

Supporting Information

Regiospecific Plasmonic Assemblies for *in-situ* Raman Spectroscopy in Live Cells

Liguang Xu^{1,#}, Hua Kuang^{1,#}, Chuanlai Xu^{1,#}, Wei Ma^{1,2}, Libing Wang^{1,*}, Nicholas A. Kotov^{2,*}

¹School of Food Science and Technology, State Key Lab of Food Science and Technology, Jiangnan University, Wuxi, JiangSu, 214122, PRC

²Department of Chemical Engineering, University of Michigan, Ann Arbor, Michigan, 48109

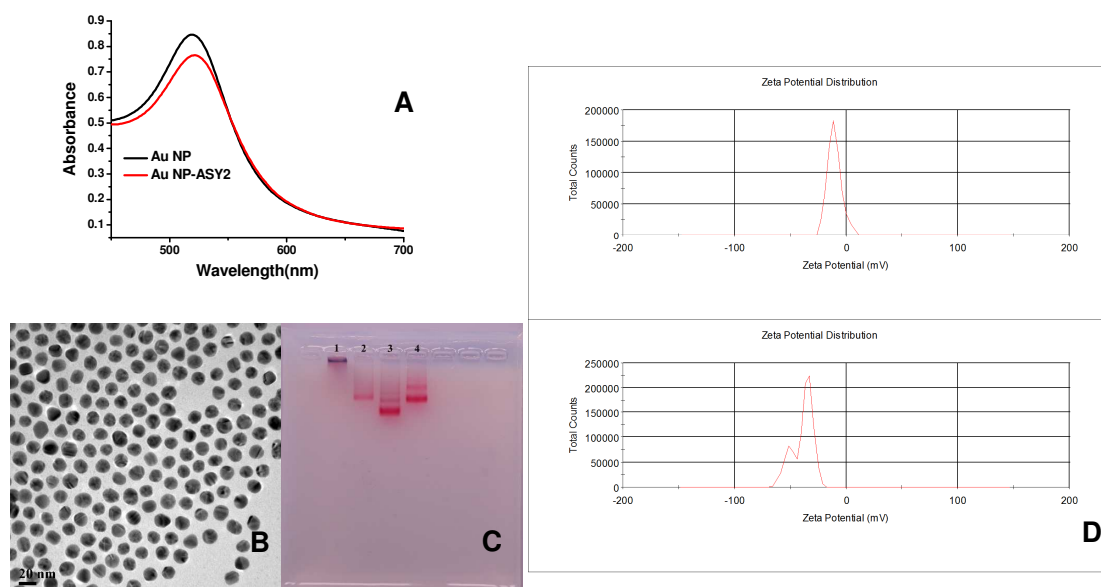


Figure S1. Comparative characterization of Au NPs (A) UV/Vis spectra of original and ASY2-modified Au NPs ; (B) Representative TEM image of ASY2-modified Au NPs; (C) Electrophoresis of Au NPs after different modification procedures: Lane 1: original Au NPs; Lane 2,4: Au NPs-DNA modification according to reference 1; Lane 3: Au NPs-DNA modification according to method described here; (D) Zeta potential data for original Au NPs (top) and ASY2-modified Au NPs (bottom).

These authors contributed to this paper equally.

* To whom correspondence should be addressed. E-mail: wanglb@hnciq.gov.cn; kotov@umich.edu

