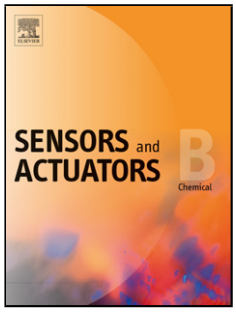

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CuS porous nanospheres as a novel noble metal-free co-reaction accelerator for enhancing electrochemiluminescence and sensitive immunoassay of mucin 1

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Highlights

- ► CuS PNSs as a novel noble metal-free co-reaction accelerator of ABEI/H_2O_2 ECL system.
- ► CuS PNSs served as good carrier for masses of ABEI functionalized Ag nanoparticles immobilization.
- ‣ The ECL immunosensor achieved a sensitive and selective detection of mucin 1.

ABSTRACT

Herein, an electrochemiluminescence (ECL) immunosensor was fabricated for sensitive assay of mucin 1 (MUC1) employing Ab_2 labeled CuS porous nanospheres (CuS PNSs) complexes as the signal probe. The prepared novel noble metal-free co-reaction accelerator of CuS PNSs with nice catalytic property for H_2O_2 decomposition enhanced the ECL response of *N*-(Aminobutyl)-*N*-(ethylisoluminol) (ABEI)/H_2O_2. Meanwhile, CuS PNSs with large specific surface area served as good carrier for

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