

Supporting Information

Anisotropic and Amphiphilic Mesoporous Core-Shell Silica Microparticles Provide Chemically Selective Environments for Simultaneous Delivery of Curcumin and Quercetin

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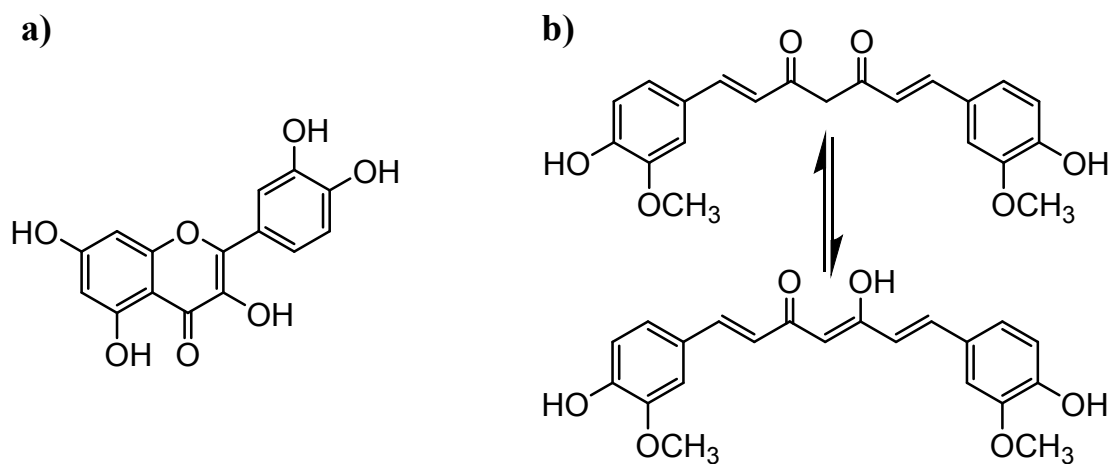
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Scheme S1. a) Chemical structure of quercetin, b) Keto/enol tautomerism of curcumin

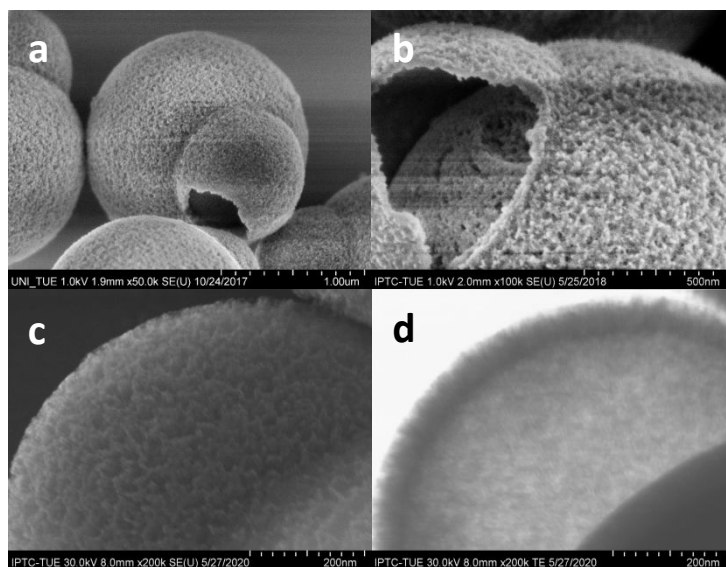


Figure 1S SEM (a,b) and STEM (c,d) micrographs of **DCS1** particles

Figure 1S displays SEM (a,b) micrographs of a selected broken dumbbell particle of **DCS1**. The images demonstrate the high porosity of the mesoporous shell that covers the large lobe and the small hemisphere. Moreover, the images also give insight into the hollow cavity

covered by the small lobe. The STEM (c,d) images show an intact particle in agreement with the broken one.

