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BioDuro, neoX to create next-gen Ab discovery platform

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Companies Combine Leading-edge AI Antibody Evolution & Advanced Synthetic Antibody Screening



US based BioDuro, LLC, a leading drug discovery and development services organization, and China based startup neoX, a leading-edge artificial intelligence and biophysics focused biotech, announced a strategic cooperation to establish the first antibody discovery platform to combine artificial intelligence (AI) and synthetic antibody discovery.

The combined platform will enable the companies' biopharma partners to shorten timelines and improve quality of antibody-based drug development programs, enabling faster path to the clinic.

neoX and BioDuro's combined platform screens tens of billions of high-impact sequences in a high-throughput manner. The sequences are all synthetic, meaning they are deliberately designed antibodies with optimized affinity, specificity, stability, and therapeutic developability. The platform is especially useful for previously intractable targets, such as GPCRs, ion channels, and peptide-MHC complexes, that have consistently failed development as antibody-based therapeutics.

The AI antibody technology of neoX includes the latest artificial neural network algorithm, machine learning, and molecular dynamics to simulate the directed evolution of each antibody—ultimately outputting optimized sequences that specifically and potently bind the target antigen. These AI-acquired sequences are quickly advanced into experimental screens.

The companies are also working with several partners to extend the technology into antibody designs for immune cell therapies such as CAR-T and TCR-T, which are highly promising immuno-oncology therapeutics, but have had unexpected outcomes and strong side effects in clinical studies—largely attributed to suboptimal antibody and linker designs. The teams are applying their unique antibody discovery platform to rapidly discover and develop next-generation CAR-T therapy with improved safety and efficacy profiles.