日本薬学会九州支部主催　特別講演会

演 題：Molecular Recognition and Catalysis with Helical Foldamers

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日 時：平成３０年１２月１２日（水）16:30～17:30

場 所：長崎大学薬学部 第２講義室（２Ｆ）（長崎市文教町１－１４）

内 容： The ability to synthesize sequence-based oligomers that fold with high fidelity - *foldamers* - has initiated a profound change in biopolymer mimicry over the last 20 years and raises interesting prospects for creating novel molecular architectures endowed with function.[1] In this presentation, we will discuss some of our recent efforts towards this goal showing how de novo design and subsequent sequence manipulation of non-peptide helical foldamers may be used i) to generate effective peptide mimics for *specific protein surface recognition* but also ii) to create *protein-like higher-order structures*. Some of the nanostructures obtained by self-assembly of amphiphilic helices exhibit isolated internal cavities and polar channels which conceivably could lead to tailored functions.[2,3] *Bioinspired catalysis* is another area where foldamers exhibit a far-reaching development and application potential. We found that oligourea foldamers can be used as chiral component in synergistic catalysis with achiral Brønsted base and that helicity is a major determinant of the catalytic efficiency in terms of both reactivity and enantiocontrol.[4]

References. [1] G. Guichard, I. Huc, Chem. Commun. 2011, 47, 5933-5941. [2] G. W. Collie, et al. Nat. Chem. 2015, 7, 871-878; [3] G. W. Collie, et al., J. Am. Chem. Soc. 2017, 139, 6128-6137. [4] D. Bécart et al.. J. Am. Chem. Soc. 2017, 139, 12524-12532.

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