

AI-Guided *De Novo* Design of Domain-Specific Antibodies for a Transmembrane Protein

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Overview:

AI-guided, heavily-constrained design plus phage display selection produced high-affinity, domain-specific antibodies to the receptor and the target domain. Funnel summary: $>10^8$ CDR-H3 designs $\rightarrow$ 360k selected $\rightarrow$ 77 mAbs $\rightarrow$ 14 receptor binders (KD to 10 pM) $\rightarrow$ 9 domain-specific binders. The findings validate our domain/epitope-specific design–make–test workflow even with a single-CDR design constraint.



