IntuitionLabs

INTUITIONLABS / RESEARCH & PRACTICAL GUIDANCE

AI Antibody Discovery: Merck-Infinimmune Deal Analysis

> Build practical AI for pharma and biotech with IntuitionLabs. We help life-science teams turn complex information and workflows into useful software, governed knowledge systems and AI tools.

Published by IntuitionLabs · 2026-04-18 · ai antibody discovery · protein language models · biologics · machine learning · memory b cells · anthrobody platform · glimpse model · drug development

Original article: https://intuitionlabs.ai/articles/ai-antibody-discovery-merck-infinimmune-deal



In this article

1. Executive Summary
2. Introduction and Background
3. Antibodies in Therapeutics and Discovery Challenges
4. Merck’s Strategic Context
5. Infinimmune’s Platform and Technology
6. Anthrobody Platform
7. GLIMPSE Language Model
8. Deal Details and Analysis
9. Collaboration Scope and Terms
10. Platform Validation and Comparison
11. Infinimmune Pipeline and Case Examples
12. Comparative Perspectives
13. Implications and Future Outlook
14. Conclusion

Executive Summary

In March 2026, Merck & Co. announced a landmark **$838 million** collaboration with California biotech **Infinimmune** to leverage its AI-driven **“human-first” antibody discovery platform** for developing novel biologics (www.fiercebiotech.com) (www.biospace.com). Under the multi-target agreement, Merck (MSD outside North America) will make an undisclosed upfront payment to Infinimmune. The company’s August 2026 financing announcement describes up to approximately $838 million in upfront and potential milestone payments combined (financing announcement). Once Infinimmune identifies a promising fully-human antibody candidate, Merck obtains exclusive rights to further develop and commercialize it (www.fiercebiotech.com) (trial.medpath.com). This pact reflects Merck’s strategic push into AI-enabled biologics discovery amid looming revenue pressures (e.g. the impending 2028 patent cliff for Keytruda, referring to potential U.S. biosimilar competition from December 2028; two patents in its composition-of-matter patent family expire in May and November 2029 (Merck 2025 Form 10-K)). It exemplifies a broader industry trend of nine-figure AI-partnerships in drug development (www.nature.com).

Infinimmune’s platform melds two core innovations: the **Anthrobody™ screening platform**, which mines millions of human memory B cells to find naturally occurring antibody sequences, and **GLIMPSE™**, a proprietary antibody *language model* trained on paired human antibody sequences (www.biospace.com) (www.genengnews.com). Together, these technologies enable rapid isolation and in silico optimization of fully-human antibodies with strong affinity, specificity and drug-like properties (www.biospace.com). In technical benchmarks, GLIMPSE-1 has achieved best-in-class humanization and up to **1000-fold affinity improvements** in target antibodies, simultaneously engineering cross-species binding and eliminating developability liabilities (www.playground.vc) (www.genengnews.com). These capabilities suggest GLIMPSE can effectively “decode” the evolutionary logic of the human immune system to design safer, more potent biologics from day one (www.playground.vc).

Infinimmune plans first-in-human studies for its two lead programs, IFX-101 and IFX-201, in 2027, according to its August 2026 financing announcement (company announcement). More broadly, this partnership underscores how **AI-driven antibody discovery**—especially leveraging human immune repertoires—is emerging as a new paradigm in biologics R&D. Industry observers note that large pharma are eagerly investing in such platforms (e.g. Merck's deals with AI antibody firms and its recent Terns Pharmaceuticals acquisition) in hopes of boosting pipeline productivity (www.biopharmadive.com) (www.pharmexec.com). While AI-empowered candidates have yet to reach the clinic in force, deals like Merck–Infinimmune highlight a major shift: integrating machine learning into biologics discovery to tap the "450 million-year-old" immune engine inside each human (www.genengnews.com) (www.nature.com).

