Supplementary

Table S1. Sequences of synthesized oligonucleotides used in the experiments.

Sample	Sequences (5'→3')
YQ26-NH_2	TTTTTCCCCCGATGCTTTCGCTTTTCCTTTCGCTTTTGTTCGCTTC GTCCCTGCTTCCTTTCTTG-(NH_2)
Cy5.5-YQ26	(Cy5.5)-TTTTTCCCCCGATGCTTTCGCTTTTCCTTTCGCTTTTGTT CGCTTCGTCCCTGCTTCCTTTCTTG
Lib-NH_2	TTTTTCGGCCGTAGCTATTCGCTTTCCTTGCTCTTATGTTCGCTTC GTCCCTGCTTCCATTCAAC-(NH_2)
Cy5.5-Lib	(Cy5.5)-TTTTTCGGCCGTAGCTATTCGCTTTCCTTGCTCTTATGTT CGCTTCGTCCCTGCTTCCATTCAAC
Sense primer	ATACCAGCTTATTCAATT
Antisense primer	AGATAGTAAGTGCAATCT
FITC-labeled sense primer	FITC-ATACCAGCTTATTCA ATT
Biotin-labeled antisense primer	Biotin-AGATAGTAAGTGCAATCT

Table S2. Sequences and dissociation constants *(K_d)* of candidate aptamers.

Aptamers	Sequences (5'→3')	K_d (nM)
YQ26	CCCCCGATGCTTTCGCTTTTCCTTTCGCTTTTGTT CGCTTCGTCCCTGCTTCCTTTCTTG	26.31 ± 2.51
YQ15	CGTCGTGCATGTCGTGACTGGTTTTGGTGGGTG GCAAAGAGGGATCGTTGGTCTCGAGTG	35.55 ± 6.58
YQ23	CCCCCGTTGCTTCCGCCTTTCCTTGCGCTTTTGTT CGTTTCGTCCCCGCTTCCTTTCTTG	76.7 ± 13.52
YQ30	CCCCCGATGCTATCGCTTTCCCTTTCGCCTTTGTT CGTTTCGTCCCTGCCTCCTTTCTTG	46.38 ± 8.13

Table S3. Size, PDI, zeta-potential, and surface charge of FSiNPs, Lib-FSiNPs, and YQ26- FSiNPs.

Sample	Size (nm)	PDI	Zeta (mV)	Aptamer/FSiNPs
FSiNPs	70.72 ± 2.62	0.131 ± 0.023	-31.32 ± 3.38	-
Lib-FSiNPs	76.34 ± 3.89	0.103 ± 0.016	-39.04 ± 4.23	-
YQ26-FSiNPs.	75.87± 4.12	0.099 ± 0.010	37.82 ± 4.38	363.46 ± 18.56

