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Review Article

Insight γ-Secretase: Structure, Function and Role in Alzheimer's Disease

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Abstract:

Neurodegenerative disorders are the state of body results in progressive degeneration leading to death of nerve cells. In this state, a patient gets affected day by day with mental weakness, dementia and ataxia. Alzheimer's disease (AD) is the most common irreversible neurodegenerative brain disorder mainly affecting people over the age of 65 years. Many researches suggest a fact that the main culprit for AD is the aggregated form of a (39-43) amino acid peptide called amyloid beta. Amyloid beta (Aβ) is generated by the action of beta secretase and gamma secretase on larger glycoprotein. Gamma (γ) secretase is an intra-membrane protease complex which cleaves the single-pass transmembrane protein, cleavage of amyloid precursor protein and Notch. γ-secretase complex contains presenilin, presenilin enhancer-2, anterior pharynx defective-1 and nicastrin. Any mutation in presenilin-1 or the cleavage of amyloid precursor protein by γ-secretase directly or indirectly associated with AD. So, prevention of this enzyme is one of the solutions for AD. In this article, we discuss about γ-secretase complex and its inhibitors that can contribute to the prevention of AD.

Keywords: Neurodegenerative disorder, Alzheimer's disease, Amyloid beta, γ-secretase, Notch, presenilin, anterior pharynx defective-1, nicastrin, amyloid precursor protein.Neurodegenerative disorder, Alzheimer's disease, Amyloid beta, γ-secretase, Notch, presenilin, anterior pharynx defective-1, nicastrin, amyloid precursor protein.

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