

Supplementary information

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

Cheng Gao,^a Fan Tang,^a Jianxiang Zhang,^b Simon M.Y. Lee^{a,*} and Ruibing Wang^{a,*}

^a State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau, Taipa,

Macao, China. *E-mail: rwang@umac.mo; simonlee@umac.mo; Tel: +853-8822-4689

^b Department of Pharmaceutics, College of Pharmacy, Third Military Medical University, Chongqing 400038, China.

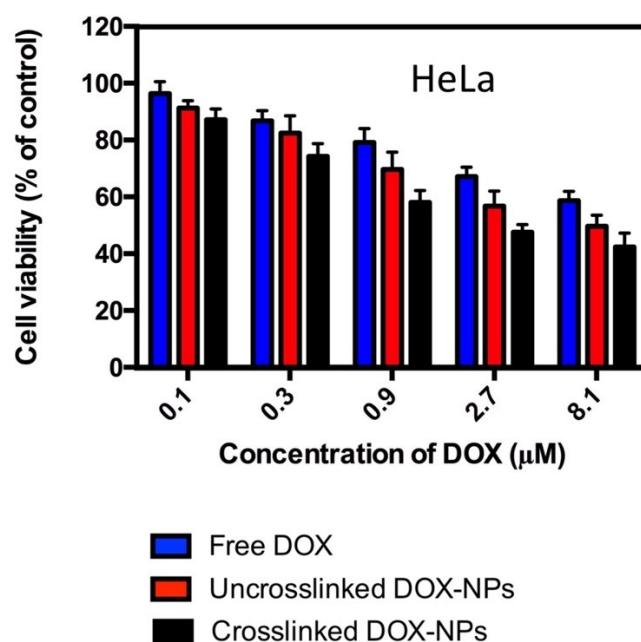


Figure S1. Cytotoxicity evaluation of free DOX, uncrosslinked DOX-NPs and crosslinked DOX-NPs that were incubated for 24 h with HeLa cells.

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 |

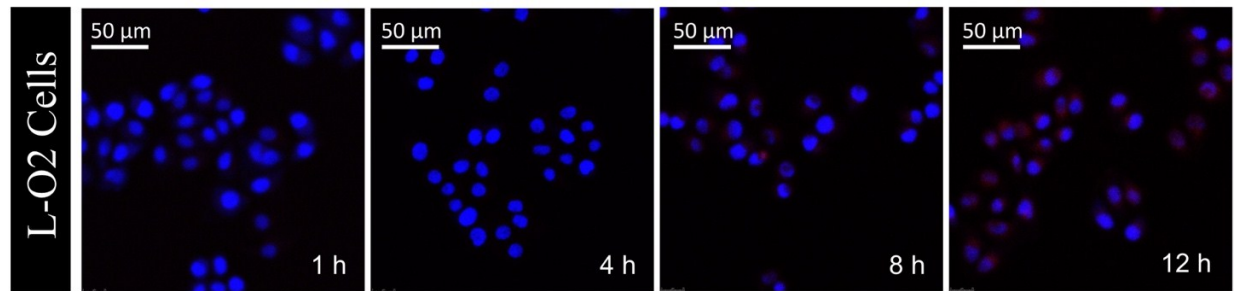


Figure S2. Cellular uptake behavior of crosslinked DOX-NPs in L-O2 cells (incubation for up to 12 h).

