Electrochemical DNA sensing strategy based on strengthening electronic conduction and signal amplifier carrier of nanoAu/MCN compositied nanomaterials for sensitive lead detection

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FIGURE LEGENDS:

**Figure S1.** Morphology of the nanomaterial: (A) MCN (TEM and SEM), (B) EAu (SEM), (C) nanoAu/MCN (TEM and SEM).

**Figure S2.** Nitrogen adsorption–desorption isotherms and the corresponding pore distribution curves of MCN.

**Figure S3.** Cyclic voltammograms of bare, MCN, EAu/MCN, DNA/EAu/MCN modified electrode in 10 mM KCl solution containing 5.0 mM ferricyanide at a scan rate of 50 mV/s.

**Figure S4.** The MB current signals on the modified electrode at electrodeposition EAu times (A); Pb$^{2+}$ reaction times (B); the current signals in different pH solution(C); S1 was hydrolyzed temperature (D), upon exposure to 1.0×10$^{-12}$ M Pb$^{2+}$ in 10 mM Tris-HCl with 10.0 mM KCl. The bars represent the standard deviations of the mean values (n=3).

**Figure S5.** The MB adsorption condition of nanoAu/MCN: (A) pH, (B) ion, (C) temperature, (D) reaction time in 10 mM Tris-HCl with 10.0 mM KCl. The bars represent the standard deviations of the mean values (n=3).
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