

# Function of graphene oxide (GO) as the “nanoquencher” for Hg<sup>2+</sup> detection using an exonuclease I-assisted biosensor

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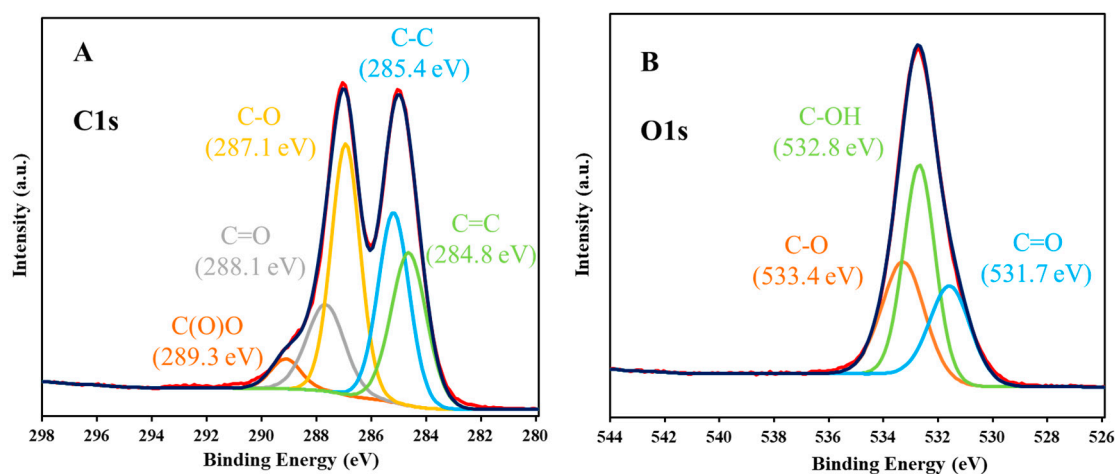
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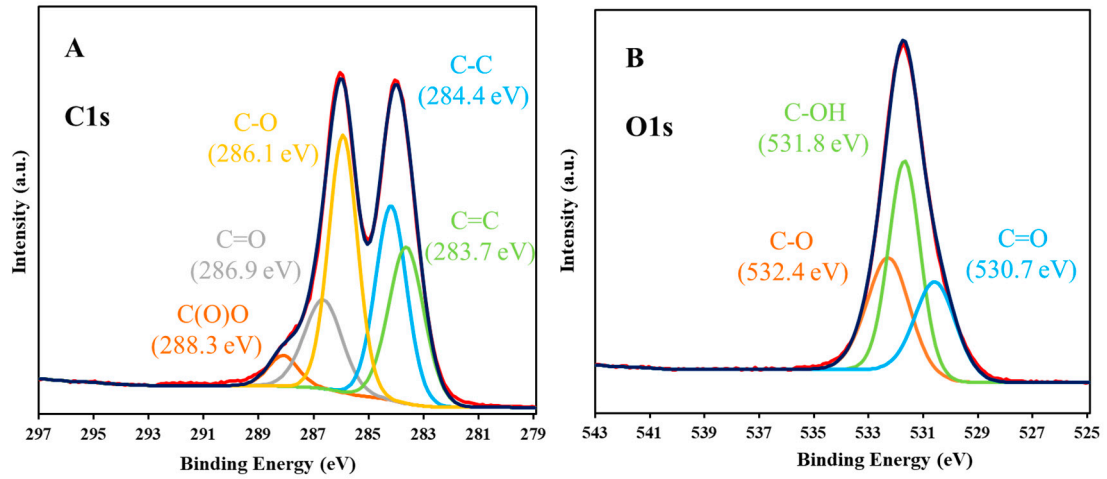


Figure S1 High-resolution XPS spectra of GO: (A) C1s spectrum, (B) O1s spectrum

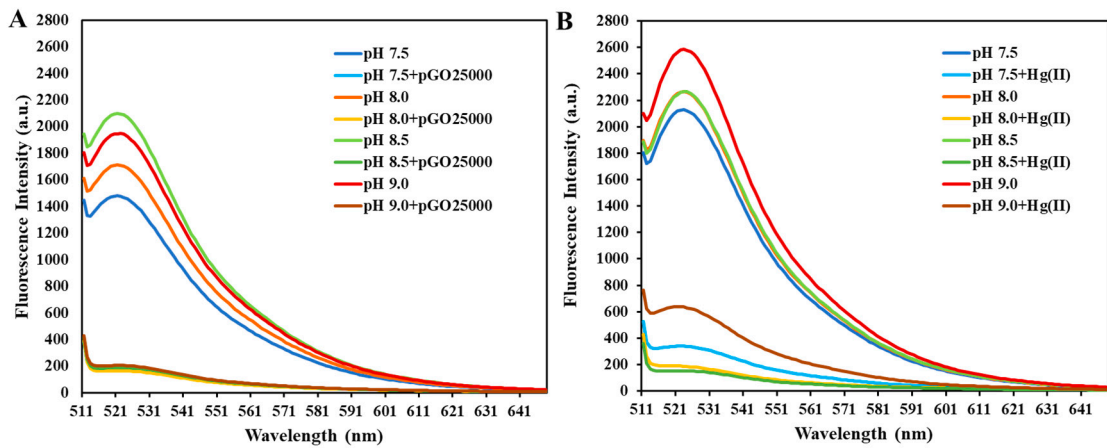


Figure S2 (A) Effect of pH values on the fluorescence intensity of FAM-ssDNA with 600 nM Hg(II) solution in the absence and presence of 0.1 µg/mL pGO25000. (B) The effect of pH values on the fluorescence intensity of FAM-ssDNA with or without 600 nM Hg(II) solution in the presence of 0.1 µg/mL pGO25000 and 2 U Exonuclease I

