Gold Nanohexagrams via Active Surface Growth Under Sole CTAB Control

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Supplementary Figures：

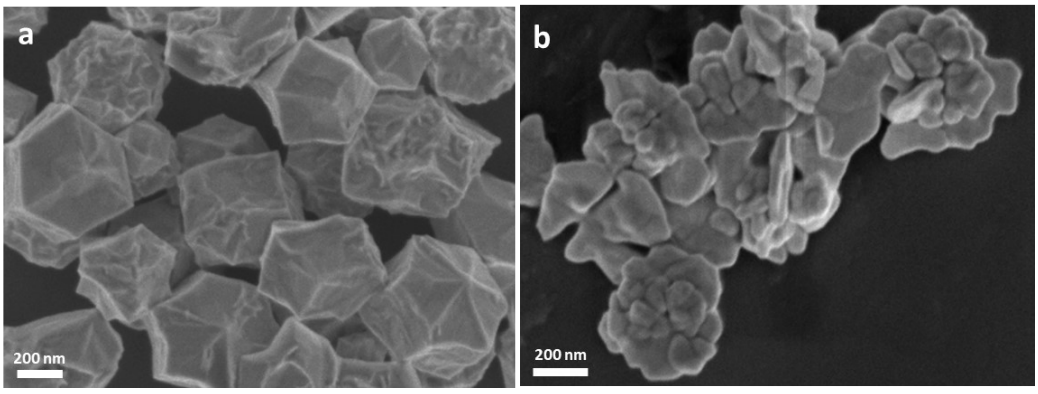

Figure S1. CTAB replaced with (a) CTAC and (b) NaBr of the same molar concentration.