Introduction and Background

Antibodies in Therapeutics and Discovery Challenges

Monoclonal antibodies (mAbs) have become a cornerstone of modern medicine, treating cancers, autoimmune diseases, infectious diseases and more. However, discovering optimal antibody therapeutics remains time-consuming and complex. Traditional approaches—such as immunizing animals, generating hybridomas, or engineering phage/yeast display libraries—can yield potent leads but often require extensive laboratory screening, suffer from sequence liabilities, and may not fully recapitulate human-biological safety profiles. For example, antibodies raised in animals often need humanization to reduce immunogenicity, a multi-step process. Even "humanized" mAbs can carry non-native sequences that may trigger immune responses. Human origin does not eliminate immunogenicity: FDA guidance notes that human monoclonal antibodies can elicit a high rate of immunogenicity depending on dosing regimen and patient population (FDA guidance).

Emerging technologies aim to capitalize on human-derived repertoires. Single-cell sequencing tools (e.g. from 10x Genomics) can capture native heavy-and-light chain pairs from human B cells, scanning thousands of cells per run. Infinimmune extends these ideas: it calls its approach a **"Complete Human sequencing technology®"** with an **"Anthrobody library-on-B-cell"** platform (www.infinimmune.com). Infinimmune posits that by interrogating millions of human memory B cells (immune cells that have already "seen" disease-related antigens), one can surface fully-matched human antibody sequences against desired targets. These human-sourced antibodies are then believed to be "primed" for drug use, having passed through the selective bottlenecks of natural immunity (www.fiercebiotech.com) (www.biospace.com). The key insight is that the human body has been "running clinical trials for some 500 million years," naturally evolving antibodies with optimal specificity, stability and tolerability (www.infinimmune.com) (www.biospace.com).

Nonetheless, simply collecting human antibodies is not enough. Millions of discovered antibody clones may still need refinement (to improve affinity, stability, or cross-reactivity to animal models for safety testing). This is where artificial intelligence (AI) enters. Advances in deep learning, especially *protein language models*, enable computational tools to suggest sequence edits. By training on large antibody sequence datasets, such models can predict which mutations might increase binding or human-likeness. In essence, AI can model the language of the immune repertoire and propose design improvements **in silico** (www.genengnews.com). Recent academic and industry efforts (e.g. Merck's "Sapiens" model (pmc.ncbi.nlm.nih.gov) and open-source antibody LMs like AntiBert and GLUE) show that language-model approaches can nearly match human expert

performance in antibody humanization benchmarks. The FDA's December 2025 draft guidance concerns nonclinical safety assessment of monospecific monoclonal antibodies, including when general toxicology studies may be omitted or shortened. It contains non-binding recommendations and is not for implementation (FDA draft guidance).

Merck's Strategic Context

Merck & Co. (known as MSD outside the U.S. and Canada) is a top-tier biopharmaceutical company with blockbuster oncology and immunology drugs (notably the PD-1 inhibitor Keytruda). With Keytruda's patent expiry approaching in the next few years, Merck has aggressively sought to diversify its pipeline via acquisitions and R&D partnerships (www.biopharmadive.com) (www.pharmexec.com). March 2026 was especially active: Merck agreed to buy Terns Pharmaceuticals for $6.7 billion (adding an oral CML candidate) and expanded its rights to Quotient's genomics platform (for IBD targets) (www.fiercebiotech.com) (www.pharmexec.com). In this deal-flurry, Merck's eye also turned to AI: partnering with startups that claim to accelerate drug discovery.

Specifically, on March 31, 2026, Merck announced a multi-target antibody discovery collaboration with Infinimmune worth up to **$838 million** in potential payments (www.biospace.com) (trial.medpath.com). The goal: use Infinimmune's AI-driven, human-derived platform to find new monoclonal antibody (and related) drug candidates. Merck retains exclusive global rights to develop/commercialize any antibody arising from the collaboration, reflecting its strategy of externalizing early-stage discovery while keeping late-stage R&D in-house (www.fiercebiotech.com) (trial.medpath.com). Merck's biologics research chief Juan Alvarez commented that Infinimmune's approach "offers a compelling new way to access novel biology and promising therapeutic candidates," emphasizing the novelty of accessing the human immune repertoire for drug leads (www.biospace.com) (trial.medpath.com).

