**Electronic Supporting Information**

# UOx@$HMnO_2$ Biozyme-Nanozyme Driven Electrochemical Platform for Specific Uric Acid Bioassays

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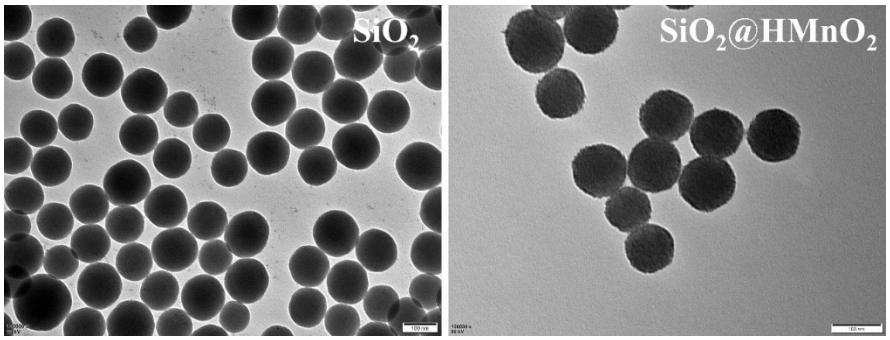


Fig S1. TEM image of $SiO_2$ nanoparticles and $SiO_2$@$MnO_2$ nanoparticles.

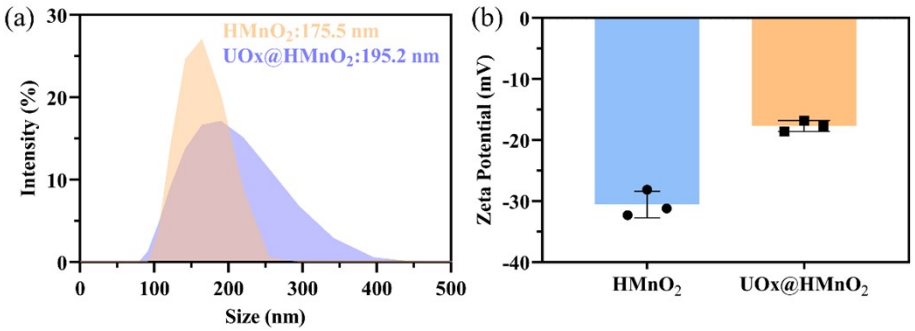


Fig S2. (a) Size distributions and (b) Zeta potential of $HMnO_2$ and UOx@$HMnO_2$.

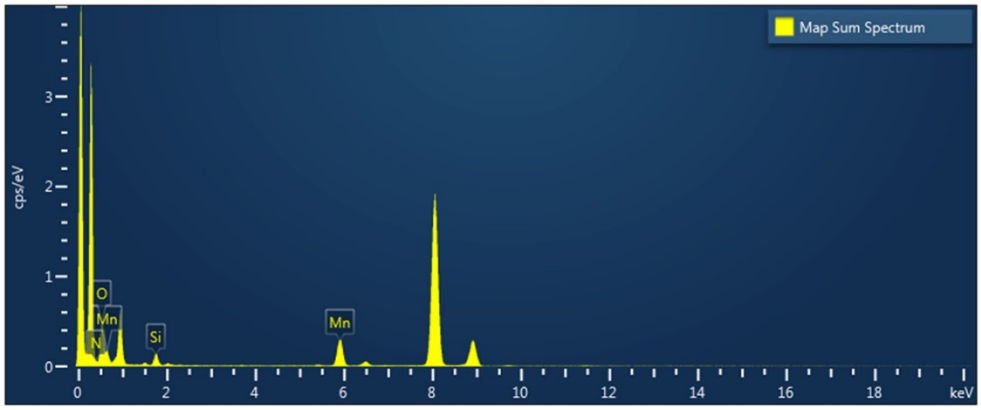


Fig S3. EDS spectrum of UOx@HMnO$_2$ by STEM.

