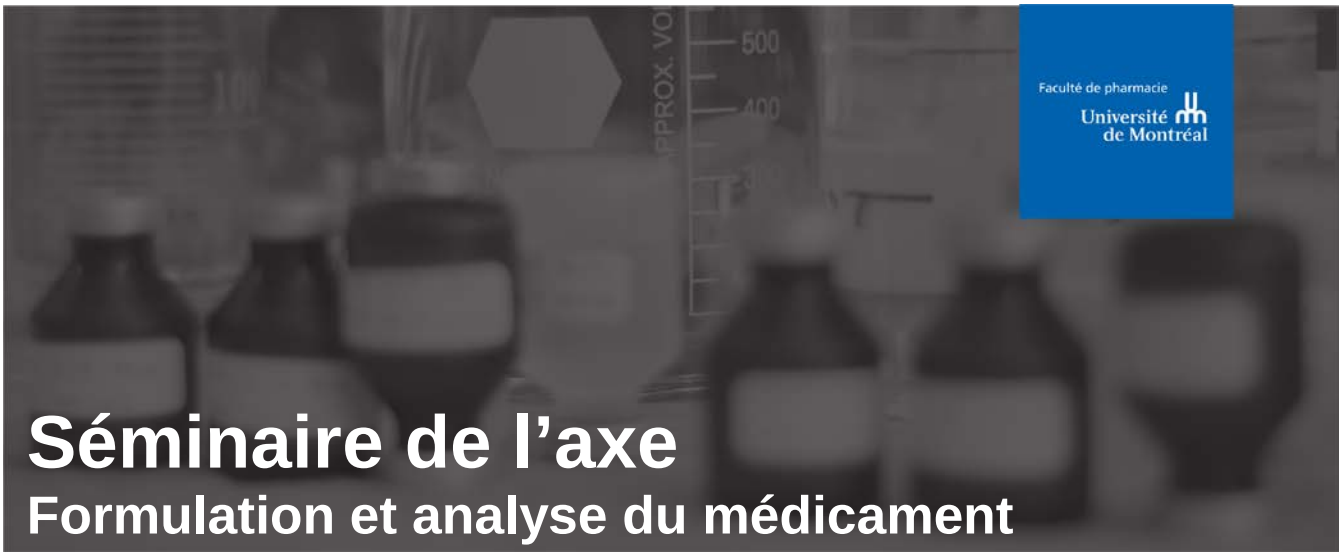

Séminaire de l'axe
Formulation et analyse du médicament

Nanocarriers designed for oral GLP-1 analogue delivery : QbD oriented approach

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à l'invitation du professeur Xavier Banquy

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Glucagon-like peptide-1 (GLP-1) analogues, liraglutide (Lira) and exenatide (Exn), are currently limited to subcutaneous injections in clinical protocol. Due to several drawbacks accompanied with this invasive route, the development of a patient-friendly delivery system is desired. For the long-term treatment of type 2 diabetes, the oral administration is considered the most widely desirable route as it can improve patient adherence to the treatment and reduce needle related complications, thus minimize the side effects and increase the treatment efficacy. Additionally, the cost effectiveness of the oral delivery compared to injections reduces the burden on patients, healthcare providers and industry. However, the oral delivery of peptide drugs constitutes a great challenge due to the stability and permeability barriers in the gastrointestinal (GI) tract, leading to low oral bioavailability.

Among the various strategies having been developed to conquer the formulation and biological barriers blocking oral peptide delivery, the encapsulation of GLP-1 analogues into nanocarriers (NCs) seems to be a very promising strategy. It is the objective of this webinar to discuss the barriers limiting oral GLP-1 analogues delivery and the potential of our developed polymeric and lipid based NCs to overcome them. Thanks to comprehensive understanding of the target product and process design, quality by design (QbD) enables the translation of innovative lab-level peptides loaded nanoformulations into clinically relevant dosage forms. Therefore, this talk also emphasizes the importance of implementing the QbD for R&D model from the "zero" phase of developing NCs encapsulating biologics.