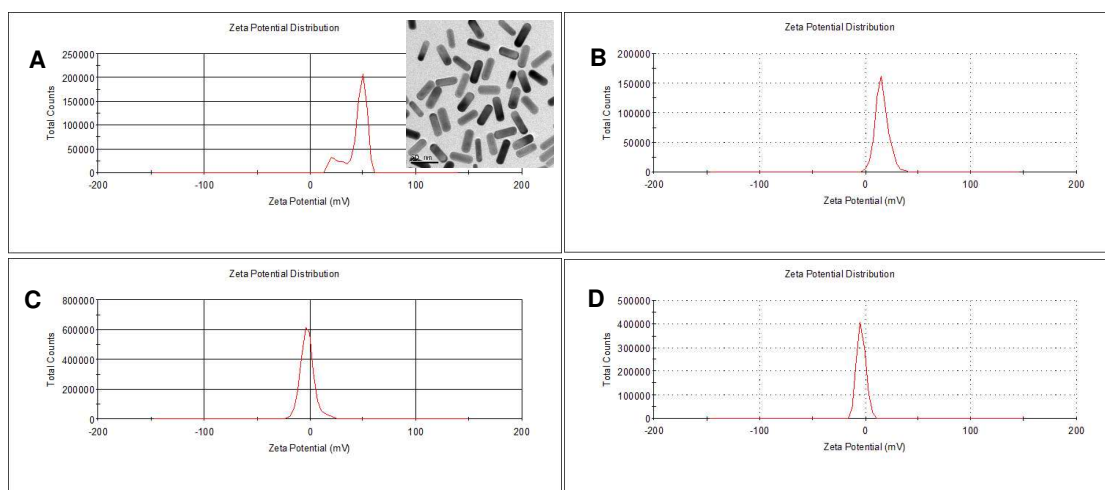


Figure S2. Comparative characterization of original and modified Au NRs. (A) Zeta potential of original Au NR, (B) Au NRs ASY1-modified the ends, (C) Au NRs ASY1-modified on the sides, (D) Au NRs ASY1-modified over the entire surface.

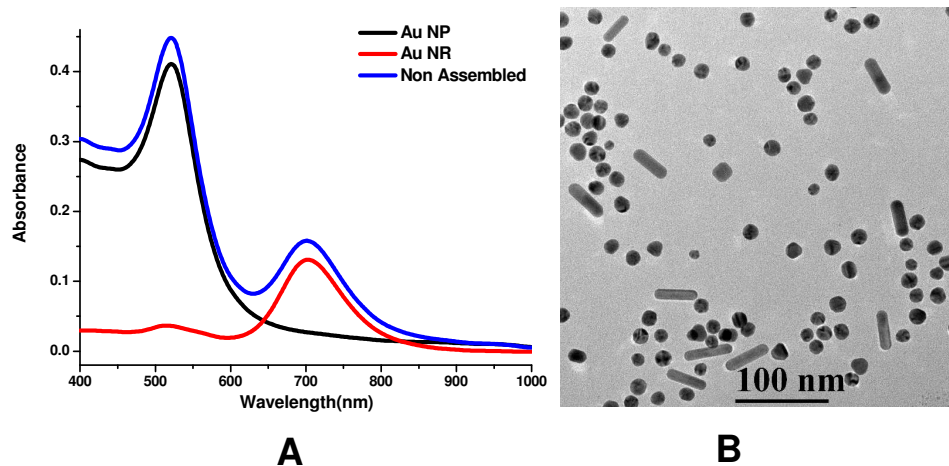


Figure S3. UV-/Vis spectrum (A) and TEM images (B) for the control experiment with non-assembling NP and NRs.