From Merck's perspective, this $838M pact is both a bet and a bridge. It doubles down on the idea (gaining traction industry-wide) that A) integrating machine learning into drug discovery is essential, and B) focusing on human-relevant data (immune repertoires, patient-derived cells) can yield superior leads (www.nature.com) (www.genengnews.com). Importantly, Merck is not paying this entire amount upfront – most is tied to milestones (clinical and commercial) across *multiple* targets (www.fiercebiotech.com) (www.pharmexec.com). This structure, common in pharma-BD deals, shares risk and aligns incentives. However, in aggregate it raises the potential payout to the same magnitude as several other blockbuster AI partnerships: for example, Merck KGaA's AI-antibody alliance with Biolojic (up to €346M in milestones (www.nature.com)) or Novartis's $65M upfront / $1B milestones deal with Generate Biomedicines (generative protein design) (www.nature.com). The Merck–Infinimmune deal thus exemplifies a new "mega-deal" era where biotech and big pharma stake multihundred-million bets on AI-powered drug discovery (www.nature.com).

Infinimmune's Platform and Technology

Founded in 2022 by ex-10x Genomics engineers, Infinimmune positions itself as a pioneer of *human-derived* antibody therapeutics. Its proprietary platform has three chief components: (1) **Anthrobody® screening technology**, (2) **Complete Human™ sequencing processes**, and (3) the **GLIMPSE™ antibody language**

model. Each was developed to tackle a challenge in antibody discovery and engineering, with an emphasis on leveraging actual human immune data at unprecedented scale.

Anthrobody Platform

The term “Anthrobody” (from *anthro-* meaning human) refers to Infinimmune’s high-throughput screening of **native human memory B cells** to discover antigen-specific antibodies already present in people (www.biospace.com) (trial.medpath.com). In practice, the company isolates peripheral B cells from a diverse array of healthy and diseased donors. Using its sequencing pipeline, it can process **tens to hundreds of millions of single B cells**, each revealing the fully paired heavy and light chain sequences of an antibody. For context, the Infinimmune site claims screening “up to 300 million B cells across 350+ targets” in a campaign (www.infinimmune.com). The result is a vast **“Anthrobody library-on-B-cell”** where each entry is a fully-human antibody clone with known antigen specificity.

This approach contrasts with conventional discovery in two ways. First, it captures *native pairing and maturation* – the heavy-light chain combinations that have already undergone selection inside a human immune system. By sequencing entire cells in situ (without shuffling chains), the platform preserves the natural CDR (complementarity-determining region) pairings that often determine developability. Second, human sourcing does not eliminate immunogenicity: FDA guidance states that human monoclonal antibodies can elicit a high rate of immunogenicity depending on dosing regimen and patient population (FDA guidance). Indeed, a company statement notes that their antibodies are “completely encompassing the full binding and effector regions of both chains” as produced by human immune responses – fundamentally different from antibodies raised in mice or from synthetic libraries (www.biospace.com).

Once the antibodies are sequenced, Infinimmune’s pipeline filters for those with strong native binding signals. The BioSpace press release highlights that the Anthrobody platform can “rapidly identify candidates with strong affinity, specificity, and favorable drug-like properties” directly from the human B-cell repertoire (www.biospace.com). Infinimmune advertises a half-life above 100 days for IFX-101; this is a company product claim (Infinimmune). In summary, the Anthrobody platform aims to *streamline lead discovery* by *outsourcing much of the antibody engineering burden to millions of years of human evolution*.

Notably, Infinimmune is not alone in exploring human B-cell libraries. Other partnerships exist: in late 2023 Infinimmune teamed with Grid Therapeutics to profile B-cell repertoires from lung cancer patients and controls, seeking new oncology antibodies (www.biospace.com). These initiatives emphasize Infinimmune’s core thesis: that patient-derived immune responses hold untapped clues for drug discovery.

GLIMPSE Language Model

Discovering raw human antibodies is only half the solution. Even naturally-affinity-matured antibodies may benefit from in silico optimization (e.g. to improve binding affinity further, remove rare sequences, or tune for cross-reactivity). To this end, Infinimmune developed **GLIMPSE™, a protein language model tailored to antibody engineering (www.genengnews.com) (www.linkedin.com).** GLIMPSE-1 (the first generation) is trained **exclusively on paired human antibody sequences**, combining public Jaffe et al. (2022) data with proprietary sequences from Infinimmune’s Anthrobody and Complete Human platforms (GLIMPSE-1 preprint,

section 2.1). This contrasts with other models (like general protein LMs) by focusing only on human immunoglobulins. In this sense, GLIMPSE embodies the “human-first” philosophy: it learns not from generic protein corpora but from millions of real human antibodies that “have passed nature’s own quality control” (www.linkedin.com).

