Electronic Supplementary Information

Triple-enzyme mimetic activity of Co$_3$O$_4$ nanotubes and their applications in colorimetric sensing of glutathione

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Fig. S1 X-ray diffraction pattern of the Co₃O₄ nanotubes.
Fig. S2 X-ray photoelectron spectra of Co$_3$O$_4$ nanotubes before the reaction (a: survey, b: Co 2p$_{3/2}$, c: O 1s) and after the reaction (d: survey, e: Co 2p$_{3/2}$, e: O 1s).
Fig. S3 pH-ΔA curve for the detection of GSH in acetate buffer. The error bars represent the standard deviation values of three measurements.
Fig. S4 Temperature-ΔA curve for the detection of GSH in acetate buffer. The error bars represent the standard deviation values of three measurements.
Fig. S5 Time-ΔA curve for the detection of GSH in acetate buffer. The error bars represent the standard deviation values of three measurements.
Fig. S6 Amount of $\text{Co}_3\text{O}_4$ nanotubes-$\Delta$A curve for the detection of GSH in acetate buffer. The error bars represent the standard deviation values of three measurements.
Fig. S7 TMB concentration-$\Delta$A curve for the detection of GSH in acetate buffer. The error bars represent the standard deviation values of three measurements.
**Fig. S8** Determination of the selectivity of GSH detection. The concentrations of each interference ions in the system are 50 mM. The error bars represent the standard deviation values of three measurements.