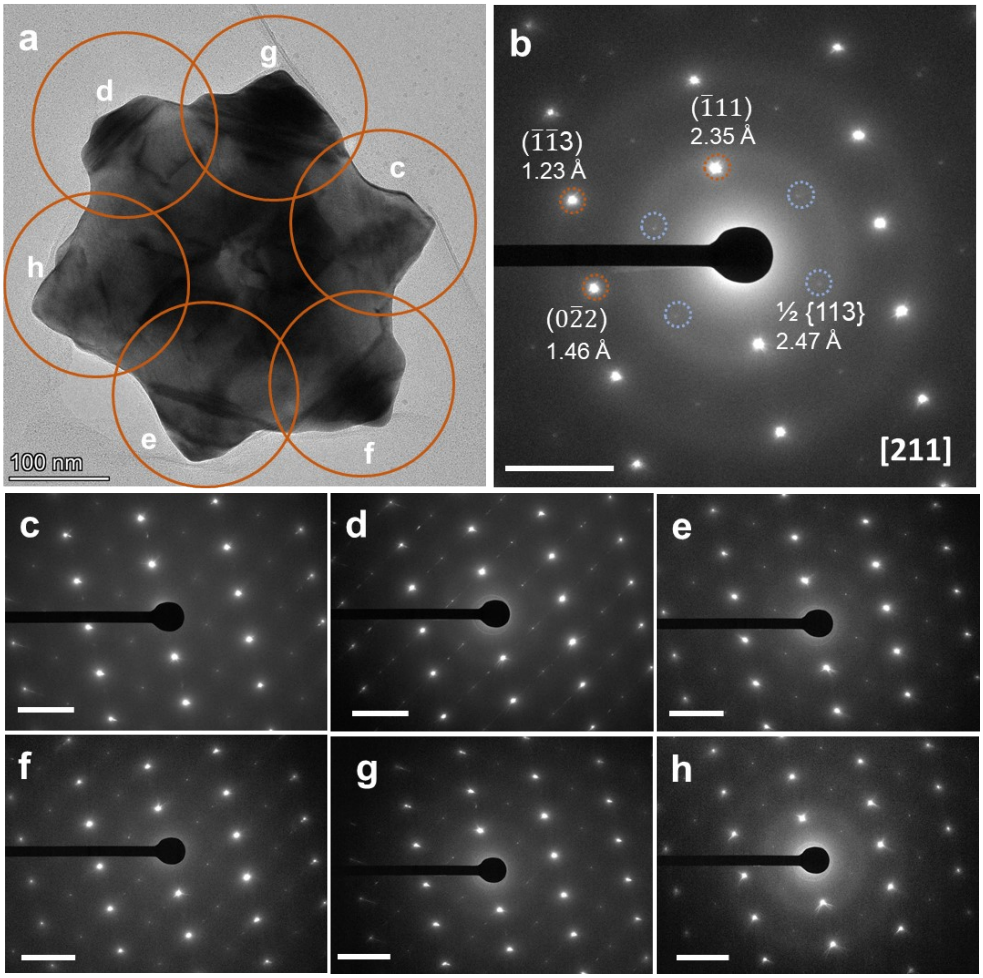

Figure S2. The pseudo-single-crystallinity of the nanohexagram. a) TEM image of a typical nanohexagram, showing the selected areas of the SAED analyses. b) SAED pattern of the entire nanohexagram aligned to the [211] zone axis, the d-spacing with 2.35 Å, 1.23 Å, 1.46 Å, 2.47 Å correspond to {111}, {113}, {022} and 1/2{113} respectively. c-h) SAED pattern of each corner. Scale bar: 5 nm^{-1}.

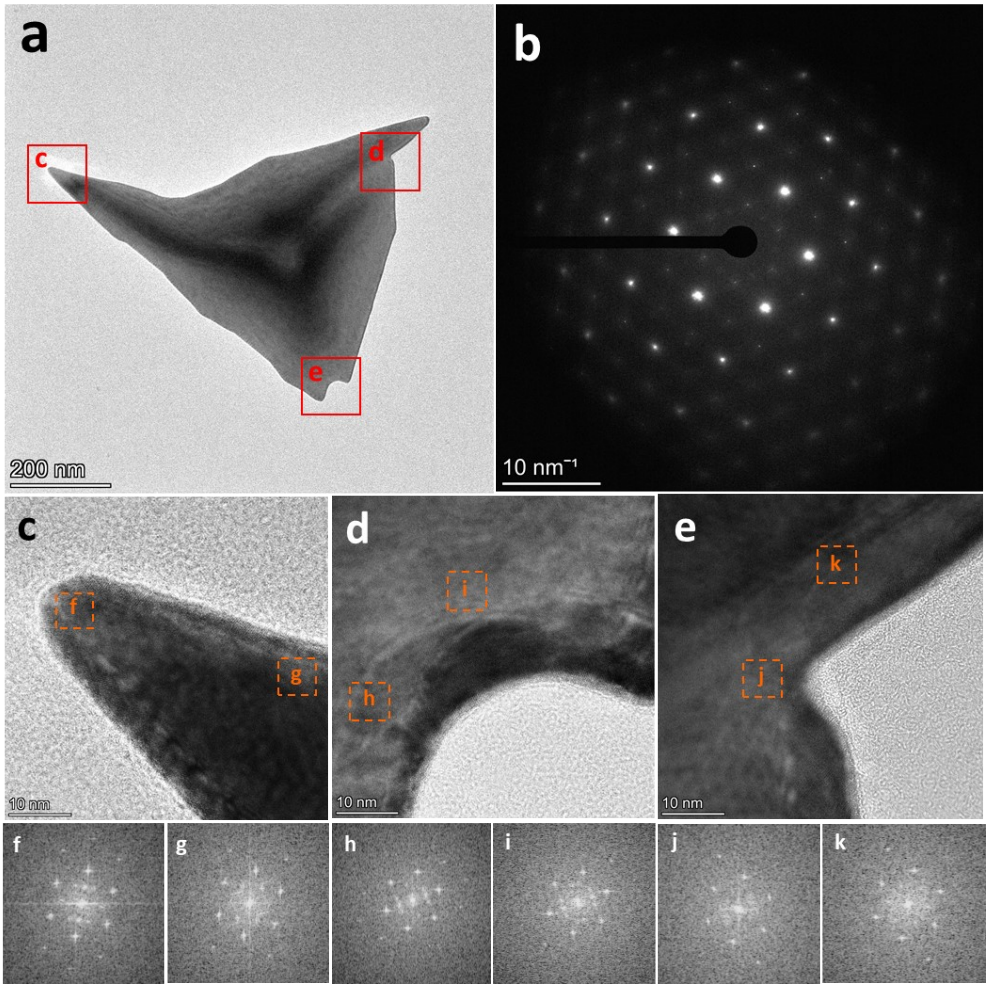

Figure S3. The pseudo-single-crystallinity of the nanohexagram with curved tips. a) TEM image of a typical nanohexagram. b) SAED pattern of the entire nanohexagram. c-e) the selected areas of the curved regions and tips in (a). f-k) Fourier transformation patterns of the selected areas in (c-e).

