

## Supplementary information

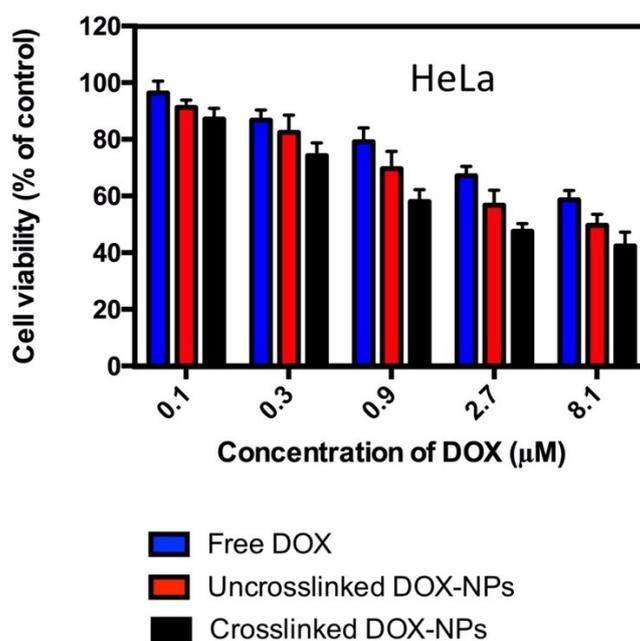
### Glutathione-responsive nanoparticles from a sodium alginate derivative for selective release of doxorubicin in tumor cells

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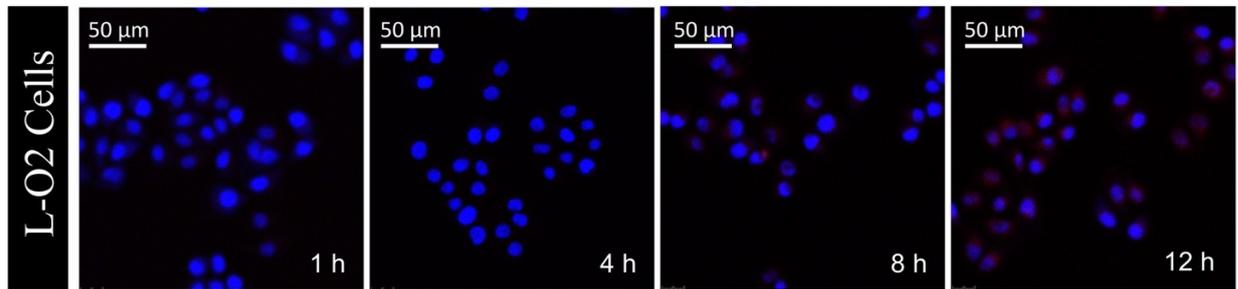
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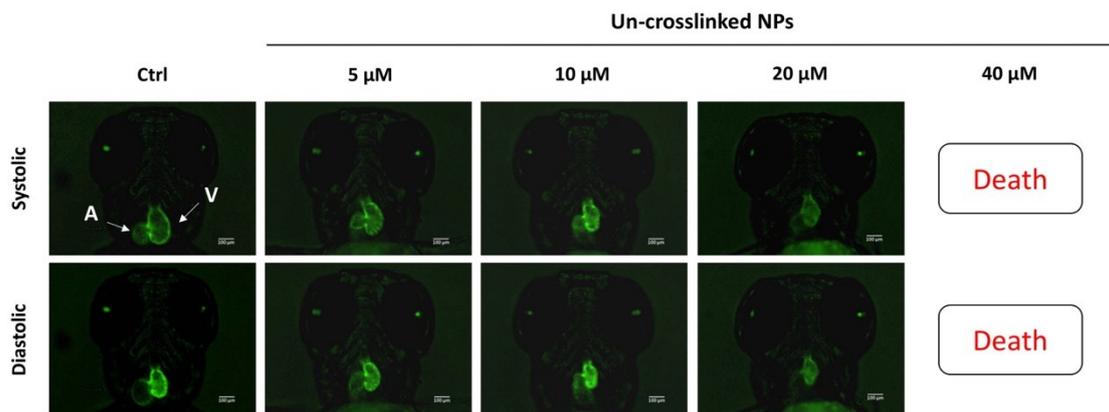
**Figure S1.** Cytotoxicity evaluation of free DOX, uncrosslinked DOX-NPs and crosslinked DOX-NPs that were incubated for 24 h with HeLa cells.

