

## Supporting Information

Size-controlled synthesis of cyclodextrin-capped gold nanoparticles for molecular recognition using surface-enhanced Raman scattering

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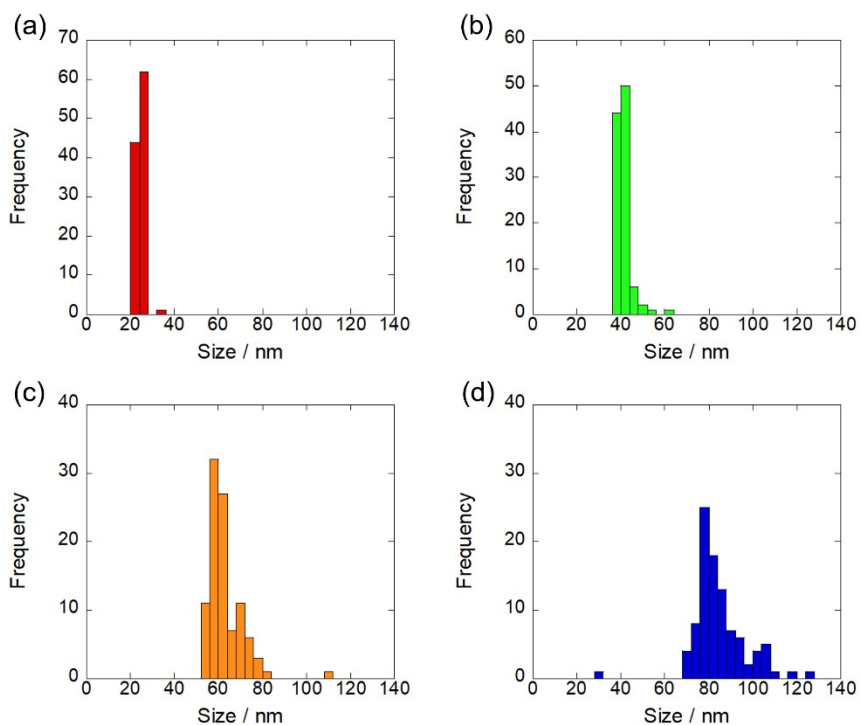


Figure S1. (a, b, c and d) Histograms of size distribution of  $\beta$ -CD-capped AuNPs for each size measured by TEM observation. In order to calculate the average particle size in each of the dispersions, the particle sizes of around 100 particles were measured from TEM images

Table S1. Relation between the particle size, zeta-potential measured by DLS and the amount of seed solution for each AuNPs.

Volume of added seed solution	Seed	2 mL	0.5 mL	0.2 mL
Diameter / Zeta-potential (using $\alpha$ -CD AuNPs)	35 nm / -44 mV	45 nm / -43 mV	70 nm / -44 mV	84 nm / -44 mV
Diameter / Zeta-potential (using $\beta$ -CD AuNPs)	28 nm / -44 mV	37 nm / -45 mV	55 nm / -46 mV	74 nm / -48 mV

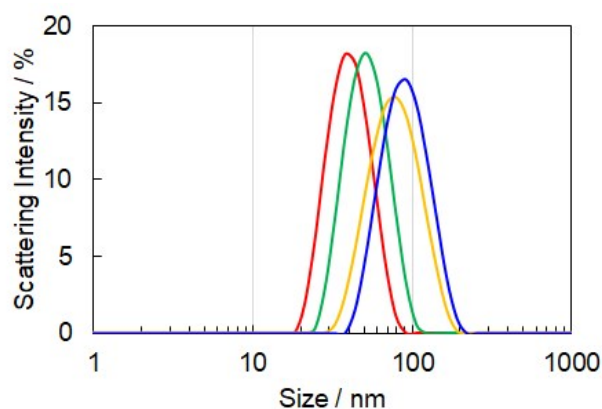


Figure S2. Size distribution of  $\alpha$ -CD-capped AuNPs for each size measured by DLS.

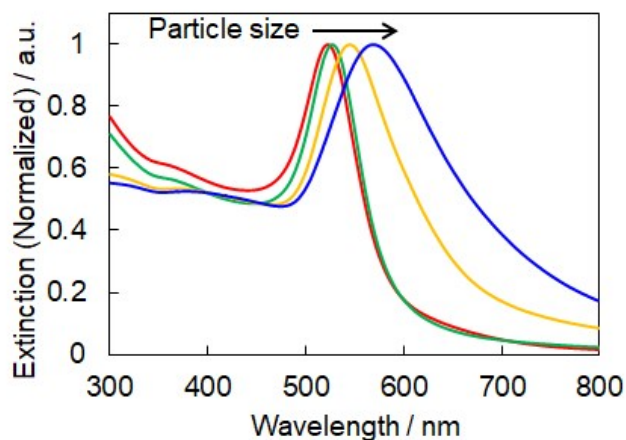


Figure S3. Extinction spectra of the  $\alpha$ -CD-capped AuNPs dispersed in an aqueous solution AuNPs.

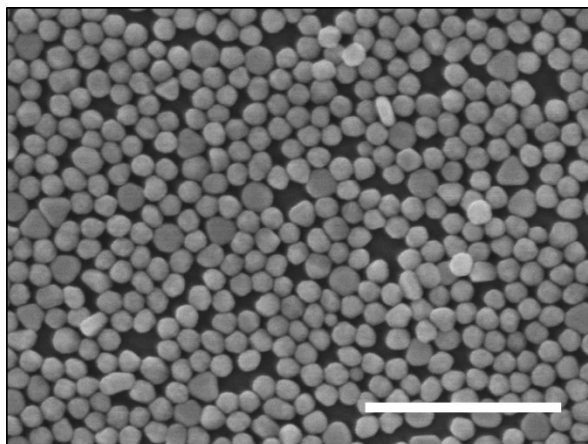


Figure S4. An SEM image of the  $\alpha$ -CD-capped AuNP monolayer with diameter of 70 nm measured by DLS. The scale bar is 500 nm.

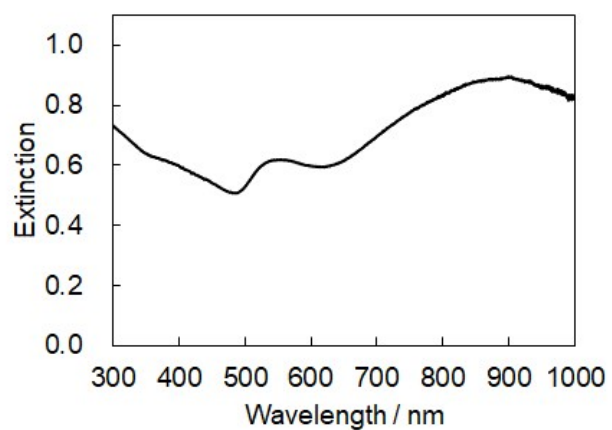


Figure S5. Extinction spectra of the  $\alpha$ -CD-capped AuNPs monolayer fabricated on a quartz substrate.