W-FST セミナーのお知らせ

下記によりウォーターフロンティアサイエンス&テクノロジー(W-FST)研究センター主催のセミナーを開催しますので、奮ってご参加ください。

日時: 2019 年 12 月 13 日（金） 16:30~17:30
場所: 神楽坂キャンパス 11 号館地下 1 階 11-3 教室
講師: Dr. Adrian Press
Research Group Leader, The Group “Nanophysiology”, *Jena University Hospital,* Germany
題目: Raman spectroscopic imaging reveals changes in the micellar conformation dictating pharmacokinetic properties

要旨:

Strategies to deliver drugs using nanocarriers, which are passively or actively targeted to their alleged site of action might affect benefit-risk-profiles of novel therapeutics favorably. We recently demonstrated interactions within or in-between carrier and cargo are influencing the pharmacokinetic properties such as biodistribution, hence must be considered while designing translational nanocarrier platforms. To understand the surface changes affecting the biomedical applications in sub-50 nm micelles suitable methods are missing. Here we present Raman imaging, an automatable vibrational spectroscopy platform, which probes molecular bond vibrations revealing structure conformation, so far only detectable by synchrotron SAXS.
On the basis of in vitro and in vivo evidence we propose that intramolecular changes introduced e.g. by cargo-carrier interactions alters the micellar corona influencing the pharmacokinetic profile. Thus, these interactions have to be considered when a carrier system is selected to achieve optimal delivery to a given tissue. Raman imaging presents an innovative platform to tackle the current bottle necks in the clinical translation of nanocarriers.

Reference

1. *Theranostics*, **2018**, *8*(14), 3766-3780,
2. *Macromolecular Bioscience*, **2017**, *17*(10), 1700064

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