Electronic Supporting Information

Silica – calix hybrid composite of covalently linked allyl calix[4]arene to MCM-41 nanoparticles for sustained release of doxorubicin to cancer cells

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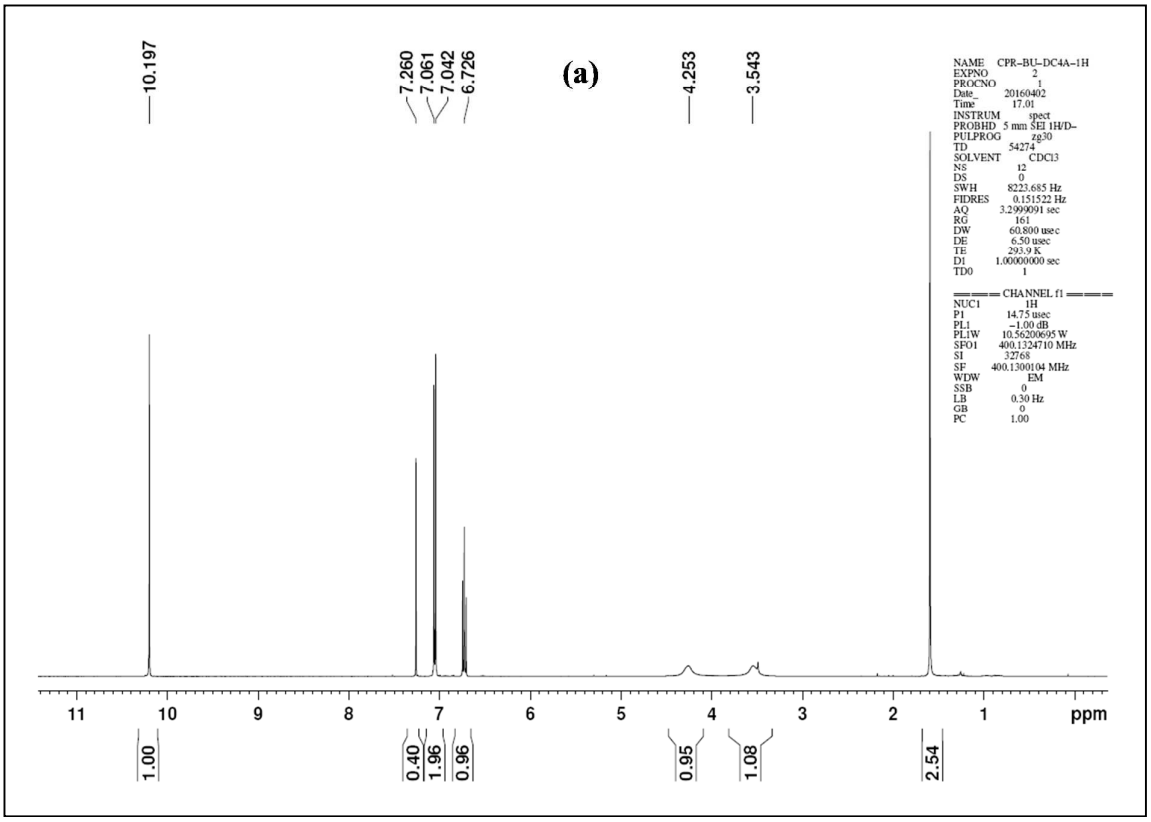
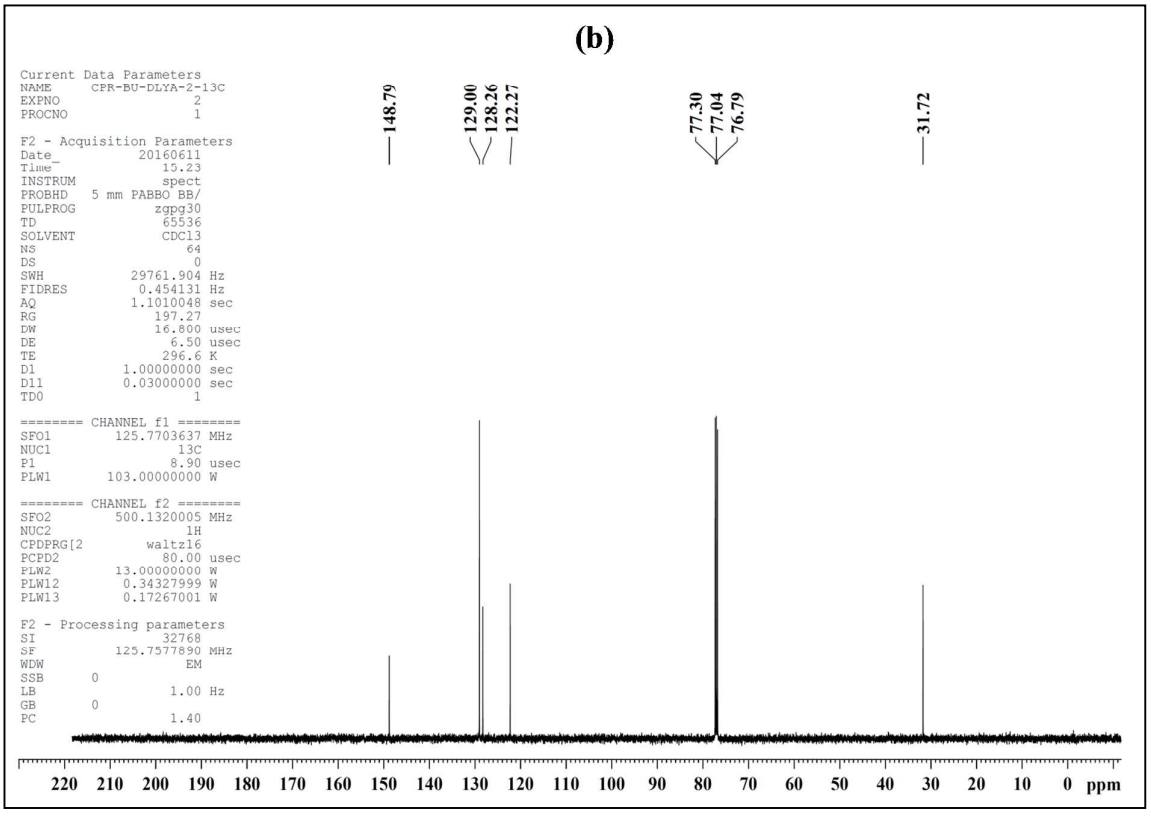
S1. (a) ^{1}H & (b) ^{13}C NMR and (c) ESI-MS spectra of **1a**.





