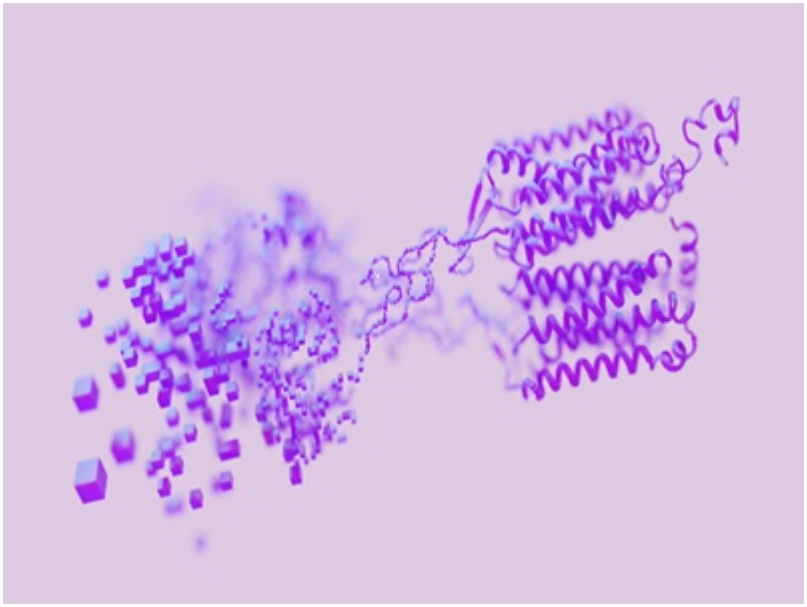
De Novo Designed Non-Local Beta Sheet Proteins

This technology offers innovative beta-sheet proteins designed for high stability and accuracy, offering new possibilities in biotechnology and therapeutic applications.



Technology ID

BDP 8076

Category

Selection of Available Technologies

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What is the Problem?

Designing stable and accurate beta-sheet proteins has been a significant challenge in the field of protein engineering. Traditional methods often result in proteins that are prone to aggregation and lack the desired stability, limiting their practical applications in biotechnology and medicine. There is a need for reliable methods to create beta-sheet proteins that can maintain their structure and function under various conditions.

What is the Solution?

Researchers have developed a novel approach to design non-local beta-sheet proteins with high stability and accuracy. By identifying structural relationships between loop geometry, side chain directionality, and beta-strand length, they have successfully created jellyroll structures with double-stranded beta-helices formed by eight antiparallel beta-strands. These designs have been validated through nuclear magnetic resonance, showing a close match to computational models. This technology provides a robust framework for creating stable beta-sheet proteins,

opening new avenues for their use in various applications.

What is the Competitive Advantage?

High Stability: The designed proteins exhibit exceptional stability, making them suitable for diverse applications.

Accurate Design: The close match between the computational models and the actual structures ensures reliability.

Versatility: These proteins can be tailored for specific functions, enhancing their utility in biotechnology and therapeutic fields.

Reduced Aggregation: The innovative design minimizes the tendency of beta-sheet proteins to aggregate, addressing a common issue in protein engineering.

Patent Information:

US20210122793A1

References

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