pharmaceutics

Supplementary Materials: Spontaneous In Situ Formation of Liposomes from Inert Porous Microparticles for Oral Drug Delivery

Maryam Farzan [1], Gabriela Québatte [1], Katrin Strittmatter [1], Florentine Marianne Hilty [2], Joachim Schoelkopf [2], Jörg Huwyler [1] and Maxim Puchkov [1,*]

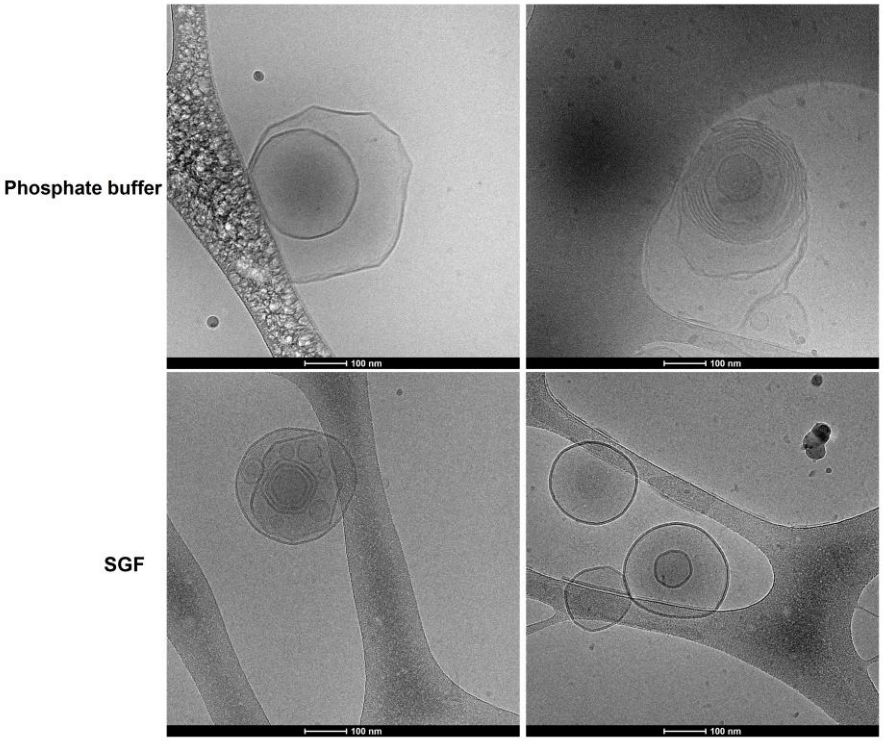

Figure S1. Cryo-EM images showing the liposomes created in phosphate buffer and in SGF.

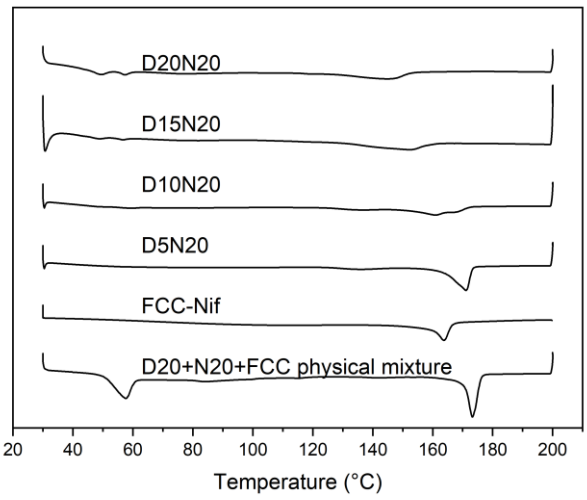

Figure S2. DSC spectra of the formulations and physical mixture. The nifedipine melting peak is present at 172 °C. For the formulations with greater phospholipid content (10%, 15%, and 20%) a

melting peak for nifedipine cannot be detected, which is due to the melting of the phospholipid and consequent dissolution the crystalline portion of nifedipine at a temperature below its melting point.

Table S1. The time required for 80% of the drug content to dissolve in SGF.

Formulation Code	Time to 80% Dissolution (min)
D5N10	16.0 ± 2.8
D5N15	15.6 ± 3.0
D5N20	8.3 ± 3.05
D10N10	12.8 ± 4.9
D10N15	24.3 ± 8.5
D10N20	8.0 ± 1.0
D15N10	34.5 ± 11.5
D15N15	23.6 ± 4.5
D15N20	35.0 ± 4.5
D20N10	68.5 ± 31.8
D20N15	56 ± 12.2
D20N20	48.66 ± 4.9

Video S1: Formation of liposomes in SGF.

The video has been uploaded in an external data repository. https://doi.org/10.7910/DVN/2LXYW1

References

1. J.M. Ting, T.S. Navale, F.S. Bates, T.M. Reineke, Design of Tunable Multicomponent Polymers as Modular Vehicles To Solubilize Highly Lipophilic Drugs, Macromolecules. 47 (2014) 6554–6565. https://doi.org/10.1021/ma501839s.
2. I. Vitez, Utilization of DSC for Pharmaceutical crystal form quantitation, Journal of Thermal Analysis and Calorimetry. 78 (2005) 33–45. https://doi.org/10.1023/b:jtan.0000042151.60566.0f.
3. B. Shah, V.K. Kakumanu, A.K. Bansal, Analytical techniques for quantification of amorphous/crystalline phases in pharmaceutical solids, Journal of Pharmaceutical Sciences. 95 (2006) 1641–1665. https://doi.org/10.1002/jps.20644.