Supporting information for

Self-assembled RNA-triple-helix hydrogel drug delivery system targeting for triple-negative breast cancer

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The supporting information has following contents:

Table 1 DNA/RNA sequences used in the experiment

ss DNA	5'-PO_4-ATAGTGAGTCGTATTA TAA AAT CTT CCT GCC CAC CTT ATCTAAATGTGGTGGTTGTGATCCTAAAA **AAG GTG GGC AGG AAG ATT TTA** TTC CTA TTC TTA CCT GAA CTT CAC TCC ACT GAA ATC TGG T ATCCCT-3'
miR-205 antisense	5'-FAM-CUUGUCCUUCAUUCCACCGGAGUCUGUC-3'
miR-221 antagomiR	5'-FAM-CCUGAAAUCUACAUUGUAUGCCAGGUUGGU-3'
Scrambled RNA-205	5'-CGC AUA UUC UAA GUU AUC UCG GAG GAT A-3'
Scrambled RNA-221	5'-CGU AUU UCG CGU GAU AAC AUA CGA CUC UAA-3'
T7 promotor	5' -TAATACGACTCACTATAGGAT-3'
LXL apt-DNA-Chol	5'-FAM-GAATTCAGTCGGACAGCGAAGTAGTTTTCCTTCTAACCTAAGAACC CGCGGCAGTTTAATGTAGATGGACGAAAATCCTAGTGTTGGTGGTGT AAATC-Chol—3'

All the sequence had no advanced purified after we got them.

Table 2 Relative tumor proliferation rate of RNA-triple-helix hydrogel

D0	D3	D6	D8	D9	D10	D12	D13	D14	D15	D16	D17
87	25	22	19	19	20	16	13	13	9	11	8

When the relative tumor proliferation rate is greater than 60%, it shows useless, while not vice versa. From the Table 2, we can see the effect of RNA triple helix. The volume of tumors were calculated by the following formula: T/C=TRTV/CRTV×100%, TRTV=Vt/V0, Vt:the real size of tumor size. V0:the first day of tumor size. CRTV represents the Control triple helix.

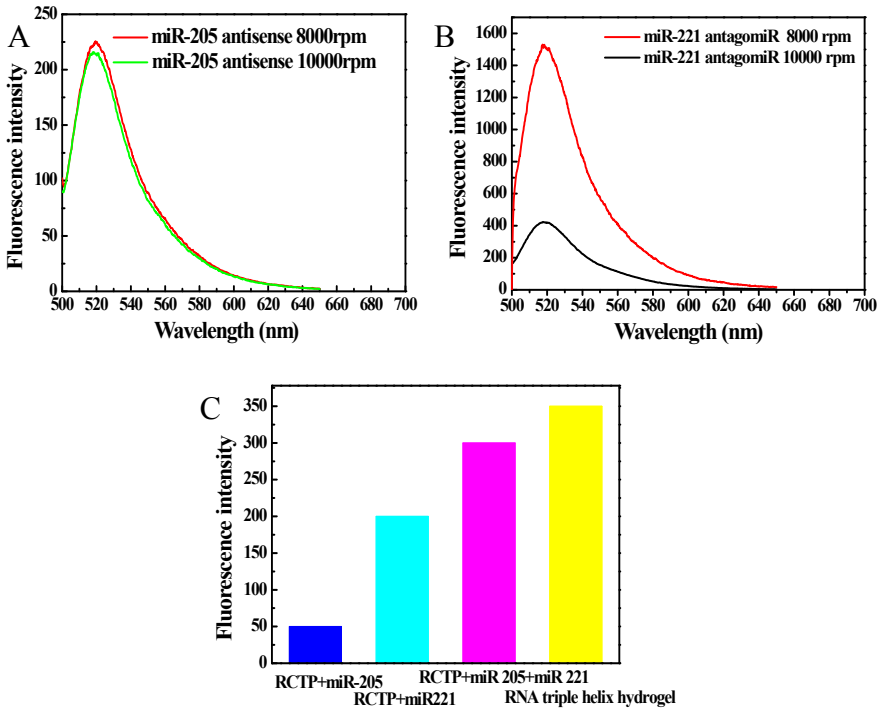

Figure S1 (A, B) Determinate the cleaning speed of miR-205 antisense and miR-221 antagomiR. (C) Quantitive analysis of the product at every stages.