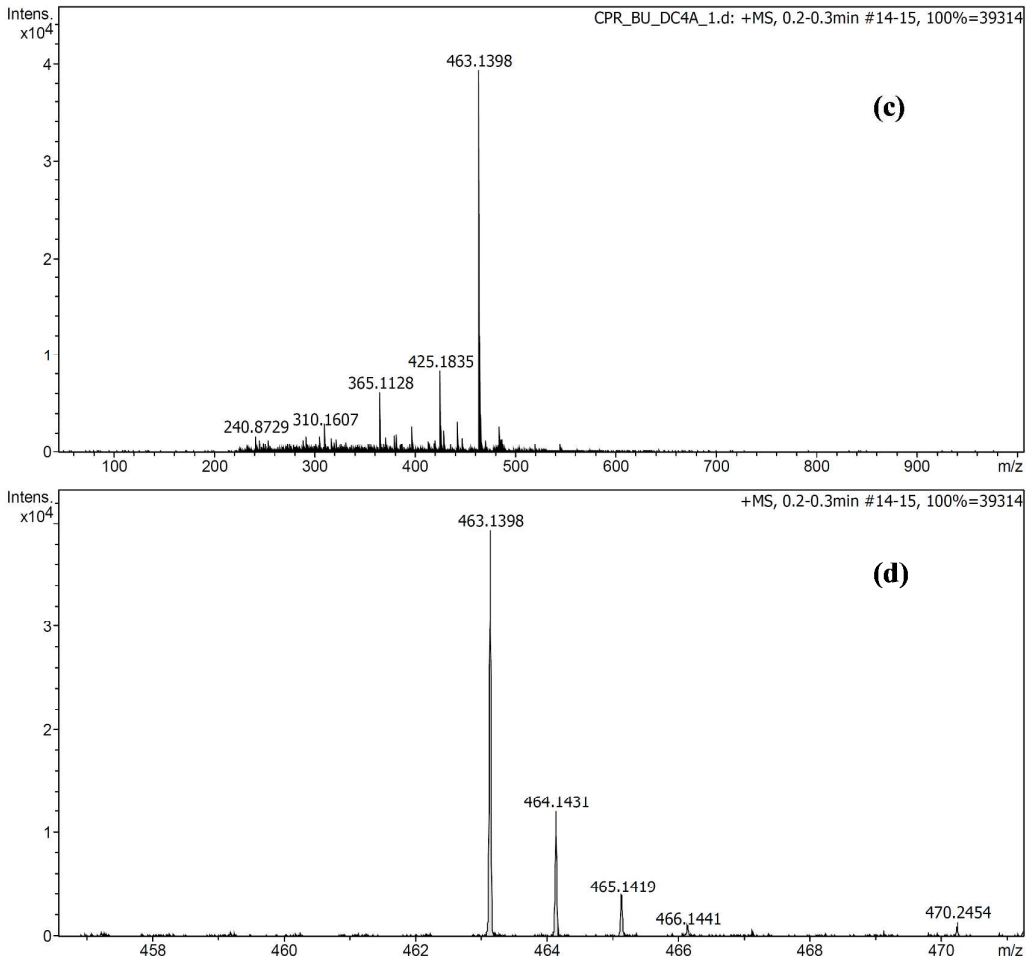
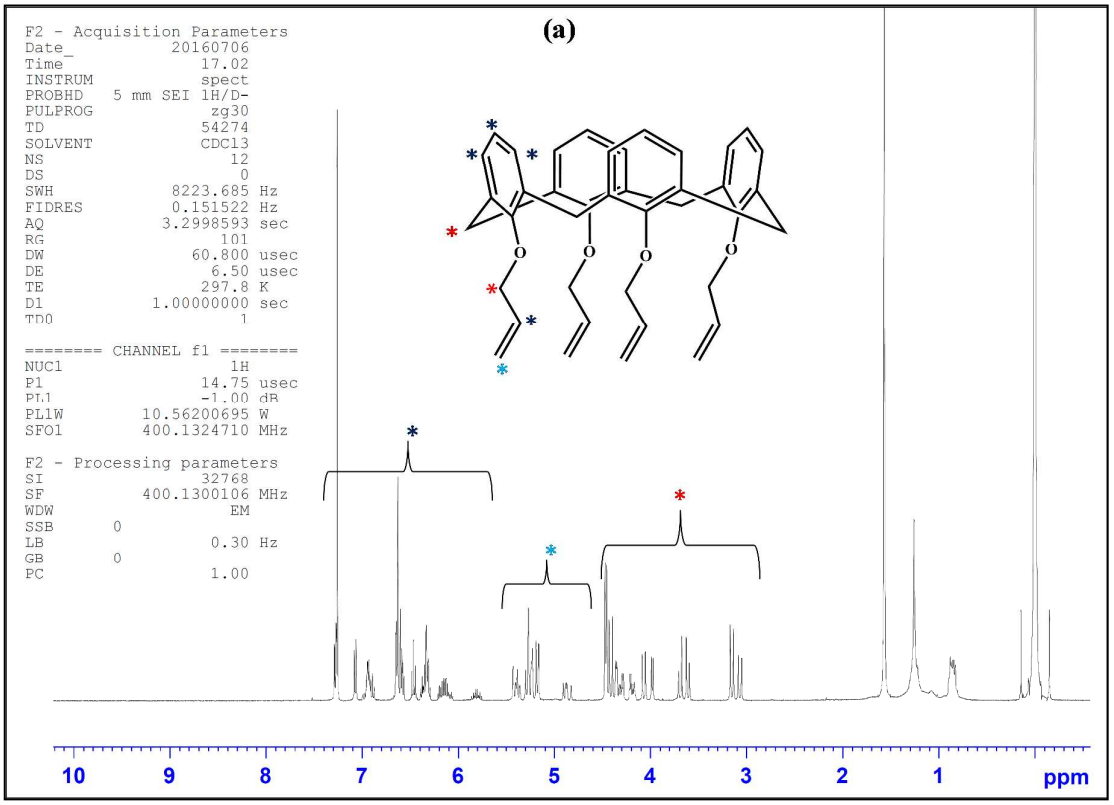