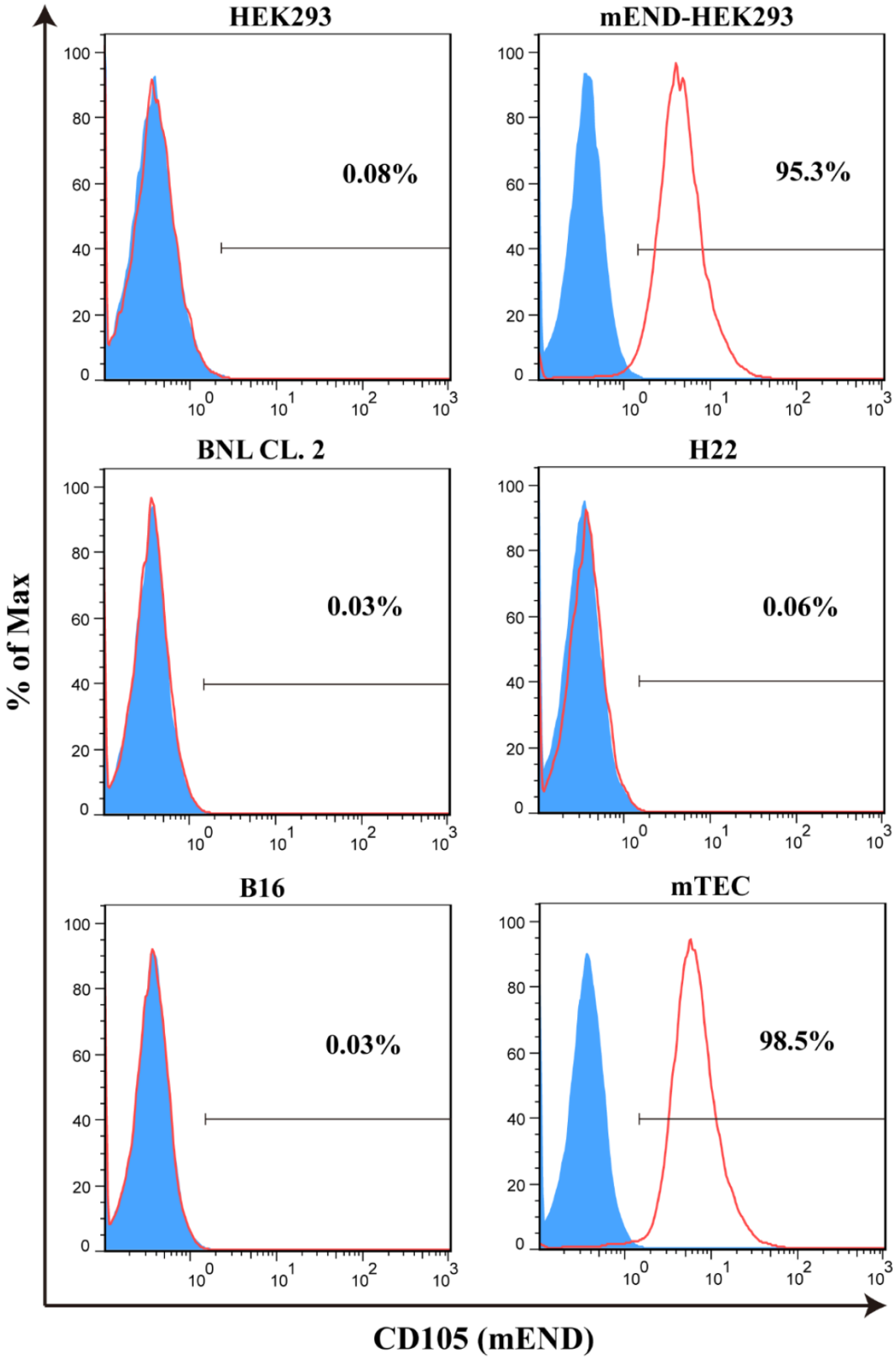
HEK293
0.08%
mEND-HEK293
95.3%
BNL CL. 2
0.03%
H22
0.06%
B16
0.03%
mTEC
98.5%
% of Max
CD105 (mEND)

Figure S1. Flow cytometric assay for the expression of mEND of HEK293, mEND-HEK293 cells, BNL.CL2, H22, B16, and mTEC cells.

