

Anti-phospho-Amyloid beta (Ser8) Antibody, clone 1E4E11 clone 1E4E11, from mouse

Art. ID SAF-MABN878

Unit EA

Description

Amyloid beta A4 protein (UniProt P05067, also known as ABPP, Alzheimer disease amyloid protein, Amyloid precursor protein, APP, APPI, Cerebral vascular amyloid peptide, CVAP, PN-II, PreA4, Protease nexin-II) is encoded by the APP (also known as A4, AD1) gene (Gene ID 351) in human. Amyloid precursor protein (APP) is initially produced with a signal peptide sequence (a.a. 1-17), the removal of which yields the mature protein with a large extracellular portion (a.a. 18-699), followed by a transmembrane segment (a.a. 700-723) and a cytoplasmic (a.a. 724-770) tail. APP can be further processed by the alpha-, beta-, and gamma-secretases in two alternative processing pathways. In the non-amyloidogenic pathway, APP is first cleaved by the plasma membrane-localized alpha-secretase to generate an N-terminal extracellular sAPPalpha fragment (a.a. 18-687) and a membrane-bound C-terminal fragment C83 (CTFalpha), which can be further cleaved by gamma-secretase to produce a non-toxic small peptide p3 and a cytoplasmic APP intracellular domain (AICD). In the amyloidogenic pathway, APP undergoes beta-cleavage in BACE-1 (beta-site APP-cleaving enzyme)-enriched endosomes to generate an N-terminal extracellular sAPPbeta fragment (a.a. 18-671) and a membrane-bound C-terminal fragment C99 (CTFbeta). Subsequent cleavage of C99 by gamma-secretase releases the amyloid beta peptides, Abeta1-42 (672-713) & Abeta1-40 (672-711), and AICD. Abeta accumulation in the cortical and hippocampal regions of the brain is a major pathological feature of Alzheimer's disease (AD). Abeta Ser8 phosphorylation is shown to promote Abeta aggregation into oligomeric and fibrillar assemblies and to prevent Abeta proteolytic clearance by certain proteases.