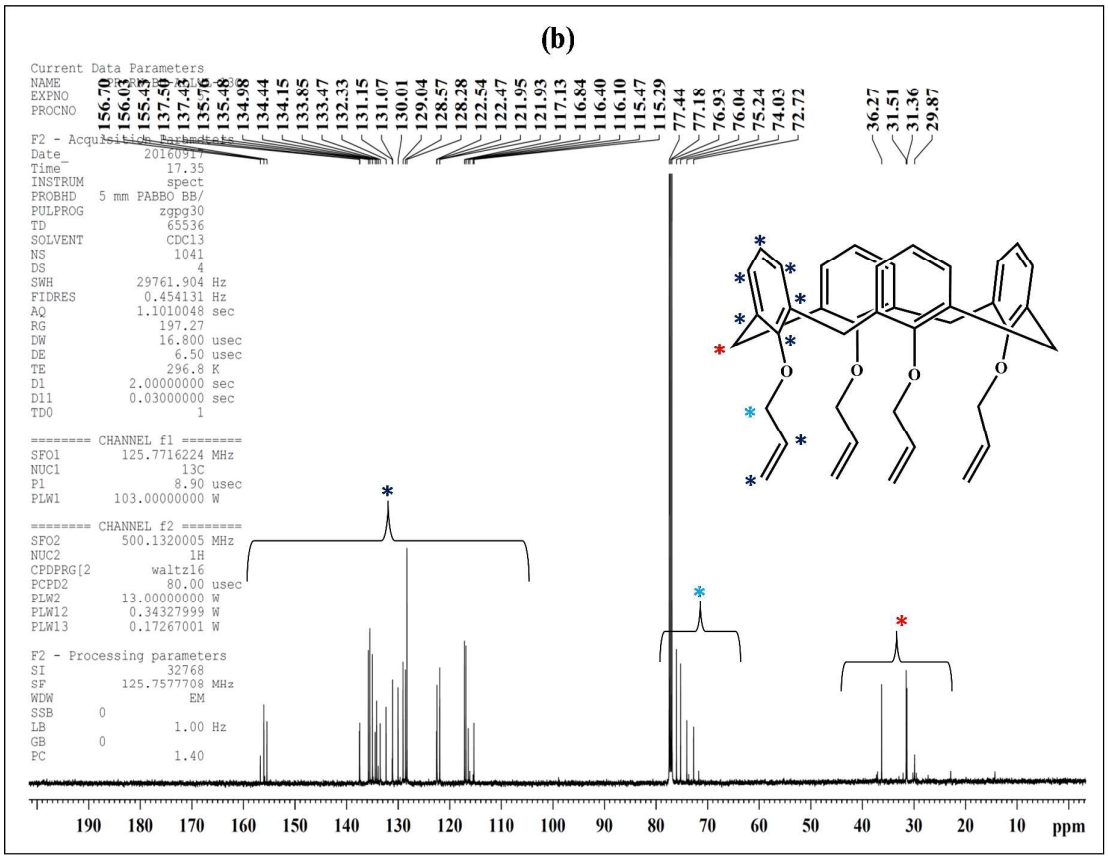


