

Supporting Information

Improved Tumor Uptake by Optimizing Liposome Based RES Blockade Strategy

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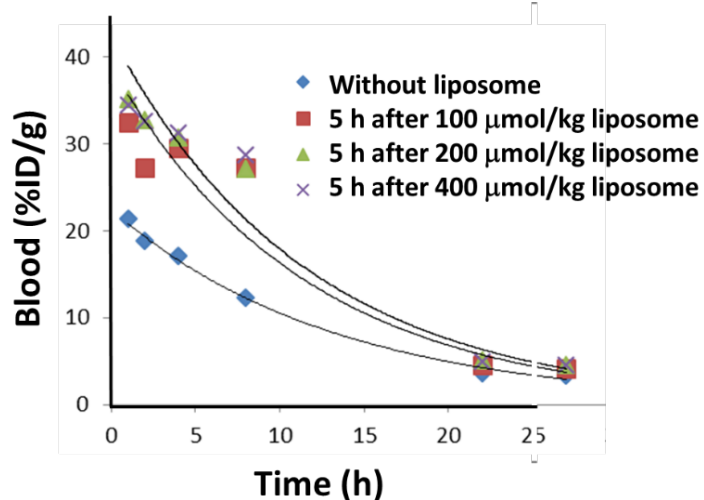


Figure S1. *In vivo* blood half-life of ^{64}Cu -labeled Au NRs without or pre-treated with 400 $\mu\text{mol/kg}$ positively charged liposome (5 h time interval).

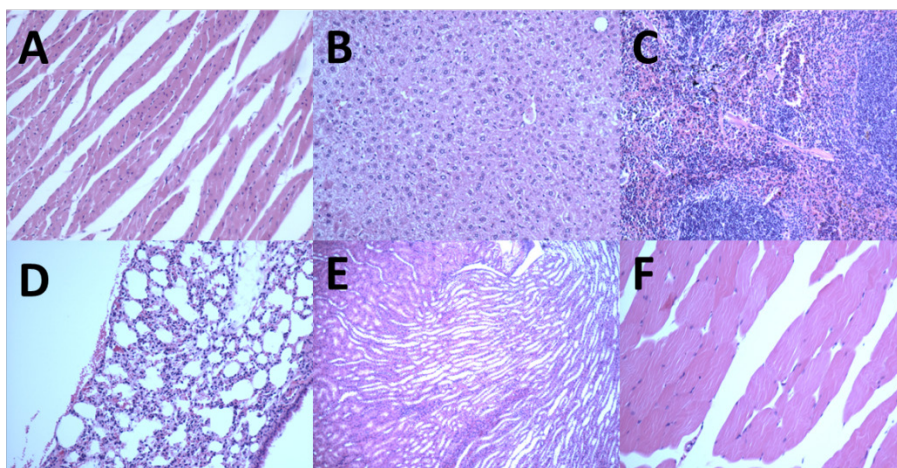


Figure S2 H&E stained images of major organs (A, heart; B, liver; C, spleen; D, lung; E, kidney; F, spleen) collected from mice at 1 day post-injection of positively charged liposomes. The dosage was 400 $\mu\text{mol/kg}$. No obvious tissue damage was observed.

Table S1 Tissue distribution of ⁶⁴Cu-labeled Au NRs pretreated with positive liposome (1 h ahead)

