

## Supporting Information

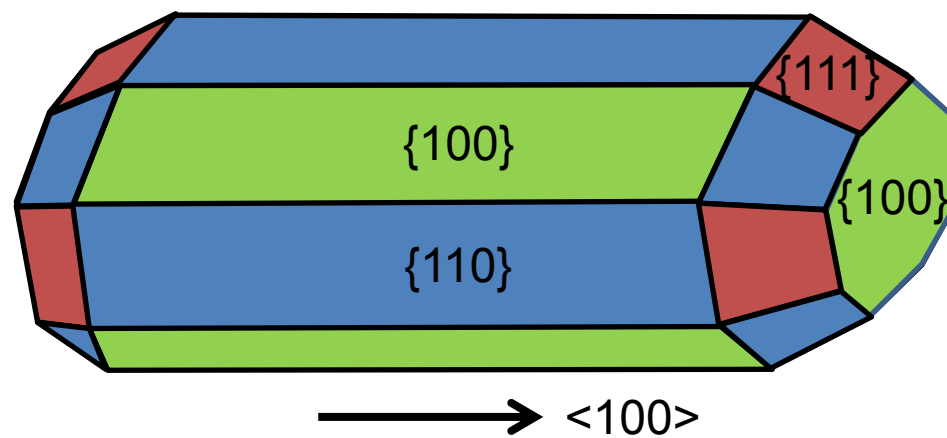
### Synthesis and growth mechanism of Au@Cu core-shell nanorods having a high antioxidative property