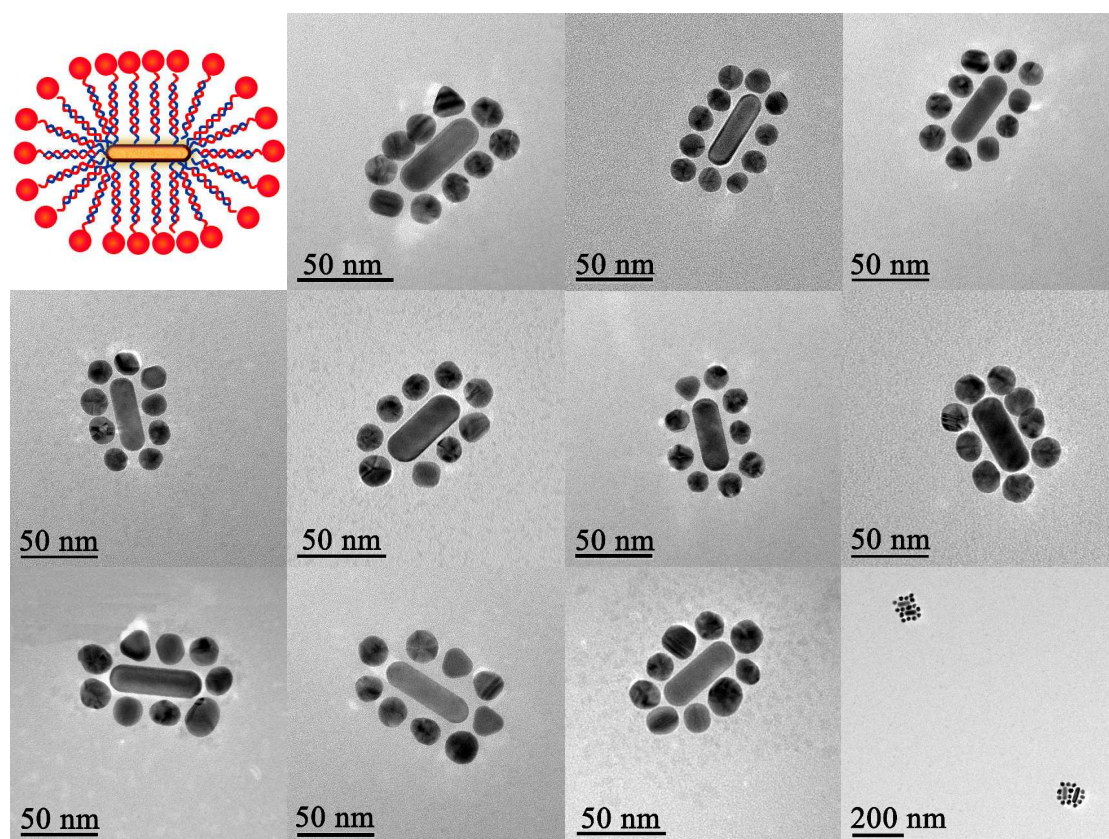


Figure S4. Representative TEM images of *Satellite* assemblies.

