Supporting Information

A porphyrin-modified $CoMoO_4$ nanosensor array for the detection of crude baijiu

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Preparation of $CoMoO_4$

Typically, $Na_2MoO_4•2H_2O$ (1 mmol), $Co(NO_3)_2•6H_2O$ (1 mmol), urea (5 mmol) and NH_4F (5 mmol) were successively added into a mixture of water (60 mL) to form a transparent solution under stirring for half an hour. Then, the solution is transferred and sealed in a 100 mL teflon-lined autoclave. After stored at 140 ℃ for 6 h, the $CoMoO_4$ products were collected by centrifugation, washed with deionized water and ethanol for several times, and vacuum dried at 80 ℃ for 12 h, followed by calcination at 300 ℃ for 2 h.

Preparation of Por-$CoMoO_4$

First, the porphyrins (3 mg) are dispersed into an alkaline aqueous solution (pH = 9,10 mL) until completely dissolved. Thereafter, $CoMoO_4$ microspheres (60 mg) were poured into the above solution under ultrasound for 1 hour. The resulting material was then heated solvent-thermally in an oven at 110 ℃ for 120 minutes. Then, the prepared Por-$CoMoO_4$ nanocomposites were naturally cooled to room temperature and washed with deionized water and ethanol three times in turn. Finally, Por-$CoMoO_4$ is dried at 60 ℃ for 12 hours.

Table S1. Types of crude baijiu

Number	Baijiu pit	Baijiu grade
1		First grade baijiu
2	Guojiao workshop	Second grade baijiu
3		Third grade baijiu
4		Four grade baijiu
5		First grade baijiu
6	Luohan workshop	Second grade baijiu
7		Third gradebaijiu
8		Four grade baijiu
9		First grade baijiu
10	Huangyi 1 workshop	Second grade baijiu
11		Third grade baijiu
12		Four grade baijiu
13		First grade baijiu
14	Huangyi 2 workshop	Second grade baijiu
15		Third grade baijiu
16		Four grade baijiu

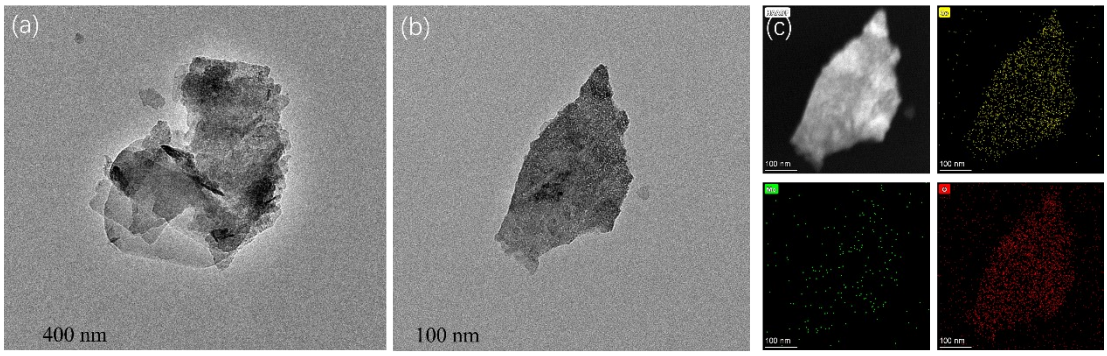

Fig. S1 (a) and (b) Por-$CoMoO_4$ TEM characterization. (c) Co、Mo、O element mapping