Figure S1. (a) ^{1}H & (b) ^{13}C NMR, (c) ESI-MS and (d) Expanded MS [M+K] spectra of **1a**.

S2. (a) ^{1}H & (b) ^{13}C NMR and (c) ESI-MS spectra of **1b**.





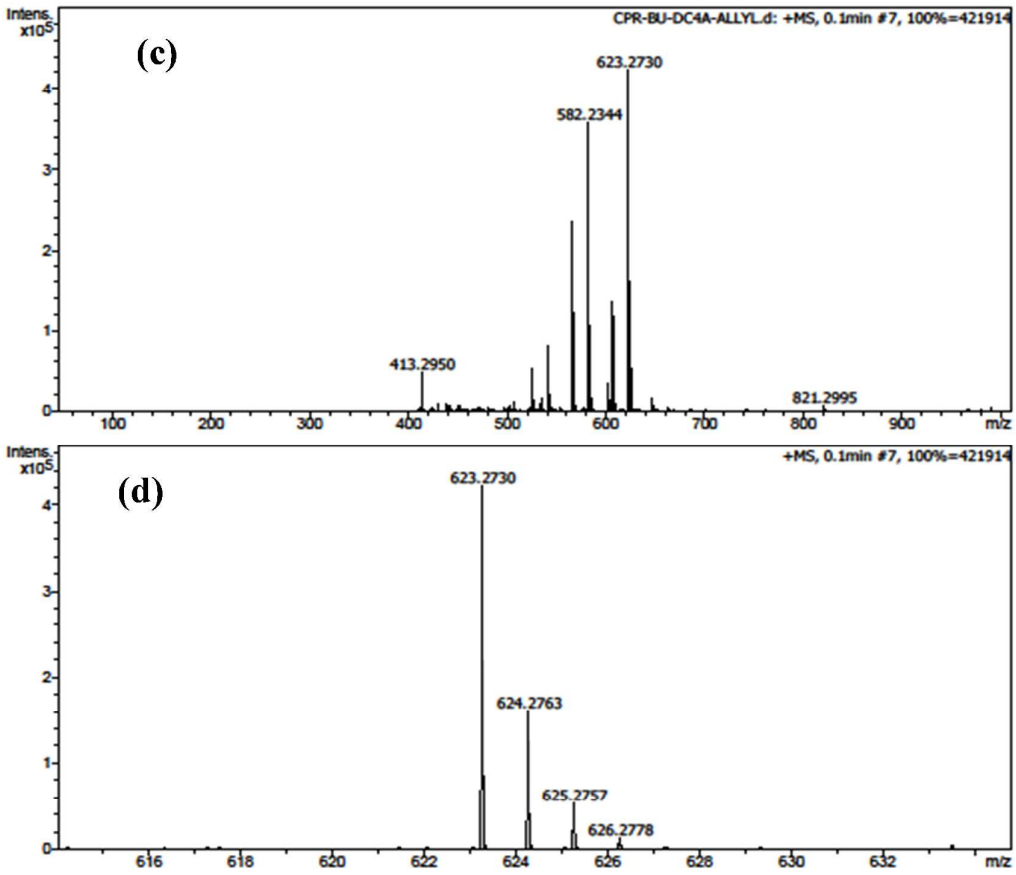