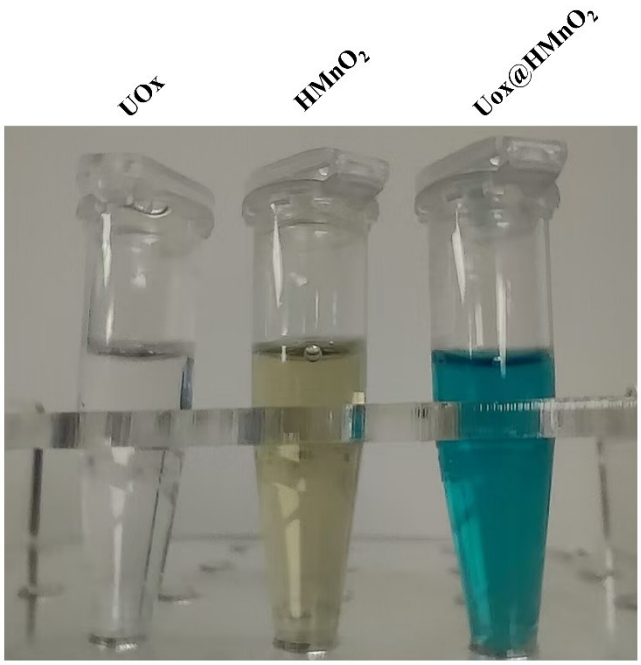


Fig S4. Photographs for the chromogenic reaction of TMB catalyzed by the UOx@$HMnO_2$.

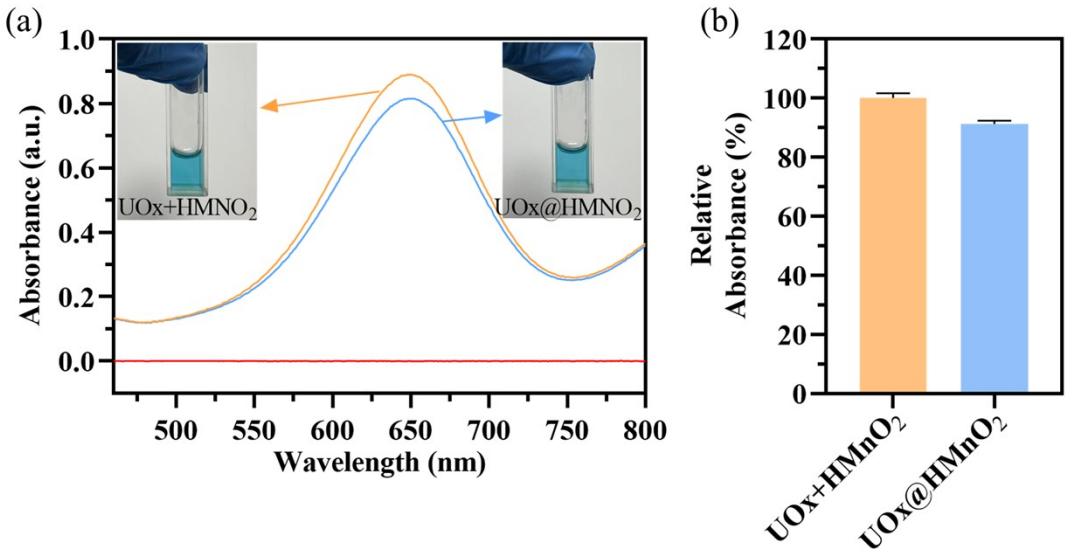


Fig. S5. (a) Comparison of the TMB color development of UOx@$HMnO_2$ with equal amounts of free UOx. (b) UV absorption of UOx@$HMnO_2$ vs. equal amounts of free uric acid oxidase at OD650.