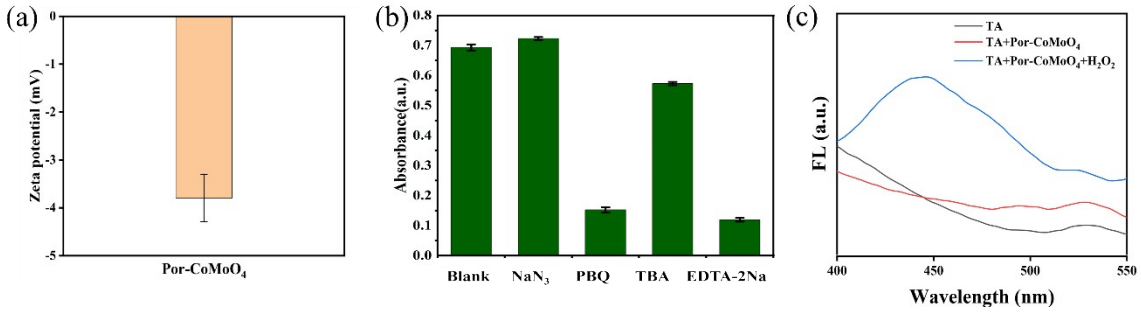

Fig. S2 (a) Por-$CoMoO_4$ zeta potential l.(b) Free radical scavenging experiments using NaN3, PBQ, TBA, EDTA. (c) Capture •OH fluorescence intensity assay using TA.

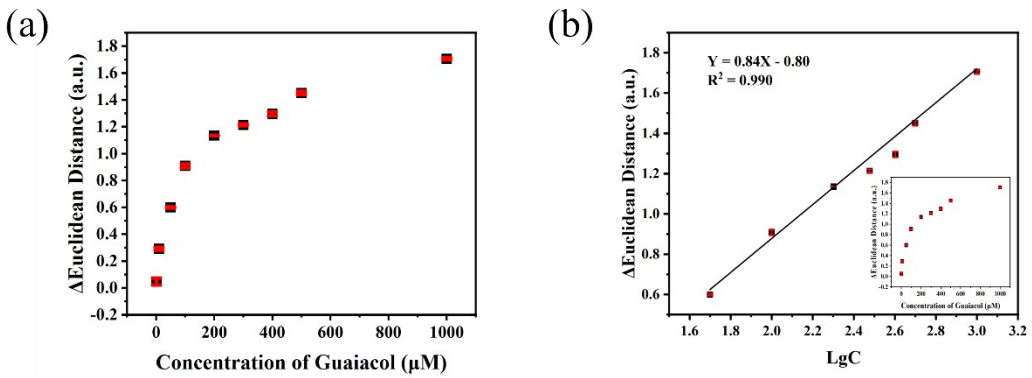

Fig. S3 (a) Detection of different concentrations of guaiacol by array, Log-linear diagram of guaiacol(b)

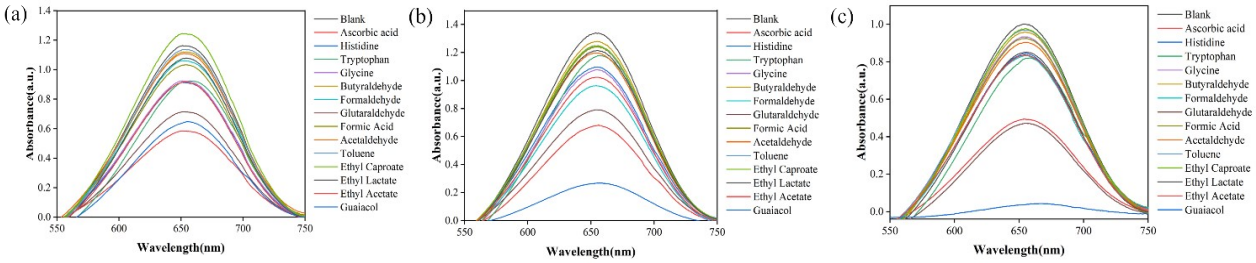

Fig. S4 Uv spectrum of 14 small molecules (a)-(c) (pH=3.6、4.4、5.2)

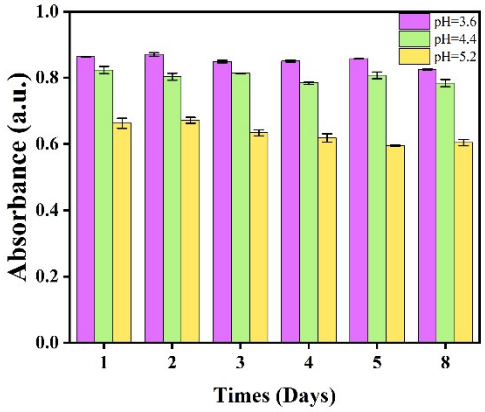

Fig. S5 UV response of the colorimetric sensing array to the crude baijiu at different times.