

† Electronic Supplementary Information (ESI)

Co-delivery of siRNA and paclitaxel into cancer cells by hyaluronic acid modified redox-sensitive disulfide-crosslinked PLGA-PEI nanoparticles†

Yan Shen^{a#}, Jue Wang^{b#}, Yanan Li^a, Huimin Sun^b, Ouahab Ammar^d, Jiasheng Tu^a, Wang Buhai^c, Chunmeng Sun^{a*}

^aState Key Laboratory of Natural Medicines, Department of Pharmaceutics, School of Pharmacy, China Pharmaceutical University, 24 Tong Jia Xiang, Nanjing, China

^b National Institute for Food and Drug Control, Beijing, People's Republic of China

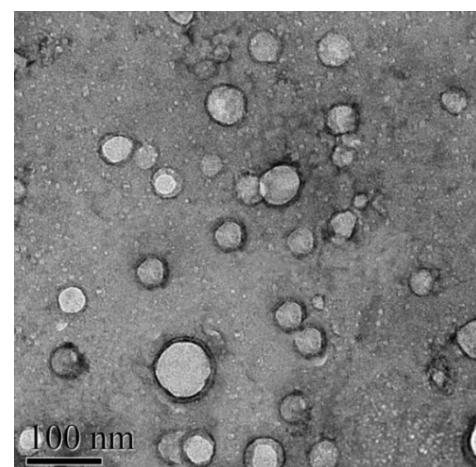
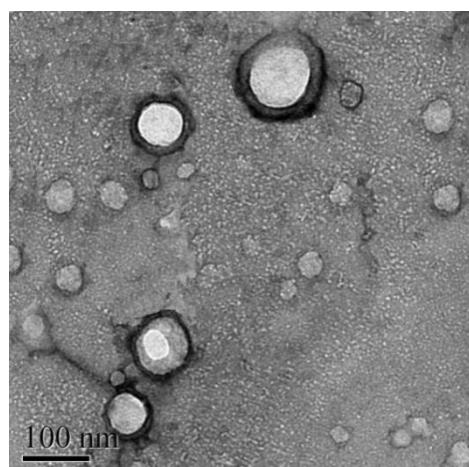
^cDepartment of Oncology, Subei People's Hospital, Yangzhou, China

^dDepartment of Pharmacy, Institute of Medical Sciences, Batna Elhadj Lakhdar University

*Corresponding author. Tel: +86-025-83271305. Suncm_cpu@hotmail.com (C. Sun) and wbhself@sina.com (B. Wang).

Tab.1 Particle characterization of different nanoparticles.

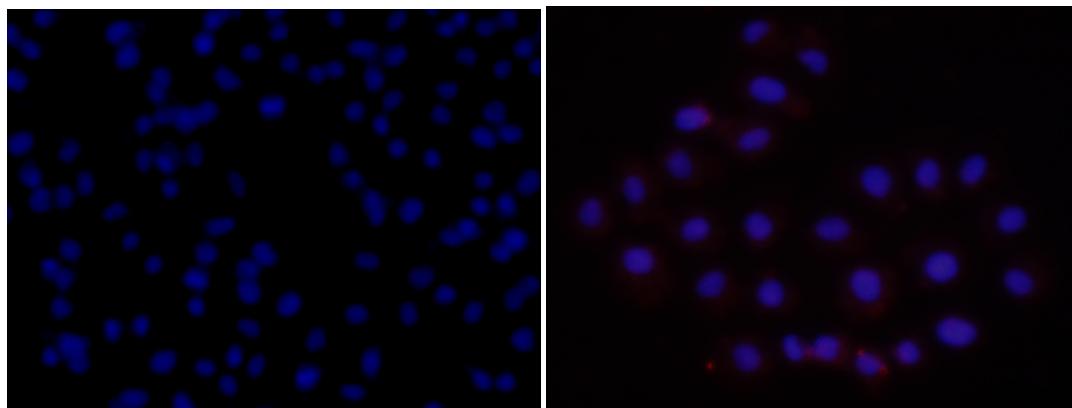
Sample	Size(nm)	PDI	Zeta(mV)
RPSP NPs	117.3±0.6	0.115	8.16
DTX/RPSP NPs	160.5±1.9	0.005	9.90
DTX/siRNA/HRPSP NPs	215.4±4.7	0.066	4.21
PP NPs	102.4±2.0	0.087	7.96
DTX/PP NPs	117.7±0.7	0.128	7.11
DTX/siRNA/HPP NPs	169.6±0.6	0.116	3.33



DTX/ siRNA /PRSP NPs

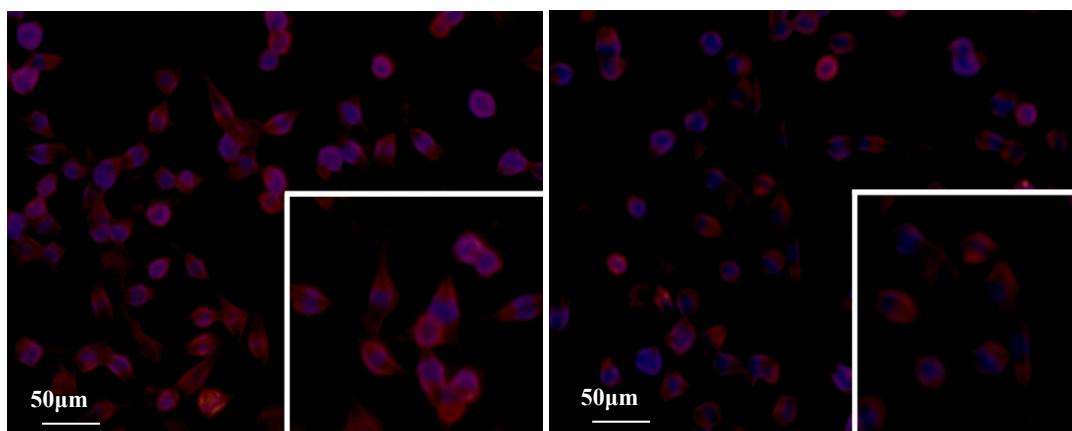
DTX/ siRNA/HPRSP NPs

S1.Characterization of nanocomplexes.(A)TEM images of DTX/siRNA/PRPS NPs and DTX/siRNA /HPRPS NPs.Scale bars represent 100 nm.



(a)

(b)



(c)

(d)

S2 (a) negative control (b) CY3-siRNA (c) CY3-siRNA/HRPSP NPs (d) CY3-siRNA/RPSP NPs. The right lower square of each panel shows the magnified cells.

Tab.2 The tumor-to-normal tissue (T/N) distribution ratios of the four formulations.

The tumor-to-normal tissue (T/N) distribution ratios

Tissues	siRNA/PP-Dir NPs	siRNA/HPP-Dir NPs	siRNA/RPSP-Dir NPs	siRNA/HRPSP-Dir NPs
Heart	2.42	2.37	3.26	3.69 [#]

Liver	0.45	0.88	0.71	1.17*#
Spleen	0.95	1.64	1.23	1.78*#
Lung	0.94	1.83	1.96	1.56*
Kidney	0.86	2.17	2.35	2.66*#
Brain	2.23	6.18	5.51	6.22*#

Note: *P<0.05 vs siRNA/RPSP-Dir NPs , # P<0.001 vs siRNA PP-Dir NPs,