

Accepted Manuscript

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PII: S0021-9797(18)30813-0
DOI: <https://doi.org/10.1016/j.jcis.2018.07.057>
Reference: YJCIS 23848

To appear in: *Journal of Colloid and Interface Science*

Received Date: 4 June 2018
Revised Date: 12 July 2018
Accepted Date: 14 July 2018

Please cite this article as: I. Shahzadi, A. Dizdarević, N. Ari Efiana, B. Matuszczak, A. Bernkop-Schnürch, Trypsin decorated self-emulsifying drug delivery systems (SEDDS): Key to enhanced mucus permeation, *Journal of Colloid and Interface Science* (2018), doi: <https://doi.org/10.1016/j.jcis.2018.07.057>

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Trypsin decorated self-emulsifying drug delivery systems (SEDDS): Key to enhanced mucus permeation

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Graphical abstract

Abstract

It was the aim of this study to prepare trypsin decorated mucus permeating self-emulsifying drug delivery systems (SEDDS). Lipophilicity of enzyme was increased by hydrophobic ion pairing (HIP) with the anionic surfactants sodium dodecyl sulfate (SDS), sodium taurocholate (ST) and sodium deoxycholate (SDO) to facilitate its incorporation in SEDDS. Blank SEDDS and trypsin decorated SEDDS were characterized regarding droplet size, polydispersity index (PI), zeta potential and proteolytic activity using N α -benzoyl-L-arginine ethyl ester (BAEE) assay. Log D_{SEDDS/release medium} of each complex was determined to assess its affinity towards SEDDS oily droplet upon emulsification. Ability of trypsin decorated SEDDS to

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