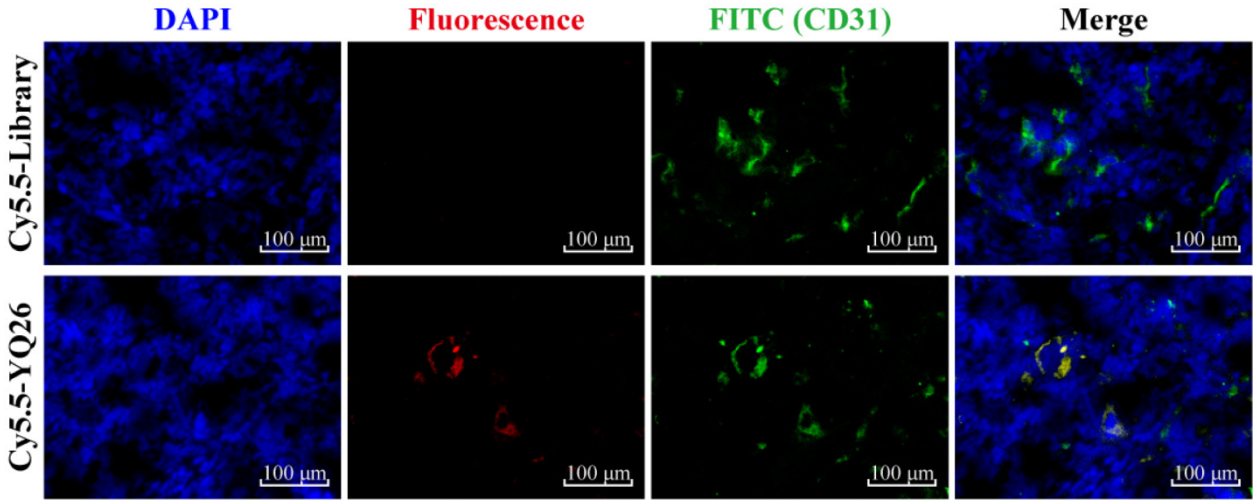

Figure S2. Fluorescence imaging of tumor tissue sections after staining with Cy5.5 labeled library or aptamer YQ26 (250 nM) and CD31 (green, with anti-mouse CD31 primary antibody).

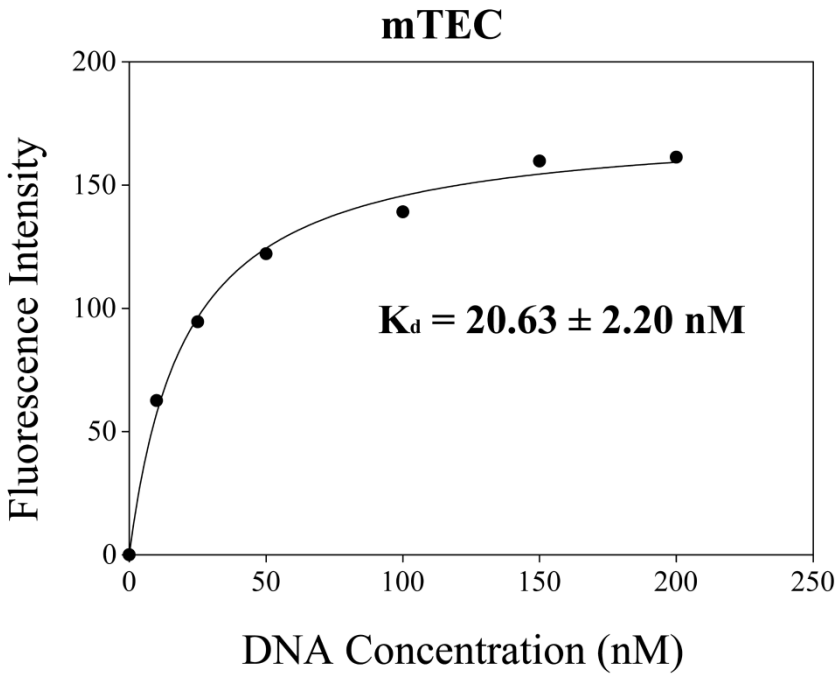

Figure S3. Dissociation constant of aptamer YQ26 for mTEC cells.