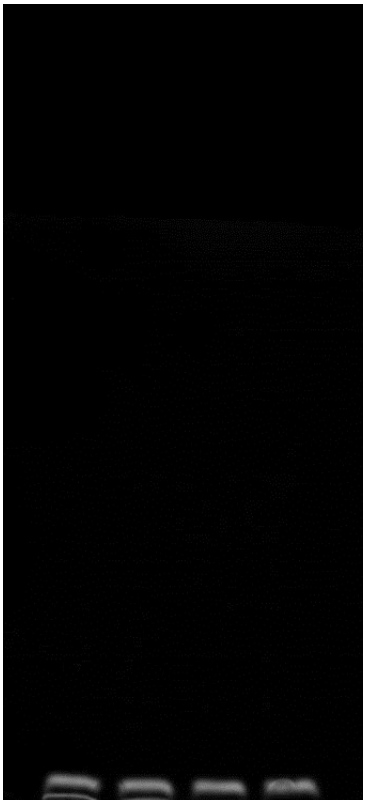

Figure S2. Stability studies of RNA-triple-helix hydrogel in different solutions for 6 h. Lane 1, pH 7.4 PBS; lane 2, pH 5.5 buffer solution; lane 3, pH 7.4 FBS; lane 4, pH 5.5 FBS.

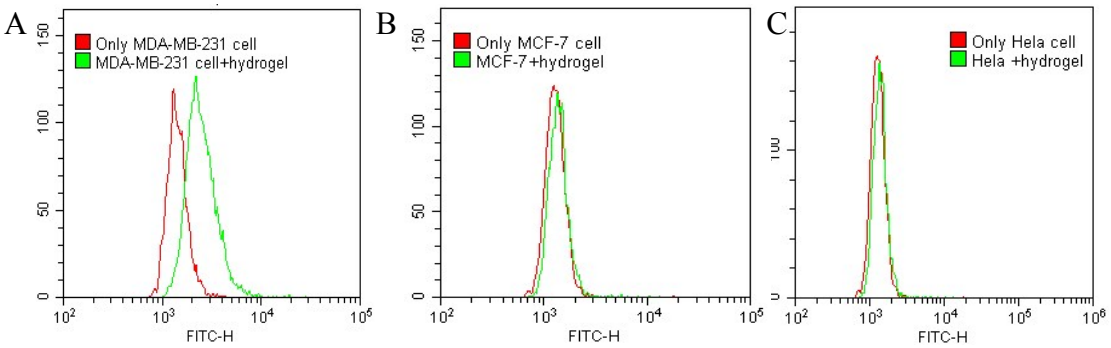

Figure S3. These three cells incubated with RNA-triple-helix hydrogel and 2 hours later, collected the fluorescence signals by Flow cytometry. A) Indicated that RNA-triple-helix hydrogecould get into the MDA-MB-231 cells. B) Indicated that RNA-triple-helix hydrogen could get into the MCF-7 cells a little. C) Indicated that RNA-triple-helix hydrogen could get into the HeLa cells a little.

