

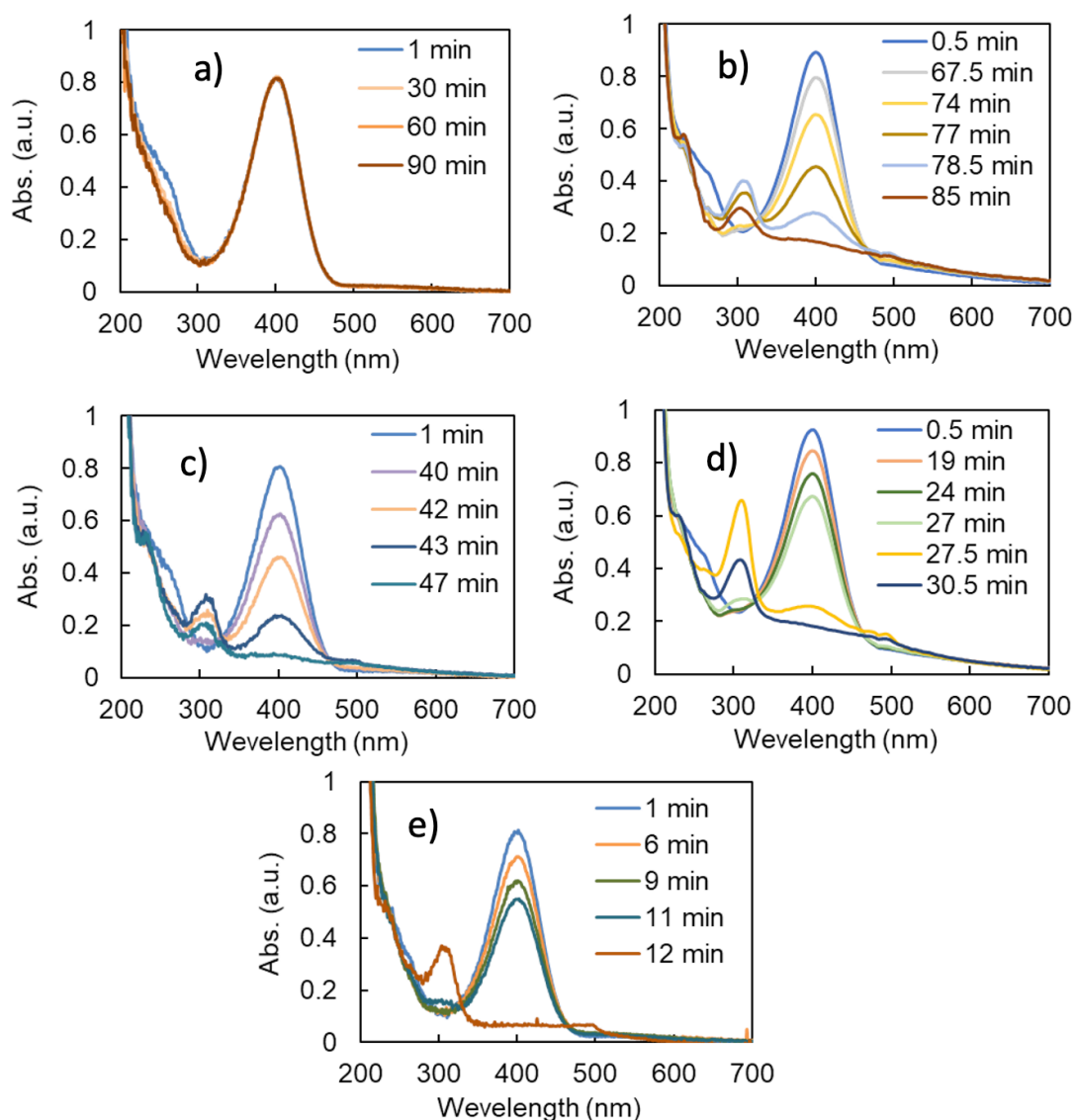
**Supporting Information for**  
**Generation of sub-5 nm AuNPs on Special Space of Loop-cluster**  
**Coronal of Polymeric Vesicle: Preparation and Its Unique Catalytic**  
**Performance in Reduction of 4-Nitrophenol**