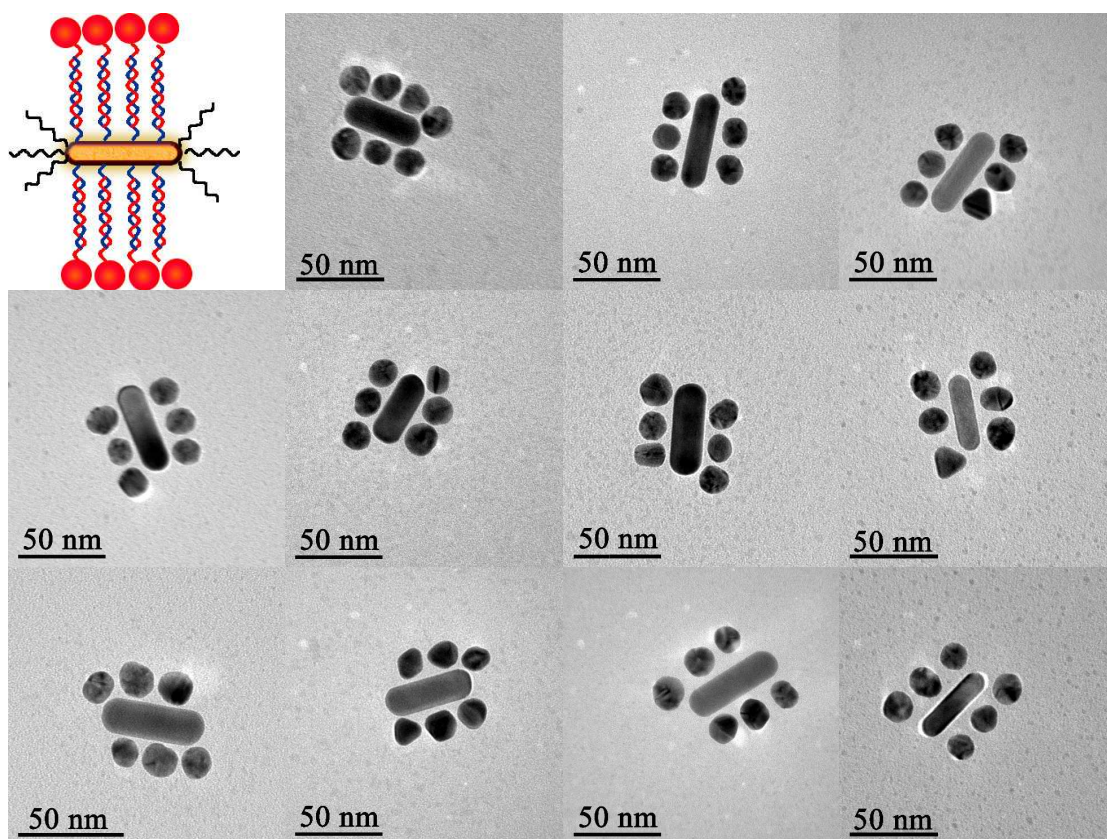


Figure S5. Representative TEM images of *Side* assemblies.

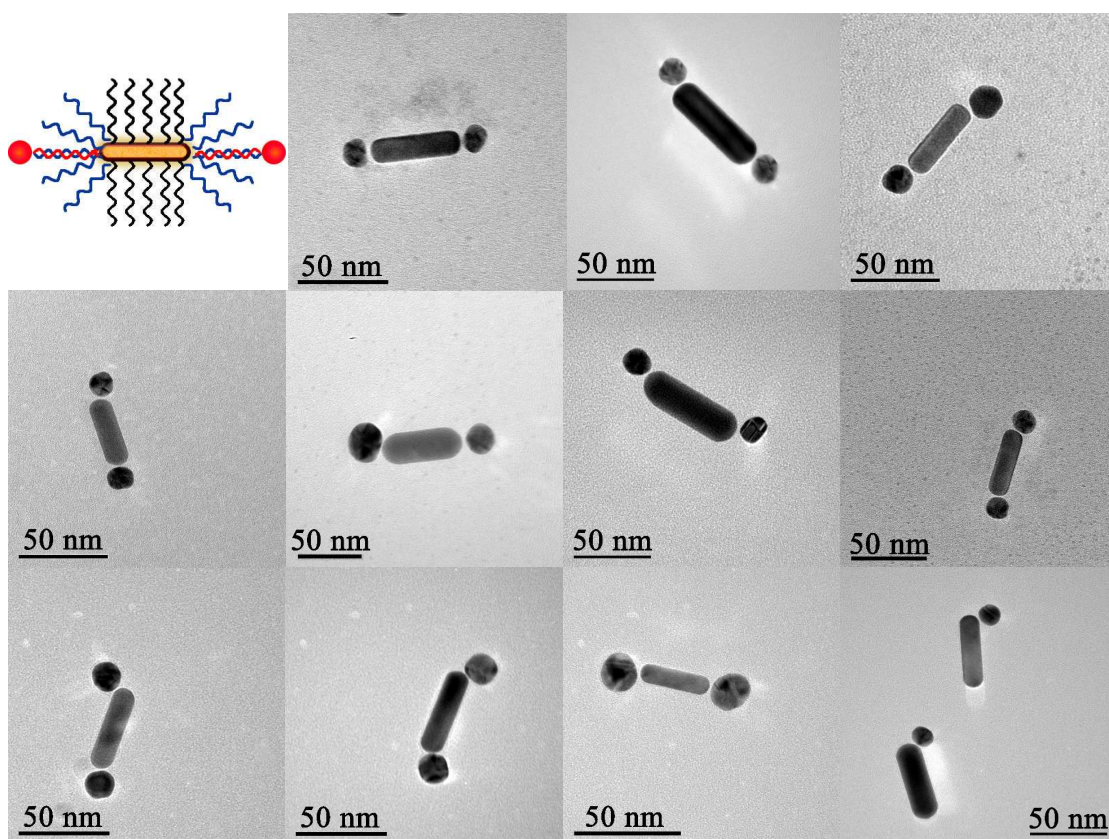


Figure S6. Representative TEM images of *End* assemblies.