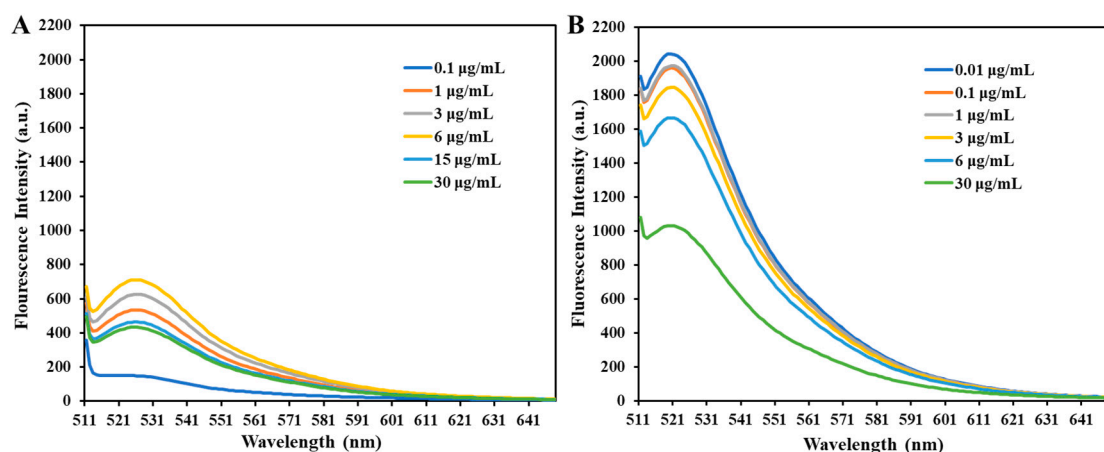


Figure S3 (A) Effects of pGO25000 concentrations from 0.1 to 30 µg/mL on fluorescence quenching of FAM-ssDNA. (B) Effects of GO concentrations from 0.01 to 30 µg/mL on fluorescence quenching of FAM-ssDNA

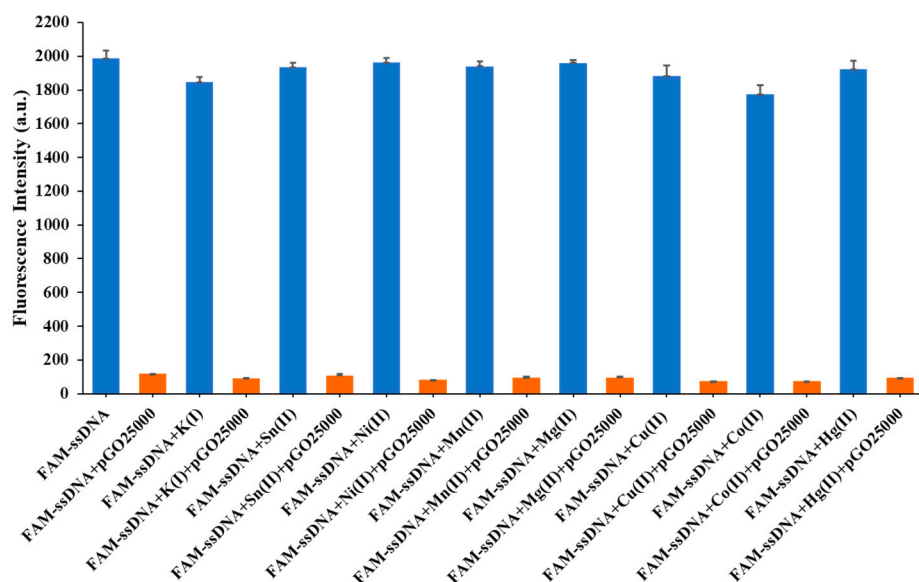


Figure S4 Selectivity of the FAM-ssDNA probes quenched by the pGO25000. The fluorescence intensities of the FAM-ssDNA probes were recorded in the absence and presence of pGO25000 (0.1 µg/mL) with the possible interference metal ions ( $K^+$ ,  $Sn^{2+}$ ,  $Ni^{2+}$ ,  $Mn^{2+}$ ,  $Mg^{2+}$ ,  $Cu^{2+}$ ,  $Co^{2+}$ ,  $Hg^{2+}$ ) respectively.  $Ex=495$  nm,  $Em=520$  nm. Each sample solution was measured three times