

Novel Peptide Inhibitors for Alzheimer's disease

Notch-Sparing Modulation of γ -Secretase by Three-Finger Toxins

Overview

Amyloid- β (A β) accumulation is a key driver of Alzheimer's disease (AD). While γ -secretase inhibitors (GSIs) have long been pursued as therapeutics, safety issues have prevented their clinical adoption.

Using AlphaFold2-based in-silico screening, the inventors discovered that Three-Finger Toxins (3FTXs)—disulfide-rich peptides from snake venom—potently block γ -secretase-mediated APP processing. Strong inhibitory activity was confirmed in both yeast-based assays and a β -galactosidase reporter system.

Brain-targeted AAV vectors for 3FTX expression are currently under development, with evaluation in AD model mice planned. Acting at sites distinct from traditional GSIs, 3FTXs offer a novel and promising approach for AD prevention and treatment.

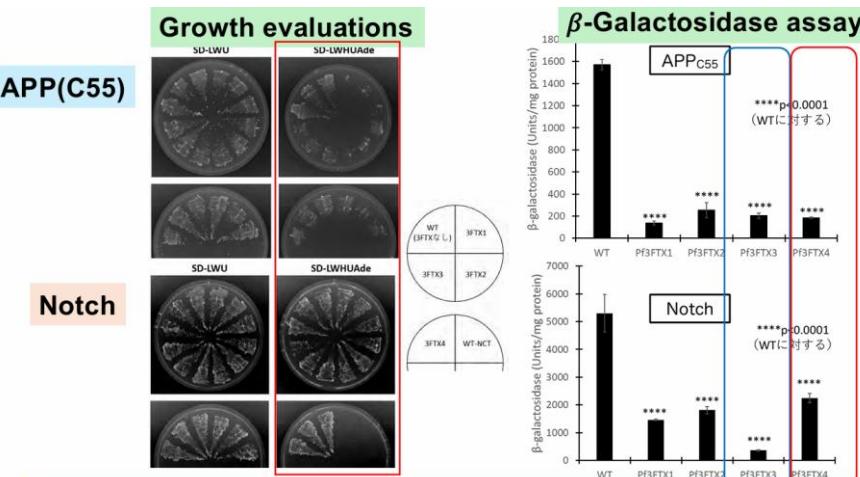
Product Application

- Therapeutic and preventive agents for Alzheimer's disease
- Potential disease-modifying therapy targeting APP processing

IP Data

IP No.	: WO2024/004231
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3FTXs Exhibit Strong γ -Secretase Inhibitory Activity



3FTXs potently inhibit γ -secretase-mediated APP processing while largely sparing Notch.

→ A first-in-class, Notch-sparing γ -secretase inhibitor series with strong potential as a safe and effective disease-modifying therapy for Alzheimer's disease.

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