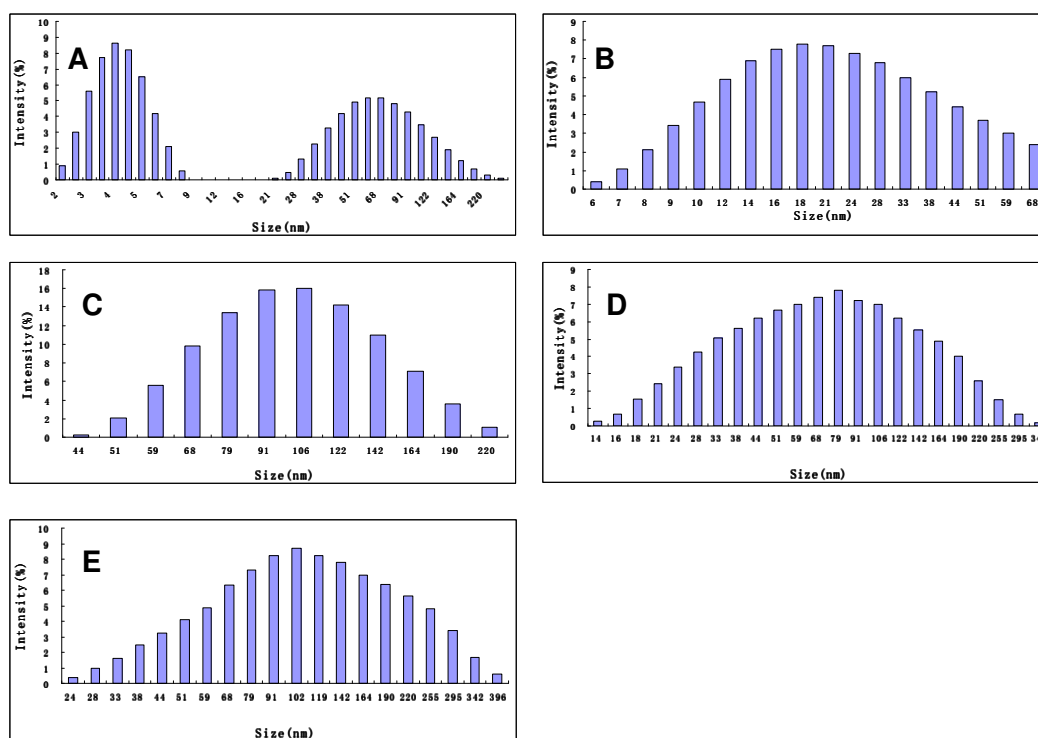


Figure S7. Hydrodynamic diameters of the specific assemblies and building blocks determined by DLS: (A) non-assembled Au NRs; (B) non-assembled Au NPs; (C) *Satellite* assemblies; (D) *Side* assemblies; (E) *End* assemblies.

