

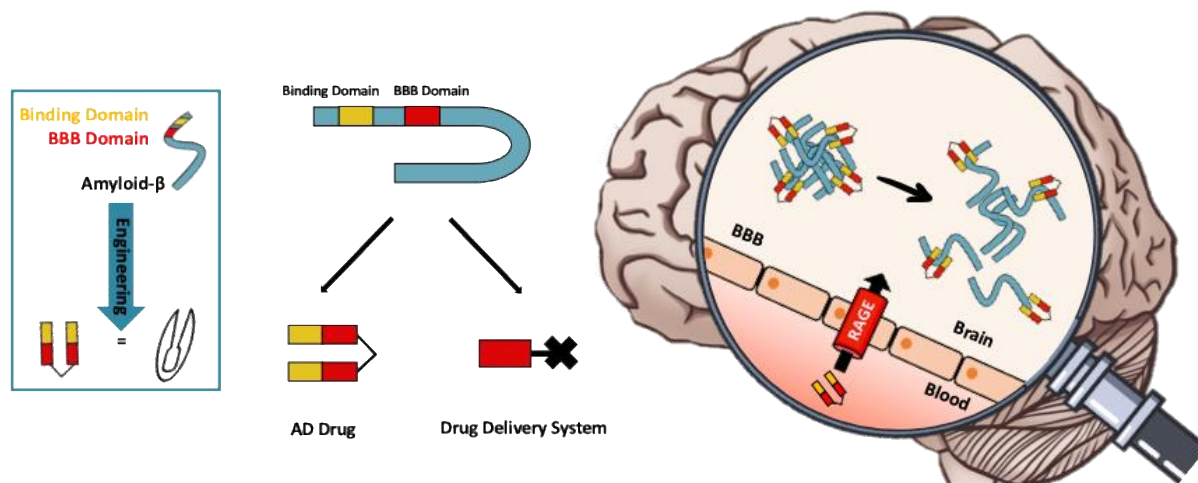
[Seminar 2]
Date: July 8, 2026
Time: 14:00-15:00
Venue: C700, Lab3

Anti-Alzheimer Strategies Utilizing Pathogenic A β Dimers

Professor YoungSoo Kim

Department of Pharmacy, Yonsei University
South Korea

Soluble amyloid- β (A β) oligomers, particularly toxic dimers, are increasingly recognized as key mediators of neurodegeneration in Alzheimer's disease (AD). However, their structural heterogeneity has posed significant challenges for drug development. In this study, we introduce two complementary therapeutic strategies that converge on a defined pathogenic t, A β dimers. First, we established a synthetic platform using well-defined parallel and anti-parallel A β dimers and identified two FDA-approved compounds that effectively dissociate A β oligomers and plaques into monomers in 5XFAD transgenic mice, thereby reducing amyloid burden and restoring cognitive function. Second, we developed DAB0117, a blood-brain barrier-permeable dimeric peptidomimetic derived from the N-terminal fragment of A β . DAB selectively interacts with aggregated A β species, facilitating their disassembly. In vivo studies in 5XFAD mice demonstrated that DAB reduced amyloid deposition, attenuated neuroinflammation, and rescued memory deficits.



References

- (1) *Angewandte Chemie International Edition*. 2023, 62(7), e202210209. Amyloid against amyloid: dimeric amyloid fragment ameliorates cognitive impairments by direct clearance of oligomers and plaques.
- (2) *Angewandte Chemie International Edition*. 2020, 59(28), 11491. Discovery of chemicals to either clear or indicate amyloid aggregates by targeting memory-impairing anti-parallel A β dimers.