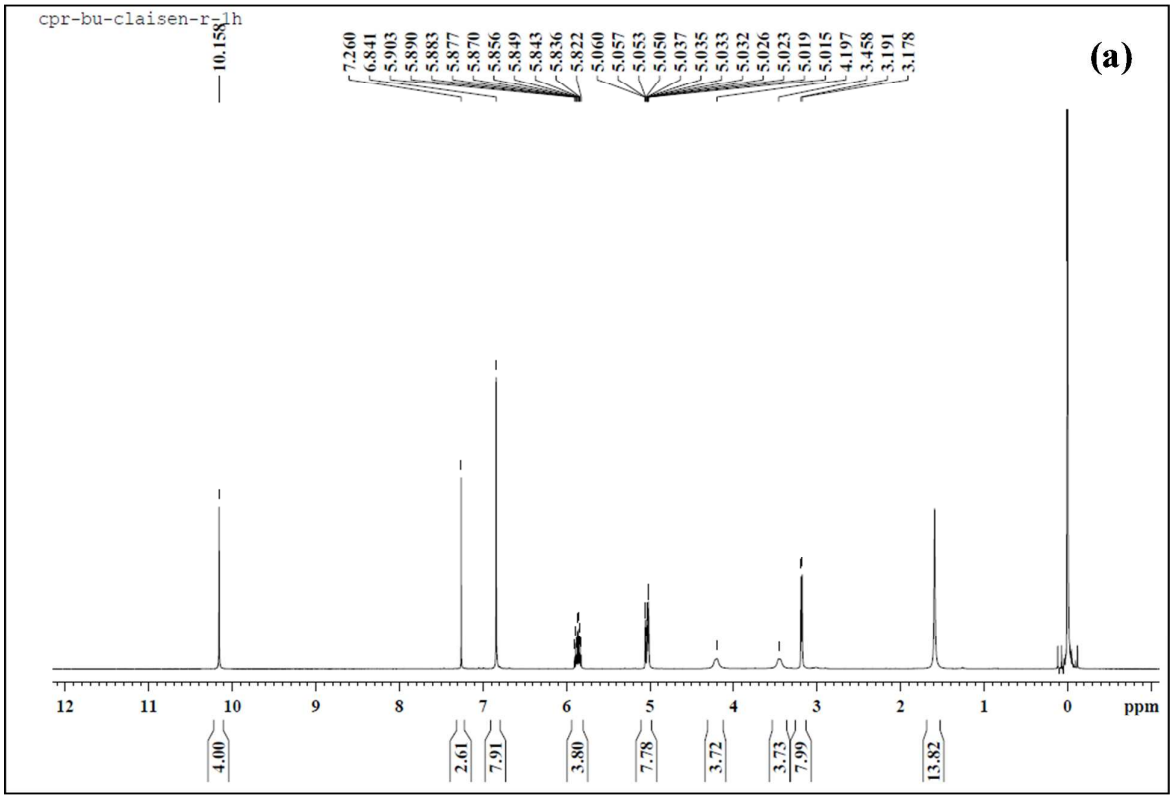
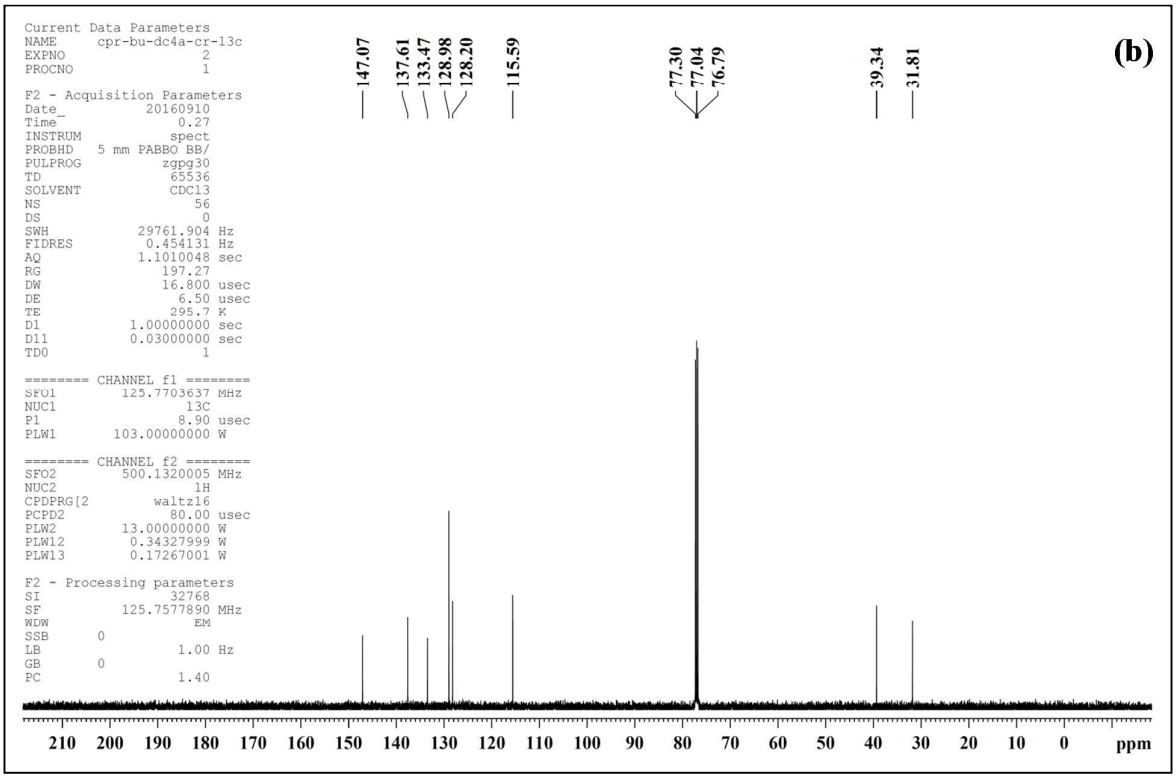


Figure S2. (a) ^{1}H & (b) ^{13}C NMR, (c) ESI-MS and (d) Expanded MS [M+K] spectra of **1b**.

