Synthesis of AuNPs

In this experiment, AuNPs were synthesized according to classic citrate reduction method¹. All glassware used in the experiment was soaked overnight with royal water (HCl/HNO3, volume ratio 3:1), then washed with ultra-pure water and dried before use. 100 mL of deionized water was added into 250 mL triple-necked bottle. A rotor was put in the bottle, and the stirring speed was set as 900 r/min. The water was heated to boil. 0.5 mL 2% HAuCl₄ solution was added. After boiling, 1.8 mL 1% sodium citrate solution was added. The color changed from yellow to purple. After heating for a period of time, it changed to wine red, then a continuous heat was needed for 20 minutes. A nylon filter of 0.45 µm was used to filter it after cooling to room temperature. It was stored in refrigerator at 4°C for subsequent experiments. The average diameter of synthesized AuNPs was 15 nm, and the concentration of them calculated by 520 nm UV-Vis absorption was 10 nM.

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