# Supplementary Materials: Optical Aptamer Probes of Fluorescent Imaging to Rapid Monitoring of Circulating Tumor Cell

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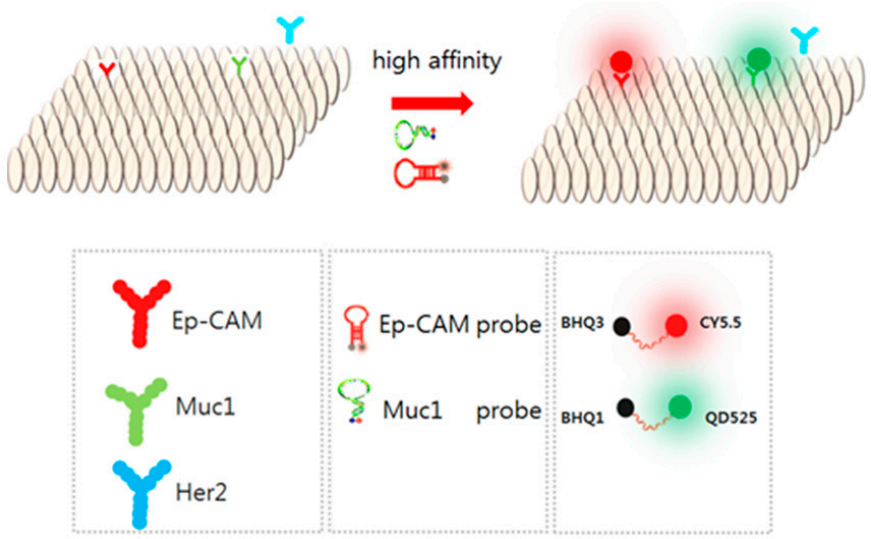


**Figure S1.** Schematic illustration of the NIF-EpCAM ALB. Multiple tumor-related proteins on CTC cell surface based on fluorescence enhancement induced by specific-affinity-triggered conformation alteration of the activated ALB probes.

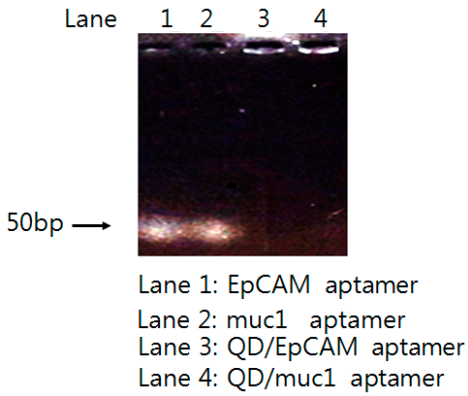


**Figure S2.** Gel electrophoresis of EpCAM ALB (lane1), muc-1 (lane2), $QD_{565}$-conjugated EpCAM (lane3) and $QD_{525}$-conjugated muc1 (lane4). Each sample was loaded on 1.5% agarose gel with a 100 bp molecular ladder. The conjugation pattern on gel electrophoresis was evaluated by UV excitation (235/345 nm).

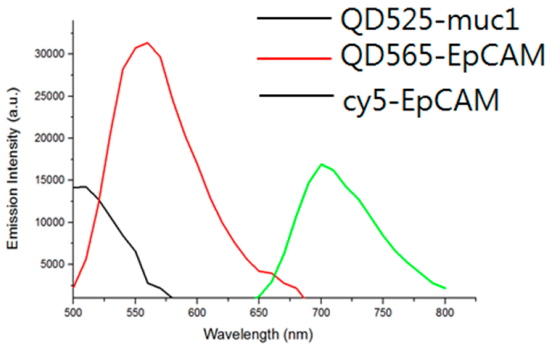


**Figure S3.** Fluorescence emission spectra of QD-muc1 (black line), QD-EpCAM (red line), and cy5.5-EpCAM (yellow green line). Excitation: 500 nm, scanning wavelength: 500–800 nm, with a band width of 25 nm.

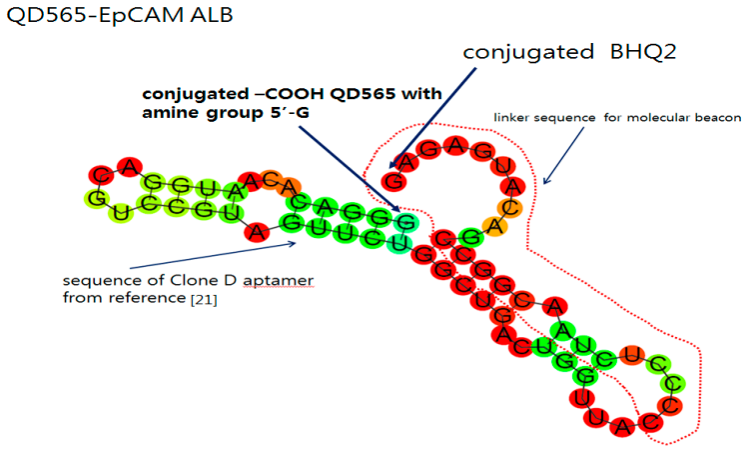


**Figure S4.** Schematic illustration of the design and function of the $QD_{565}$-EpCAM ALB secondary structure by mFOLD.

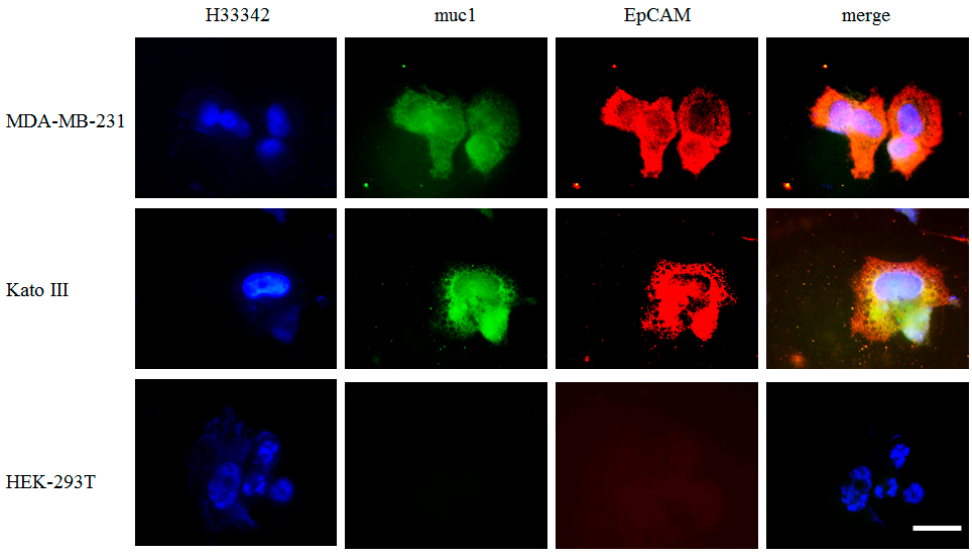


**Figure S5.** Confocal images of cultured MDA-MB-231, Kato III and HEK-293T cells labeled with the EpCAM/$QD_{565}$ ALB. The final concentration of the EpCAM/$QD_{565}$ ALB was 2 pM. Scale bars indicated 15 μm.