

## Supporting Information

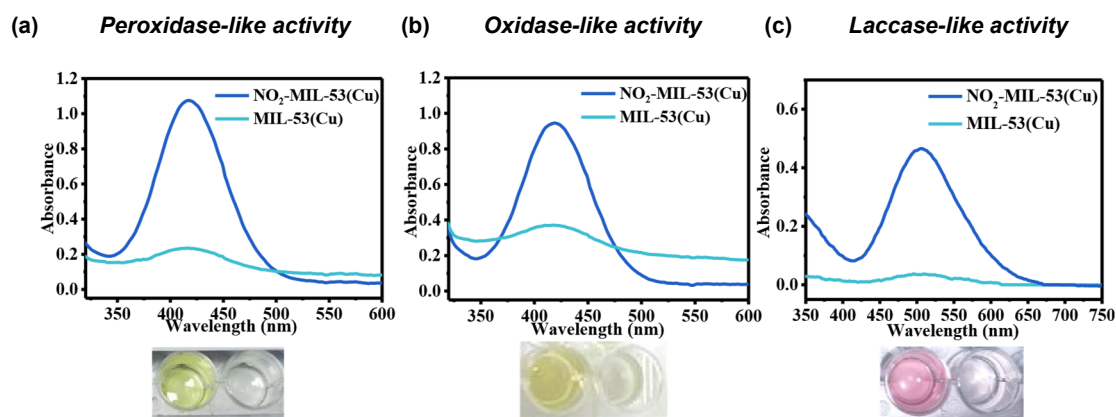
### A Nitro Functionalized MOF with Multi-enzyme Mimetic Activities for the Colorimetric Sensing of Glucose at Neutral pH

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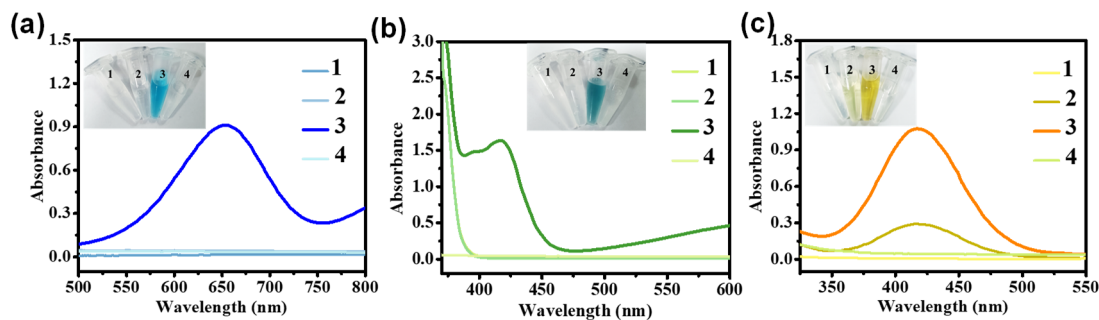
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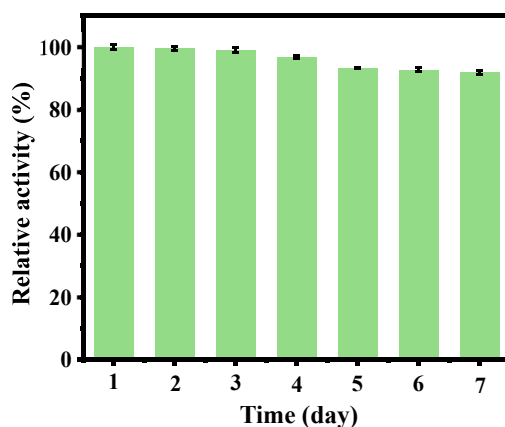
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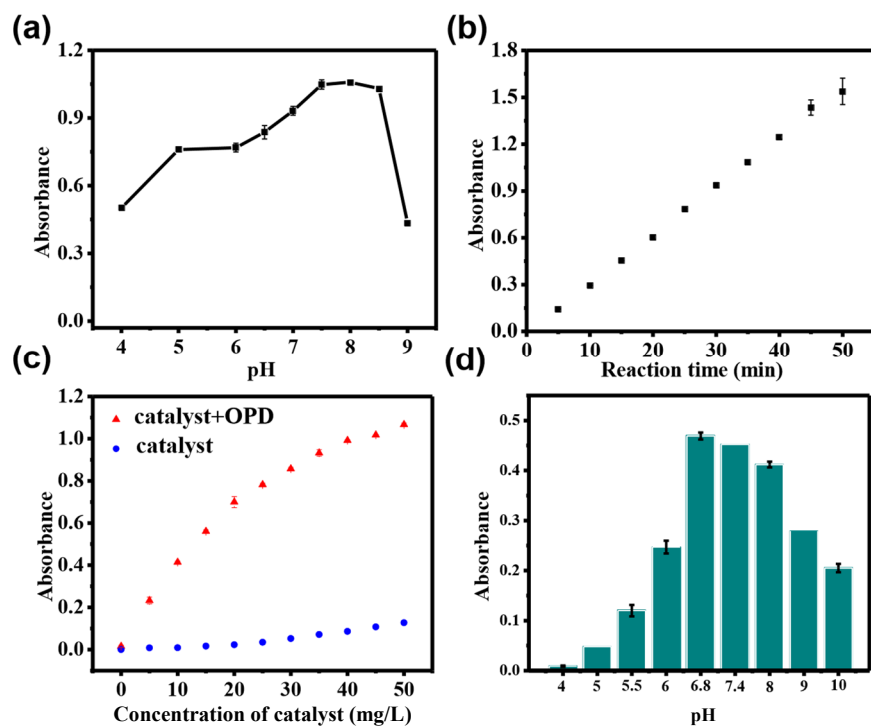
**Figure S1** UV-vis spectra and corresponding images of incubation systems with MIL-53(Cu) and NO<sub>2</sub>-MIL-53(Cu) (the solution in image from left to right is consist to the line from up to down and the images were taken under day light).



