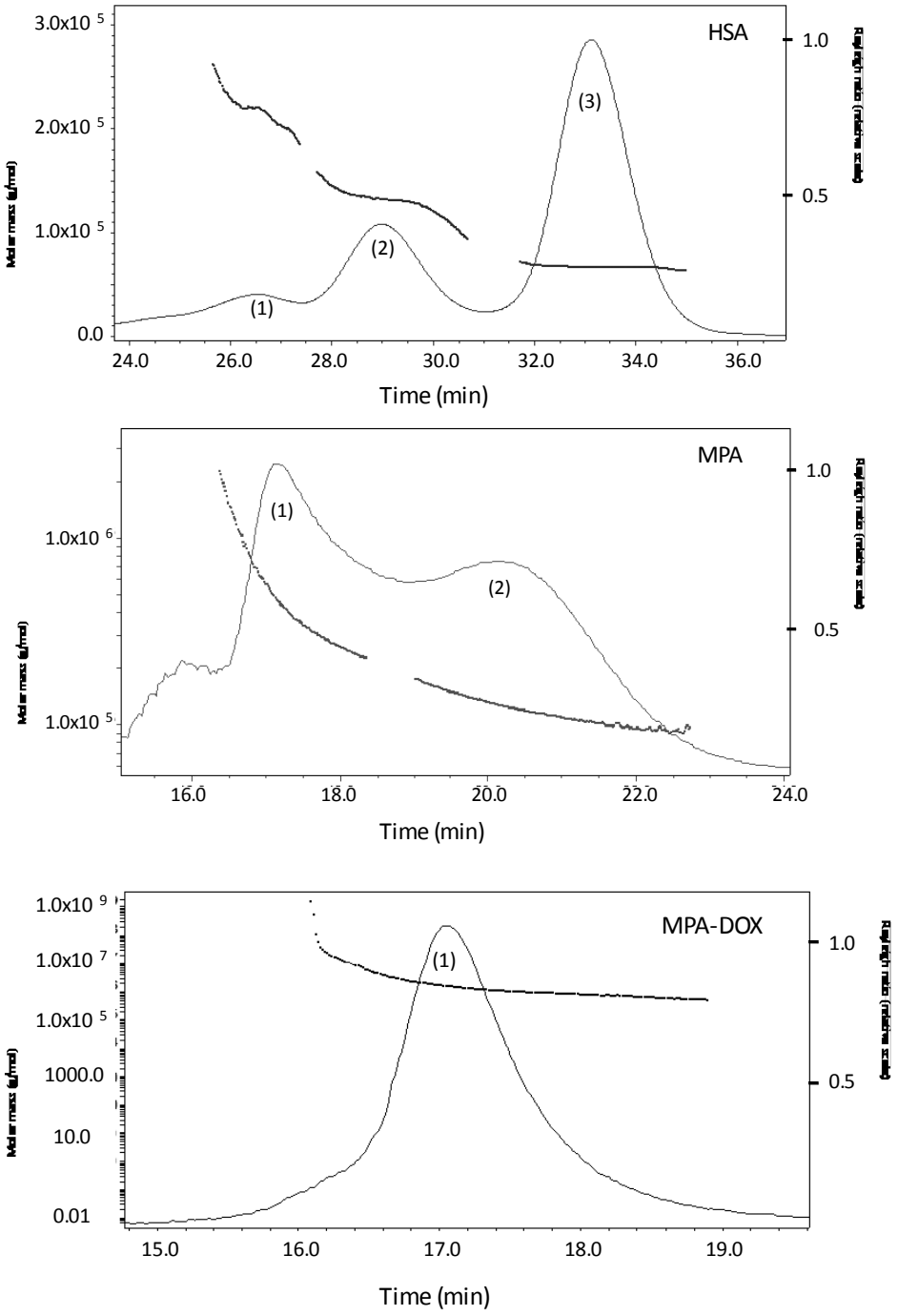

Figure S.1. The reaction progress of MPA-Dox. The intermediates and final products were analyzed by FPLC-QELS. Dotted line: molar mass. Solid line: Rayleigh ratio.

