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Galux AI Platform Generates High-Affinity Therapeutic Antibodies With Minimal Design Sets

GaluxDesign achieved a 31.5% overall hit rate across eight target epitopes, with 10.5% of AI-designed antibodies showing therapeutically meaningful affinity and several reaching picomolar binding strength.

By **Ankit Kankar** | September 13, 2026



-Galux, a South Korean biotech pioneering AI-driven protein therapeutics design, announced new experimental findings demonstrating that its AI protein design platform, GaluxDesign, can reliably generate high-affinity antibodies from minimal design sets, signaling a meaningful shift in how therapeutic antibodies can be discovered.

In the new study, the company generated only fifty AI-designed antibodies per epitope across eight target epitopes and achieved a 31.5% overall hit rate. Notably, 10.5% of all designs exhibited therapeutically meaningful affinity, with several candidates reaching picomolar binding strength. All candidates were validated in full-length IgG format, confirming that GaluxDesign outputs behave as druggable therapeutic leads without extensive engineering.

“This performance represents more than a numerical improvement in success rate, it reflects a fundamental shift from discovering antibodies to rationally designing them,” said Chaok Seok, CEO of Galux. “Traditional antibody discovery depends on probabilistic enrichment from massive libraries and requires months of iterative affinity maturation and humanization. The ability of GaluxDesign to deliver potent binders within weeks, and without heavy downstream engineering, demonstrates a true transition from stochastic discovery to rational molecular design.”

These results gain further significance when considered alongside the company’s earlier library-scale work demonstrating de novo antibody design across eight distinct therapeutic targets (e.g., PD-L1, HER2, EGFR S468R, ACVR2A/B, FZD7, ALK7, CD98hc, IL-11), yielding binders with affinities as strong as 9pM. In that study, Galux resolved a designed PD-L1 antibody complex by cryo-EM with 1.1 Å interface RMSD, validated structural novelty, and showed that functional behaviors such as mutant and subtype specificity could be intentionally encoded and retained in IgG format. Together, these findings show not only that GaluxDesign can produce structurally accurate and functionally tunable antibodies, but that it can now do so reliably from only dozens of computational sequences.

As multiple groups demonstrate progress in AI antibody design, Galux’s work highlights a distinct dimension: a deeply validated design platform with high precision across scales. By unifying structural accuracy, functional developability, target diversity, and now small-design efficiency, GaluxDesign provides a foundation for therapeutic discovery that is predictable rather than probabilistic.

“What these studies collectively show is that the essential qualities of a therapeutic antibody can all be defined at the design stage and realized experimentally through our platform,” added Seok. “Our next step is to take this level of design control toward more advanced modalities, including multi-target binders and new functional architectures, and demonstrate how AI can expand the boundaries of what therapeutic antibodies can do.”

Read online: <https://worldbusinesswatch.com/news/13/137/galux-ai-platform-generates-high-affinity-therapeutic-antibodies-with-minimal-design-sets.html>

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