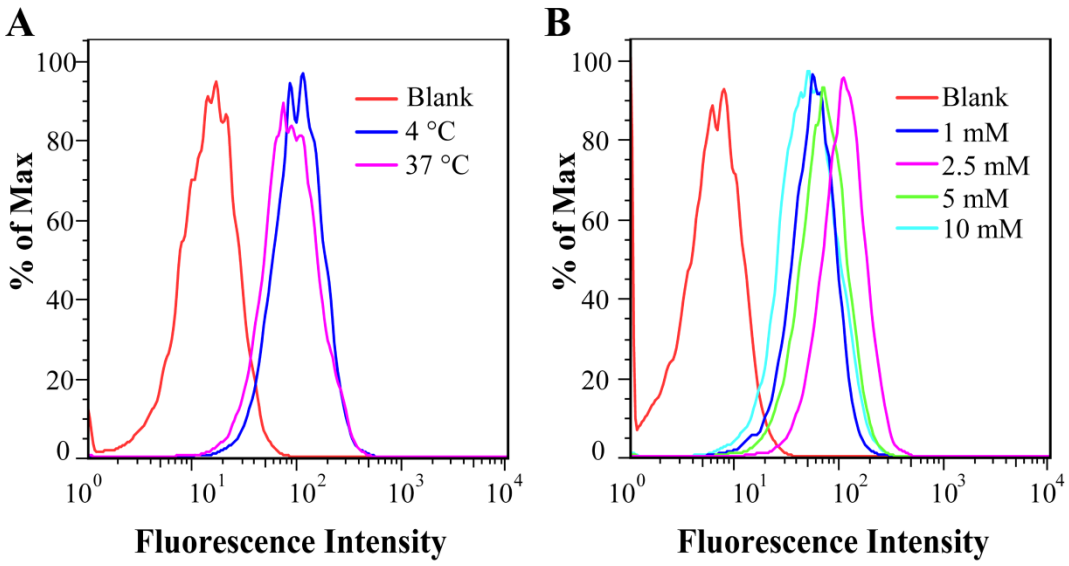

Figure S4. The effect of temperature and concentration of Mg^{2+} on YQ26-FSiNPs in mTEC cells.

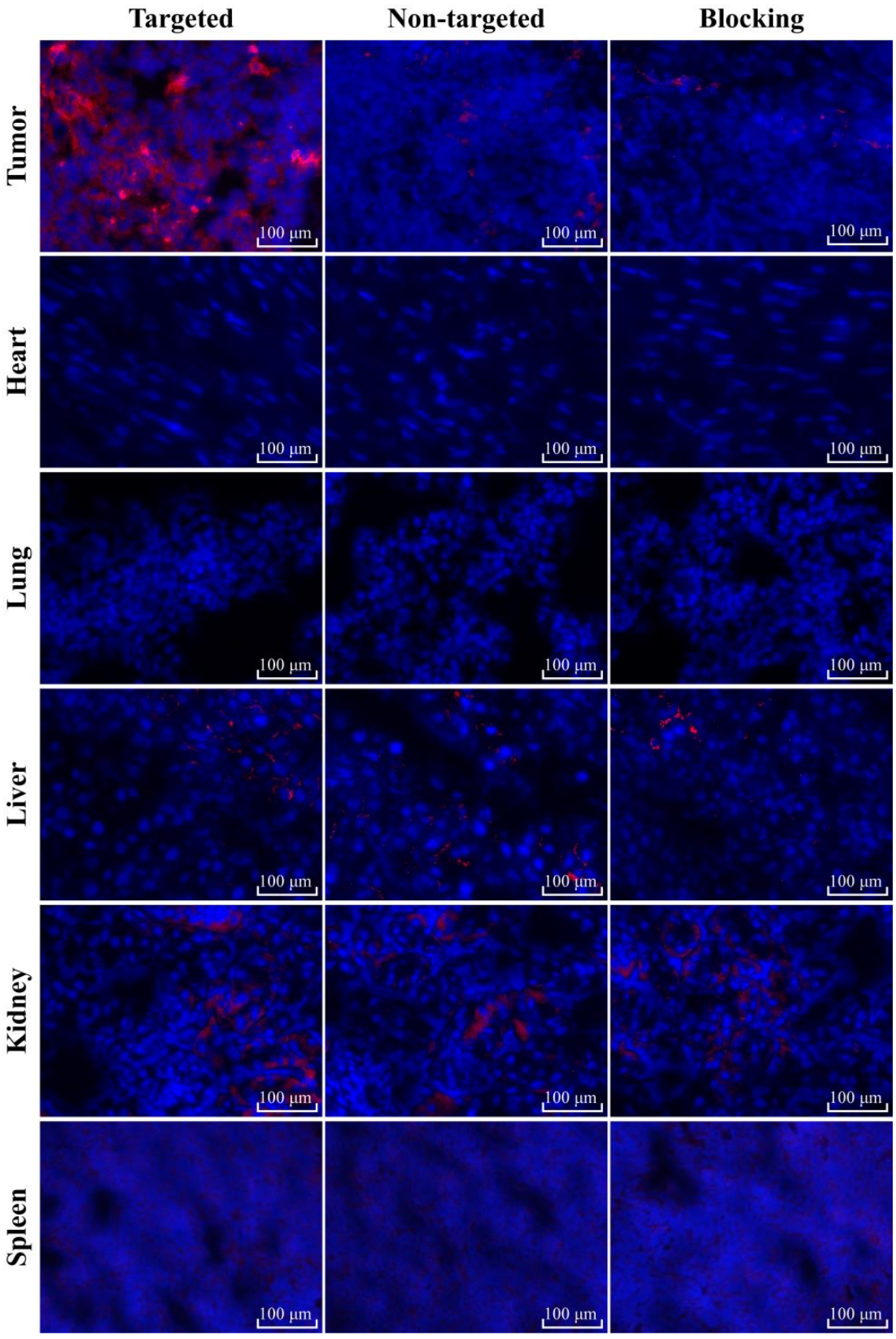
Targeted
Non-targeted
Blocking
Tumor
Heart
Lung
Liver
Kidney
Spleen
100 μm

