

TECHNOLOGY

Compounds and Methods for Addressing Proteotoxicity-Associated Diseases

OVERVIEW

Summary

The patent, "Compounds and methods for treating proteotoxicity-associated diseases", introduces a novel approach to combat proteotoxicity - a condition where misfolded or aggregated proteins become harmful to cells. This technology is particularly relevant in the context of neurodegenerative diseases such as Alzheimer's, frontotemporal dementia, and amyotrophic lateral sclerosis, where protein misfolding and aggregation are key factors in disease progression. The patented compounds are engineered to interact with and inhibit the aggregation of these misfolded proteins. The proposed mechanism of action involves the modulation of the protein quality control machinery within cells, potentially preventing the aggregation of specific misfolded proteins implicated in neurodegeneration.

Market

The Global Neurodegenerative Disease Market, as reported by Research and Markets, is projected to reach \$52.7 Billion by 2030, growing at a CAGR of 3.2%. Proteotoxicity plays a significant role in neurodegenerative diseases, making this technology highly relevant. The market growth is primarily driven by the increasing prevalence of diseases that necessitate protein quality control for treatment, such as cancer and neurodegenerative disorders. Technological advancements are also highlighted as key drivers of market growth.

The escalating prevalence of neurodegenerative diseases, largely due to an aging population, is expected to fuel the demand for new therapies. The rising incidence of these diseases and the urgent need for novel therapeutic strategies present substantial opportunities for the application of this technology.

Technology

The patent describes a library of chemical compounds designed to target proteotoxicity. Proteotoxicity is a condition where proteins become toxic to cells due to misfolding or aggregation. This is especially significant in the context of neurodegenerative diseases such as Alzheimer's, frontotemporal dementia, and amyotrophic lateral sclerosis, where protein misfolding and aggregation are major contributors to disease progression. The chemical structures of the compounds in the patent are designed to interact with these misfolded proteins and prevent their aggregation.

The mechanism of action of these compounds likely involves modulating the protein quality control machinery within cells. This machinery is responsible for ensuring that proteins are correctly folded and functioning. When proteins misfold, they can aggregate and become toxic to cells, leading to cell death and disease. By modulating this machinery, the compounds can potentially prevent the aggregation of specific misfolded proteins implicated in neurodegeneration. This represents a novel approach to treating diseases associated with protein misfolding and aggregation.

The patent claims encompass the chemical structure of the compounds, pharmaceutical formulations containing these compounds, and methods for treating diseases associated with proteotoxicity. This technology signifies a major advancement in the field of neurodegenerative diseases. The compounds have been engineered to target and modulate protein quality control machinery, potentially preventing the aggregation of misfolded proteins. The therapeutic indications are extensive, covering a range of neurodegenerative diseases linked with proteotoxicity.

References

[Emerging Developments in Targeting Proteotoxicity in Neurodegenerative Diseases - PubMed \(nih.gov\)](#)

[New compounds can provide a breakthrough in the treatment of neurodegenerative pathologies \(news-medical.net\)](#)

[Global Neurodegenerative Disease Market Report 2023: Sector \(globenewswire.com\)](#)

Additional Information

Potential Fields of Application: Neurology, Pharmacology, Biotechnology, Drug Development

Keywords: Proteotoxicity, Neurodegenerative Diseases, Protein Misfolding, Therapeutic Compounds

Advantages:

- Targets Protein Misfolding
- Potential Treatment for Neurodegenerative Diseases
- Broad Therapeutic Indications

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CATEGORIES

- Therapeutics
- Small molecules

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ATTACHMENTS

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