Supporting Information

**The impact of cell culture media on the interaction of biopolymer-functionalized gold nanoparticles with cells: mechanical and toxicological properties**

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**Figure S1**. UV-Vis absorption spectra of different surface-functionalized AuNPs.

**Figure S2**. TEM images of AuNPs functionalized with citrate, dex-10, chitosan and dextrin molecules.

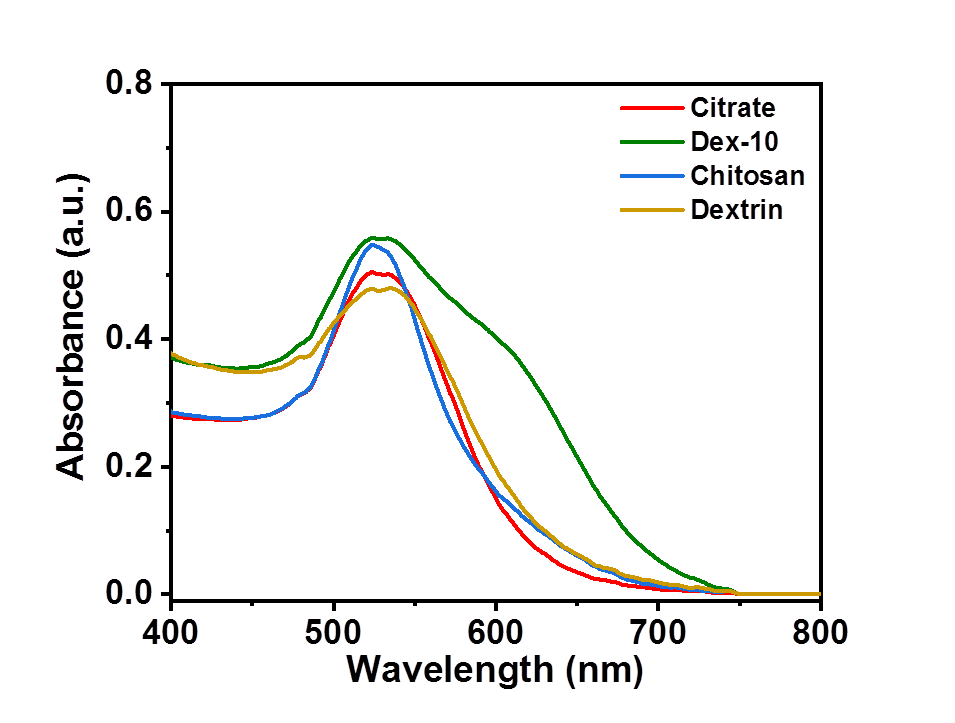
**Figure S3**. DLS and zeta potential data of AuNPs functionalized with citrate, dex-10, dextrin and chitosan ligands.

**Figure S4**. Zeta potential data of AuNPs in protein poor- and protein rich medium.

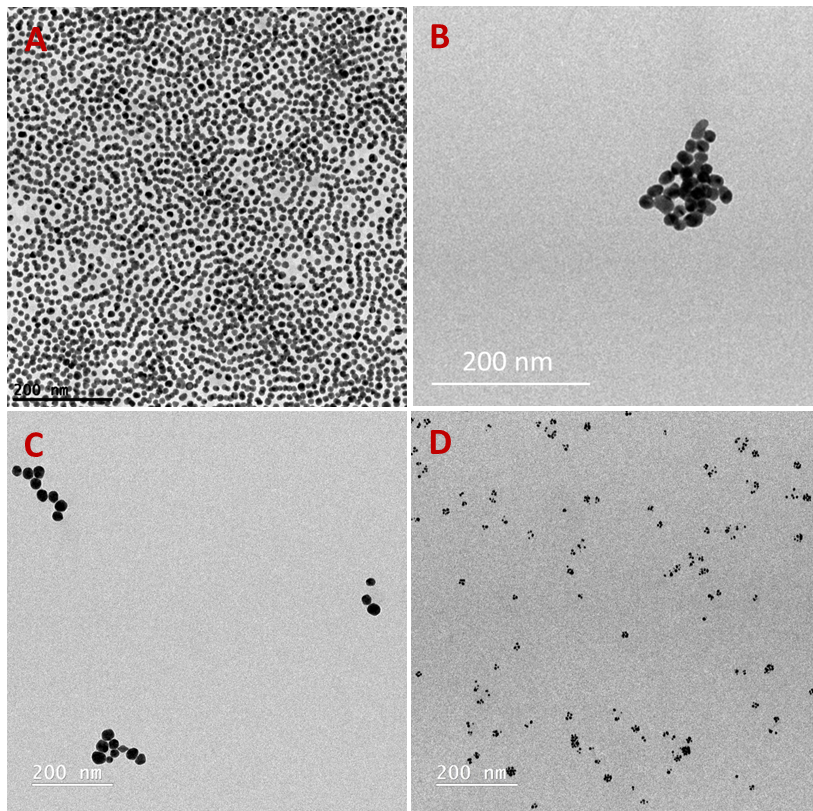
**Figure S5**. Osmolarity of protein poor- and protein rich CCM with different surface-functionalized AuNPs.