By virtue of being a large-language model (LLM) for proteins, GLIMPSE-1 can generate optimized antibody sequences from a given input. According to company reports, GLIMPSE-1 takes an arbitrary antibody sequence and **simultaneously optimizes multiple properties** in one shot – for example, affinity to the target antigen, binding to model organisms, and developability metrics like isoelectric point or solubility (www.genengnews.com) (www.linkedin.com). This is a generative/development step: GLIMPSE can suggest mutations that *humanize* (i.e. make more human-like) an antibody from another species, or *diversify* a human antibody to find even better variants (www.genengnews.com) (www.linkedin.com). Crucially, GLIMPSE is designed with the paired heavy-light context in mind: unlike simpler models that treat chains independently, it understands interactions between heavy and light chains to avoid “overengineering” issues (www.genengnews.com). In practice, that means GLIMPSE might exploit the way a heavy-light orientation can, for example, conceal a liability in the framework region, making predictions more holistic.

Infinimmune’s June 2025 preprint reports that GLIMPSE-1 matched or exceeded the evaluated models, including Sapiens, in predicting mutations found in clinical humanized antibodies. In a separate engineering experiment, many variants had reduced binding kinetics, while selected variants improved affinity relative to parental molecules and clinical controls (GLIMPSE-1 preprint).

In sum, GLIMPSE acts as a **generative engine** for antibody design. According to Infinimmune’s CEO:

> “Fully human antibodies carry the evolutionary logic of the immune system—optimized over millions of years. With GLIMPSE-1, we can **decode that logic directly** from immune repertoires to design better, safer biologics from day one. As the FDA shifts away from animal testing, models like GLIMPSE-1 will be critical to discovering and developing next-generation antibody therapies.” (www.playground.vc)

This statement encapsulates the value proposition: GLIMPSE doesn’t just replicate existing sequences, it infuses new candidates with patterns gleaned from how human immunity naturally balances potency and tolerance (www.linkedin.com) (www.playground.vc). Infinimmune reports development-candidate generation in as little as eight weeks by combining in silico characterization and diversification with wet-lab validation (Infinimmune platform).

Deal Details and Analysis

Collaboration Scope and Terms

Under the Merck–Infinimmune agreement, Infinimmune will apply its **Anthrobody® discovery platform** *and* the **GLIMPSE™ antibody language model** to Merck’s chosen targets (www.biospace.com) (trial.medpath.com). Merck has designated multiple undisclosed biological targets (likely in areas such as immunology or inflammation, given Infinimmune’s expertise), but has not revealed specifics. Merck has

exclusive rights to develop and commercialize candidates arising from the collaboration. Infinimmune will receive an undisclosed upfront payment and is eligible for milestone payments. The company's subsequent financing announcement describes up to approximately $838 million in upfront and potential milestone payments (collaboration announcement; financing announcement).

Merck's announcement does not break down the upfront versus milestones, but press coverage notes this follows a pattern: earlier in March 2026, Merck agreed to pay $20 million upfront in another tech venture (Flagship/Peregrine), making Infinimmune's deal the latest in a flurry of high-value R&D partnerships (www.fiercebiotech.com). The headline total is **up to approximately $838 million in upfront and potential milestone payments combined**, according to Infinimmune's August 2026 financing announcement (financing announcement). By contrast, Merck also simultaneously paid $20M upfront (plus up to $2.2B milestones) for Quotient's genomics targets and committed ~$6.7B to acquire Terns, indicating Merck's willingness to make large investments for pipeline innovation (www.fiercebiotech.com). In that context, the Infinimmune deal is significant but smaller than major acquisitions, aligning more with a discovery-stage research pact.

For Infinimmune, the deal is validation and cash fuel. In August 2026, Infinimmune announced a $75 million Series A financing (company announcement). CEO Wyatt McDonnell emphasized that the deal "allows us to scale our human-first discovery engine and accelerate the development of differentiated biologics" (www.fiercebiotech.com). In other words, Merck's investment buys Infinimmune more data, equipment and validation, enabling dozens or hundreds of target campaigns to run in parallel. Infinimmune can thus grow its antibody database, refine GLIMPSE with more training data, and advance its own pipeline (such as IFX-101/IFX-201) with much higher throughput.

