

Supplementary Information

Real-time electrochemical LAMP: a rational comparative study of different DNA intercalating and non-intercalating redox probes

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1. Real-time monitoring of the SWV response of $[\text{Os}(\text{bpy})_2\text{dppz}]^{2+}$ and MB at different concentrations in an LAMP solution.

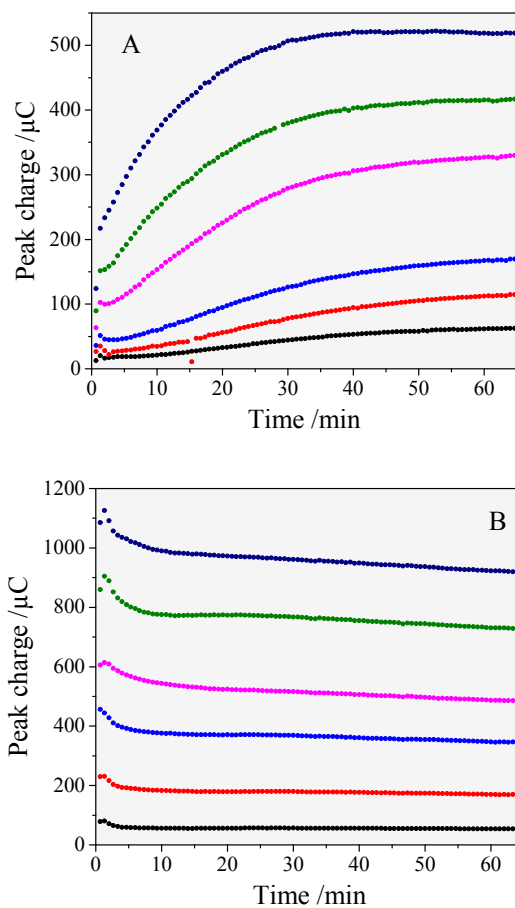


Figure S1. Real-time monitoring of the SWV response of (A) $[\text{Os}(\text{bpy})_2\text{dppz}]^{2+}$ or (B) MB at different concentrations in an LAMP solution (50 μL of solution containing all of the required reagents for LAMP but no DNA target) held at 65°C . From bottom to top: (A) 0.5, 1, 2, 5, 10, and 15 μM $[\text{Os}(\text{bpy})_2\text{dppz}]^{2+}$; (B) 2, 5, 10, 15, 20, 25 μM MB.

