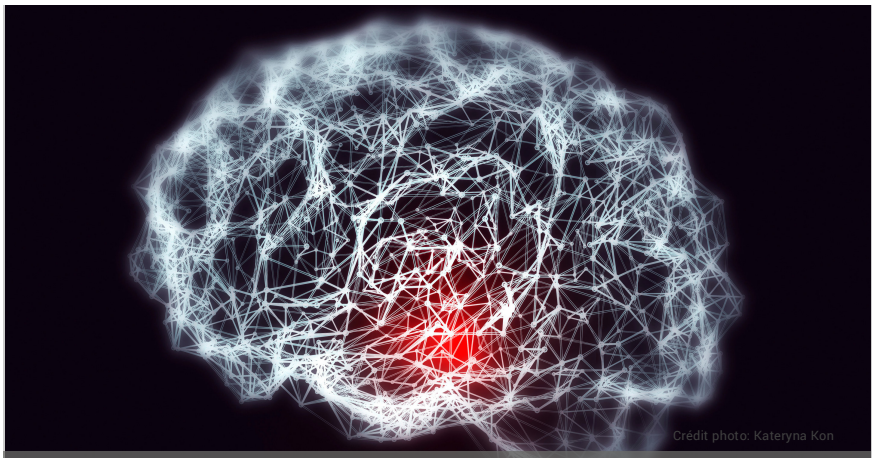

Hiver 2019

Conférence

au Département de chimie
présentée conjointement avec
PROTEO

CONFÉRENCIER

PROF. SANDRINE ONGERI

BioCIS, CNRS – Université Paris-Sud
Paris, France

DATE

Lundi, 29 avril 2019

TITRE

Design and synthesis of mimics of protein secondary structures to inhibit amyloid protein aggregation : interest in Alzheimer's disease and type 2 Diabetes

RÉSUMÉ

At least 20 human degenerative diseases, named amyloidosis, have been currently identified and involve misfolding and misassembly into various aggregate structures of more than 30 proteins. Among these diseases, Alzheimer's disease (AD) is of major concern affecting approximately 47 million people worldwide, number that is expected to reach 75 million by 2030. Type 2 diabetes (T2D) is also a major public health issue, affecting nearly 400 million people in the world. No etiological treatment exists against these two diseases which leads irremediably to the death of neuronal and pancreatic β-cells respectively. Clinical studies suggest that T2D might be an increased risk for AD. Aggregates of $A\beta_{1-42}$ and hIAPP amyloid proteins, involved in AD and T2D respectively, share similar structural characteristics and aggregation process. In particular, soluble oligomer species $A\beta_{1-42}$ and hIAPP are highly suspected to be involved in neuronal and pancreatic β-cells death respectively, by a similar mechanism of toxicity.

The strategy aiming at preventing the presence of toxic oligomers by preserving monomer species of $A\beta_{1-42}$ and hIAPP, that are described as non toxic and more easily cleared, appeared to us very appealing. For that purpose, we i- designed and synthesized β-hairpin and helix peptidomimetics targeting either $A\beta_{1-42}$ and/or hIAPP; ii- developed new biophysical techniques to identify and separate soluble monomer and oligomer species of $A\beta_{1-42}$ and hIAPP; iii- evaluated our peptidomimetics on the aggregation of $A\beta_{1-42}$ and hIAPP using these new techniques.

La conférence aura lieu **à 14h30 au local 2880** du **Pav. Alexandre-Vachon**
Cordiale invitation à toutes et à tous !

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