## **Supplementary information**

## Electrochemical sensor based on the Mn<sub>3</sub>O<sub>4</sub>/CeO<sub>2</sub> nanocomposite with abundant oxygen vacancies for highly sensitive detection of hydrogen peroxide released from living cells

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Fig. S1. The (A-C) HR-TEM images and (D) EDS of the  $Mn_3O_4/CeO_2$  nanocomposites.



Fig. S2. XRD pattern of the  $CeO_2$  and  $Mn_3O_4/CeO_2$ .



Fig. S3. (A) The current response of five different  $Mn_3O_4/CeO_2/GCE$  prepared under the same conditions in 0.1 M PBS (pH = 7.4) containing 1 mM H<sub>2</sub>O<sub>2</sub>. (B) The current response of 10 repeated amperometric measurements using the same  $Mn_3O_4/CeO_2/GCE$  in 0.1 M PBS (pH = 7.4) containing 1 mM H<sub>2</sub>O<sub>2</sub>. (C) Stability test of  $Mn_3O_4/CeO_2$  modified electrode.