Platform Validation and Comparison

Strategically, the collaboration serves to partially de-risk Infinimmune's platform: a major pharma partner is essentially vouching for its scientific approach. It follows Infinimmune's earlier efforts to demonstrate platform success. For instance, in the year prior the company worked with Immunome to find antibodies (an agreement announced Sept 2025 (www.biopharmadive.com)) and with KBI Biopharma for manufacturing support (Sept 2025 press release). Infinimmune also publicized internal pipeline data, such as preclinical results for an anti-IL-22 antibody in atopic dermatitis (www.biospace.com).

Compared to other AI-antibody initiatives, Infinimmune's strategy is distinctive in its human-centric data. Many platforms use **proprietary genetic engineering** (e.g. transgenic mice, synthetic libraries) to generate human-like antibodies. By contrast, Infinimmune's Anthrobody directly taps the human immune repertoire. The Observed Antibody Space (OAS) database (OAS) and academic consortia have long collected B-cell sequences, but Infinimmune claims to have "one of the largest datasets of naturally occurring human antibodies" (www.biospace.com). They then apply machine learning (GLIMPSE) on top—whereas competitors often focus on experimental methods.

For example, Merck's own R&D lab developed an antibody language model named **Sapiens** (part of their "BioPhi" platform) that humanizes murine antibodies using sequences from the OAS database (pmc.ncbi.nlm.nih.gov). GLIMPSE-1's training corpus combines paired human antibody sequences from public

Jaffe et al. (2022) data and proprietary Infinimmune platform data (GLIMPSE-1 preprint). Notably, both companies have essentially demonstrated their LMs achieve similar outcomes: GLIMPSE-1 matched Sapiens in humanization accuracy using far less data (www.genengnews.com).

Table 1 summarizes the shared humanization benchmark reported in Infinimmune's June 2025 preprint, which was not certified by peer review (GLIMPSE-1 preprint).

Benchmark feature	Reported evaluation
Test set	25 parental/humanized clinical antibody pairs, of which 20 could be independently confirmed
Endpoint	Prediction of mutations found in clinical humanized antibodies
GLIMPSE-1 versus Sapiens	GLIMPSE-1 matched or exceeded the evaluated models, including Sapiens, on this endpoint

Infinimmune's collaboration announcement describes human-derived pipeline antibodies, including IFX-101, an IL-22 inhibitor, and IFX-201, an IL-13 inhibitor, under development for moderate-to-severe atopic dermatitis (company announcement). In debates with Big Pharma partners, Infinimmune emphasizes platform throughput ("speed, quality, rigor and capital efficiency" (www.biopharmadive.com)) – an assertion apparently backed by Merck's decision to collaborate. The FDA's December 2025 draft guidance addresses nonclinical safety assessment of monospecific antibodies, including when general toxicology studies may be omitted or shortened; its recommendations are non-binding and not for implementation (FDA draft guidance).

Infinimmune Pipeline and Case Examples

Infinimmune is concurrently advancing its own drug candidates derived via the same platform. Known preclinical programs include:

- **IFX-101 (anti-IL-22)** – Infinimmune's human-derived IL-22 antibody program is being developed for atopic dermatitis. The company describes its lead antibodies as engineered for extended dosing intervals and plans first-in-human studies for both lead programs in 2027 (company financing announcement).
- **IFX-201 (anti-IL-13)** – An IL-13 blocking antibody for AD and related autoimmune conditions. This complements IFX-101 by targeting a parallel inflammatory pathway.
- **Other Inflammation Targets** – Preclinical programs have been disclosed for additional immune-modulators such as APRIL (a B-cell growth factor) and IL-17F, as well as undisclosed targets in oncology and immunology (www.biospace.com) (trial.medpath.com).

The GLIMPSE-1 preprint describes an antibody-engineering experiment against four undisclosed targets. Many variants showed reduced binding kinetics, while selected variants improved affinity relative to parental antibodies and clinical controls (GLIMPSE-1 preprint).

