Supporting information

Chemical and pharmaceutical evaluations of relationship between triazole linkers and pore sizes on cyclodextrin-calixarene nanosponges used as carrier for natural drugs.

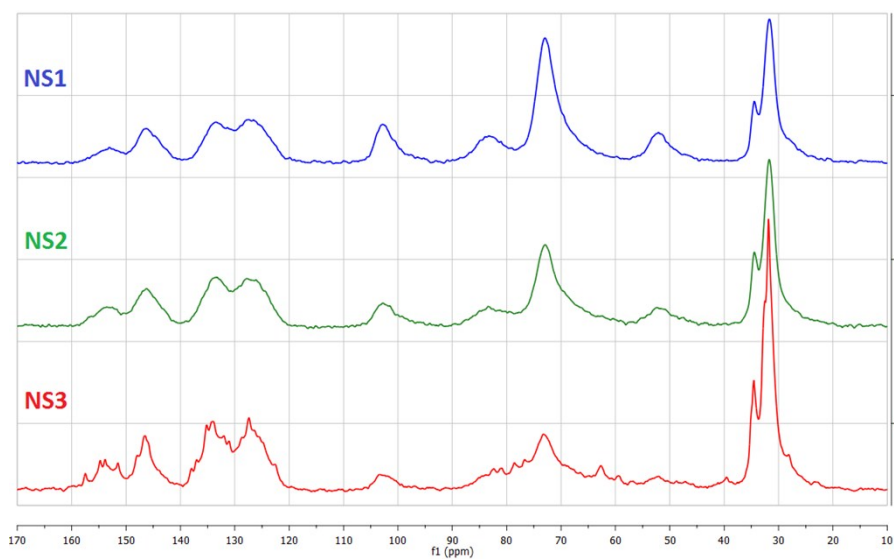M. Massaro, V. Cinà, M. Labbozzetta, G. Lazzara, P. Lo Meo,* P. Poma, S. Riela* and R. Noto.

Figure S1. $^{13}C\{^{1}H\}$CP-MAS NMR of the nanosponges **NS1**-**NS3**.
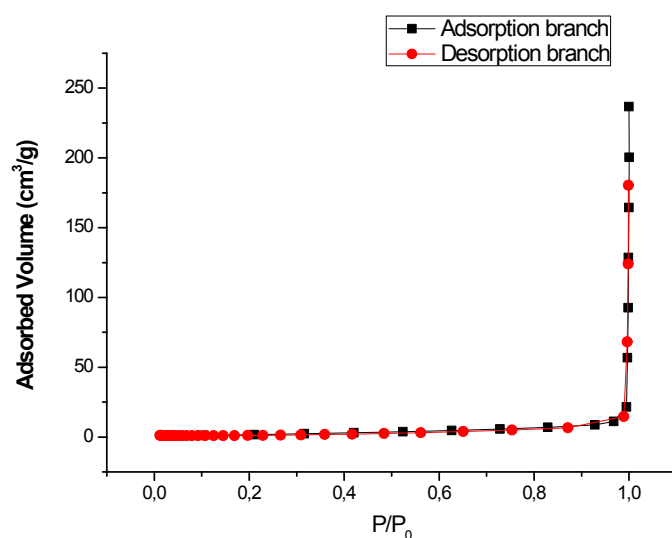

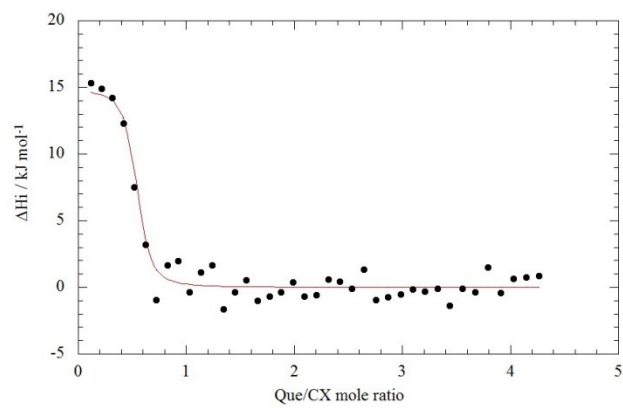**Figure S2.** N_2 adsorption-desorption isotherm of **NS1**.
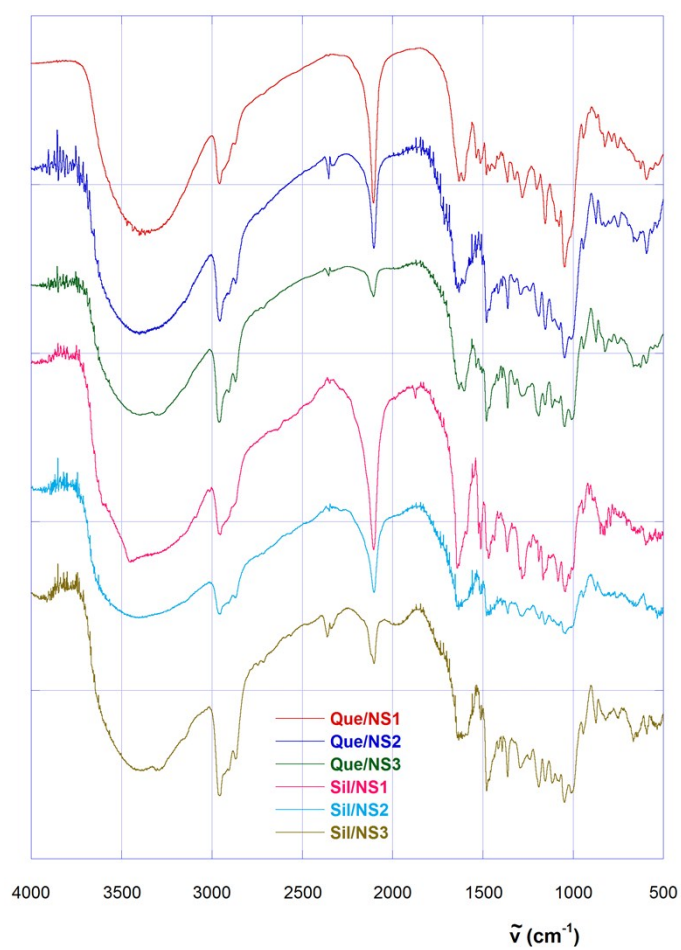
Figure S.3. ITC titration curve.

