

Supplementary information:

Using EISA for the Direct Drug Templating of Therapeutic Vectors with High Loading Fractions, Tunable Drug Release and Controlled Degradation

SI0: Scheme of a low temperature spray drying system

SI1: GISAXS patterns of drug-templated mesoporous thin films

SI2: Environmental Ellipsometric Porosimetry of drug template mesoporous thin films

SI3: Pore Size Distributions of drug-templated aerosol-made mesoporous particles

SC: Stearoyl Choline

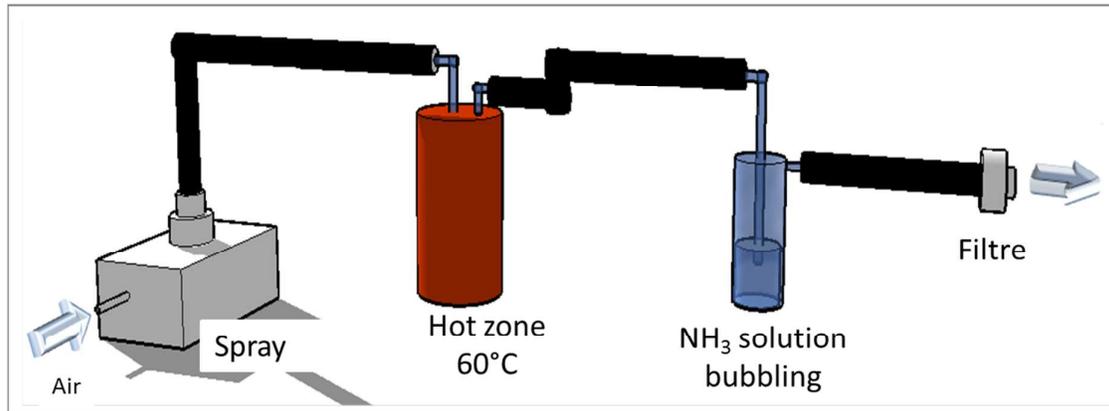
GR: Glycosyl-Resveratrol

SL: Sophorolipid

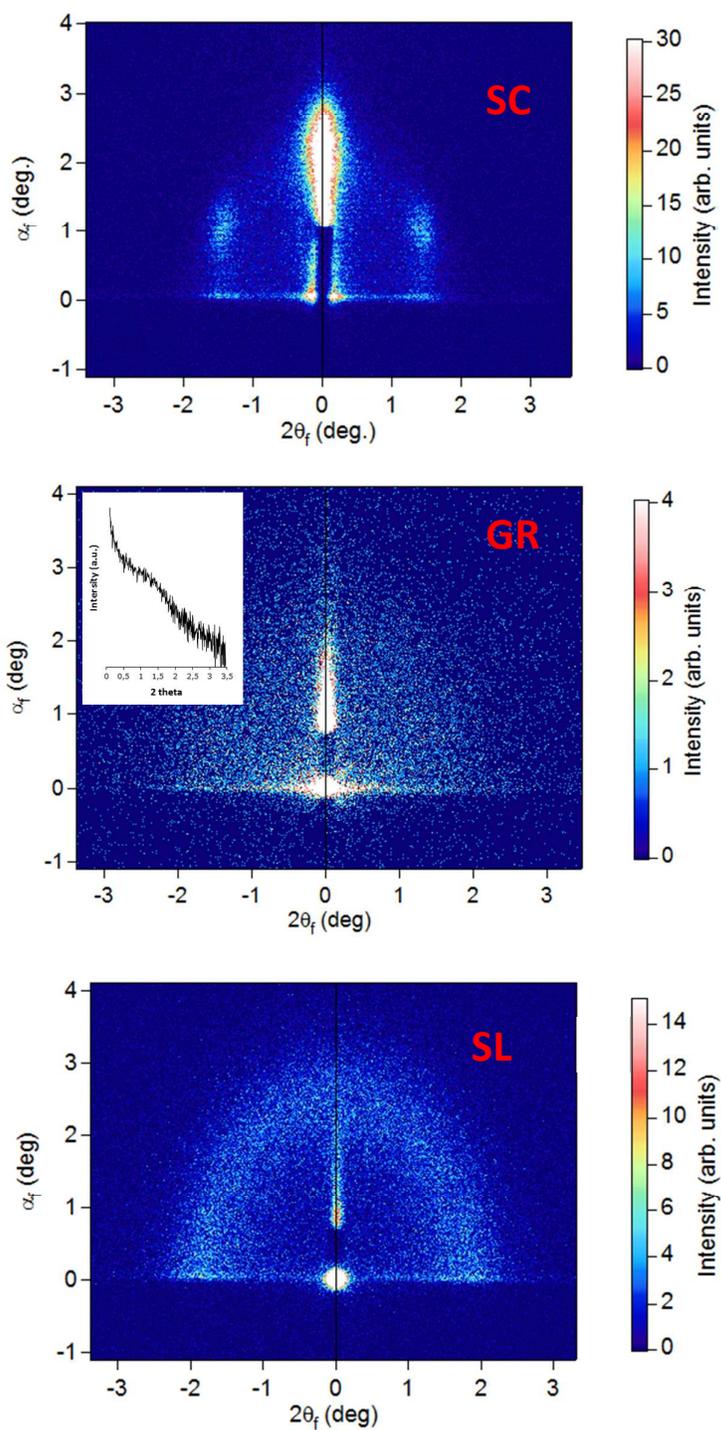
RH: Relative Humidity

PSD: Pore Size Distribution

S10: Scheme of a low temperature spray drying system

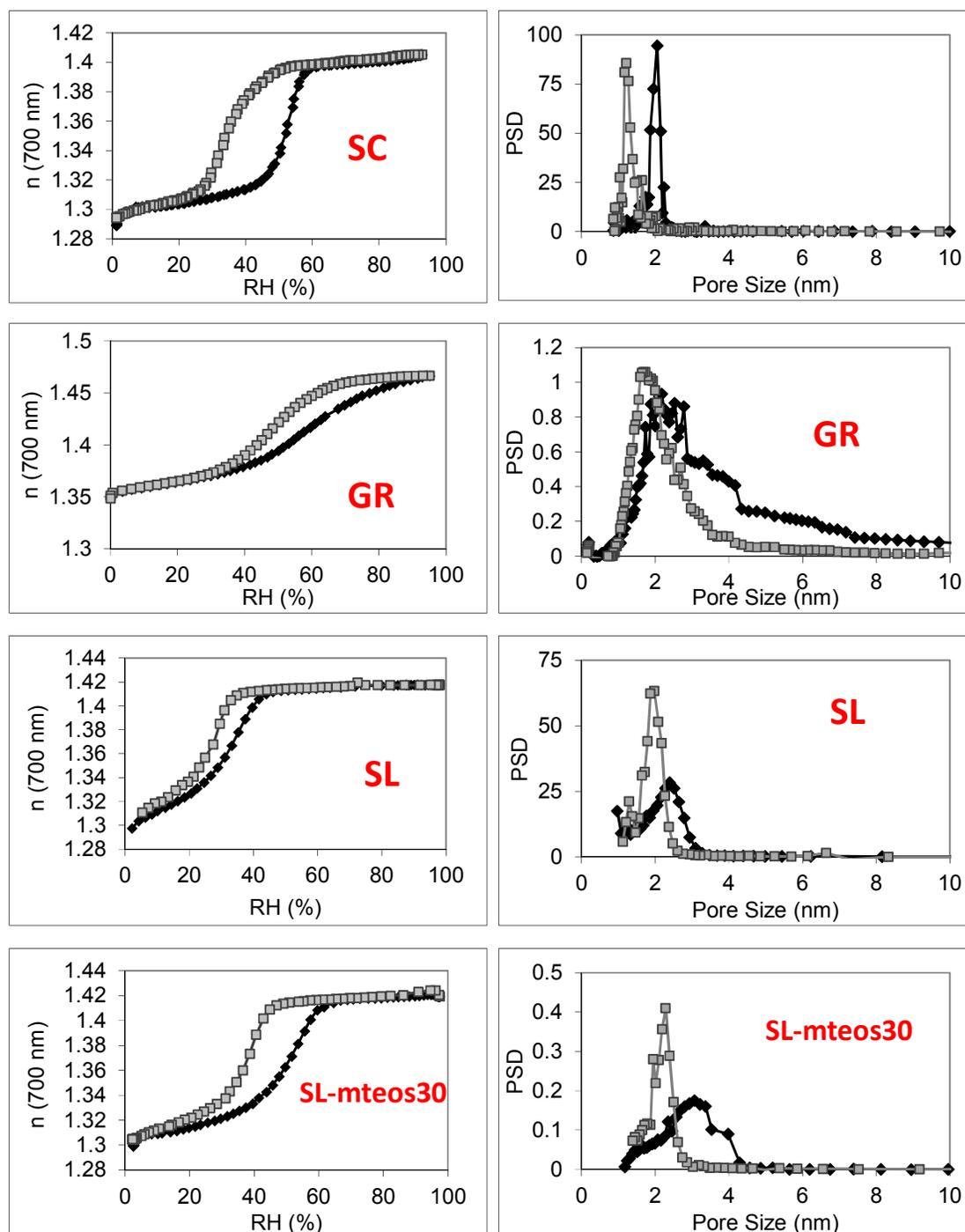


SI1: GISAXS patterns of drug-templated mesoporous thin films



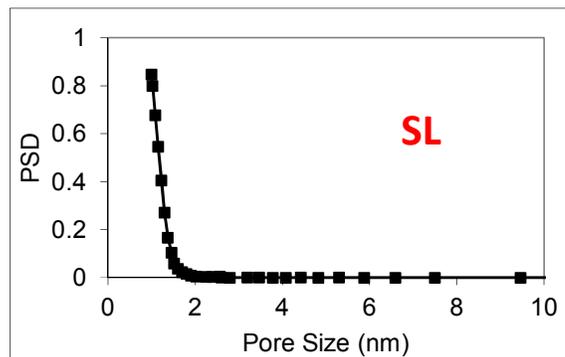
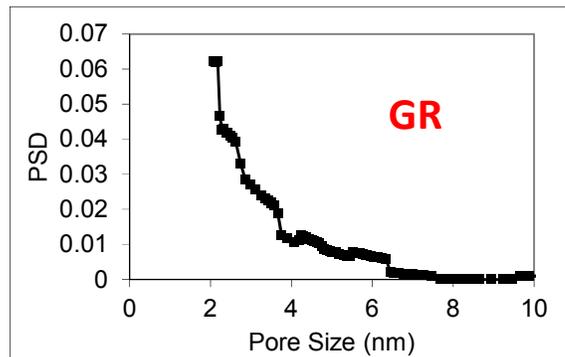
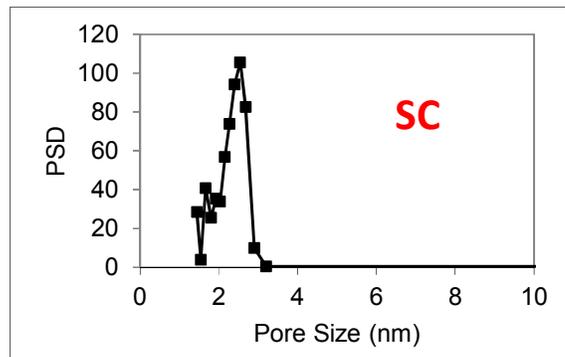
