Supplementary Notes

Selective Uptake and Imaging of Aptamer- and Antibody-Conjugated Hollow Nanospheres Targeted to Epidermal Growth Factor Receptors Overexpressed in Head and Neck Cancer

Marites Pasuelo Melancon[1], Min Zhou[2], Rui Zhang[2], Chiyi Xiong[2], Peter Allen[3], Xiaoxia Wen[2], Qian Huang[2], Michael Wallace[1], Jeffrey N. Myers[4], R. Jason Stafford[5], Dong Liang[6], Andrew D. Ellington[3], Chun Li[2]*

Departments of [1]Interventional Radiology, [2]Cancer Systems Imaging, [4]Head and Neck Surgery, and [5]Imaging Physics, The University of Texas MD Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030

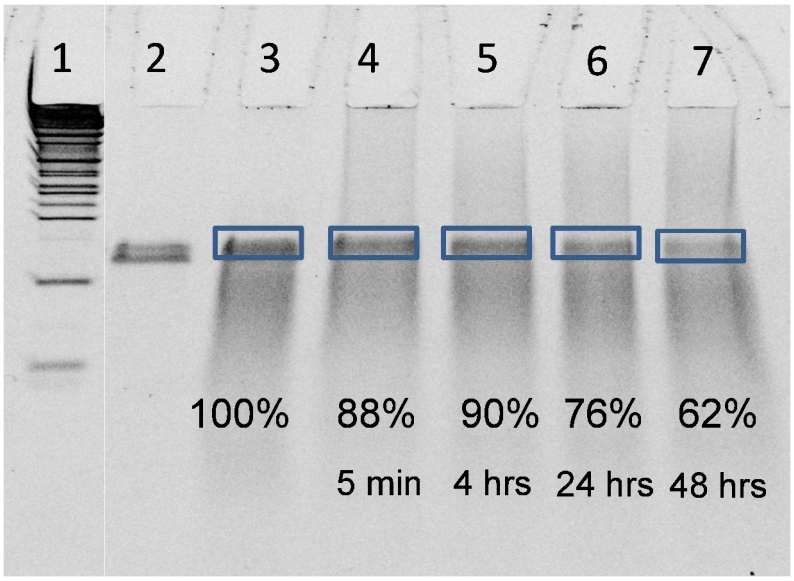
[3]Department of Chemistry and Biochemistry, The University of Texas at Austin, 1 University Station, Austin, TX 78712

[6]Department of Pharmaceutical Sciences, Texas Southern University, 3100 Cleburne Street, Houston, TX 77004

*Address correspondence to: Chun Li, PhD, Department of Cancer Systems Imaging-Unit 59, The University of Texas MD Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030. Phone: 713-792-5182; Fax: 713-794-5456; E-mail: cli@mdanderson.org

Stability of aptamer-HAuNS in mouse plasma

To measure the stability of aptamer on gold nanoparticles, apt-HAuNS (eqv. 0.4 mg Au) was suspended in 400 µl Dulbecco's phosphate buffered saline containing 50% (v/v) mouse plasma (GeneTex, GTX73236, Irvine CA) and incubated at 37°C. Five minutes after mixing with plasma, or at 4 hrs and 24 hrs after incubation, 100 µl aliquots of reaction mixture were withdrawn and centrifuged. Nanoparticle pellets were washed with Dulbecco's phosphate buffered saline four times and re-suspended in 100 µl deionized water. Potassium cyanide (2 µl, 1 M) was added 20 µL of HAuNS to digest gold nanoparticles, the resulting clear solutions were mixed with TBE-urea sample buffer (Life Technologies, Grand Island, NY) and heated at 80°C for 5 min. Samples were analyzed by electrophoresis in a 15% denaturing polyacrylamide gel (TBE-urea gel, Life Technologies). RNAs were stained with SYBR gold stain (Invitrogen) and visualized with a blue laser light on FLA-5100 fluorescent imaging analyzer (Fuji Film Life Science, Stanford, CT). The image was processed using MultiGauge software (Fuji Film Life Science).



Supplementary Figure S1. Stability of aptamer-HAuNS in mouse plasma. Experimental details are described under "stability of aptamer-HAuNS in mouse plasma". Aliquots were taken at the indicated time points. Percentages of aptamer attached to HAuNS are also indicated, taken amount of aptamer in aptamer-HAuNS without incubation with plasma as 100%. Lane 1: DNA ladder; Lane 2: aptamer E07 (0.4 pmole); Lane 3: apt-HAuNS (control); Lanes 4-6: apt-HAuNS incubated with 50% mouse plasma.