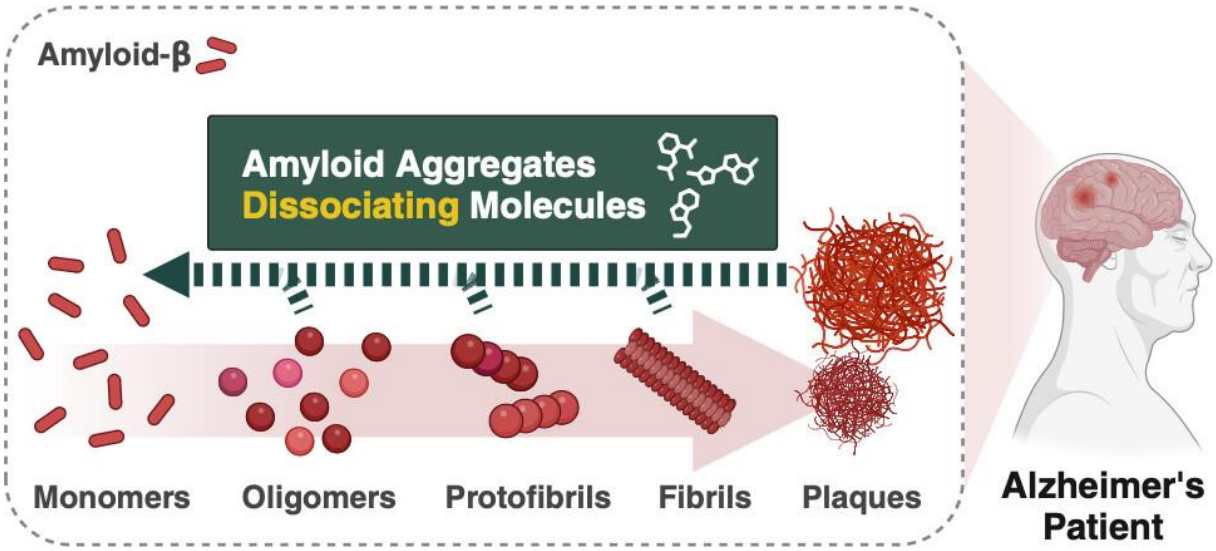
[Seminar 1]
Date: July 7, 2026
Time: 14:00 – 15:00
Venue: C700, Lab3

Chemical-Driven Clearance of Misfolding Protein Aggregates for Alzheimer Drug Discovery

Professor YoungSoo Kim

Department of Pharmacy, Yonsei University
South Korea

Alzheimer's disease (AD) is characterized by the accumulation of amyloid-β (Aβ) and tau aggregates, which contribute to neurodegeneration. While recent anti-Aβ antibody therapies have shown efficacy in reducing Aβ burden, their limitations—including adverse effects, high costs, and complex administration—highlight the need for alternative therapeutic strategies. Our research focuses on developing small molecules that target Aβ and tau aggregates, either independently or together, to facilitate their disaggregation and clearance from the brain. These compounds penetrate the blood-brain barrier, bind to toxic protein aggregates, and promote their dissociation into nontoxic monomers, addressing key pathological features of AD. In addition, using behavioral tests in AD mouse models, we demonstrate that these compounds improve learning and memory functions. The chemical-driven approach offers a cost-effective and accessible alternative to immunotherapy, with the potential to improve disease management and extend its application to other neurodegenerative disorders associated with protein misfolding.



References
(1) Accounts of Chemical Research. 2024, 57(22), 3266. Chemical-driven amyloid clearance for therapeutics and diagnostics of Alzheimer's disease. Kim H, Kim Y*.