Engineered TNA Polymerase for Therapeutic Applications

Tech ID: 34034 / UC Case 2023-720-0

BRIEF DESCRIPTION

An engineered polymerase enabling the synthesis of threose nucleic acid (TNA) for advanced therapeutic applications.

FULL DESCRIPTION

This technology involves a laboratory-evolved polymerase, named 10-92, that can faithfully and efficiently synthesize threose nucleic acid (TNA), an artificial genetic polymer. The 10-92 enzyme offers an important tool that can be used to support a broad range of applications in synthetic biology and drug discovery.

SUGGESTED USES

- Drug discovery and development, particularly for diseases requiring targeted therapeutic intervention.
- Development of TNA-based therapeutic aptamers.
- Biotechnology research, especially in the field of synthetic biology.

ADVANTAGES

- Highly efficient synthesis of TNA, surpassing previous polymerases.
- Enables the creation of therapeutic aptamers, providing an alternative to traditional antibodies.
- Biologically stable, enhancing the durability of resulting therapeutics.
- Facilitates drug discovery by allowing TNA to be synthesized on DNA templates.

PATENT STATUS

Patent Pending

RELATED MATERIALS

- Directed evolution of a highly efficient TNA polymerase achieved by homologous recombination Maola VA, Yik EJ, Hajjar M, Lee JJ, Holguin MJ, Quijano RN, Nguyen KK, Ho KL, Medina JV, Chim N, and Chaput JC Nature Catalysis 2024, 7, 1173-1185.

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Research Tools
  - Screening
- **Research Tools**
  - Nucleic Acids/DNA/RNA
  - Reagents

RELATED CASES

2023-720-0

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