	1-h [⁶⁴ Cu]AuNR PET (%ID/g)				3-h [⁶⁴ Cu] AuNR PET (%ID/g)				5-h [⁶⁴ Cu] AuNR PET (%ID/g)			
Uptake	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg
Liver	32.3±2.4	33.0±0.6	29.4±5.9	32.7±3.0	36.0±2.3	29.3±0.6	27.6±4.3	31.7±2.2	39.9±2.4	28.2±3.2	28.3±3.1	28.8±2.1
Spleen	24.6±1.4	12.0±1.3	10.1±2.0	9.2±0.3	27.5±1.9	9.9±2.1	9.5±1.6	10.0±0.6	25.9±2.2	13.6±2.3	10.4±3.8	11.6±1.6
Heart	21.3±2.4	30.4±3.9	36.7±2.2	32.3±1.0	18.9±1.0	29.8±3.2	33.1±1.3	31.6±0.8	17.0±1.7	28.6±2.3	28.8±2.3	29.3±1.2
Tumor	6.0±0.2	8.1±1.1	8.1±1.4	9.1±0.8	7.0±0.9	10.2±1.0	9.7±0.4	8.7±0.5	8.2±0.2	11.5±1.6	11.1±1.5	11.4±1.5
	8-h [⁶⁴ Cu] AuNR PET (%ID/g)				22-h [⁶⁴ Cu] AuNR PET (%ID/g)				27-h [⁶⁴ Cu] AuNR PET (%ID/g)			
Uptake	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg
Liver	42.1±5.9	27.6±2.8	27.4±3.2	30.3±2.0	30.9±2.0	21.1±1.2	22.0±2.5	23.1±1.2	27.9±2.0	18.1±1.3	19.3±2.5	19.9±1.6
Spleen	23.8±1.0	11.9±1.5	10.3±2.6	12.1±0.2	17.9±1.1	7.6±0.6	7.2±1.7	8.1±1.2	14.8±0.7	6.6±0.4	6.6±1.5	7.0±0.9
Heart	12.3±0.4	26.5±5.1	26.6±0.8	27.3±2.6	3.8±0.6	4.5±0.7	5.2±0.4	5.1±0.2	3.1±0.8	3.3±0.5	4.7±0.5	4.6±0.6
Tumor	9.3±1.1	11.1±2.6	12.2±0.7	12.7±1.0	10.8±1.1	12.4±1.9	13.5±0.3	14.1±1.2	11.5±1.1	13.4±0.5	13.9±0.5	14.9±2.0

Table S2. Tissue distribution of ⁶⁴Cu-labeled Au NRs pretreated with positive liposome (5 h ahead)

	1-h [⁶⁴ Cu]AuNR PET (%ID/g)				3-h [⁶⁴ Cu] AuNR PET (%ID/g)				5-h [⁶⁴ Cu] AuNR PET (%ID/g)			
Uptake	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg
Liver	32.3±2.4	34.2±2.6	33.5±1.0	32.7±1.8	36.0±2.3	33.9±5.8	29.4±0.5	31.0±2.3	39.9±2.4	32.0±1.7	27.8±2.4	29.4±1.8
Spleen	24.6±1.4	12.1±3.0	11.4±0.4	12.6±0.5	27.5±1.9	13.5±3.0	13.6±0.9	13.3±1.2	25.9±2.2	11.5±0.4	12.7±0.4	15.1±3.2
Heart	21.3±2.4	32.5±4.4	35.2±4.4	34.5±1.3	18.9±1.0	27.2±8.2	32.7±3.8	32.6±1.9	17.0±1.7	29.5±6.1	30.7±4.8	31.3±4.8
Tumor	6.0±0.2	7.9±0.3	7.9±0.5	8.1±2.2	7.0±0.9	8.5±1.2	8.6±1.1	9.1±0.4	8.2±0.2	9.9±0.2	12.3±1.0	13.3±0.4
	8-h [⁶⁴ Cu] AuNR PET (%ID/g)				22-h [⁶⁴ Cu] AuNR PET (%ID/g)				27-h [⁶⁴ Cu] AuNR PET (%ID/g)			
Uptake	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg	Control	100μmol/kg	200μmol/kg	400μmol/kg
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Spleen	23.8±1.0	10.9±0.4	14.0±1.0	13.4±1.7	17.9±1.1	7.6±0.5	9.0±0.6	9.0±1.2	14.8±0.7	5.9±0.6	7.6±0.6	7.9±1.4
Heart	12.3±0.4	27.3±3.3	27.2±2.2	28.8±3.0	3.8±0.3	4.5±1.1	5.1±0.4	5.0±0.4	3.3±0.5	4.1±1.2	4.6±0.5	4.6±0.7
Tumor	9.3±1.1	12.3±1.7	13.6±1.6	15.0±1.3	10.8±1.1	14.1±1.3	14.7±0.9	16.6±1.8	11.5±1.1	14.9±1.4	15.2±1.1	16.1±1.3