Physisorption measurements

N₂-physisorption measurements were performed on an ASAP2020 volumetric adsorption apparatus (Micromeritics Instrument Corp.) at 77 K ($a_m(\text{N}_2, 77 \text{ K}) = 0.162 \text{ nm}^2$). The samples were degassed at 250 °C for 4 h prior to analysis. The Brunauer–Emmett–Teller (BET)^[1] specific surface area was calculated from the nitrogen adsorption branch of the isotherm in the relative pressure range of 0.07–0.15 for the pure SiO₂ and the hybrid materials. Pore size distributions (dV/dD) were calculated from the nitrogen desorption branch using the Barrett–Joyner–Halenda (BJH) method.^[2]

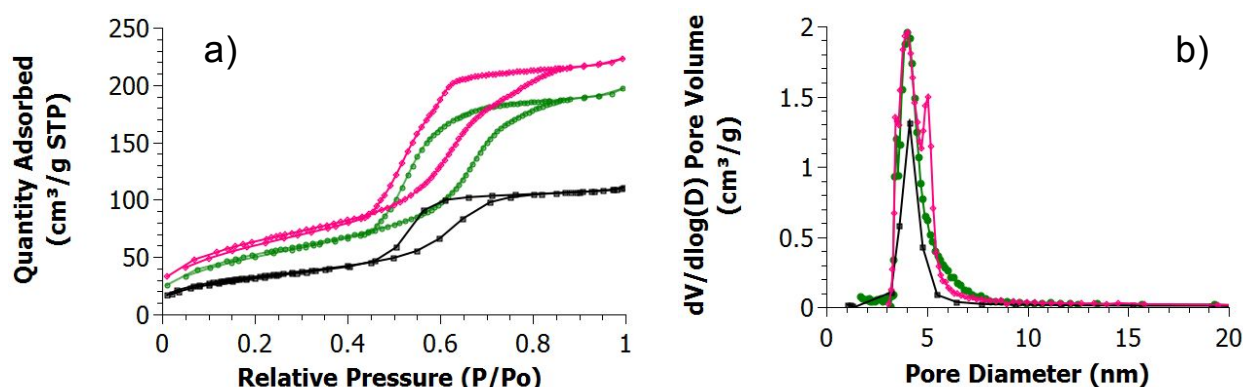


Figure 2S a) Nitrogen adsorption and desorption isotherms and b) BJH pore volume and pore diameter for **CS** (◆), **DCS1** (■) and **DCS2** (●)

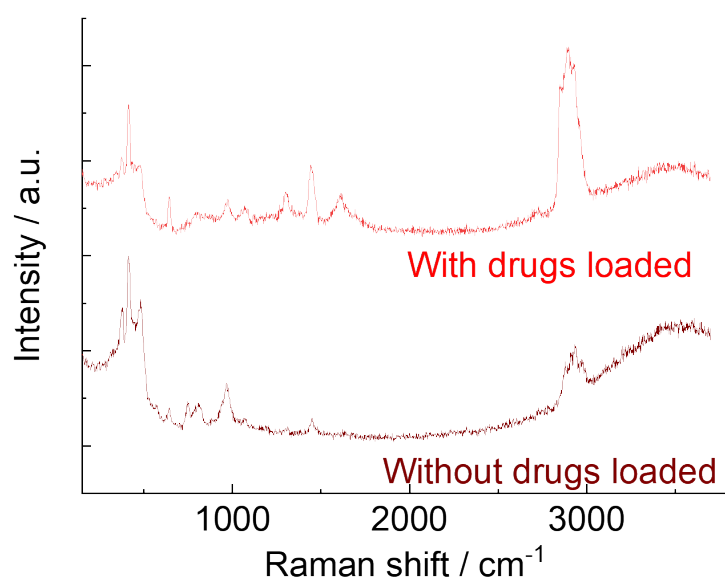


Figure 3S Comparison between Raman spectra of the **DCS1** particles with drugs loaded and without drugs loaded.

References

- [1] S. Brunauer, P. H. Emmett, E. Teller, *J. Am. Chem. Soc.* **1938**, 60, 309.
- [2] E. P. Barrett, L. G. Joyner, P. P. Halenda, *J. Am. Chem. Soc.* **1951**, 73, 373.