**Figure S6.** Time-dependent mechanical alterations of HL 60 cells in presence of AuNPs in RPMI without FCS.

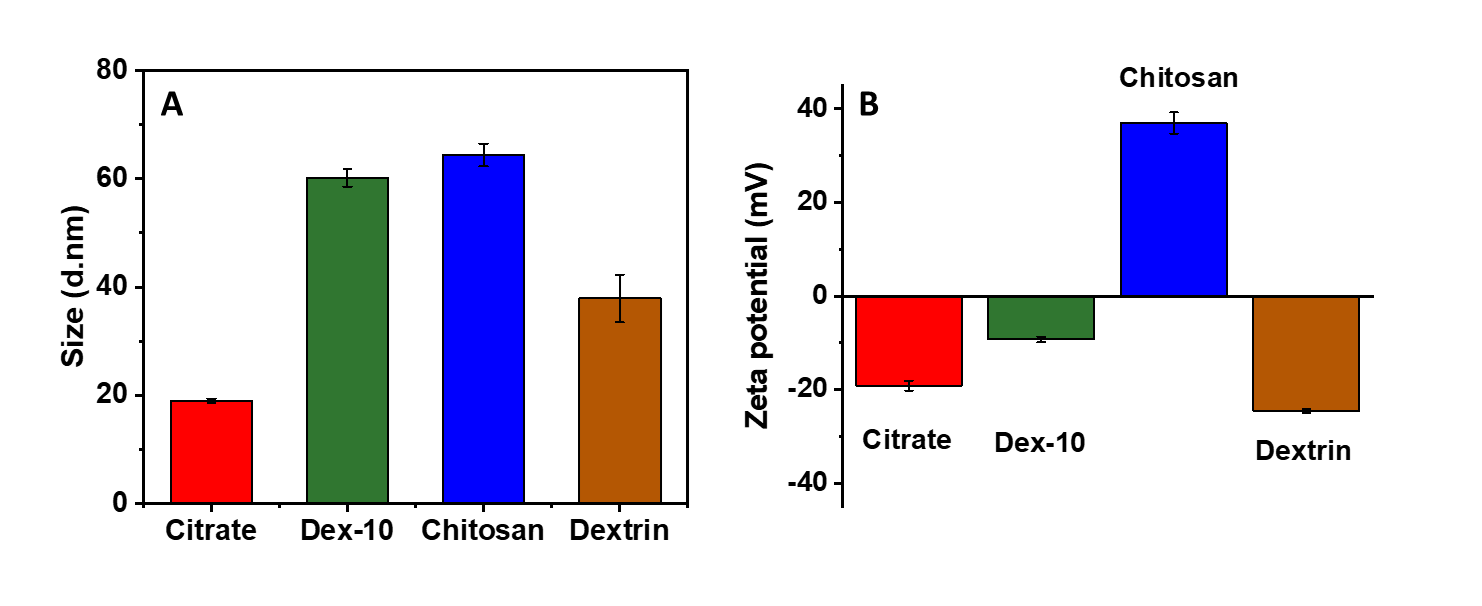
**Figure S7.** Time dependent cytotoxicity results of HL 60 cells in presence of different surface-functionalized AuNP in RPMI media without FCS.