**Table S1.** The mean size (diameter) and size distribution of crosslinked nanoparticles incubated with the cell culture media at different time points.

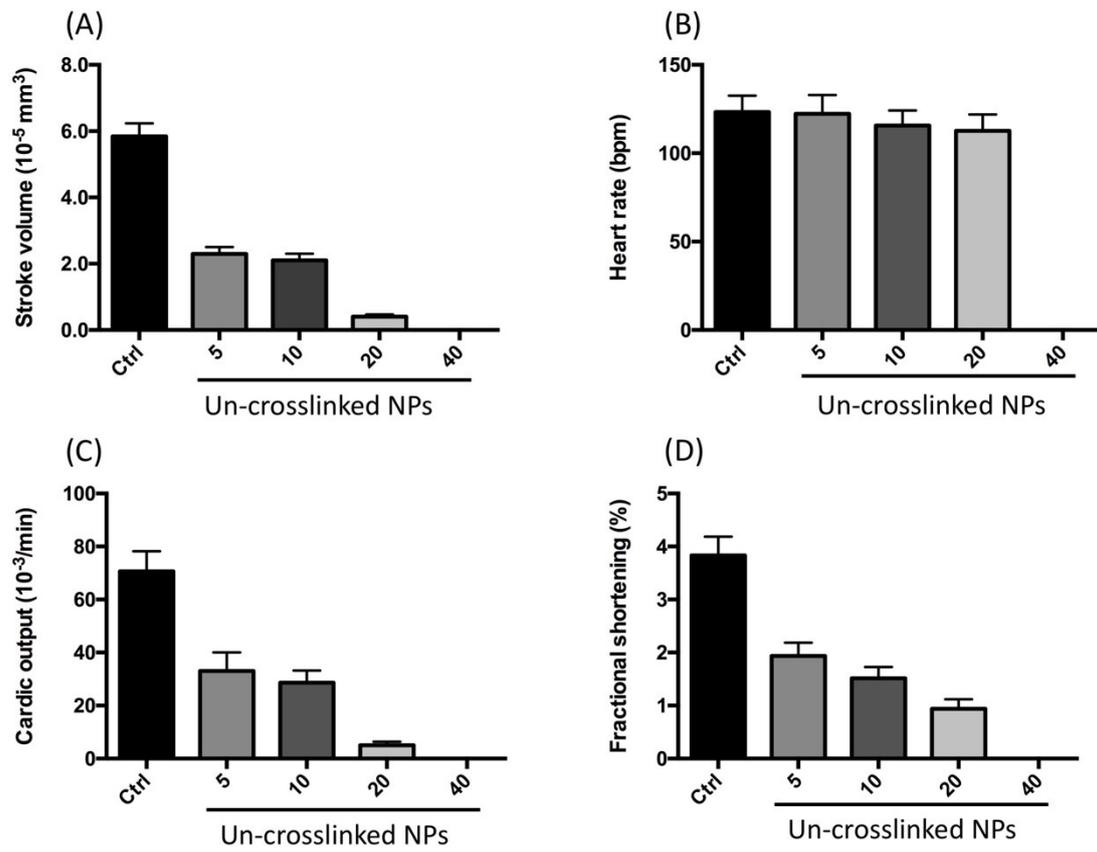
Time (h)	Diameter (nm)	PDI	Zeta potential (mV)
0	106.6	0.204	-18.3
6	113.4	0.226	-17.3
12	125.5	0.267	-15.4
24	139.2	0.292	-13.6



**Figure S2.** Cellular uptake behavior of crosslinked DOX-NPs in L-O2 cells (incubation for up to 12 h).



**Figure S3.** Representative fluorescent images of zebrafish exposed to various concentrations of un-crosslinked DOX-NPs for 2 days. “A” denotes atrium, and “V” denotes ventricle.



**Figure S4.** Cardiac functions of zebrafish exposed to various concentrations of un-crosslinked NPs for 2 days; (A) Stroke volume, (B) Heart rate, (C) Cardiac output and (D) FS % Data are presented as mean  $\pm$  S.D. (n =16).