# MBG FOCUS TALK

hosted by Erik Østergaard Jensen


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iNano Auditorium (1593-012)


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## The Emerging Gamma-secretase Interactome and its Implication in the Pathogenesis of Alzheimer's Disease


Gamma-secretase is an aspartyl protease that controls regulated intramembrane proteolysis of a growing list of single-pass type-I transmembrane proteins, including the amyloid precursor protein (APP) and the Notch-1 receptor. Importantly, gamma-secretase is responsible for the final step in the production of amyloid-β peptides (Aβ), the key causative agents of Alzheimer's disease (AD). Because an age-dependent dysregulation of its specific activity has pointed to the sporadic forms of AD, it remains critical to identify gamma-secretase modulators (i) to better understand the biological mechanisms that cause AD, and (ii) for the development of therapies to safely prevent and/or treat this neurodegenerative disorder. We investigated the gamma-secretase interactome and identified new endogenous modulators of APP processing and Aβ production. Among these, some play an important role in spatial learning and memory, while quantitative and qualitative changes in their gene expression profiles were found in human brains from neuropathologically-verified AD cases.



Keywords: Gamma-secretase, intramembrane proteolysis, interactome, Alzheimer's disease, learning and memory.