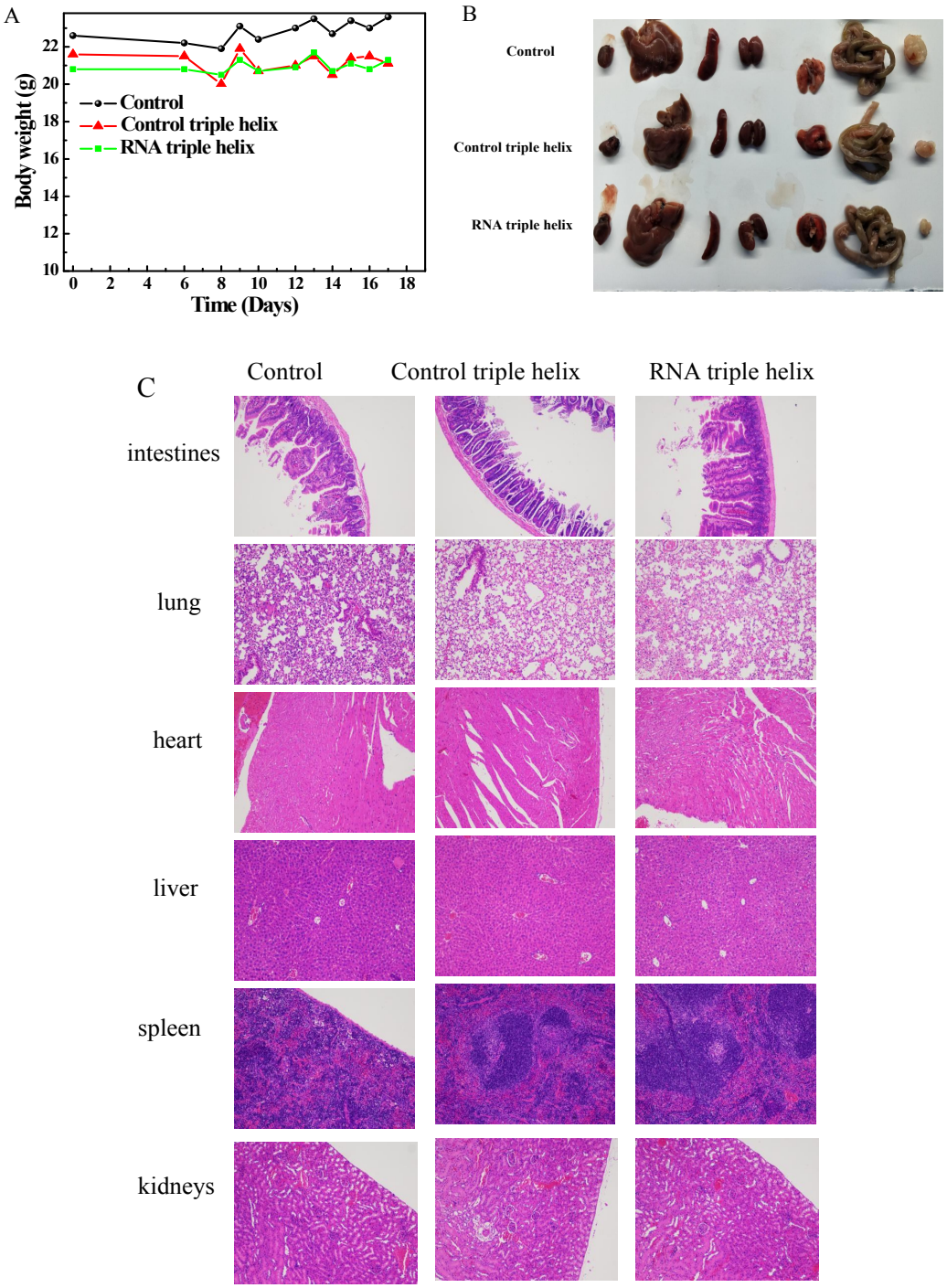

Figure S4. In vivo tumor therapy via RNA-triple-helix hydrogel. A) Body weight changes in the indicated groups during treatment (It is associated with the indoor temperature). Data represent mean ± standard deviation (SD) (n = 2 mice per group). B) The solid tumors got from these three groups. C) The H@E staining of these three groups organs indicated that there is no obvious metastasis among these organs.