Soluble amyloid precursor protein α (sAPPα), a secreted proteolytic fragment of nonamyloidogenic amyloid precursor protein (APP) processing, is known for numerous neuroprotective functions. These functions include but are not limited to proliferation, neuroprotection, synaptic plasticity, memory formation, neurogenesis, and neuritogenesis in cell culture and animal models. In addition, sAPPα influences amyloid-β (Aβ) production by direct modulation of APP β-secretase proteolysis as well as Aβ-related or unrelated tau pathology, hallmark pathologies of Alzheimer's disease (AD). Thus, the restoration of sAPPα levels and functions in the brain by increasing nonamyloidogenic APP processing and/or manipulation of its signaling could reduce AD pathology and cognitive impairment. It is likely that identification and characterization of sAPPα receptors in the brain, downstream effectors, and signaling pathways will pave the way for an attractive therapeutic target for AD prevention or intervention [1)].

1)

Habib A, Sawmiller D, Tan J. Restoring Soluble Amyloid Precursor Protein α Functions as a Potential Treatment for Alzheimer's Disease. J Neurosci Res. 2017 Apr;95(4):973-991. doi: 10.1002/jnr.23823. Epub 2016 Aug 17. Review. PubMed PMID: 27531392; PubMed Central PMCID: PMC5296245.