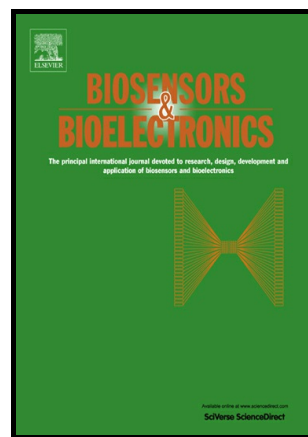


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Abstract

A novel ratiometric electrochemiluminescent (ECL) biosensor was designed for the detection of concanavalin A (Con A) based on two ECL emitters competing for the dissolved oxygen (O_2). In this strategy, CdTe quantum dots (QDs) were used as the cathodic emitter and N-(aminobutyl)-N-(ethylisoluminol) (ABEI) was used as the anodic emitter. With the presence of dissolved O_2 utilized as co-reactant, CdTe QDs showed an ECL emission at -1.7 V, and ABEI showed an emission at +0.6 V. Phenoxy-derivatized dextran (Dexp), as a recognition element, was immobilized by graphene oxide functionalized CdTe QDs (G-CdTe QDs) to recognize Con A, and further combined with Dexp, gold and platinum nanoparticles decorated ABEI

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