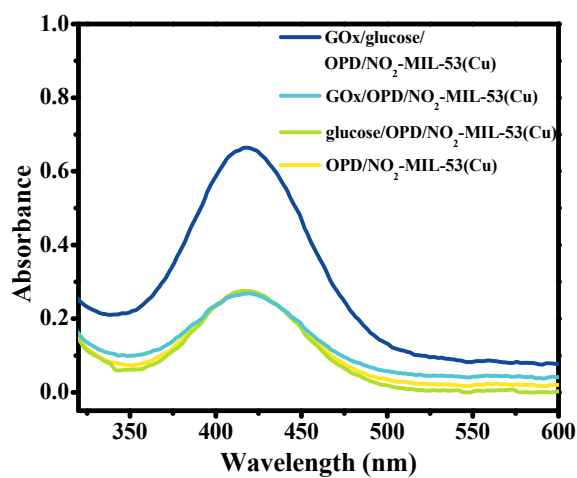
**Figure S2** UV-vis spectra and corresponding images of incubation systems in the presence of H<sub>2</sub>O<sub>2</sub> with different enzyme-linked chromogenic substrates (a) TMB; (b) ABTS; (c) OPD. (1-4 stand for different incubation systems, 1: chromogenic substrate/H<sub>2</sub>O<sub>2</sub>, 2: chromogenic substrate/ NO<sub>2</sub>-MIL-53(Cu), 3: chromogenic substrate/ H<sub>2</sub>O<sub>2</sub>/NO<sub>2</sub>-MIL-53(Cu), 4: H<sub>2</sub>O<sub>2</sub>/ NO<sub>2</sub>-MIL-53(Cu), and the inset images were taken under day light).



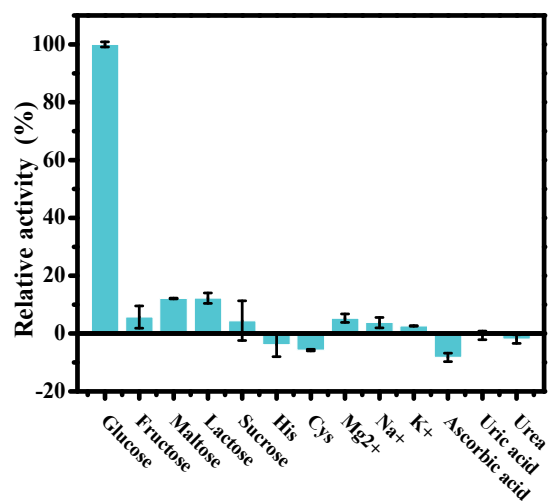
**Figure S3** Peroxidase-like activity of NO<sub>2</sub>-MIL-53(Cu) during seven-day storing.



**Figure S4** Effects of (a) pH, (b) reaction time, (c) catalyst concentration on the oxidase-like activity of NO<sub>2</sub>-MIL-53(Cu). And (d) Effects of pH to the laccase-like activity of NO<sub>2</sub>-MIL-53(Cu).



**Figure S5** UV-vis spectra of different incubation systems in glucose detection (reaction concentrations: OPD 0.3 mM, GOx  $5 \times 10^{-3}$  mg/mL, glucose 2 mM, and catalyst 20 mg/L).



**Figure S6** Effects of various common species towards glucose detection: (0.01 mM His and Cys; 0.02mM ascorbic acid and Uric acid; and the others 0.2 mM).

**Table S1.** Comparison of various MOFs-based colorimetric detection platform for glucose detection.

MOFs-based nanozymes	Peroxidase incubation pH	Linear range ( $\mu\text{M}$ )	LOD ( $\mu\text{M}$ )	Ref
Fe-BTC	4	5.0–100	2.4	[39]
Cu–hemin MOFs	6	10–3000	6.9	[40]
Magnetic ZIF-8	4	5–150	1.9	[41]
PCN-222(Fe)	4	12–75	2.2	[42]
CuBDC	5.2	10–500	4.1	[43]
Pt/Fe-MOF	4	2–400	2.3	[44]
Fe-MIL-101	7.4	up to 150	2.5	[45]
NO <sub>2</sub> -MIL-53(Cu)	7.4	0.5–300	2.6	This work

**References:**

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