## **Complexation of aromatic surfactants**

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Bioactive surfactants are molecules with broad applications as complexation agents, antimicrobials or transfections agents [1]. Some hydrophobic ethers obtained from 4-nitro-3-hydroxibenzoic acid have shown to be active in enzymatic processes [2]. These compounds also show antimicrobial activity. Complexation of hydrophobic molecules with cyclodextrins could enhance the bioavailability and also improve properties such as solubility and stability [3].

Based on these considerations, we synthetized an octyl ether of 4-nitro-3-hydroxibenzoic acid, characterized the aggregation of this compound and its complexation with  $\alpha$  and  $\beta$  cyclodextrins. After surface tension measurements, we obtained a CMC for this compound.

The ROESY spectrum shows that the aliphatic chain of the surfactant molecule protrudes into the cavity of both cyclodextrins.

- [1] Yoon, K.; Jackman, J. A.; Min C. K.; Nam-Joon C.; *Langmuir*, 2015, **31**, 10223
- [1] Shin, H.; Gennadios, H.; Whittington, D.; Christianson, D. W.; Med. Chem. 2007, 15, 2617
- [2] Mura, P.; J of Pharmaceutical and Biomedical Analysis, 2015, 113, 226