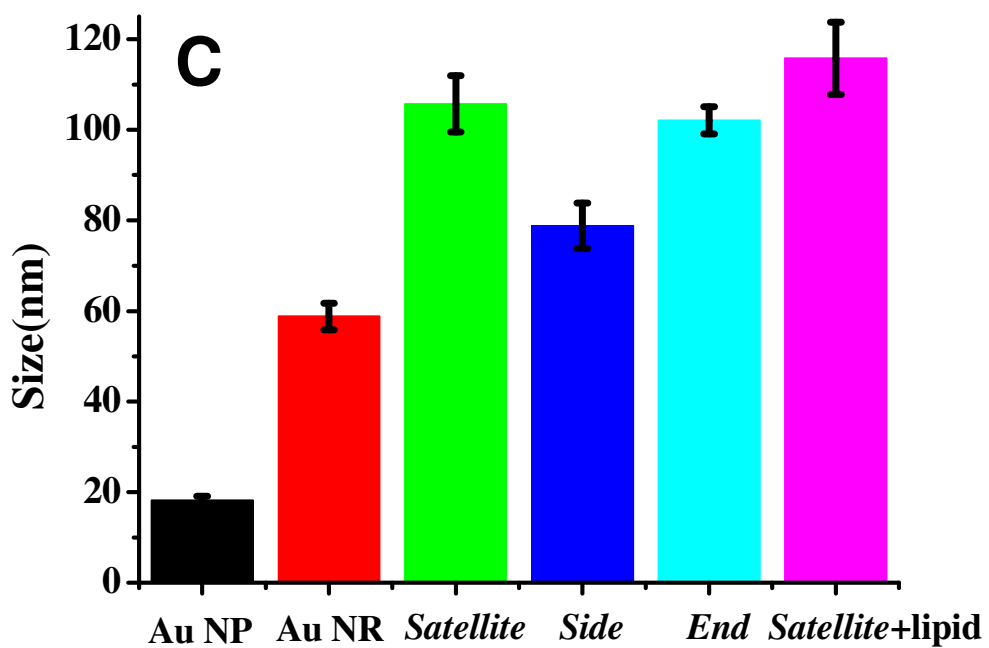
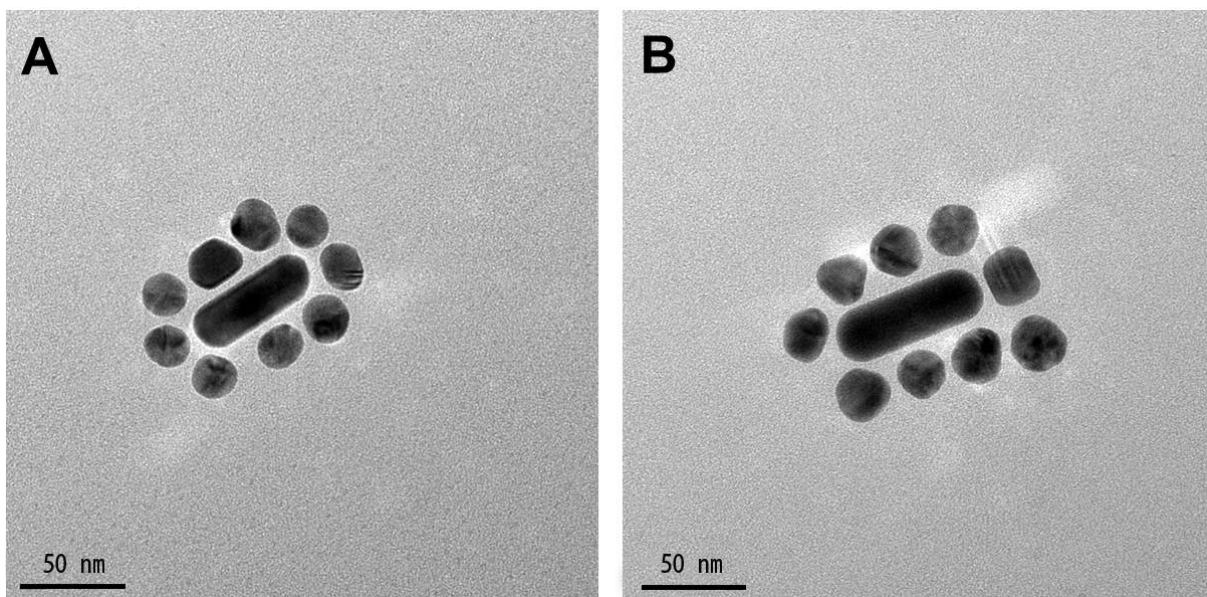


Figure S8. TEM images of the *Satellite* assemblies before (A) and after (B) mixed with the lipid; (C)

The size of the *Satellite* assemblies with and without the lipid in Fig. 6H.

References

1. H. Kuang, S. Zhao, W. Chen, W. Ma, Q. Yong, L. Xu, L. Wang and C. Xu, *Biosensors and Bioelectronics*, 2011, **26**, 2495-2499.