According to literature based on ^{1}H & ^{13}C NMR spectra [*J. Am. Chem. Soc*. **1982**, *104*, 2652-2653; *Tetrahedron,* **1983,** 39, 409-426], **1b** is present in the partial cone plus other conformers. Therefore, one will expect a complex pattern & spectrum in 3.0 to 5.0 ppm since the resonances of bridge-CH_2-, arm -O-CH_2- and -CH=CH_2 appear in this region (labelled in the figure). The ^{13}C NMR showed the signals in the regions 156-115 (aryl & vinyl), 76-72 (OCH_2) and 37-29 (bridge –CH_2) ppm corresponding to *aryl* and *C*=*C* (vinyl) carbons, O*C*H_2 and Ar-*C*H_2-Ar, respectively. Thus the obtained NMR spectra are in agreement with the literature reported ones.

S3. (a) ^{1}H and (b) ^{13}C NMR and (c) ESI-MS spectra of allylCalix.





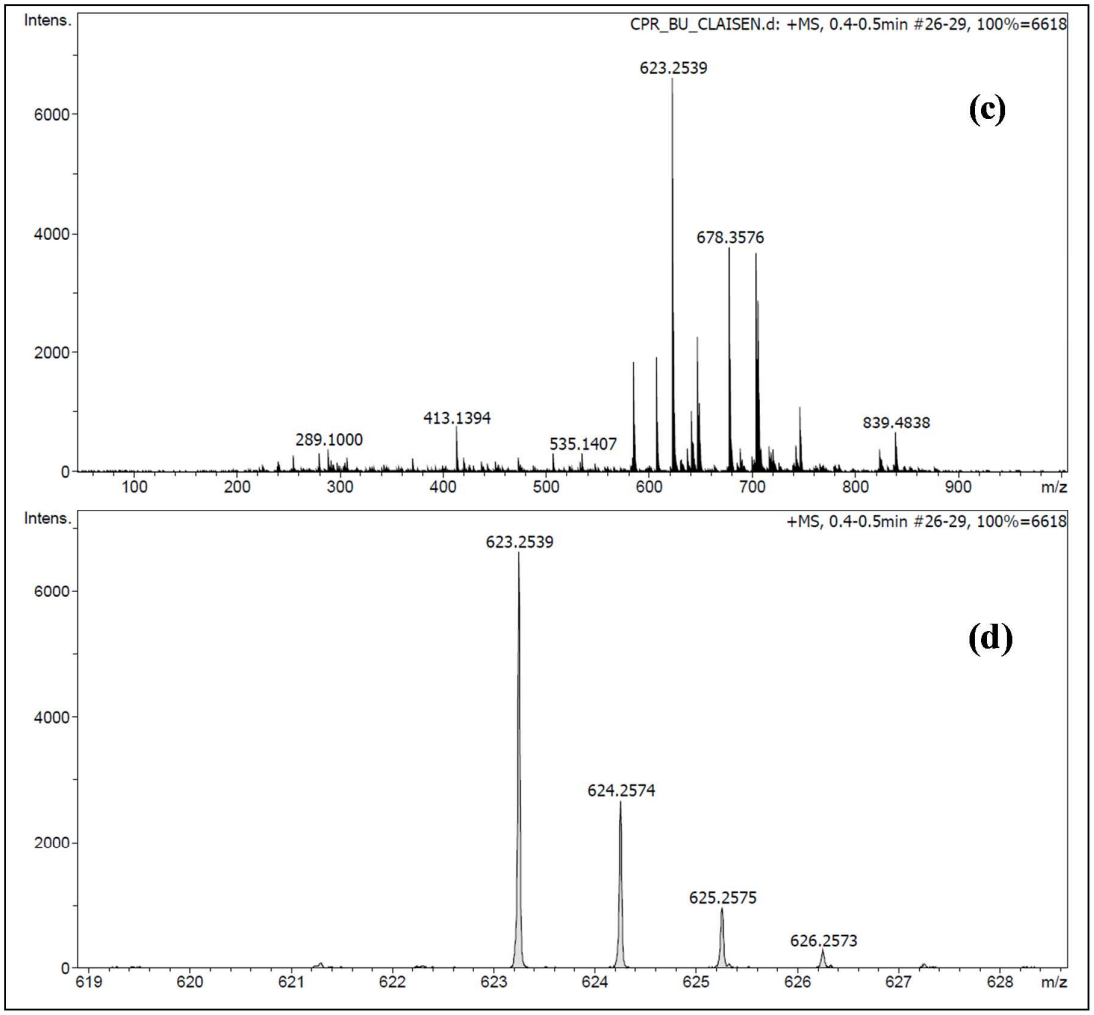


Figure S3. (a) ^{1}H & (b) ^{13}C NMR, (c) ESI-MS and (d) Expanded MS [M+K] spectra of allylCalix.

