

Supplementary Information

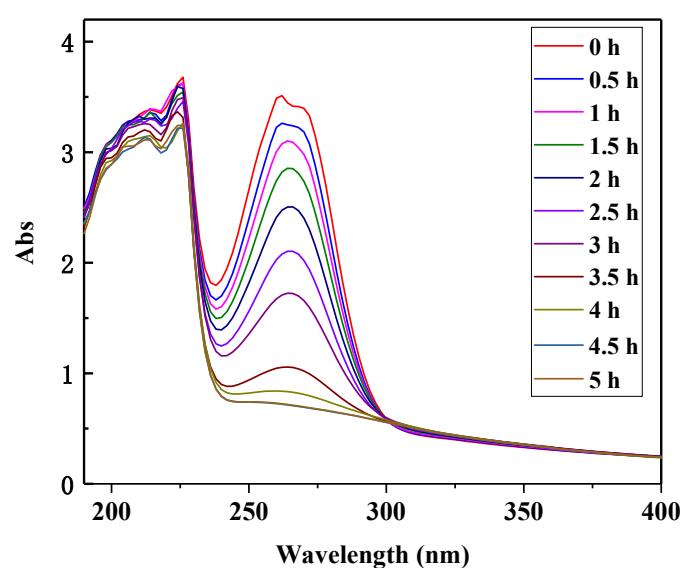
# Ultrasensitive Fluorescent “ON-OFF” Label-Free Immunosensor for Detection of Vitellogenin of Marine Medaka

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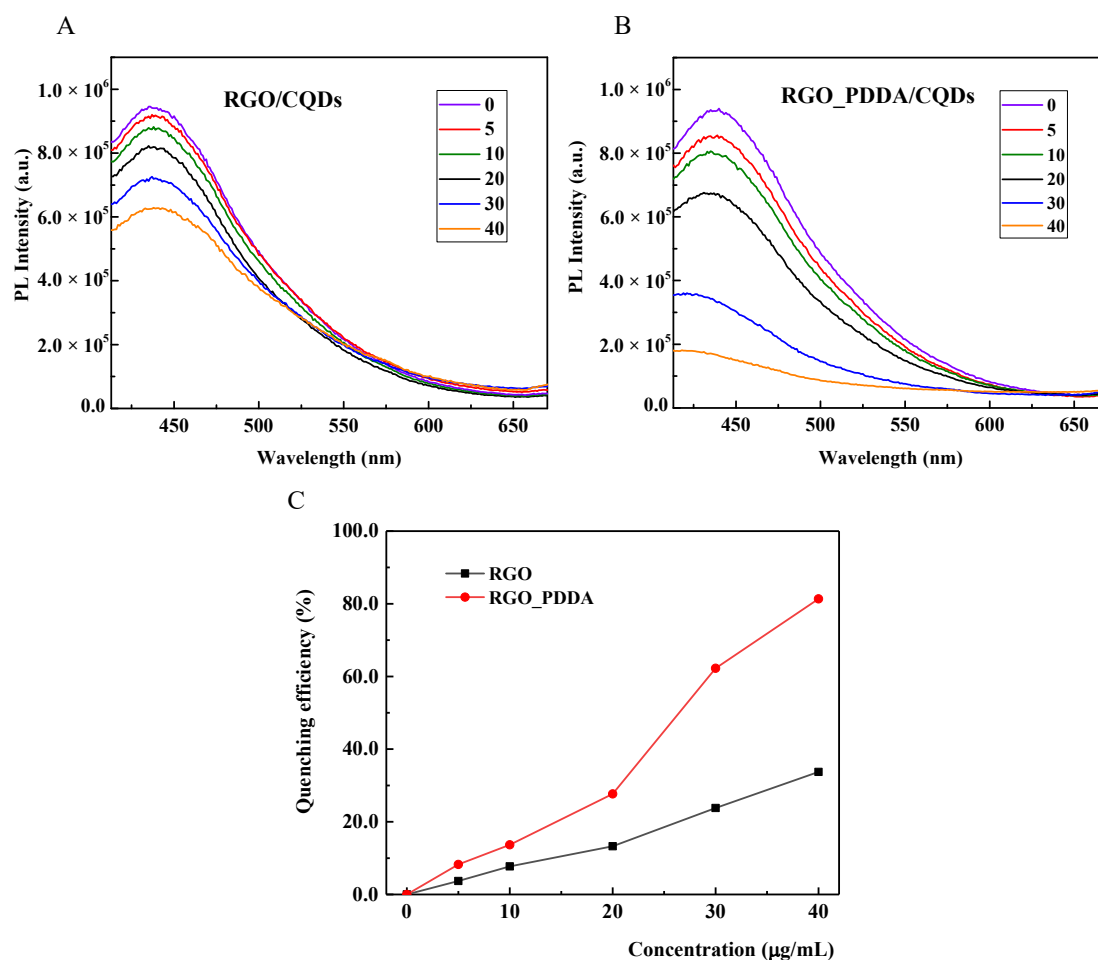
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**Figure S1.** UV-Vis absorption spectra change with time during the reduction of GO.



**Figure S2.** Effect of different concentration (0, 5, 10, 20, 30, 40  $\mu\text{g/mL}$ ) of (A) RGO and (B) RGO\_PDDA on fluorescence curve of CQDs, and (C) their corresponding fluorescence quenching efficiency.

#### *The Calculation of Detection Limits*

According to the linear relation  $I = 54324.76 + 28833.63 \log(c_{\text{Vtg}})$  and  $S/N = 4$ , we can obtain the following formula to calculate the LOD:

$$4N = 54324.76 + 28833.63 \log(\text{LOD}) \quad (\text{S1})$$

The average noise signal ( $N$ ) of multiple blank samples measured by us is 3504.27, and  $\text{LOD} = 0.04$  can be obtained.