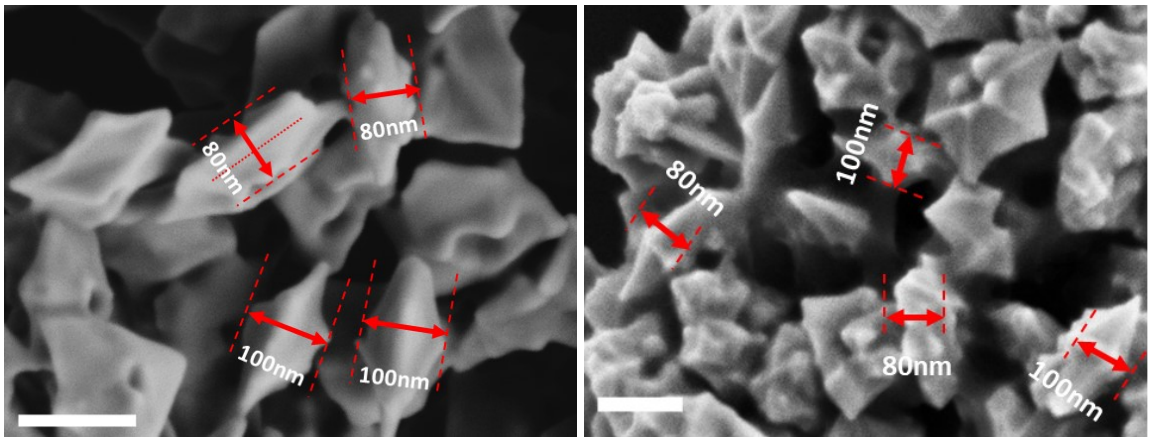

Figure S4. Representative samples indicating the thickness of nano-hexagram are 80-100 nm (scale bar 200 nm).