Comparative Perspectives

Merck–Infinimmune joins a growing catalogue of AI-driven pharma partnerships, especially in biologics. Infinimmune will use its Anthrobody discovery platform and GLIMPSE antibody language model to discover and optimize antibodies derived directly from human immune repertoires (company announcement). A Nature News roundup (June 2025) listed several high-profile AI pacts: for instance, AbbVie's $65M upfront/ $1.95B deal with Gilgamesh (AI-designed CNS drugs) (www.nature.com), and Novartis's $65M/ $1B-plus deal with Generate Biomedicines (generative protein design) (www.nature.com). Compared to these, Merck's $838M commitment to Infinimmune falls in the same ballpark of strategic bets on AI: it is smaller than multi-billion dollar oncology acquisitions but larger (in milestone terms) than typical small-molecule AI pacts (www.nature.com).

Within the antibody discovery space, Infinimmune's approach can be contrasted with others:

- **AbCellera** collaborates with Lilly on therapeutic antibodies; Lilly has development and commercialization rights under their expanded agreement (AbCellera announcement).
- **Regeneron** uses VelocImmune transgenic mice and classical immunization, then AI for candidate triage.
- **Merck's Sapiens/BioPhi** platform: focused on humanization via ML (as discussed above) but not on de novo human antibody discovery at the scale of Infinimmune.

In education, GLIMPSE's nearest academic analog is *AntiBERTa* and *AntiBERTy* (Antibody language models) or *ProGen* (a general protein-generative model). However, those models often train on public sequence databases (scraped from patents and NGS) and may not preserve heavy-light pairing. GLIMPSE-1 was trained on paired human antibody sequences combining public data from Jaffe et al. (2022) with proprietary Infinimmune platform data (GLIMPSE-1 preprint). In tests, GLIMPSE-1 outperformed or matched those public models on specific tasks of antibody optimization, despite using a smaller, curated training set (www.genengnews.com) (www.playground.vc).

Table 2 below compares several representative AI-based antibody discovery/design approaches:

Approach / Platform	Data Source	AI Role	Notable Feature
Infinimmune Anthrobody + GLIMPSE	Human donor B-cell repertoires; public and proprietary paired human sequences (GLIMPSE-1 preprint)	Generative design & optimization; target mining	The company reports development-candidate generation in as little as 8 weeks using computational work and wet-lab validation (Infinimmune)
Merck Sapiens (BioPhi)	Observed Antibody Space (public data)	Humanness filtering/modeling	Focus on humanizing non-human mAbs; uses masked-LM (pmc.ncbi.nlm.nih.gov)
AlphaFold / Structural A.I.	Protein sequence–structure databases	Structure prediction	High-accuracy modeling (not specifically sequence design)
AbCellera's platform	Single human plasma B cells	Some ML classification (proprietary)	Experimental B-cell capture + screening for binding

Approach / Platform	Data Source	AI Role	Notable Feature
LabGenius	Experimental functional and developability assay data	Multi-objective Bayesian optimisation	Closed-loop machine learning and automated functional screening (LabGenius technology)

Table 2. Comparison of select antibody discovery platforms. Infinimmune combines human-output data with generative AI (GLIMPSE), whereas other platforms rely on different data sources or AI methods.

Implications and Future Outlook

This Merck-Infinimmune collaboration signals several notable implications for the biopharma field:

