Takeda

Investment in AI is surging

Biopharma spending on AI (% R&D spend)⁹



Biopharma companies have invested over

\$1B

in upfront payments through **collaborations with AI companies**¹⁰

But AI’s success relies on the data

Preparing scientific data for AI is hard

“The first thing we’ve learned is the importance of **having outstanding data** to actually base your ML on....[W]e’ve had to spend most of the time just cleaning the data sets before you can even run the algorithm. It’s taken us **years just to clean the datasets.**”¹¹

Vas Narasimhan, M.D.
CEO, Novartis

“[T]he value of data is not in the tool or the method or the idea. **The value of the data is in the effort** that you put into making the data valuable.”¹²

Jeffrey Reid
Vice President
RGC Chief Data Officer
Regeneron

Data issues threaten AI initiatives



85% of **machine learning projects fail**, primarily due to a lack of AI-ready data, clearly defined ROI, and domain expertise¹³

Low quality and poorly curated datasets are the **#1** barrier to implementing AI, according to a biopharma industry survey¹⁴

Eager to get started with AI?

Your scientific data may be holding you back.

Read our white paper to understand why biopharma companies risk falling short of their AI goals.

[Download white paper](#)

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