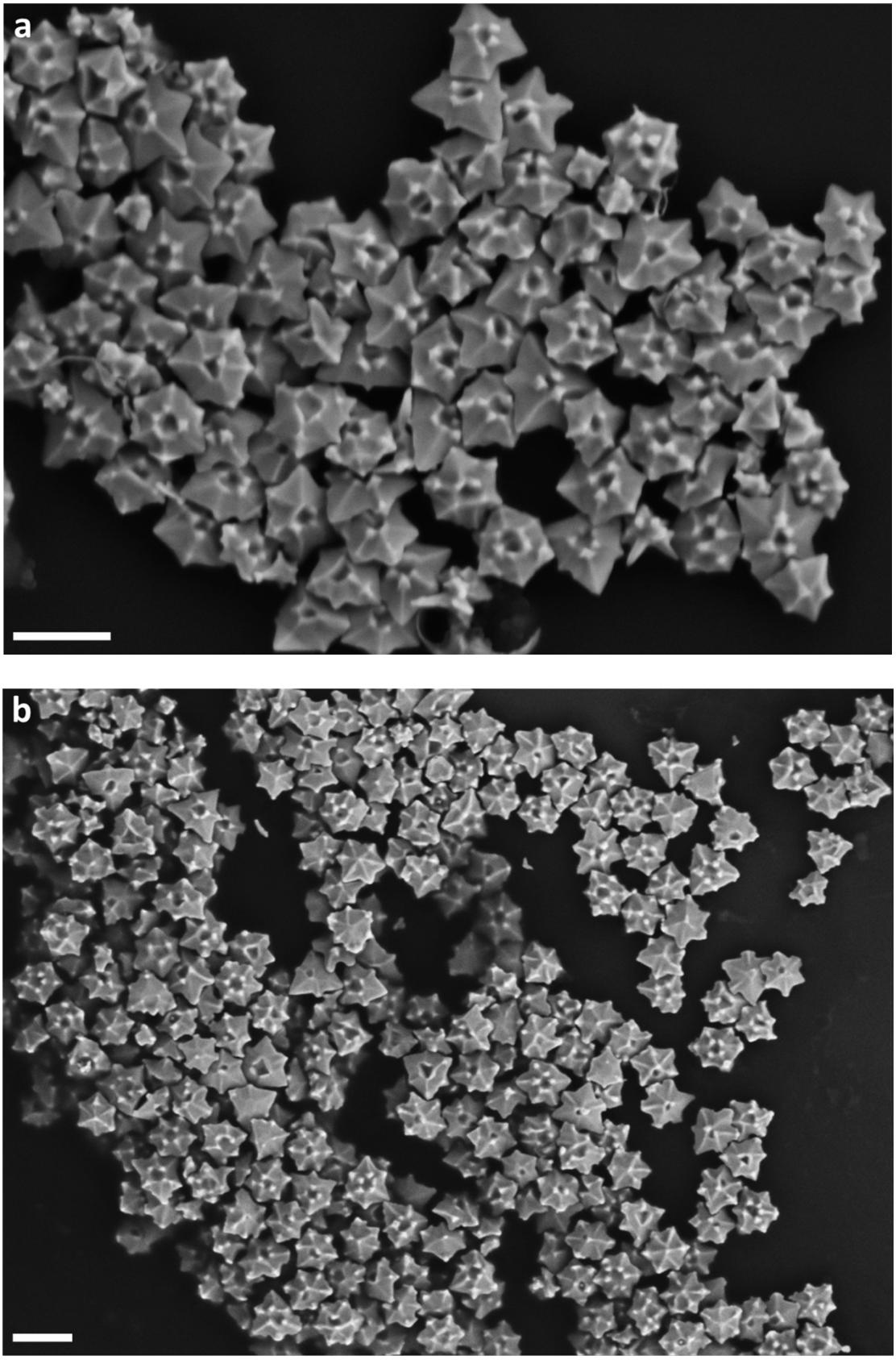

Figure S5. Large-view image of gold nanohexagram for a) Figure 4g. b) Figure 4f. All scale bars are 400 nm.

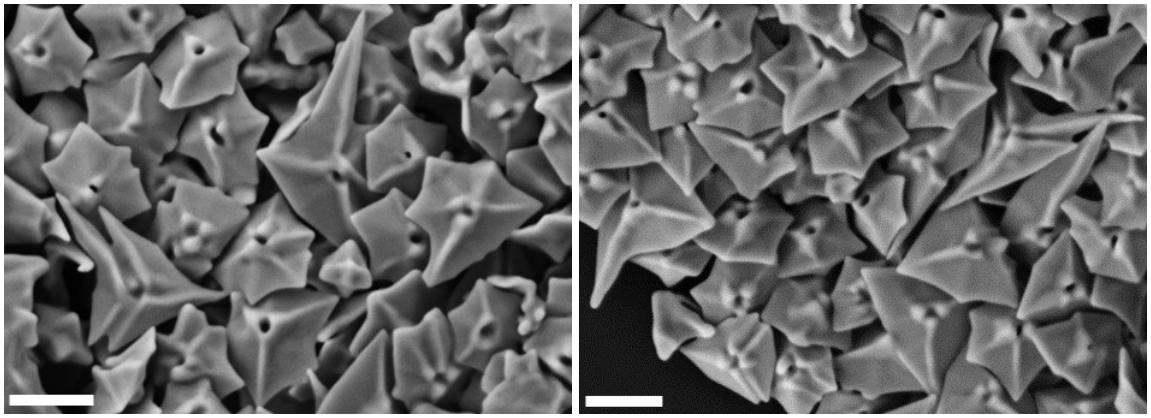

Figure S6. Large-view images of gold nanohexagram with curved tips and steep ridges for Figure 4j. All scale bars are 400 nm.

