Antibody-Fusion Degraders For Targeted Degradation Of Protein Aggreagates And Organelles Via Autophagy

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VALUE PROPOSITION

The degradation of abnormal protein aggregates and damaged organelles is required for normal cell functions. Impaired degradation of these intracellular components has been linked to aging and neurodegenerative diseases such as Alzheimer's disease, ALS, and Parkinson's disease. Targeted protein degradation (TPD) has become an emerging therapeutic strategy in recent years, and PROteolysis TArgeting Chimeras (PROTAC) technology has emerged as one of the most promising approaches to remove specific disease-associated proteins by exploiting cells' own destruction machinery via ubiquitin–proteasome system (UPS), but it lacks the ability to degrade large sized contents such as organelles

TECHNOLOGY DESCRIPTION

UCSF investigators have developed antibody-fusion degraders for targeted intracellular degradation of protein aggregates and organelles. This technology can be leveraged to develop therapeutic strategies against diseases that are caused by cytotoxic aggregates, such as the targeted degradation of mitochondria in patients with Parkinson's disease.

RELATED MATERIALS

▶ Jiang, Z., Kuo, Y.-H., & Arkin, M. R. (2023). Autophagy Receptor-Inspired Antibody-Fusion Proteins for Targeted Intracellular Degradation. Journal of the American Chemical Society, 145(44), 23939–23947.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

targeted protein degradation, autophagy, peptides, proteins, aging, neurodegenerative disease, protein aggregates

CATEGORIZED AS

▶ **Biotechnology**

▶ Health

▶ Proteomics

▶ **Medical**

▶ Disease: Central Nervous System

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