CAPTaINs: Capped And Protected Targeted Immunoproteasome N-End Degrons

Tech ID: 34477 / UC Case 2025-851-0

BRIEF DESCRIPTION

CAPTaINs provide a novel, selective, and stable method for selective degradation of protein targets.

FULL DESCRIPTION

Capped and Protected Targeted Immunoproteasome N-End Degrons (CAPTaINs) represent a cutting-edge technology that provides novel chimeric compounds that selectively degrade target proteins. This platform utilizes an immunoproteasome recognition sequence which acts as a molecular “cage” to prevent premature degradation. Activation occurs specifically in cells expressing the immunoproteasome, enabling precise, disease-specific protein degradation with improved serum stability and prolonged therapeutic effect.

SUGGESTED USES

- Pharmaceutical development for targeted cancer therapies.
- Treatment of hematological malignancies including lymphoma and leukemia.
- Biotech research and drug discovery focused on protein degradation mechanisms.
- Precision medicine approaches for protein-related diseases.

ADVANTAGES

- Selective degradation limited to disease-relevant cells expressing immunoproteasome.
- Improved serum stability resulting in prolonged degradation response.
- Innovative molecular design with a recognition sequence for controlled “uncaging.”
- Reduced off-target effects by avoiding degradation in healthy cells.
- Lower molecular weight compared to PROTACs, improving cell permeability.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Disease: Autoimmune and Inflammation
  - Disease: Cancer
  - New Chemical Entities, Drug Leads
  - Research Tools
  - Therapeutics
- **Research Tools**
  - Reagents

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