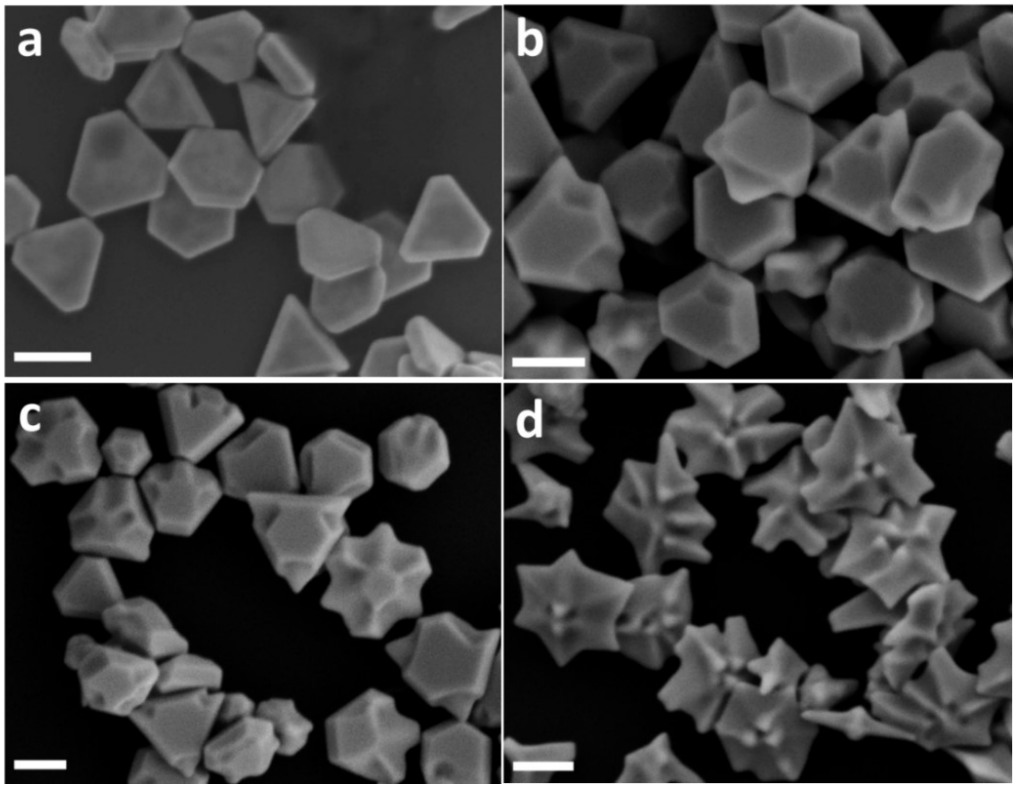

Figure S7. Dependence of the growth mode on the rate of reduction. a) the products obtained with the AA/$HAuCl_4$ ratio of 3. (b-d) the product nanostructures obtained with increasing amount of NaOH (0.25, 0.5, and 0.75 equivalent of AA), with the AA/$HAuCl_4$ ratio kept at 3. All scale bars are 400 nm.

