**Electronic supplementary information** 

## Catalase-Functionalized SiO<sub>2</sub> Nanoparticles Mediate Growth of Gold Nanoparticles for Plasmonic Biosensing of Attomolar MicroRNA with the Naked Eye

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Figure S1 Zata potential of SiO<sub>2</sub>, aminated SiO<sub>2</sub> and carboxylated SiO<sub>2</sub> nanoparticles.



Figure S2 (A) paragraph and (B) UV-Vis absorption of obtained coloured solution (left to right: CAT-SA-SiO<sub>2</sub> nanoparticles, SiO<sub>2</sub> nanoparticles and control) on the sensing system.



Figure S3 (A) The catalytic performance of different amounts of CAT. (B) the linear correlation between  $-\triangle A_{550}$  and the amount of CAT in the range of  $1.22 \times 10^{-15}$  to  $2.44 \times 10^{-13}$  mol: Y =  $0.007 + 1.248 \times 10^{12}$  X, where Y and X represent  $-\triangle A_{550}$  value and CAT amount (mol), respectively.