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TECHNOLOGY BRIEF

A Novel Class of Inhibitors of Beta-amyloid Peptide Aggregation: Alzheimer's Disease Therapeutics D-3929

INVENTION SUMMARY

In an effort to treat and prevent Alzheimer's disease, the invention relates to the discovery of a family of small molecules that can inhibit the aggregation of beta-amyloid peptides. Aggregation of beta-amyloid peptides causes plaque formation in the brain and is strongly associated with Alzheimer's disease. Compared to other beta-amyloid peptide inhibitors in clinical trials, this invention offers molecules that are over 100 times more efficient to inhibit beta-amyloid aggregation. The vast number of derivatives of these molecules also offers a large selection of prospective drug candidates from which to choose. In addition, some of the molecules have been through toxicity studies in other applications, with no indication of toxicity. Furthermore, these molecules can easily cross the blood brain barrier, eliminating the possibility of problems with drug delivery. In vivo studies are currently being conducted with these molecules using a transgenic mice model.

POTENTIAL COMMERCIAL APPLICATIONS

- Disease modifying drugs for Alzheimer's Disease.

ADVANTAGES

- The compounds can be delivered with or without other therapeutic treatments. They can be administered orally, nasally, or parenterally in the form of tablets, capsule, injections, etc.
- These compounds easily cross the blood brain barrier, and have been shown to be non-toxic.

TECHNICAL MERITS

These compounds have the potential to prevent key pathological processes in Alzheimer's disease, forming a unique trifunctional class of compounds that prevent beta-amyloid aggregation and beta-amyloid induced inhibition of the nicotinic acetylcholine receptor, and may prevent beta-amyloid-induced tau phosphorylation, thus preventing the three major processes thought to be responsible for Alzheimer's disease pathology.

Inventors

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Office of the Vice Provost for Technology
Transfer and Economic Development

Patent Information

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License Status

Exclusive or non-exclusive licenses will be considered.

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