S4. Flowcytometry analysis of Dox internalization into HeLa cells.

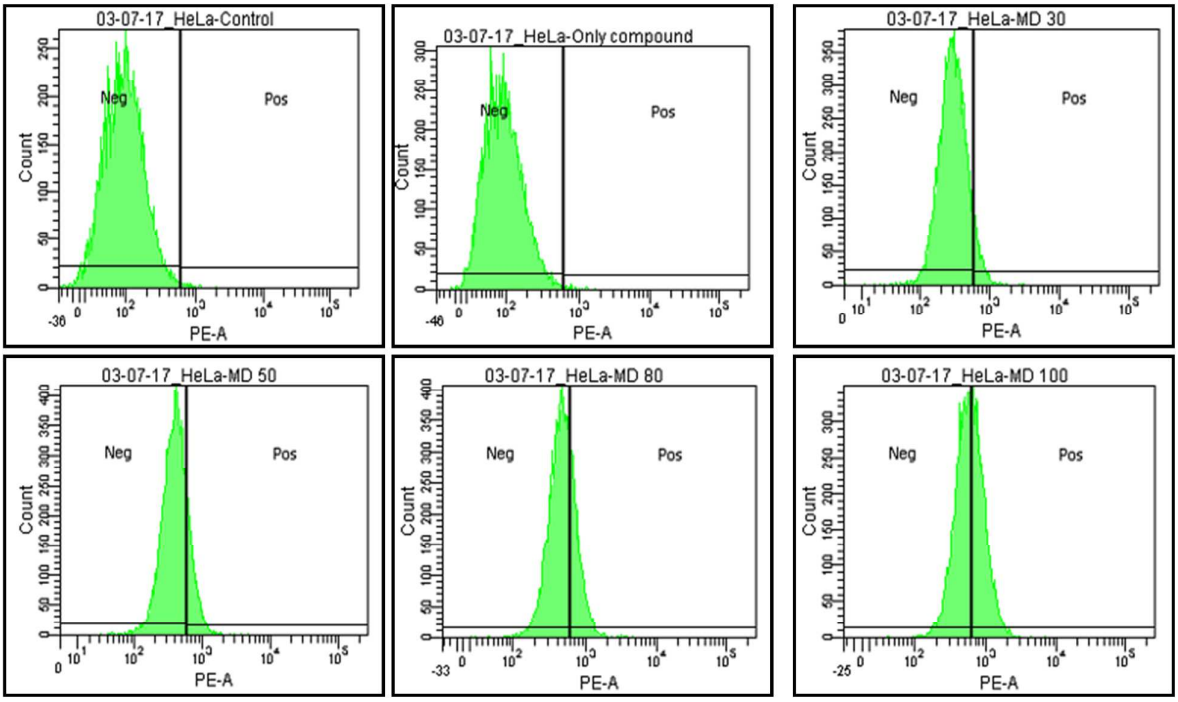


Figure S4. Flowcytometry analysis of Dox internalization into HeLa cells. Here the controls are simple cells and the cells treated with MCM-allylCalix alone (no Dox loading). 'MD' is MCM-allylCalix-Dox.

S5. Flowcytometry analysis of Dox internalization into MCF7 cells.

