

SUPPLEMENTARY INFORMATION

1. The determination of size of gold nanostars and length of branches. The size of gold nanostar is $69.57 \pm 6.08 \text{ nm}$ ($N=142$ nanoparticles) and the length of branches is $12.96 \pm 4.44 \text{ nm}$ ($N=609$ branches).

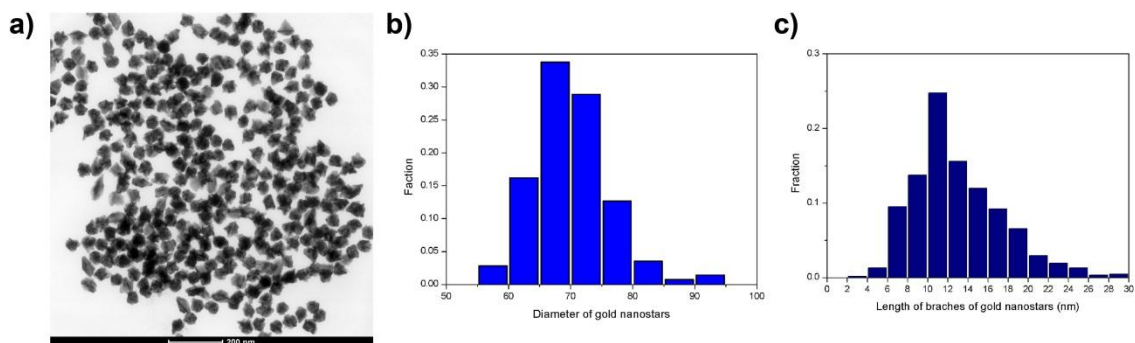


Fig. S1 a) TEM images of gold nanostars b) histogram of the size of gold nanostars c) histogram of the length of branches of gold nanostars