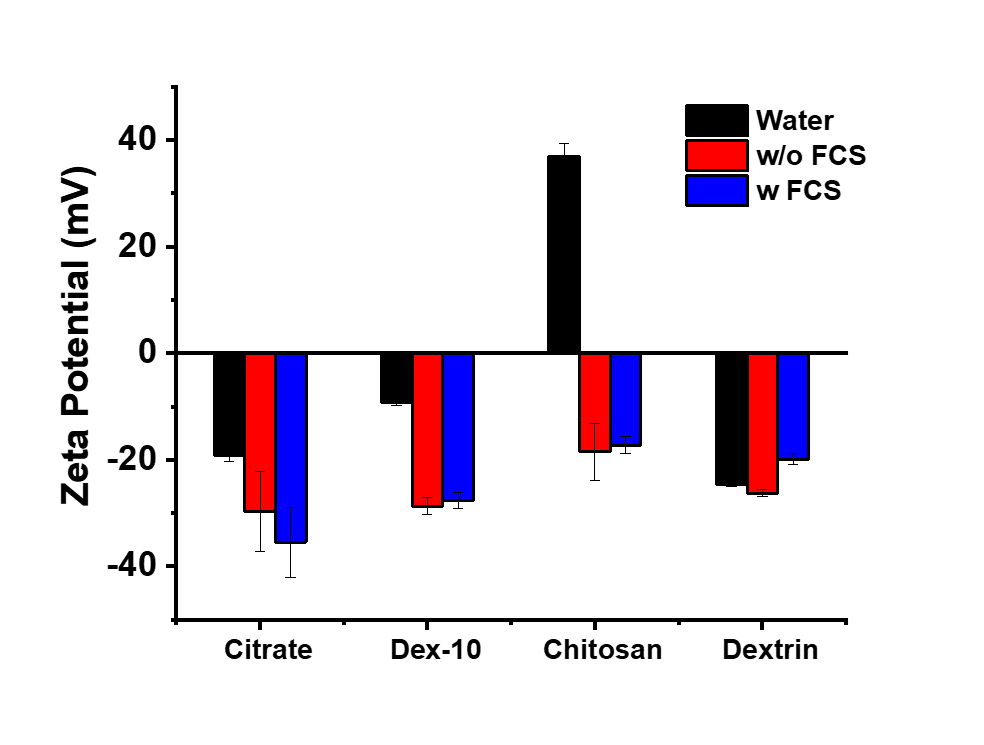
**Figure S1.** A) UV-Vis absorption spectra of AuNPs functionalized with citrate, dex-10, chitosan and dextrin ligands (AuNPs concentration = 100 nM).



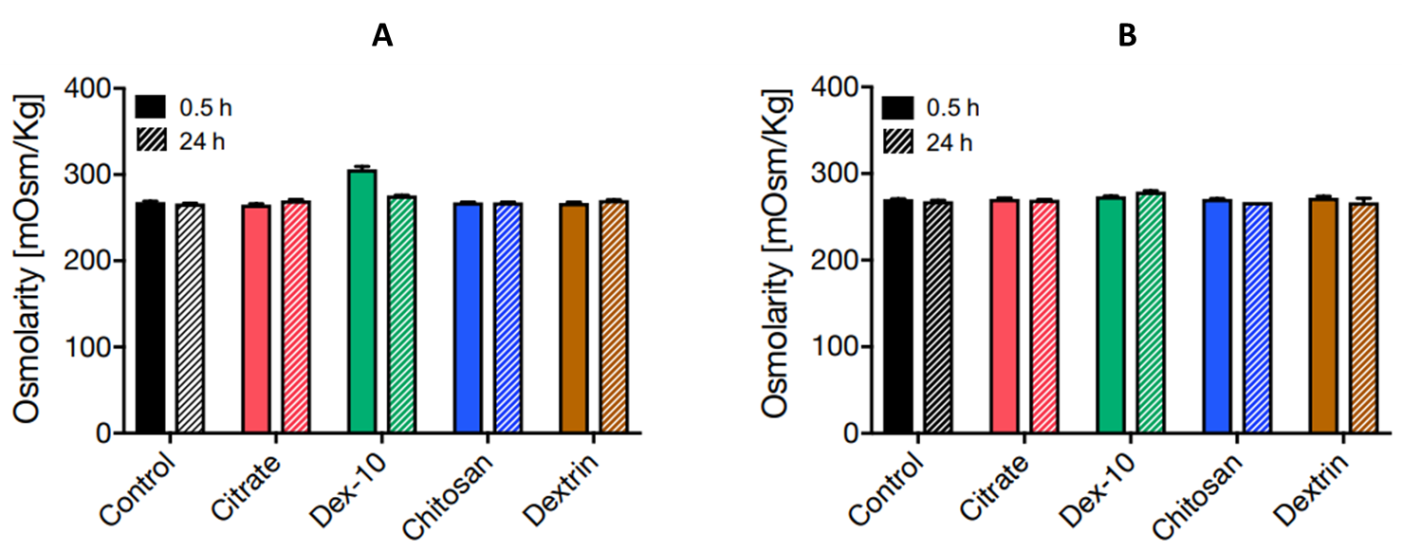
**Figure S2.** TEM images of AuNPs functionalized with citrate (A), dex-10 (B), chitosan (C) and dextrin (D) ligands.