- **Acceleration of Human-Centric Biologics**: Human sourcing does not eliminate immunogenicity. FDA guidance notes that human monoclonal antibodies can elicit a high rate of immunogenicity depending on dosing regimen and patient population (FDA guidance).
- **AI Integration in R&D Pipelines**: Such partnerships reinforce the trend of embedding AI models at critical junctures. Machine learning does not replace laboratories but guides them. The deal underscores that *big pharma trusts AI tools enough to base major R&D investments on them*. If GLIMPSE-engineered candidates reach the clinic successfully, it will validate the paradigm of using large language models for protein engineering.
- **Competitive Pressure on Peers**: It is unlikely Merck will be alone for long. Rival companies (e.g. Roche/Genentech, Amgen, Sanofi) are sure to monitor outcomes. Positive results could spark similar partnerships or in-house initiatives. Indeed, Merck KGaA (Germany) has already been active with its own AI projects (www.nature.com), and Roche-backed companies may well collaborate with AI antibody firms.
- **IP and Data Economics**: Fully human antibody sequences raise intellectual property nuances. Naturally occurring sequences can be hard to patent, pushing companies to focus on novel combinations or engineered variants (the GLIMPSE designs) for exclusivity. This collaboration highlights the value of proprietary datasets: Infinimmune's amassed human antibody library is a key asset likely guarded by trade secret. The economic value of these human data (and Merck's willingness to pay) suggests an emerging market for high-quality immune repertoire datasets.
- **Challenges and Risks**: Milestone-based deals inevitably carry risk: not all projects will succeed. For the $838M figure to be realized, multiple candidates must clear clinical trials and reach the market. Historically, many candidate antibodies fail in trials. If GLIMPSE outputs do not yield efficacious in vivo results, Merck may pay only a fraction of that total. Additionally, real-world immunogenicity and manufacturability of AI-designed antibodies will need careful validation. However, Infinimmune's human-centric approach aims to minimize these risks by starting from sequences already vetted by nature.
- **Future Platform Evolution**: The collaboration itself provides incentive for Infinimmune to improve GLIMPSE and Anthrobody. More campaigns mean more sequence feedback, which can be used to retrain GLIMPSE. In turn, GLIMPSE improvements enhance future hit rates. We can expect iterative

cycles of tech refinement (e.g. GLIMPSE-2, -3) and expansion of donor diversity. Merck's own investment may ultimately include data-sharing or co-developing new models, though such details are undisclosed.

- **Impact on Patients and Healthcare**: If successful, the tangible benefits could include faster delivery of novel antibody therapies for hard-to-treat diseases. For example, IL-22 and IL-13 are both implicated in inflammatory diseases lacking fully satisfactory treatments. A best-in-class antibody with long half-life could improve patient compliance and outcomes. More broadly, demonstrating a swift pipeline (potentially 8-week candidate turnaround) could reduce drug development costs, potentially lowering prices or spurring competition.

Conclusion

The Merck–Infinimmune $838M collaboration embodies the cutting edge of biologics innovation: merging vast human immune data with advanced AI engineering. Infinimmune's **Anthrobody platform** systematically mines the diversity of human antibodies, while its **GLIMPSE language model** acts as an AI-driven engineer, tweaking and inventing sequences with desirable traits. Together, they promise to streamline the discovery of fully-human, "clinically optimized" antibodies that may outperform those generated by traditional means.

Merck's multi-target deal shows confidence in this approach and aligns with its broader biologics strategy amid a changing industry landscape (www.pharmexec.com) (www.nature.com). If Infinimmune delivers even a single high-profile clinical candidate through this deal, it would validate a new discovery paradigm: *leveraging the human immune system and machine learning as foundational tools*. More likely, success will be judged by how many programs advance into human trials and, ultimately, to market approval.

In the short term, all eyes will be on the candidates designated under the Merck deal. Infinimmune's August 2026 financing announcement schedules first-in-human studies for its two lead programs in 2027 (company announcement); this is the company's forecast. For the medium term, the evolution of this partnership will be instructive: will GLIMPSE-generated antibodies demonstrate superior attributes in the clinic? Will integration of such AI platforms become routine in pharmaceutical R&D?

Beyond Infinimmune and Merck, this case study signals to the industry: capital is flowing into AI-driven biology, and platforms that can harness **meaningful data** (especially human data) will have an edge. The deal adds to a growing cache of case examples where "deep learning meets biotech" (see Fig. 1). Assuming technical hurdles can be managed, one may foresee a future where AI language models routinely write antibody sequences, effectively becoming co-discoverers alongside scientists. For now, the Merck–Infinimmune collaboration will be closely watched as a test of just how transformative AI can be in overcoming the complex challenges of antibody drug discovery.

Sources: Information in this report is synthesized from company press releases, reputable news outlets, and peer-reviewed articles (e.g. BusinessWire/BioSpace press releases (www.biospace.com), industry analyses (www.fiercebiotech.com) (www.pharmexec.com), and research publications on antibody language models (www.genengnews.com) (www.playground.vc)). All figures and claims are supported by the cited references.

Source links

Links cited in this article, in order of first appearance. Full addresses are provided for readers using extracted text.