GISAXS patterns of SC,GR and SL-templated mesoporous thin films. SC shows a typical p6m pattern characteristic of a 2D-hexagonal porous structure. GR shows a very poor structuration (insert: radial integration of 2D-GISAXS signal). GISAXS patterns of SL exhibits a correlation ring characteristic of the short range mesostructure of a worm-like structure.

SI2: Environmental Ellipsometric Porosimetry of drug templated mesoporous thin films



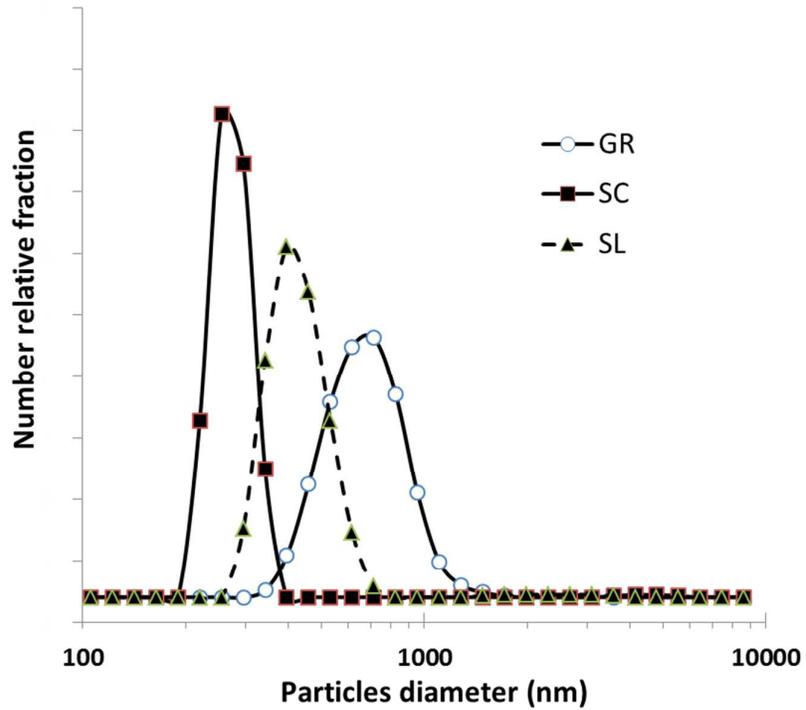
Left: Water adsorption-desorption isotherms of drug-templated films after calcination. Right: Pore Size Distributions (PSD) obtained from modified Kelvin equation assuming cylindrical pore geometry. All materials exhibit a type IV isotherm. The resulting PSD are very sharp in the case of SC (2.1 nm), sharp in the cases of SL (2.4 nm) and SL-mteos 30 (3 nm) and broad in the case of GR (2-10 nm) from adsorption curves.

SI3: Pore Size Distributions of drug-templated aerosol-made mesoporous particles



Pore Size Distributions of SC, GR and SL-templated aerosol-made mesoporous particles computed with the BJH method. SC exhibits a sharp peak centered at 2.5 nm. GR exhibits a broad distribution below 8 nm, SL exhibits a sharp distribution below 2 nm. BJH method is accurately valid beyond 2 nm.

SI4: Diffusion light scattering analyses of as made aerosol particles dispersed in ethanol with 30 sec in ultrasonic bath.



Numeral particle size distribution of as-made aerosol mesostructured vectors dispersed in ethanol. The variation of particle mean size distribution observed in between each system is mainly due to the difference of dilution of the various solutions used for particles generation. GR vectors particle size distribution cannot be compared directly with the two others because this material was prepared with the home-made low temperature spray-drying apparatus schemed in SI 0.