Figure S5. Fluorescence images of tissue slices from tumor and important organs at 24 h post-injection of targeted group (END-FSiNPs), non-targeted group (Lib-FSiNPs), or blocking group (END-FSiNPs with excess dose of anti-END).

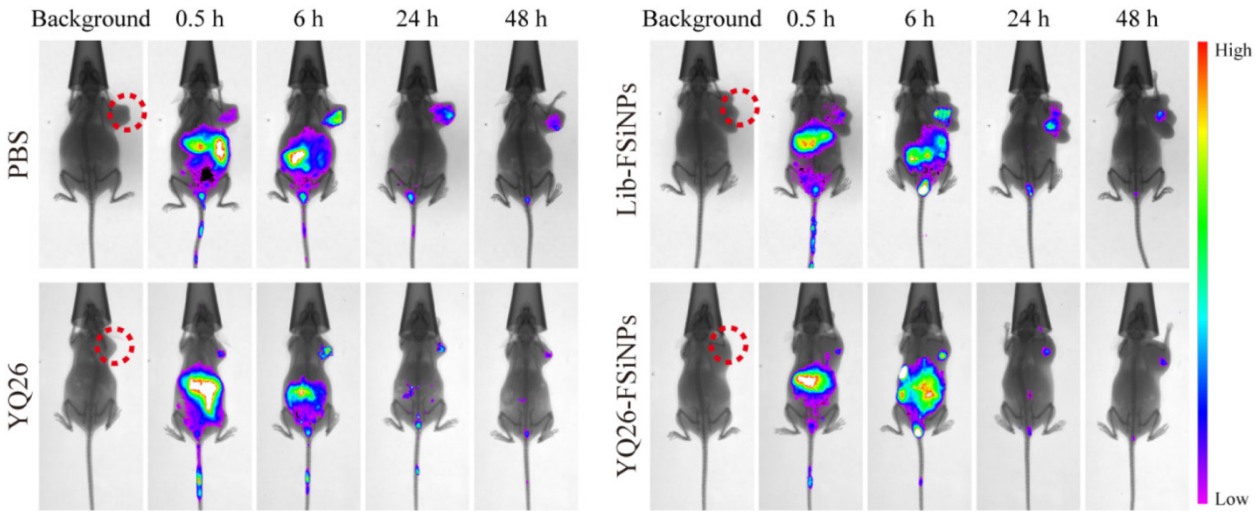

Figure S6. *In vivo* imaging of H22 tumor-bearing mice. Time-lapse *in vivo* fluorescence images of at 0.5, 6, 24 and 48 h post injection of YQ26-FSiNPs three weeks after different treatment (PBS, Lib-FSiNPs, YQ26 or YQ26-FSiNPs). The tumors were circled with red dotted line.

