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Engineer degree in Biotechnology, Saint-Petersburg Technological Institute (Technical University), Russia, 2007

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### Keywords

Secretases - Regulated Intramembrane Proteolysis - Signaling Pathways - Alzheimer's Disease

### Science

Amyloid precursor protein is sequentially cleaved by  $\alpha$ - and  $\beta$ -secretases releasing the soluble APP $\alpha$  and soluble APP $\beta$  fragments in the extracellular space. Further cleavage of the APP membrane hub generates Amyloid  $\beta$  peptides (A $\beta$ ) that constitute the amyloid plaques observed in the brains of Alzheimer's disease patients. Main focus of my project is regulation of  $\alpha$ - and  $\beta$ -secretases cleavage of APP in order to modulate the A $\beta$  peptide production. We have previously investigated  $\alpha$ -secretase activation providing novel insight in the signaling molecules responsible for the 5-HT<sub>4</sub> receptor-stimulated sAPP $\alpha$  induction (Pimenova et al, 2014). We are currently interested in modulation of the  $\beta$ -secretase activity to achieve specific and selective inhibition of the APP proteolysis.

### Selected publications

Pimenova AA, Thathiah A, De Strooper B, Tesseur I. Regulation of amyloid precursor protein processing by serotonin signaling. PLoS One. 2014 Jan 21; 9(1): e87014. PMID: [24466315](https://pubmed.ncbi.nlm.nih.gov/24466315/).

Tesseur I, Pimenova AA, Lo AC, Ciesielska M, Lichtenthaler SF, De Maeyer JH, Schuurkes JA, D'Hooge R, De Strooper B. Chronic 5-HT<sub>4</sub> receptor activation decreases A $\beta$  production and deposition in hAPP/PS1 mice. Neurobiology of Aging. 2013 Jul; 34(7): 1779-89. PMID: [23474291](https://pubmed.ncbi.nlm.nih.gov/23474291/).