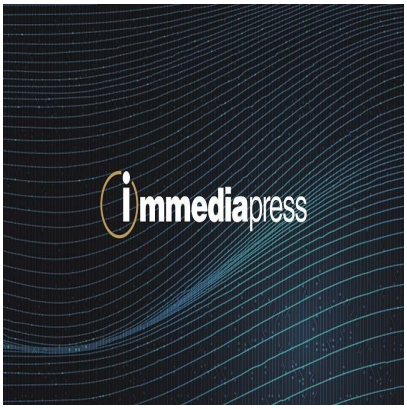

Sino Biologicalâ??s Cell-Free Protein Synthesis Supports Tencent AI for Life Sciences Labâ??s Protein Design Study Published in Nature Communications

Descrizione

COMUNICATO STAMPA â?? CONTENUTO PROMOZIONALE

HOUSTON, May 28, 2026 /PRNewswire/ â?? Sino Biological, Inc. (Shenzhen Stock Exchange: 301047.SZ) has announced that its gene synthesis and cell-free protein expression workflow was used in a recent study by Tencent AI for Life Sciences Lab published in Nature Communications, enabling rapid validation of AI-designed proteins with improved activity, stability, and multifunctionality.

Bridging AI Protein Design and Experimental Validation

Artificial intelligence has accelerated protein amino acid sequence design; however, translating these computational designs into functional proteins remains a key challenge in protein engineering. Protein activity, stability, folding, and expression are influenced by complex structural and biochemical factors, often causing discrepancies between in silico predictions and experiments.

To address this gap, the study introduced an Ontology Reinforcement Iteration (ORI) framework, integrating protein ontology with reinforcement learning from wet-lab feedback. Experimental data, including protein expression levels and functional activity, were continuously fed back into the model enabling iterative optimization of protein sequences and improved design accuracy.

Cell-Free Protein Synthesis Accelerates the AI Design Loop

The researchers subsequently utilized Sino Biologicalâ??s XPressMAXâ?¢ Cell-Free Protein Synthesis Kit to enable rapid protein expression and functional screening. Protein-coding sequences cloned into the kitâ??s expression vector and added to the proprietary cell-free reaction system supported rapid designâ??buildâ??test cycles.

Using this workflow, the team engineered a lysozyme with over 100-fold higher activity than the natural enzyme, developed a thermostable chitinase retaining activity at 85Â°C, and expressed bifunctional enzymes with improved performance compared with naturally occurring multifunctional enzymes.

XPressMAXâ?¢Cell-Free Protein Synthesis Kit

Key features include:

About Sino Biological

Sino Biological is an international reagent supplier and CRO service provider specializing in recombinant protein production and antibody development. With the US-based Center for Bioprocessing (C4B) in Houston and SignalChem Biotech (part of Sino Biological) in Canada, Sino Biological delivers tailored, localized solutions to meet diverse research needs worldwide. Serving researchers in over 90 countries, the company maintains a stringent quality management system across all products.

For media inquiries or partnership opportunities, please contact:Sino Biological, Inc.gmo@sinobiological.cn www.sinobiological.com

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