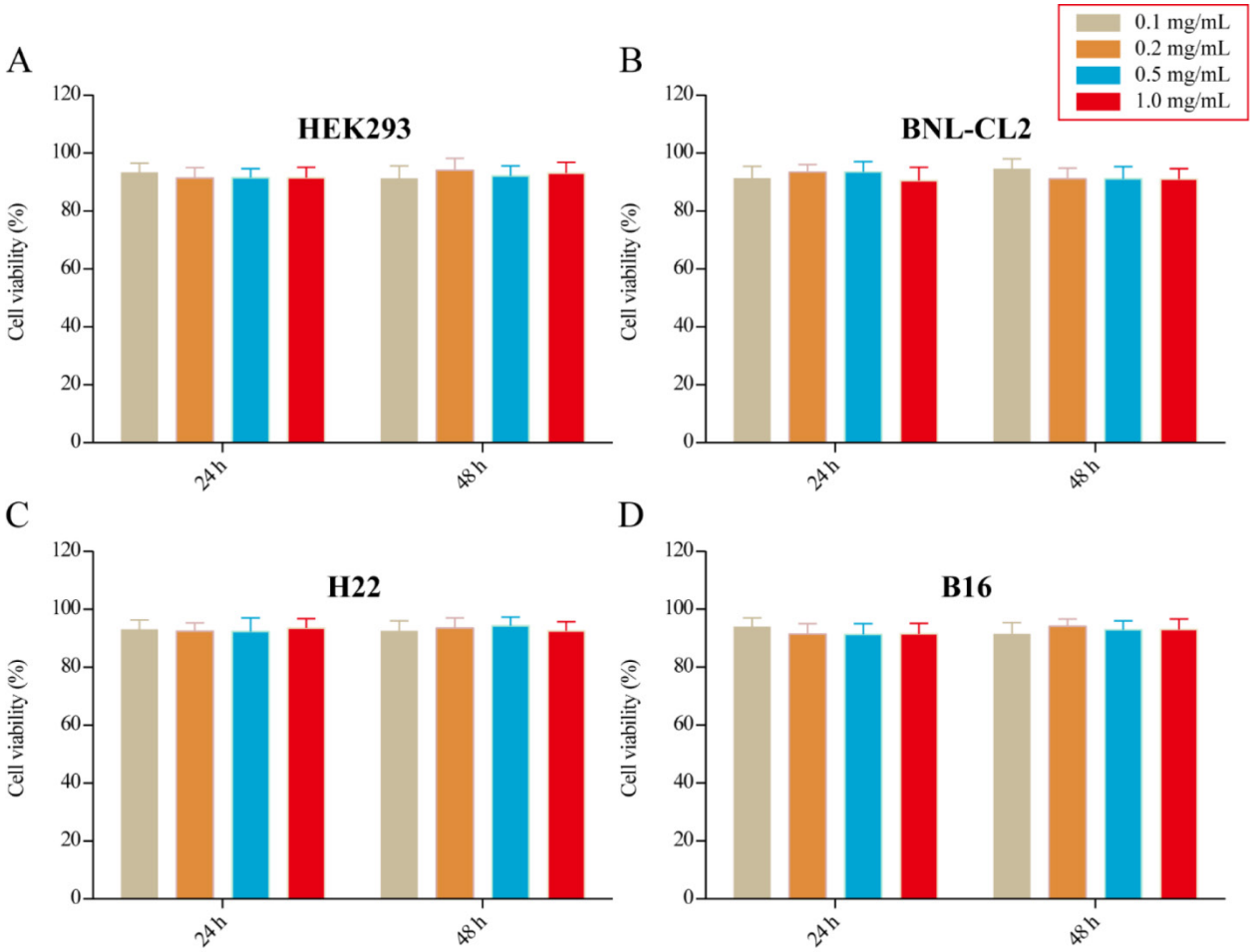

Figure S7. Cell toxicity assay of YQ26-FSiNPs on HEK293, BNL-CL2, H22, and B16 cells. Cell viability was measured every 24 h following incubation with various concentrations of YQ26-FSiNPs.

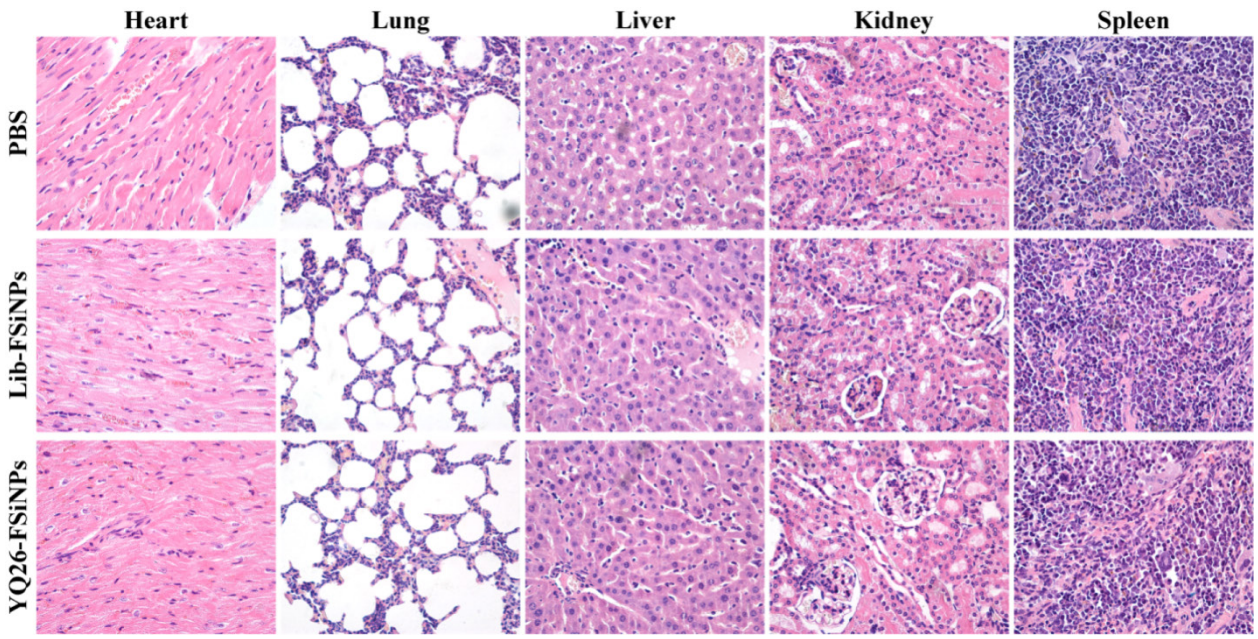

Figure S8. Tissue toxicity assay of mice treated with PBS (upper), Lib-FSiNPs (middle), YQ-FSiNPs (lower). Sections from major organs were stained with hematoxylin-eosin and examined by light microscopy (400 × original magnification).

