

Neuroscience Seminar Series

Friday, February 13, 2015 at 11:30

Salle des Conférences (R229)
Centre Universitaire des Saints-Pères
45 rue des Saints-Pères, 75006 Paris

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Beta- and Gamma-secretases: fascinating proteases in the membrane and relevant for Alzheimer disease

Over the last decade important progress has been made towards the understanding of the molecular pathobiology of Alzheimer's Disease. One major breakthrough was the identification of presenilin and its crucial role in the γ -Secretase processing of APP and Notch. We will show that our knowledge on γ -Secretase function and regulation has dramatically progressed in the last years. We will explain how different γ -Secretase complexes have different biological roles, and that selectively targeting them could provide safer drugs. Also increasing insights into structure and function could lead to safer drugs, such as gamma-secretase modulators, but also drugs that specifically interfere with docking of specific substrates to the different γ -Secretases. Finally insight into the regulation of the γ -Secretase complex only starts to emerge, which also could open new opportunities for safer drugs. We will also present unpublished novel insights into the function of the Beta-secretase or BACE-1, which is now the most favored drug target in Alzheimer disease. It is clear that also this enzyme is involved in important neurobiological phenomena and that the big issue is whether a therapeutic window can be established or not.