

- **Name of Invention:**
 - A combination drug for treatment of mild cognitive impairment
- **Inventors:**
 - Jerry Juang, RaiHua Lai
- **Affiliation:** Institute of Molecular & Genomic Medicine, NHRI, Taiwan

IP Right Protection

- US patent filled
- PCT filled

Concept and Advantages of this Technology

- **The Principles of current AD drugs**

The current antibody therapy drugs are used to bind with amyloid proteins, thereby clearing amyloid protein deposits, but they are unable to reduce the production of amyloid proteins.

- **The differences between this case and the principles of current AD therapeutic drugs**

Regulate systemic metabolism and immune responses to achieve balance, used for treating early-stage AD/MCI or preventing the occurrence of AD.

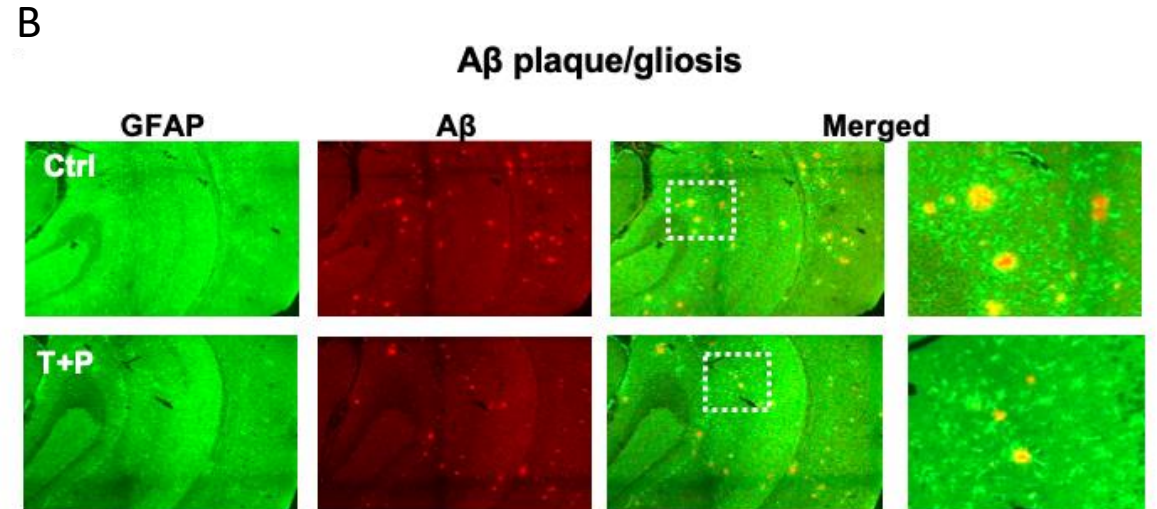
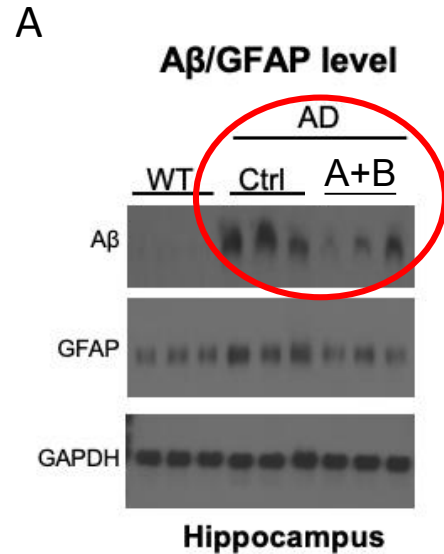
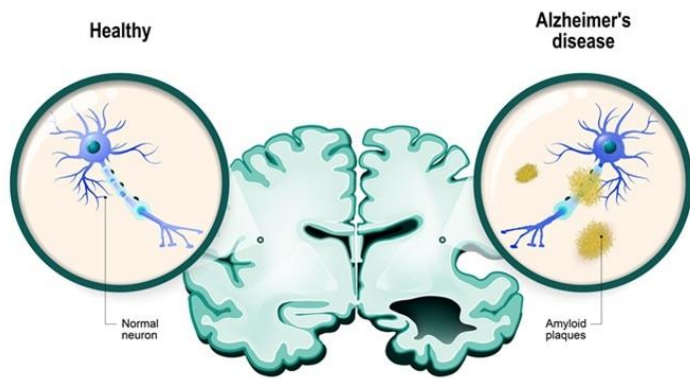
- **Drug design**

The drug target was chosen **based on our discovery of a novel beta-amyloid's cellular function**, which involves its interaction with a metabolic transcription factor. Due to the close interplay among metabolic pathways for maintaining homeostasis, we combine two drugs targeting closely linked pathways to synchronize energy balance and restore metabolic equilibrium in AD development.

Advantages of the Current Invention

This medication will regulate metabolic imbalances and excessive systemic inflammatory responses, thereby **reducing the production and accumulation of amyloid proteins**, preventing or slowing down the occurrence of dementia.

Assessing Combined Drug Efficacy in a Mouse AD Model



Assessing Combined Drug Efficacy Through Population-based Cohort Study

55% Reduction in AD Risk compared to non-users

	A + B
N	10535
Age, mean (s.d.)	58.58 (11.46)
Male, n (%)	2802(26.6%)
Hypertension, %	5959(56.55%)
Dyslipidemia, %	4504(42.75%)
Incidence rate of Dementia (per 1000-person-year)	7.28
Relative Risk	0.446

Why repurposing FDA-approved Drugs for AD?

	Novel Drug	Drug Repositioning	Drug Repurposing
Cost	>\$1 Billion	\$300 Million	\$ 250K
Time to Get to Market	13-15 Years	6.5 years	3 Years
Success Rate	1 in 10,000	4 in 10	3 in 10