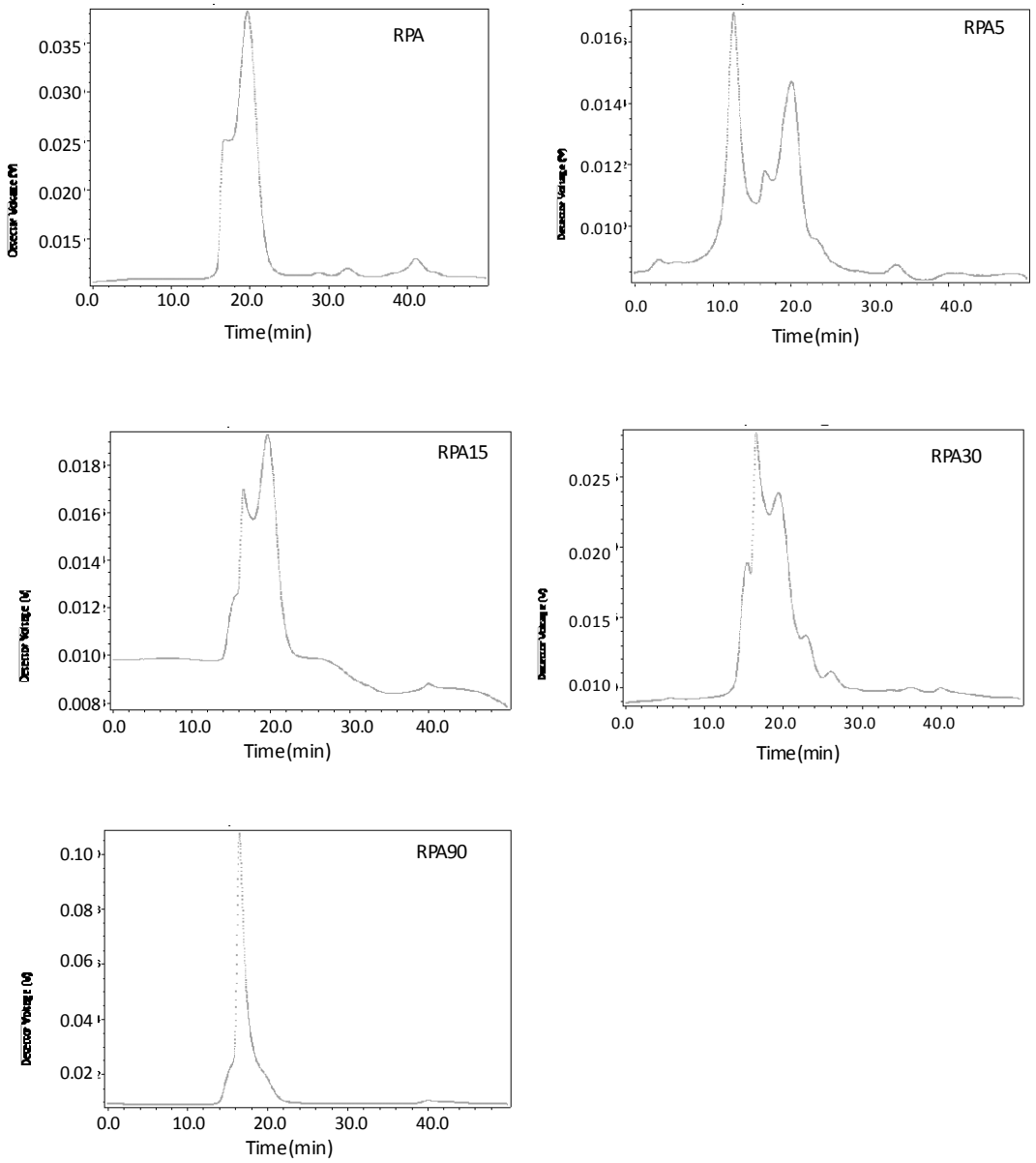

Figure S.2. FPLC_QELS analysis of RPA and its doxorubicin derivatives. UV absorbance versus column run time.

Table S.1. The formulation kinetics of RPA-DOX

	RPA5	RPA15	RPA30	RPA90
				
Input (RPA : SPDP : DOX)[a]	1 : 5 : 5	1 : 15 : 15	1 : 30 : 30	1:30:90
Conjugated DOX (before dialysis) (RPA : DOX)[b]	1 : 3.2	1 : 11.6	1 : 23.1	1 : 27.4
Final total DOX (After dialysis) (RPA : DOX)[c]	1 : 1.4	1 : 4.2	1: 13.1	1 : 44.0
Nanoparticle formation[d]	Partially	Partially	Partially	Completely

[a]: SPDP was in the form of sulfo-LC-SPDP, DOX was doxorubicin thiol derivative, the ratio among RPA and SPDP and DOX is a molar ratio;

[b]: the quantity of chemically conjugated doxorubicin was determined by monitoring the release of pyridine-2-thione from sulfo-LC-SPDP using UV spectrum[43];

[c]: the quantity of doxorubicin associated with RPA was determined by UV-Vis analysis method[31];

[d]: Nanoparticle formation was evaluated by FPLC-QELS, seen in Figure S.2.

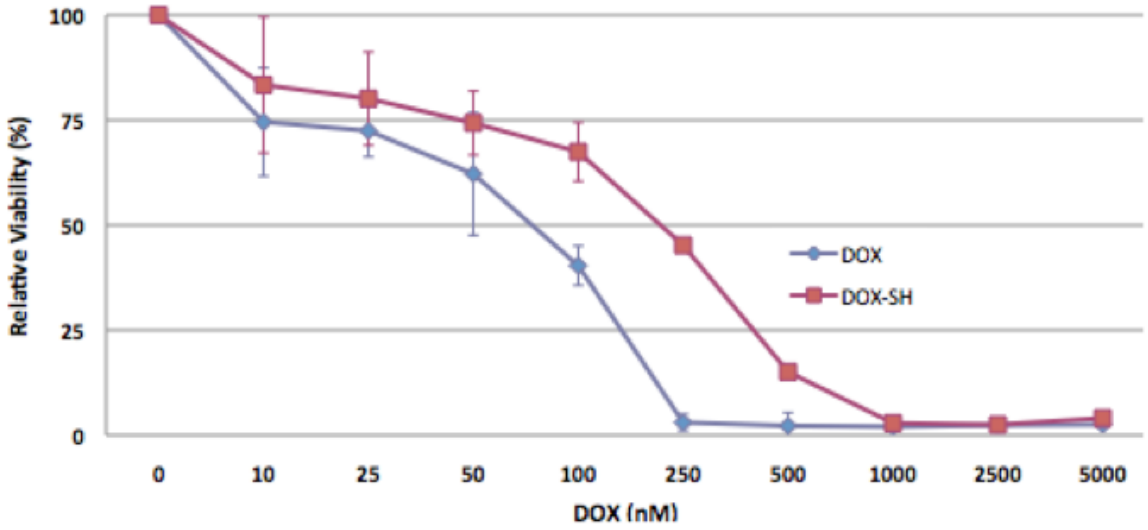

Figure S3. The relative cytotoxicity of unmodified doxorubicin versus the thiolated form used in this study was evaluated using an MTT assay. The data presented here derives from a separate experiment from that shown in Figure 8.