

Korea develops new therapeutic drug for Alzheimer's disease

09 August 2022 | News

It eliminates the inflammatory side effects? commonly associated with such drugs



Although Aduhelm, a monoclonal antibody targeting amyloid beta (A β), recently became the first US FDA approved drug for Alzheimer's disease (AD) based on its ability to decrease A β plaque burden in AD patients, its effect on cognitive improvement is still controversial.

Moreover, about 40% of the patients treated with this antibody experienced serious side effects including cerebral edemas (ARIA-E) and hemorrhages (ARIA-H) that are likely related to inflammatory responses in the brain when the A β antibody binds Fc receptors (FCR) of immune cells such as microglia and macrophages.

To overcome these problems, a team of researchers at KAIST (Korea Advanced Institute of Science and Technology) in South Korea has developed a novel fusion protein drug, A β -Gas6, which efficiently eliminates A β via an entirely different mechanism than A β antibody-based immunotherapy. In a mouse model of AD, A β -Gas6 not only removed A β with higher potency, but also circumvented the neurotoxic inflammatory side effects associated with conventional antibody treatments.

"We believe our approach can be a breakthrough in treating AD without causing inflammatory side effects and synapse loss. Our approach holds promise as a novel therapeutic platform that is applicable to more than AD. By modifying the target-specificity of the fusion protein, the Gas6-fusion protein can be applied to various neurological disorders as well as autoimmune diseases affected by toxic molecules that should be removed without causing inflammatory responses", said the researchers.