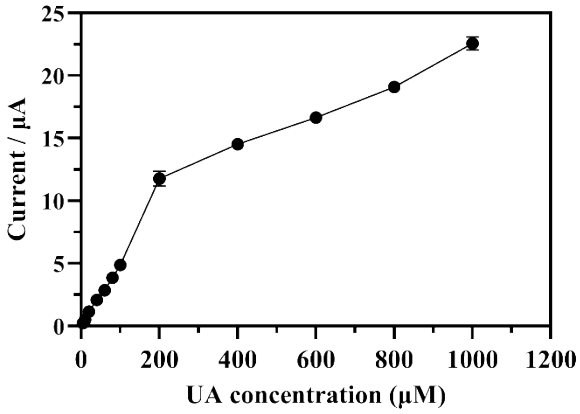


Fig S6. Relationship between UA concentration and current.

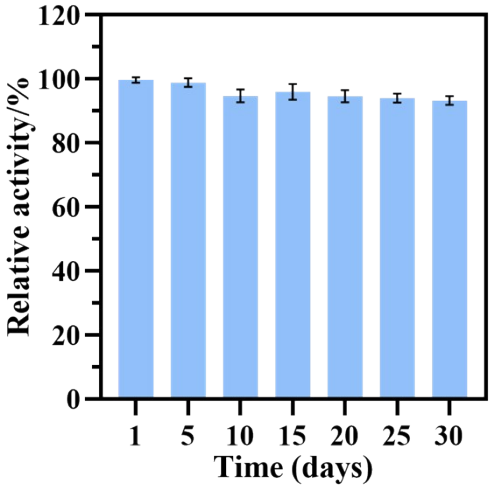


Fig. S7. UOx@HMnO$_2$-GCE was used for the long-term detection of uric acid stability, and the vertical coordinate was calculated using the CV value on day 1 as a reference.

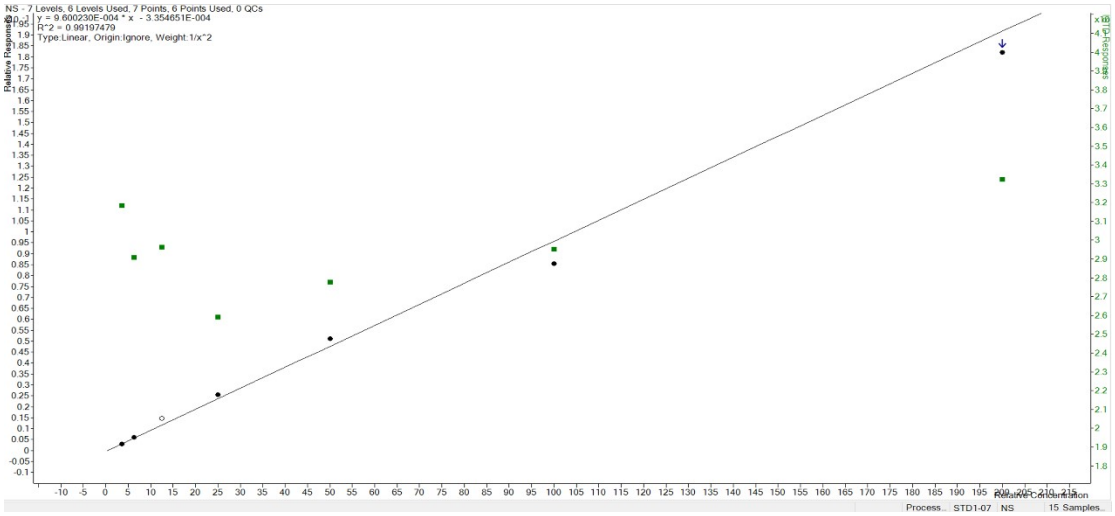


Fig S8. Data points and standard curves for high performance liquid chromatography-tandem mass spectrometry (UHPLC-MS/MS) tests.

Table S1. Recoveries of UA in human urine based on the UOx@HMnO$_2$-GCE.

| Before amount (μM) | Add amount (μM) | Found amount (μM) | Recovery (%) |
|---|---|---|---|
| 32.80 | 10 | 41.09 | 96.00 |
| 34.22 | 20 | 66.32 | 103.27 |
| 33.24 | 40 | 74.87 | 102.22 |