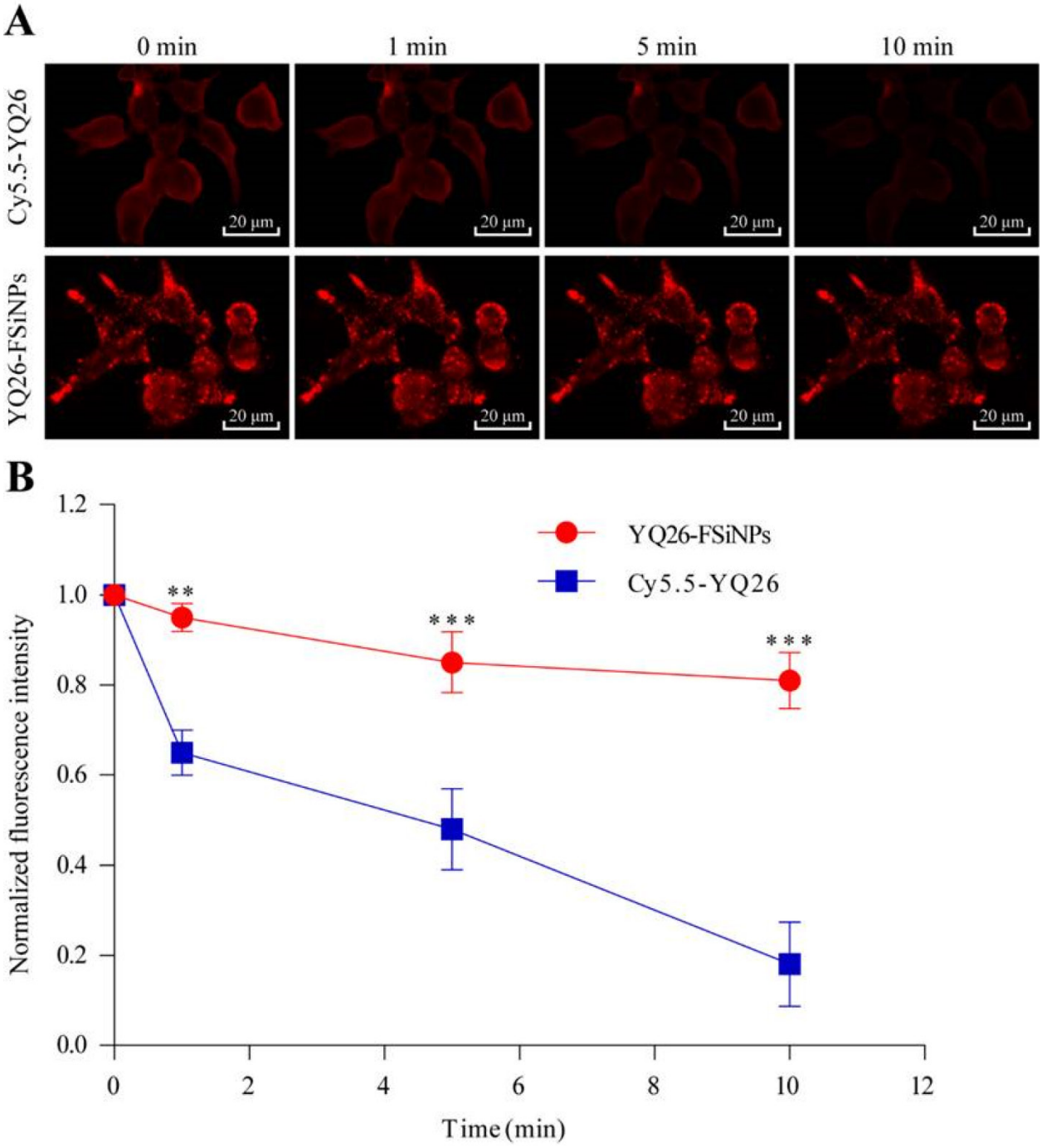

Figure S9. Fluorescence imaging (A) and quantification of photostability (B) of YQ26-FSiNPs and Cy5.5-YQ26. Scale bar = 20 μm. ** $P < 0.01$, *** $P < 0.001$.