Figure S.4. FT-IR spectra of the nanocomposites between **Sil** and **Que** and **NSs**.
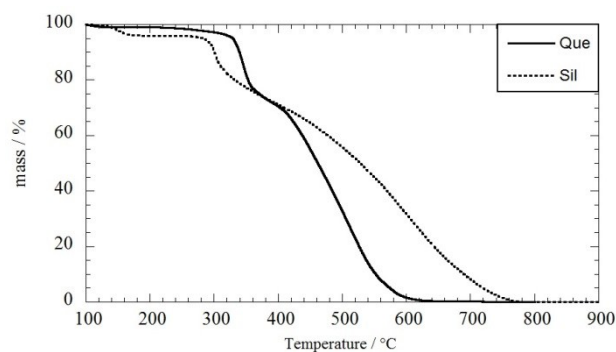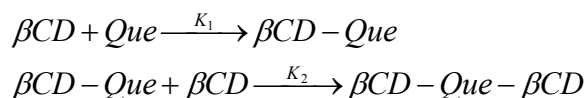
Figure S.5. Thermoanalytical curves of silibinin and quercetin.

The formation of 1:2 Que/βCD complexes has been demonstrated by fluorescence spectroscopy. The fluorescence data provided the equilibrium constant for the quercetin–βCD inclusion complex formation by assuming the equilibria:

$$\beta CD + Que \xrightarrow{K_1} \beta CD - Que$$

$$\beta CD - Que + \beta CD \xrightarrow{K_2} \beta CD - Que - \beta CD$$

The overall association constant will be given by:

$$\beta = K_1 \cdot K_2 = \frac{[\beta CD - Que - \beta CD]}{[Que] \cdot [\beta CD]^2}$$

If [βCD] >> [Que] the change in the fluorescence intensity as function of βCD concentration will be given by:

$$\Delta I = \frac{\Delta \alpha \cdot \beta \cdot Que_t \cdot [\beta CD]^2}{1 + \beta \cdot [\beta CD]^2}$$

where $\Delta \alpha$ is the difference of emission quantum yield of free and complexed substrate, Que_t and [βCD] are the total concentration of quercetin and cyclodextrin, respectively.

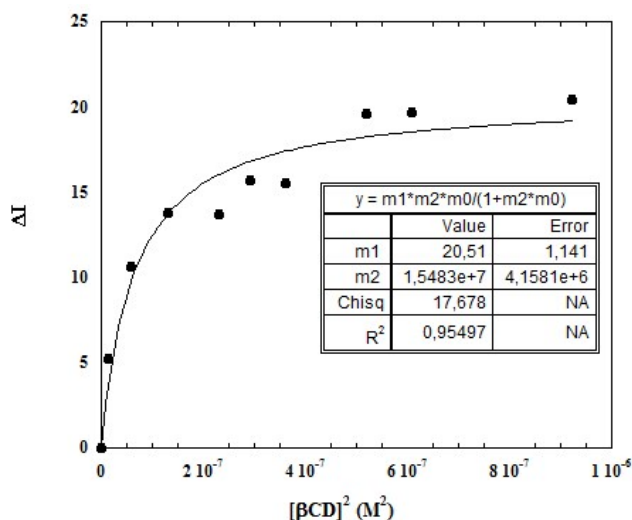**Figure S.6.** Trend of the fluorescence intensity of the quercetin (1×10^{-5} M) as function of βCD concentration (3×10^{-4}- 1×10^{-3} M).