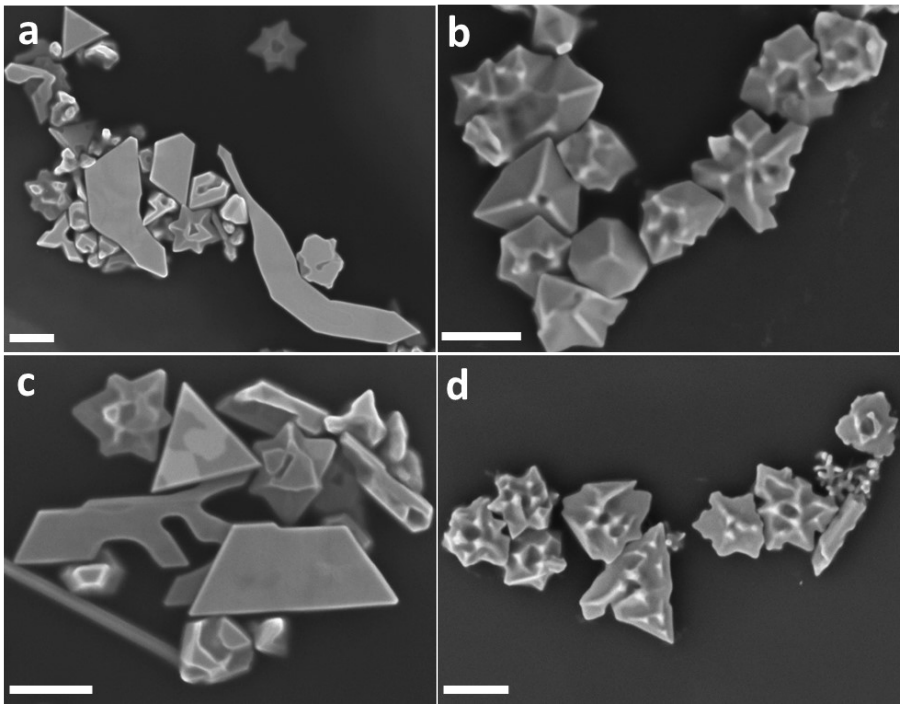

Figure S8. Dependence of the growth mode on CTAB concentration and the rate of reduction. a) 5 mM CTAB, AA/$HAuCl_4$ ratio at 3. b) 5 mM CTAB, AA/$HAuCl_4$ ratio at 12. c) 1 Mm CTAB, AA/$HAuCl_4$ ratio at 3. d) 1 mM CTAB, AA/$HAuCl_4$ ratio at 12. All scale bars are 200 nm.

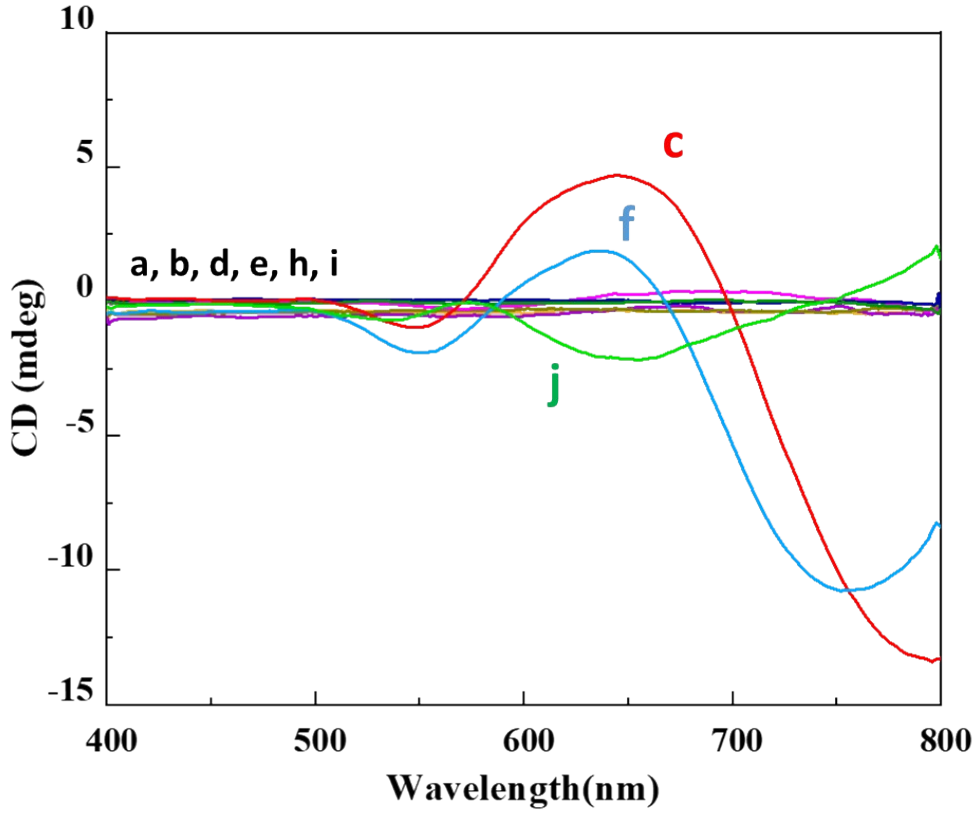

Figure S9. The CD spectra for samples in Figure 5.