For submission to: *Analyst*

# Nanoparticle Modification of Microfluidic Cell Separation for Cancer Cells Detection and Isolation

Supporting Information

Yun Zhou[1], Ziye Dong[2], Hermella Andarge[1], Wei Li[2], and Dimitri Pappas[1,*]

[1]Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, TX, 79409, US, and [2]Department of Chemical Engineering, Texas Tech University, Lubbock, TX，79409, US.

*E-mail: d.pappas@ttu.edu

*Phone: 806-834-1103

*Fax：806-742-1289

*Corresponding author

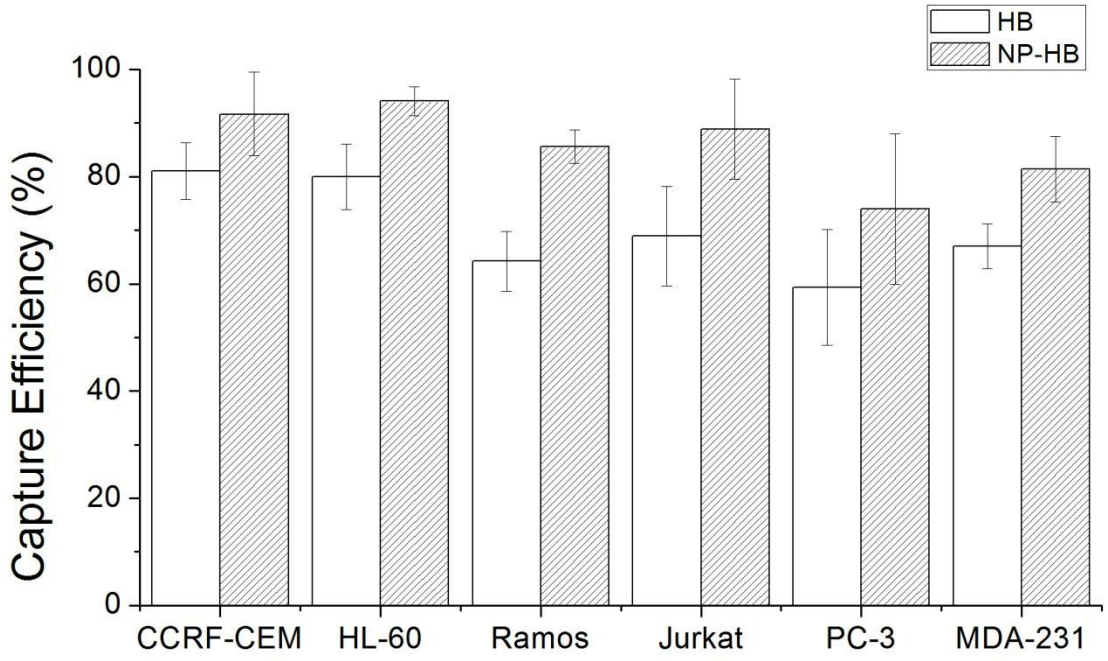


Fig. S1 Capture efficiency of all cell lines involved in this study. The increase of capture for NP-HB measurement of all cell lines in this figure were 11±4%, 14±6%, 21±8%, 20±4%, 15±18%, and 14±9%. Our NP-modified HB chip showed a great improvement for capture efficiency and has the ability of maintaining capture efficiency at a high level. All these increase were proved as significant via T-test with the p values of 0.0205, 0.0004, 0.0001, 0.004, 0.0334, and 0.0008, respectively. This significant cell capture ability is of great importance in isolating target cells from cell mixtures and blood samples.

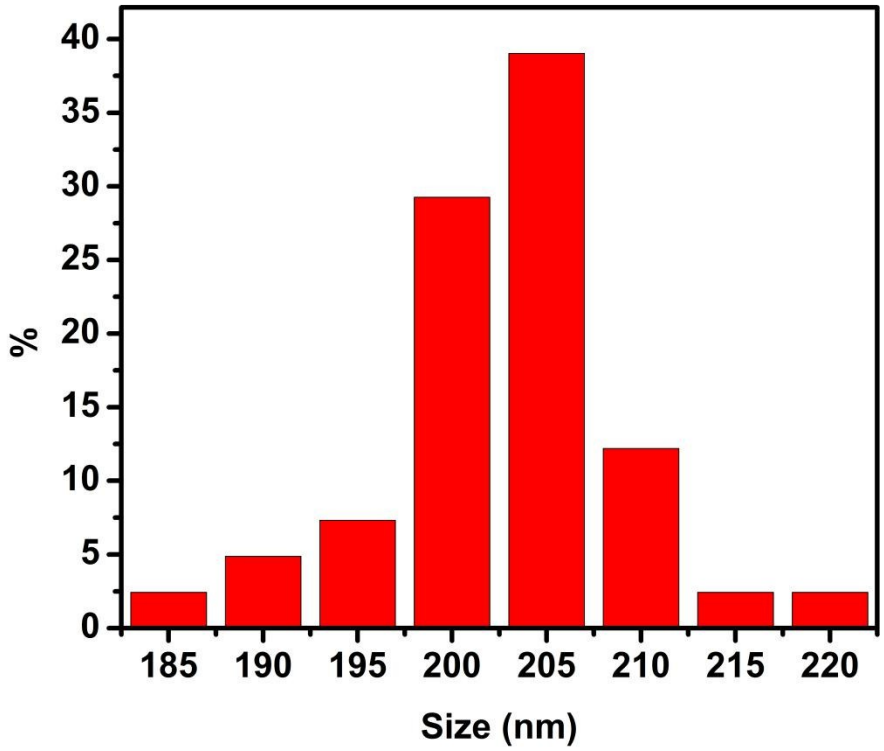


Fig. S2 Size distribution of nanoparticles on NP-HB microchip surface. The average size of nanoparticles is 202.5±6.7 nm. The surface coverage is 90.1±4.2%. The nanoparticles attached on the channel surface via electrostatic interactions, and the attachment formed a foundation for subsequent LbL modification