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# **A novel electrochemiluminescent immunoassay for diclofenac using conductive polymer functionalized graphene oxide as labels and gold nanorods as signal enhancers**

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## **ABSTRACT**

Diclofenac (DCF) is among the pharmaceutical compounds of concern based on its nocuousness in environment. In this work, a novel electrochemiluminescent (ECL) immunosensor for detecting DCF was constructed using poly(etherimide)-poly(3,4-ethylene dioxythiophene):poly(styrene sulfonate) functionalized graphene oxide and CdSe@CdS quantum dots (QDs-PEI-GO/PEDOT) as bioreceptor for conjugating DCF antibody to magnify signal. It is worth noting that this is the first time GO/PEDOT has been applied to ECL sensor field. Compared with GO, GO/PEDOT exhibited a higher conductivity and more stable chemical property, indicating that the proposed immunosensor would possess stronger and more stable luminescence performance. In addition, the electrode was modified with gold nanorods (AuNRs) which increase the load capacity of DCF coating antigen through

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