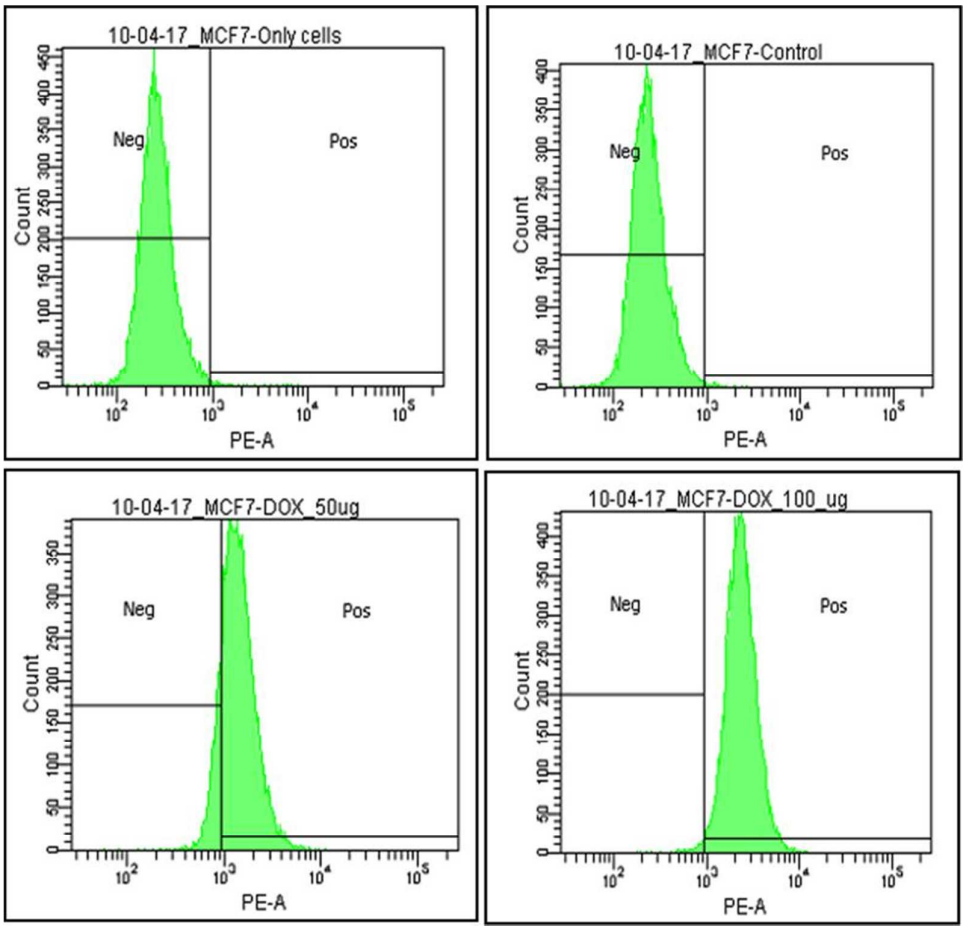


Figure S5. Flowcytometry analysis of Dox internalization into MCF7 cells. Here, the controls are simple cells and the cells treated with MCM-allylCalix alone (no Dox loading). 'MD' is MCM-allylCalix-Dox.

S6. Localization of Dox into HeLa cells upon treating with MCM-allylCalix-Dox.

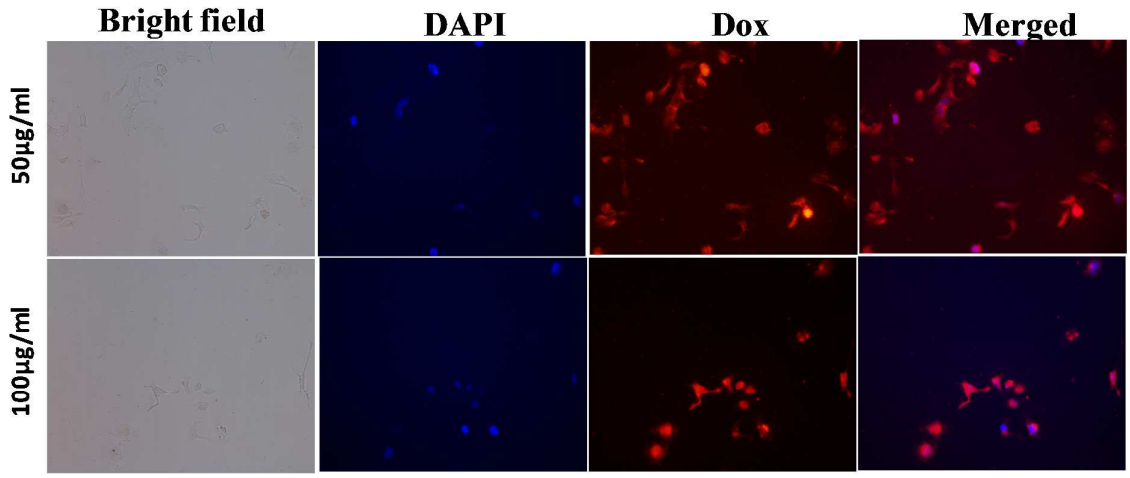


Figure S6. Localization of Dox in HeLa cells upon treating with two concentrations of MCM-allylCalix-Dox for 48 h of incubation.

S7. Fluorescence intensities of Dox internalized into MCF7 & HeLa cells based on microscopy.

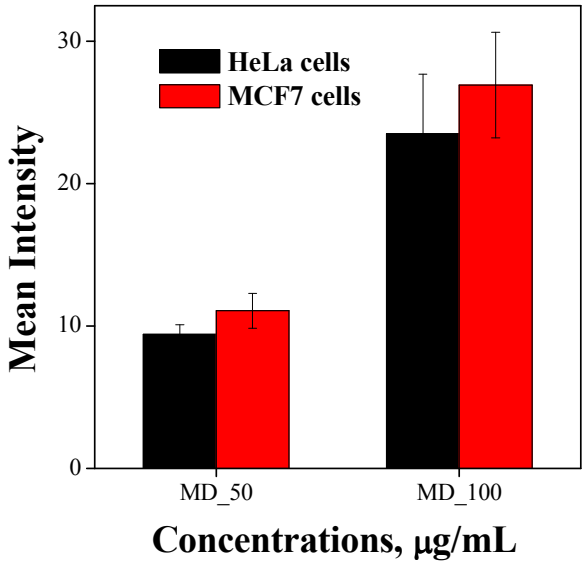


Figure S7. Fluorescence intensities measured upon internalization of Dox into MCF7 & HeLa cells when treated with two different concentrations of MD (MCM-allylCalix-Dox) based on microscopy. 'only cells' is a control having no 'MD'.