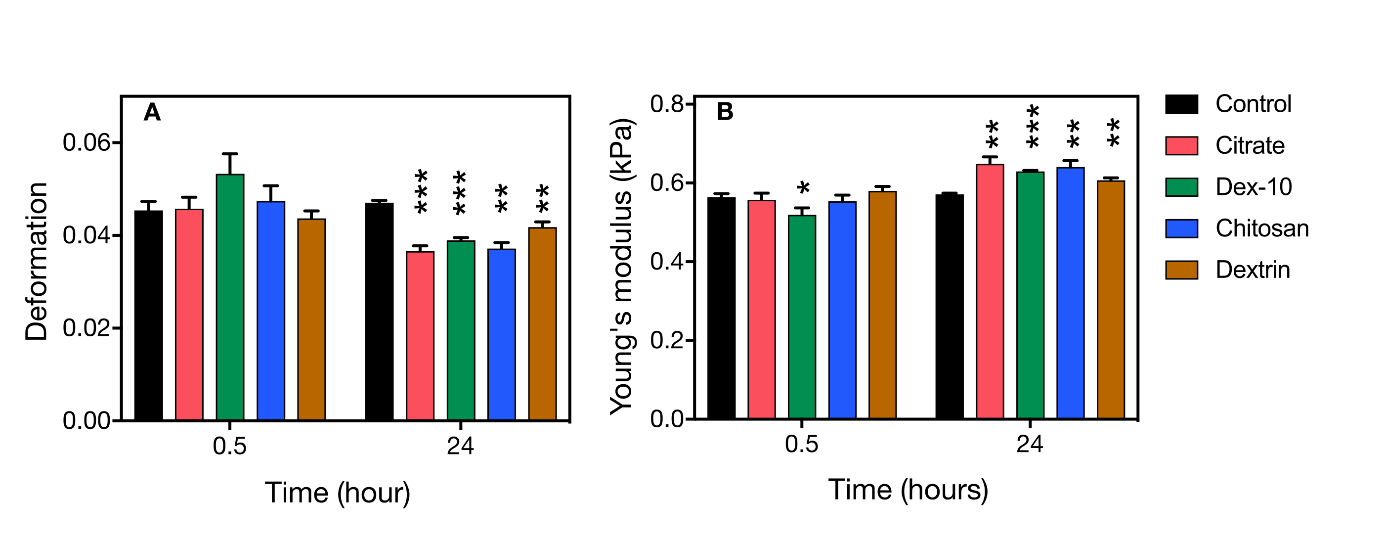
**Figure S3.** DLS (A) and zeta potential (B) data of biopolymer-functionalized AuNPs.

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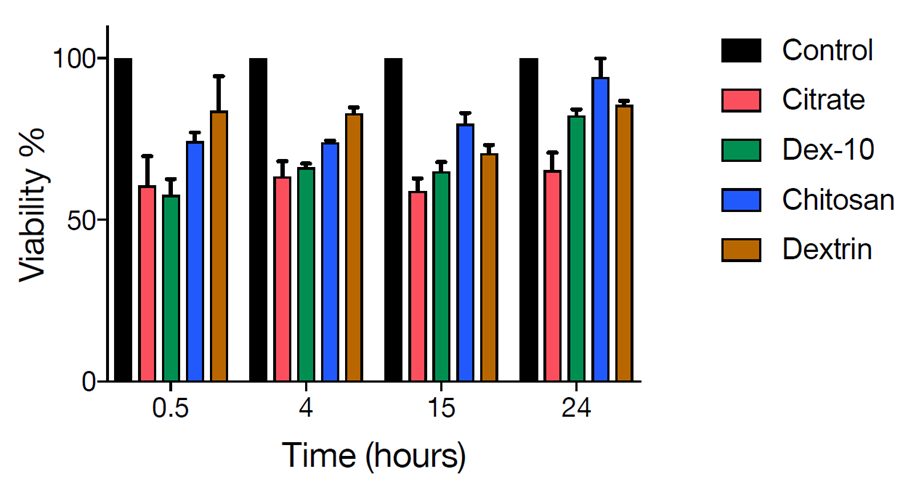
**Figure S4.** Charge distribution of different surface-functionalized AuNPs in protein poor- and rich media at 37 ºC after 24 h incubation.



**Figure S5.** Osmolarity of protein poor (A) and protein rich (B) CCM after incubation with different surface-functionalized AuNPs for 0.5 h and 24 h at 37 ºC.



**Figure S6.** Time-dependent mechanical alterations of HL60 cells in presence of AuNPs (50 nM) in RPMI without FCS. Error bars correspond to the standard error of mean.

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**Figure S7.** Time dependent cytotoxicity results of HL 60 cells in presence of different surface-functionalized AuNP (50 nM) in RPMI media without FCS. Error bars correspond to the standard deviation.