1. https://www.fiercebiotech.com/biotech/merck-enlists-antibody-hunter-infinimmune-838m-biobucks
2. https://www.biospace.com/press-releases/infinimmune-enters-collaboration-with-merck-to-discover-novel-human-antibody-therapeutics
3. https://www.businesswire.com/news/home/20260811487819/en/Infinimmune-Raises-%2475-Million-Series-A-Financing-to-Advance-Pipeline-of-Human-Derived-Antibodies-for-Atopic-Dermatitis-and-Inflammatory-Disease
4. https://trial.medpath.com/news/c4fe737b70a2d8b5/infinimmune-partners-with-merck-in-838-million-antibody-discovery-deal
5. https://www.merck.com/wp-content/uploads/sites/124/2026/02/MRK-12.31.2025-10K-FINAL.pdf
6. https://www.nature.com/articles/d43747-025-00027-z
7. https://www.genengnews.com/topics/artificial-intelligence/infinimmunes-ai-model-glimpse-1-engineers-human-sourced-antibodies
8. https://www.playground.vc/playground-blogs/how-infinimmune-is-transforming-therapeutic-antibody-engineering
9. https://www.biopharmadive.com/news/merck-infinimmune-antibody-research-deal/816119
10. https://www.pharmexec.com/view/merck-enters-838-million-research-development-collaboration-infinimmune
11. https://www.fda.gov/media/85017/download
12. https://www.infinimmune.com
13. https://www.biospace.com/infinimmune-announces-partnership-with-grid-therapeutics-to-conduct-deep-sequencing-of-b-cells-for-oncology-drug-discovery
14. https://pmc.ncbi.nlm.nih.gov/articles/PMC8837241
15. https://www.fda.gov/regulatory-information/search-fda-guidance-documents/monoclonal-antibodies-streamlined-nonclinical-safety-studies
16. https://www.linkedin.com/posts/playground-global_infinimmune-has-harnessed-the-vast-diversity-activity-7338923110722674691-na5C
17. https://carterra-bio.com/wp-content/uploads/2025/07/2025.06.08.658113v1.full.pdf.pdf
18. https://opig.stats.ox.ac.uk/webapps/oas
19. https://investors.abcellera.com/news/news-releases/2024/AbCellera-and-Lilly-Expand-Collaboration-to-Develop-Antibody-Medicines/default.aspx
20. https://labgeniustx.com/technology

THE PUBLISHER

About IntuitionLabs

IntuitionLabs is an AI consulting, custom software development and data engineering firm serving pharmaceutical, biotechnology, medical-device and other life-science organizations. We work with clinical, regulatory, medical-affairs, commercial, quality and IT teams to connect technology decisions with the work people need to accomplish.

AI consulting and adoption

Our AI enablement services cover readiness assessments, use-case selection, governance and policies, team workshops, adoption measurement and ongoing advisory support. We help organizations structure the information layer behind AI: source material, context, permissions and maintained knowledge that make generated answers useful and reviewable. Private LLM inference and hosted AI options support teams evaluating how to operate AI with appropriate control over their data and infrastructure.

Software, data and life-science workflows

IntuitionLabs develops custom software for pharma and biotech, integrates enterprise systems, and builds data engineering and business intelligence solutions. Areas of focus include AI agents, regulatory research, medical writing, medical affairs, CMC information, competitive intelligence and clinical-document workflows. Our eTMF intelligence work includes cross-system reconciliation and inspection-readiness support.

Enterprise platforms and regulated delivery

We provide Veeva services, application support, managed services, integrations and custom applications, alongside enterprise content work involving platforms such as Egnyte. For regulated workflows, our services include GxP enablement, computer-system validation and software development addressing 21 CFR Part 11 requirements. The applicable controls, validation responsibilities and acceptance criteria are defined for each engagement.

Work with IntuitionLabs

Explore AI enablement, pharma and biotech software development, data engineering and BI, and Veeva services. Contact IntuitionLabs to discuss your workflow, information sources and implementation needs.

IntuitionLabs publishes educational research to help life-science teams make informed technology decisions. Coverage of a product or organization does not imply a client relationship, endorsement or partnership.

Website: https://intuitionlabs.ai

This article is educational. Verify consequential medical, legal, financial, regulatory and technical decisions with appropriate professionals and the cited primary sources. Company services are described separately from the article's research findings.