Wen-Li Wang, Ayaka Kanno, Amika Ishiguri and Ren-Hua Jin\*

Department of Material and Life Chemistry, Kanagawa University, 3-27-1

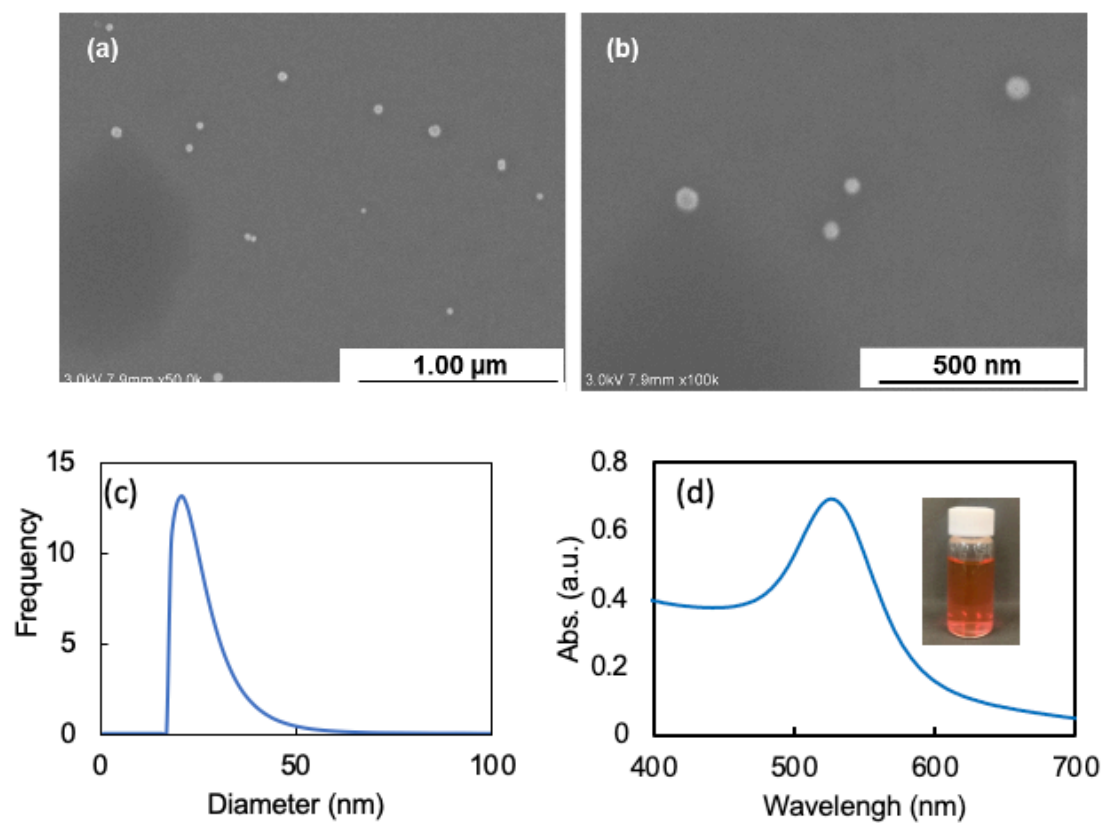
Rokkakubashi, Yokohama 221-8686, Japan.

E-mail: rhjin@kanagawa-u.ac.jp



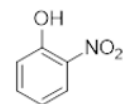
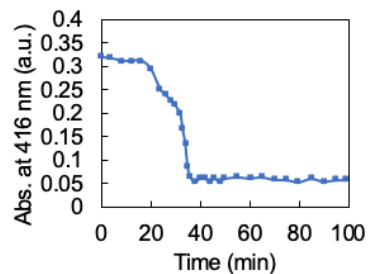
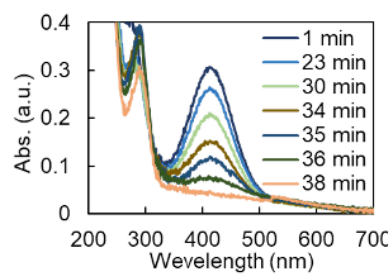
Run	Au ( $\mu\text{mol}$ )	4-NP ( $\mu\text{mol}$ )	NaBH <sub>4</sub> ( $\mu\text{mol}$ )	Solvent	[Au]:[4-NP]: [NaBH <sub>4</sub> ]	Induction time (min)
a	0.084	0.144	21.1	deionized water	1 : 1.71 :252	No reduction
b	0.084	0.144	26.4	deionized water	1 : 1.71 :314	57
c	0.084	0.144	42.3	deionized water	1 : 1.71 :503	28
d	0.084	0.144	84.6	deionized water	1 : 1.71 :1007	16
e	0.084	0.144	169.9	deionized water	1 : 1.71 :2023	1

**Fig. S1.** Reduction of 4-nitrophenol catalyzed by LCCV@AuNP with different concentrations of 4-NP and NaBH<sub>4</sub>, monitored by UV-vis; (a) low concentration, run **a** in table 1; (b) medium concentration, run **b** in table 1; (c) high concentration, run **c** in table 1.

