

### Supporting figure captions

Fig S1. Schematic flow of experimental procedures followed in this study.

Fig S1.(A) MALDI-MS spectra for optimization acquired after a 3h incubation of *S.aureus* cells with a) 0.00mg/mL, (b) 0.01mg/mL, (c) 0.02mg/mL, (d) 0.04mg/mL, (e) 0.05mg/mL and (f) 0.1mg/mL concentrations of CdS-MPA (B) MALDI-MS spectra acquired after a 3h incubation of *S.aureus* cells with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.02mg/mL, (d) 0.04mg/mL, (e) 0.05mg/mL and (f) 0.1mg/mL concentrations of CdSe-MUA.

Fig S2.(A) MALDI-MS spectra for optimization acquired after a 6h incubation of *S.aureus* cells with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.1mg/mL, (d) 0.2mg/mL, (e) 0.4mg/mL and (f) 0.5mg/mL concentrations of CdS-MPA.

Fig S2.(B) MALDI-MS spectra acquired after a 6h incubation of *S.aureus* cells with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.1mg/mL, (d) 0.2mg/mL, (e) 0.4mg/mL and (f) 0.5mg/mL concentrations of CdSe-MUA.

Fig S3.(A) MALDI-MS spectra acquired after a 9h incubation of *S.aureus* cells with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.1mg/mL, (d) 0.2mg/mL, (e) 0.4mg/mL and (f) 0.5mg/mL concentrations of CdS-MPA.

Fig S3.(B) MALDI-MS spectra acquired after a 9h incubation of *S.aureus* cells with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.1mg/mL, (d) 0.2mg/mL, (e) 0.4mg/mL and (f) 0.5mg/mL concentrations of CdSe-MUA.

Fig S4.(A) Epifluorescence micrographs of *S.aureus* cells incubated with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.1mg/mL, (d) 0.2mg/mL, (e) 0.4mg/mL and (f) 0.5mg/mL concentrations of CdS-MPA for 12h.

Fig S4.(B) Epifluorescence micrographs of *S.aureus* cells incubated with a) 0.00mg/mL, (b) 0.05mg/mL, (c) 0.1mg/mL, (d) 0.2mg/mL, (e) 0.4mg/mL and (f) 0.5mg/mL concentrations of CdSe-MUA for 12 h.