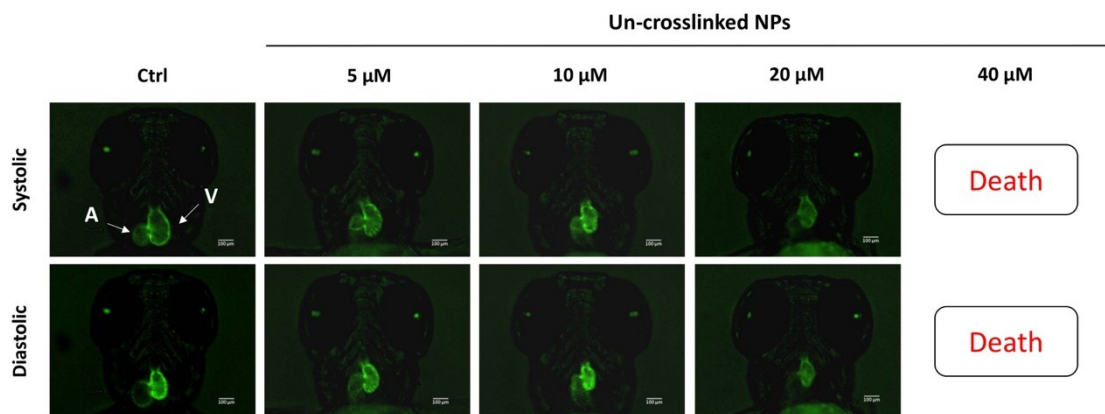


Figure S3. Representative fluorescent images of zebrafish exposed to various concentrations of un-crosslinked DOX-NPs for 2 days. “A” denotes atrium, and “V” denotes ventricle.

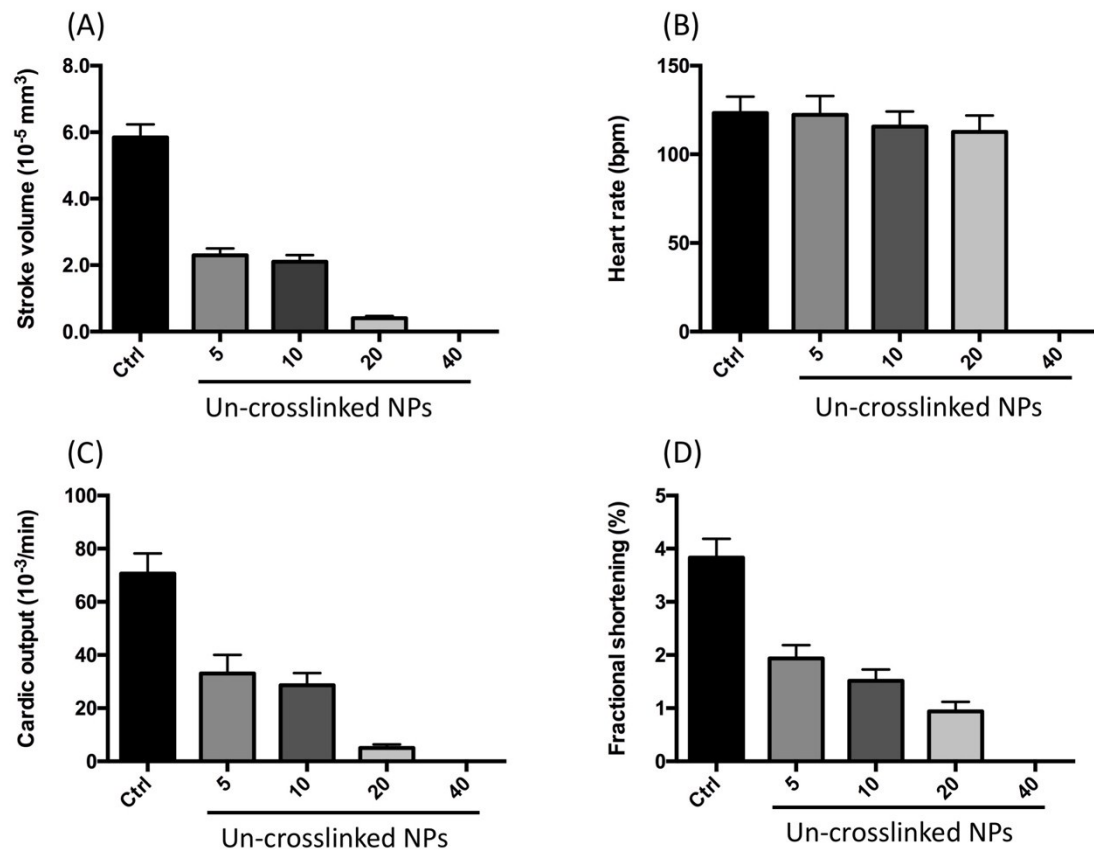


Figure S4. Cardiac functions of zebrafish exposed to various concentrations of un-crosslinked NPs for 2 days; (A) Stroke volume, (B) Heart rate, (C) Cardiac output and (D) FS % Data are presented as mean \pm S.D. (n =16).