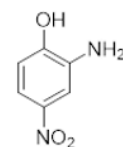
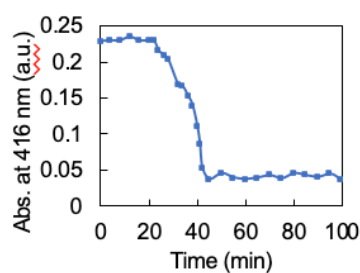
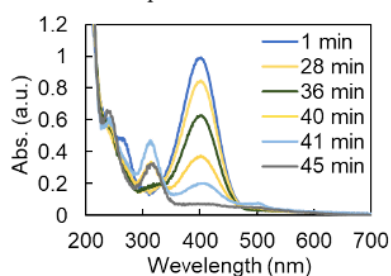


**Fig. S2.** AuNP@C obtained from the reduction of  $\text{HAuCl}_4$  by trisodium citrate. a-b) SEM images of the AuNP@C. c) DLS profile of the aqueous solution of the AuNP@C. d) UV-vis spectrum of the aqueous solution of the AuNP@C (inset: snapshot of AuNP@C in aqueous solution).

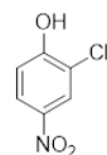
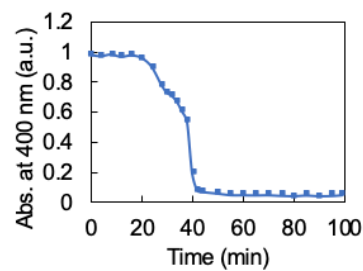
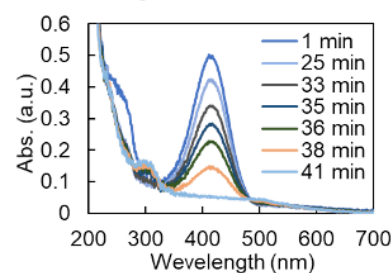
• 2-Nitrophenol



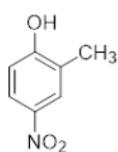
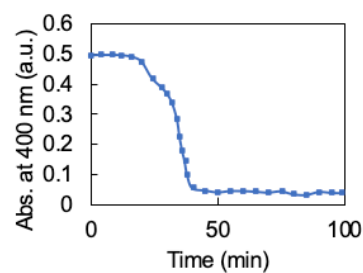
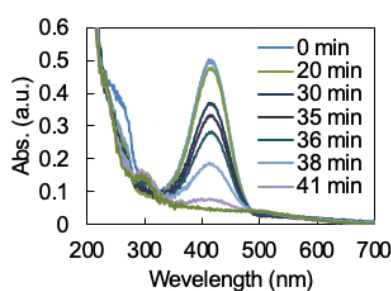
• 2-Amino-4-nitrophenol



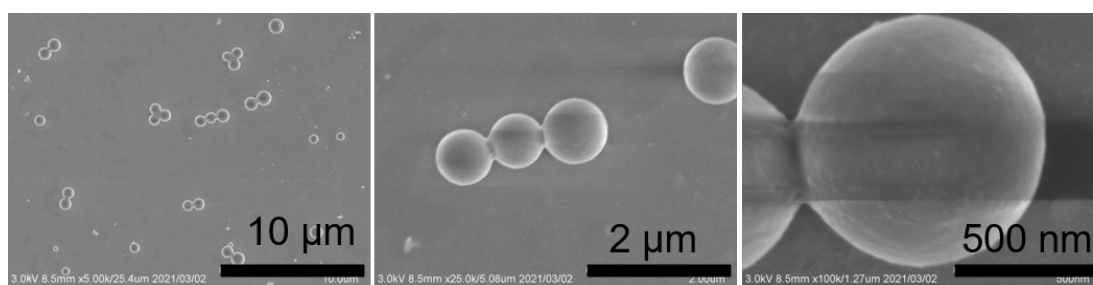
• 2-Chloro-4-nitrophenol



• 4-Nitro-o-cresol



**Fig. S3** Reduction of 4-nitrophenols catalyzed by LCCV@AuNP.



**Fig. S4** SEM images of AuNP@LCCV prepared in a high concentration of 3 mg/mL.