2. Influence of the LAMP adjuvants on the UV-visible spectra of NB as a function of incubation time at 65°C.

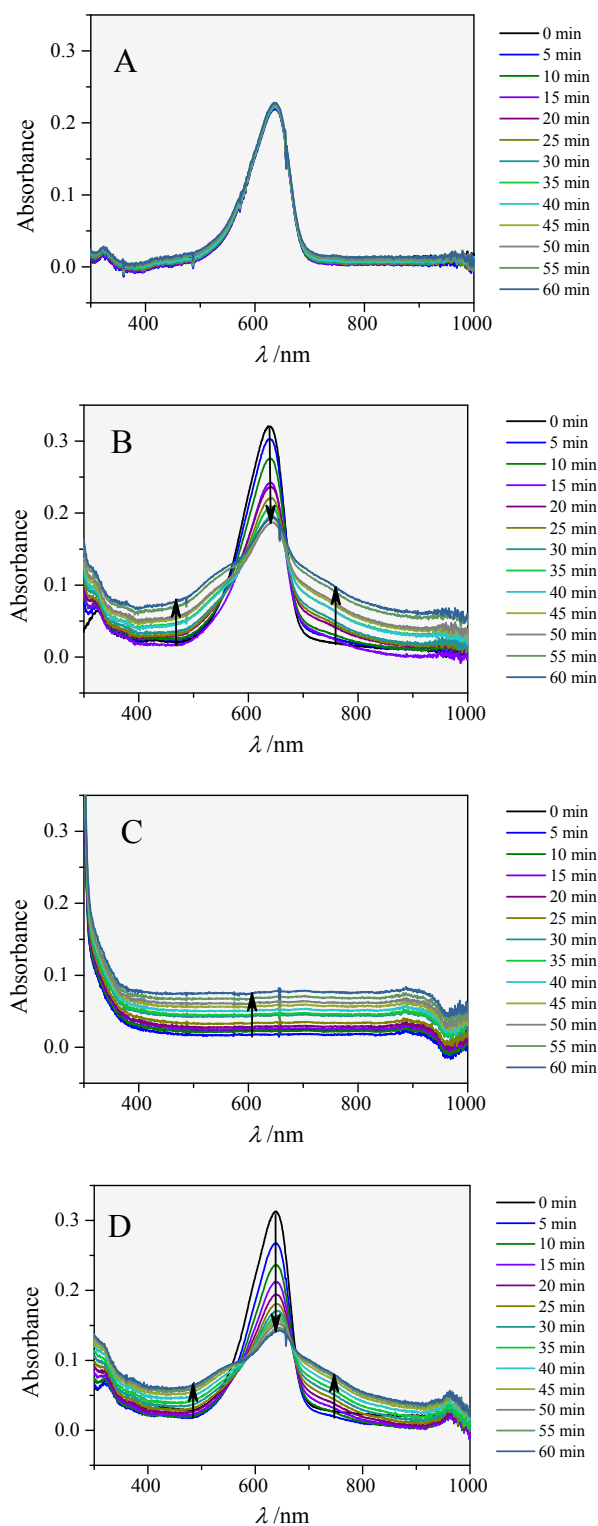


Figure S2. UV-visible spectra of 5 μ M NB as a function of incubation time at 65°C in: (A) a 1 \times TB solution or (B) an LAMP mixture (*i.e.*, 1 \times TB buffer + 0.025 % wt BSA + 1 wt % PVP + 1 mM betaine + 400 μ M of each of the dNTPs + 0.32 U of Bst 2 WarmStar DNA polymerase). (C) Same as in B but without NB. (D) Same as in A but with 1 wt % PVP.

3. Effect of the stepwise addition of a pyrophosphate solution to SWV response of $\text{Ru}(\text{NH}_3)_6^{3+}$ in an LAMP solution.

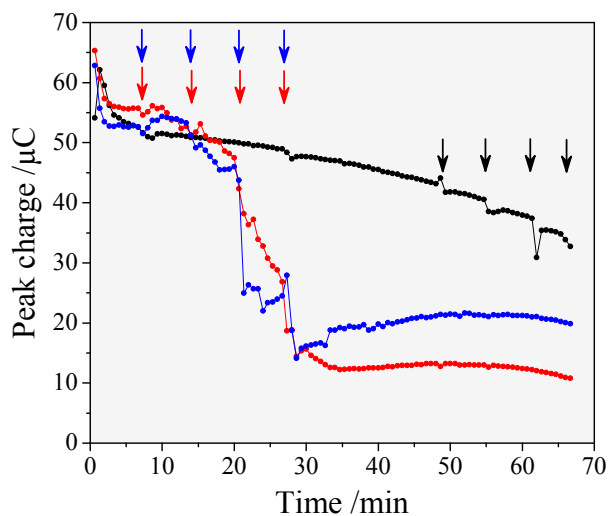


Figure S3. Real-time monitoring of the SWV response of $\text{Ru}(\text{NH}_3)_6^{3+}$ (15 μM) in an LAMP solution (50 μL of solution containing all of the needed reagents for LAMP except dNTPs) held at 65°C and during the stepwise addition (0.2 μL) of a pyrophosphate solution (0.1 M). The blue and red curves are duplicated experiments (the 4 injection times of pyrophosphate are specified on the graph by the corresponding blue and red arrows). The black curve is a control experiment with (black arrows) $4 \times 0.2 \mu\text{L}$ injection of water at the end of the experiment to check for dilution effects on the SWV response.