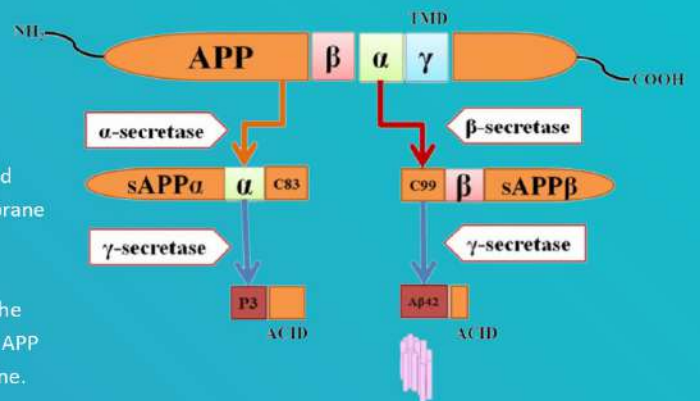




## Amyloid protein precursor (APP)

Human APP gene was first discovered in 1987 from  $\beta$ -amyloid and the gene was mapped to chromosome 21. APP belongs to membrane proteins containing extracellular domain and short cytoplasmic region. APP releases  $A\beta$  by two cleavage processes, one in the extracellular domain ( $\beta$ -secretase cleavage) and another one in the transmembrane region ( $\gamma$ -secretase cleavage). Different types of APP proteins can be formed by alternative splicing from the single gene. APP695 is a major splice form in neurons. APP is cleaved by two different proteolytic pathways, one is a non-Amyloidogenic and other one is Amyloidogenic pathway. For this process, two main enzymes  $\gamma$ -secretase and  $\beta$ -secretase are responsible.



Amyloidogenic process of APP hypothesis and formation of  $A\beta$ -42. APP protein can be processed by different enzymes like  $\beta$ -secretase,  $\gamma$ -secretase and  $\alpha$ -secretase. sAPP $\beta$  and sAPP $\alpha$  is produced with peptides C83 and C99.