## Controllable preparation of sea urchin-like Au NPs as SERS substrate

## for highly sensitive detection of the toxic atropine

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Fig. S1 SEM image of octahedron gold crystal.



Fig. S2 SEM image of THH gold crystal.



Figure S3 the SEM image of sea urchin-like gold nanoparticles prepared when 200  $\mu L$  of gold octahedral seeds and 300  $\mu L$  of 2 mM glutathione are added.



Fig.S4 SEM images of gold nanostructures prepared with 10  $\mu L$  glutathione in the growth solution.

Fig.S5 SEM images of gold nanostructures prepared with 25  $\mu L$  glutathione in the growth solution.