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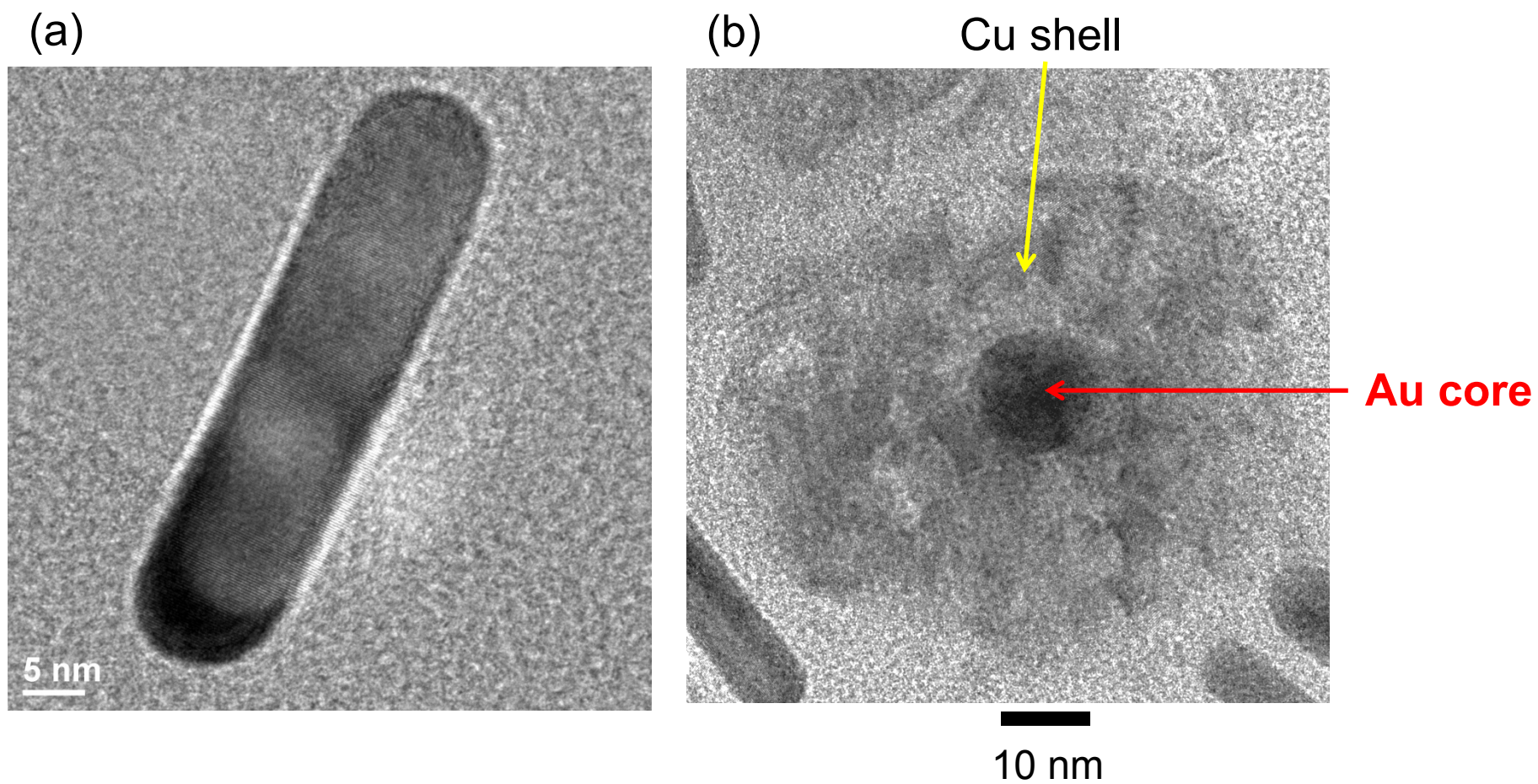
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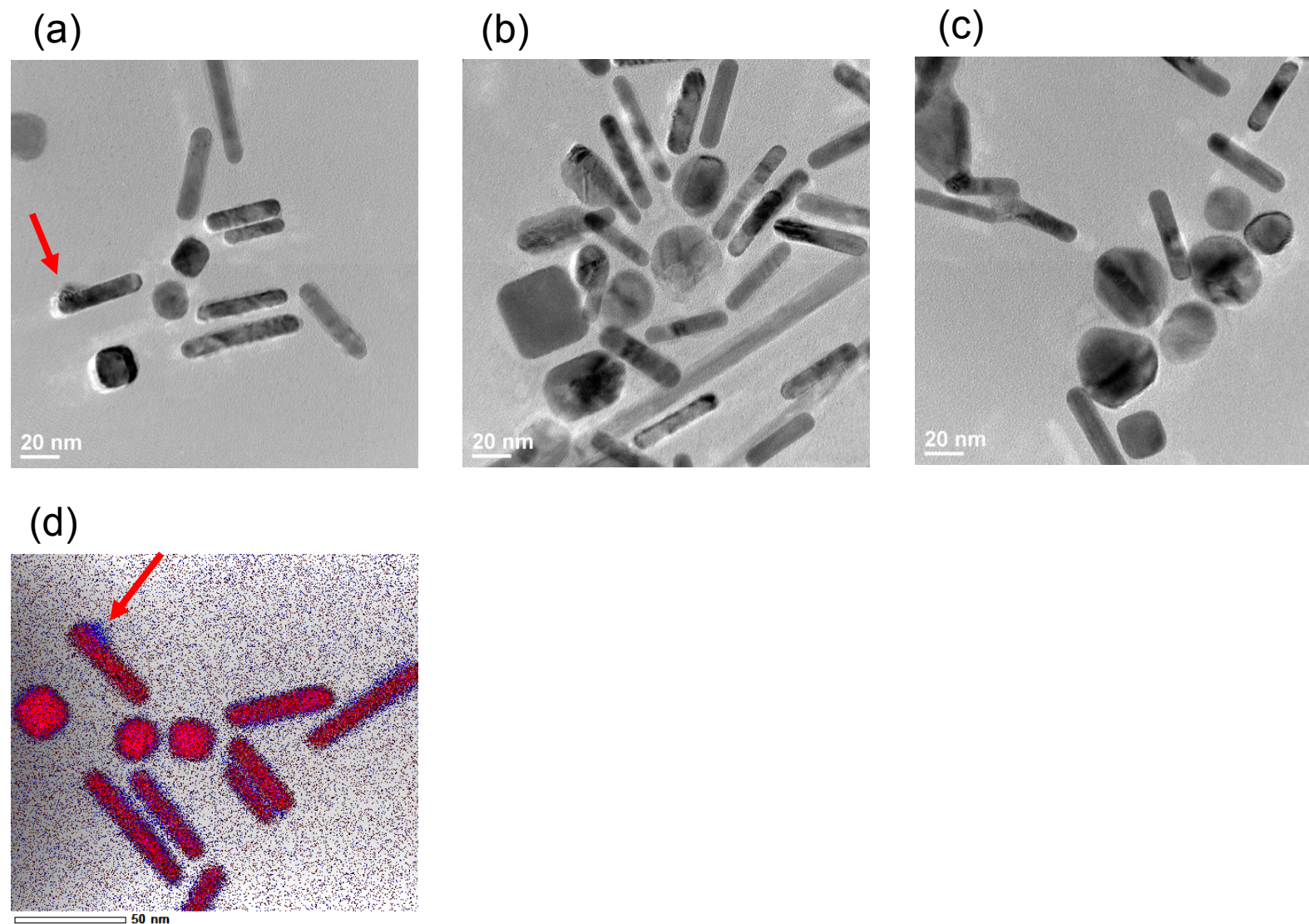
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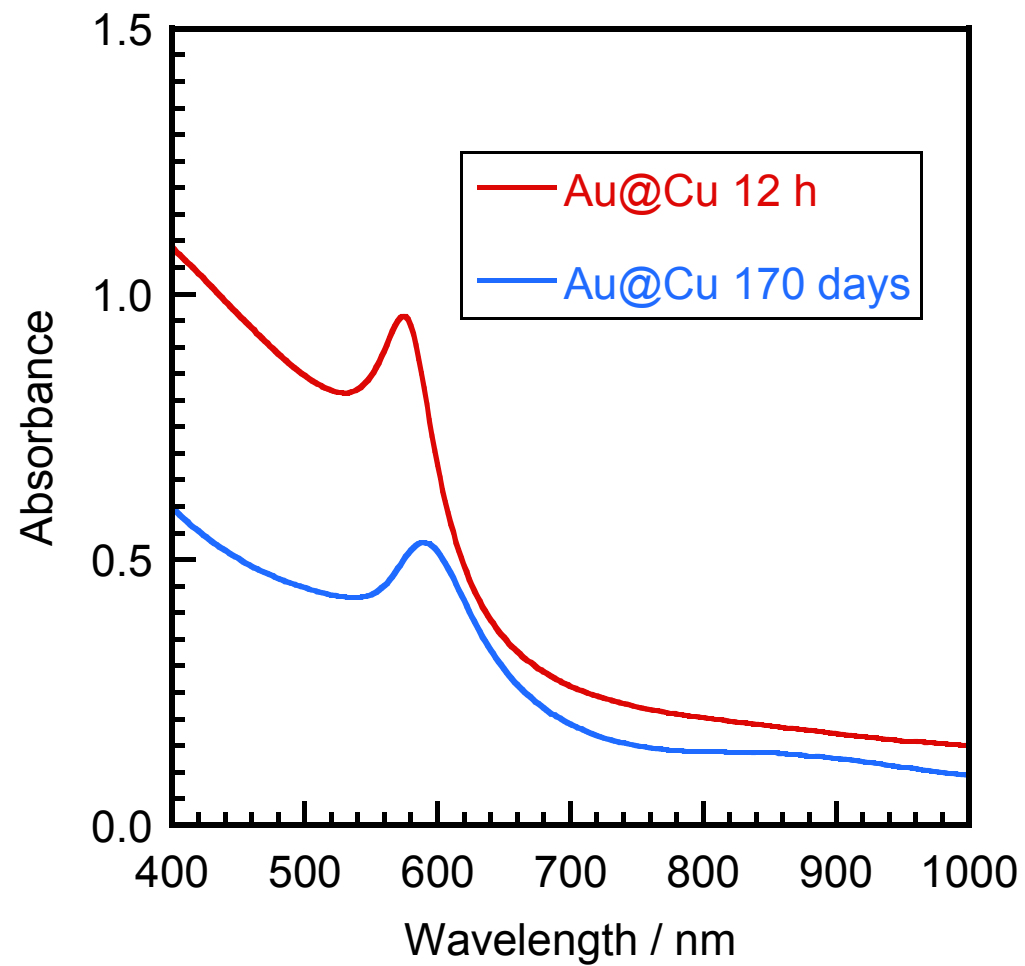
**Fig. S1.** Traditional crystal structures of Au NR prepared using CTAB.



**Fig. S2.** TEM image of (a) Au NR and (b) standing Au NR in Au@Cu.



**Fig. S3.** (a)-(c) TEM images of Au-Cu products obtained using  $\text{Cu}(\text{OAc})_2 \cdot \text{H}_2\text{O}/\text{NaCl}$  at 3, 6, and 9 h, respectively. (d) EDS image obtained at 3 h.



**Fig. S4.** SPR band of Au@Cu NRs obtained just after synthesis and after 170 days.