Suplementary information

Iridium oxide nanoparticles and polythionine thin film based platform for sensitive Leishmania DNA detection

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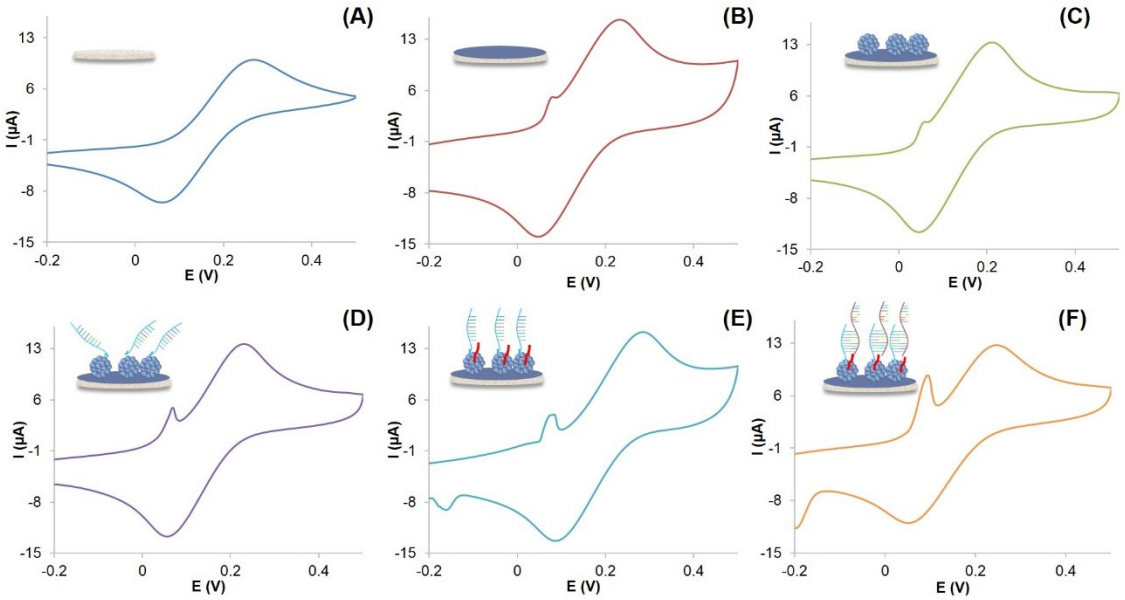

Figure S1. Cyclic voltamperograms of bare electrode (A) and after of: electrodeposition of polythionine (B), IrO_2 NPs adsorption (C), oligonucleotide probe immobilization (D), blocking step with ethanolamine (E) and hybridization with complementary target (F).

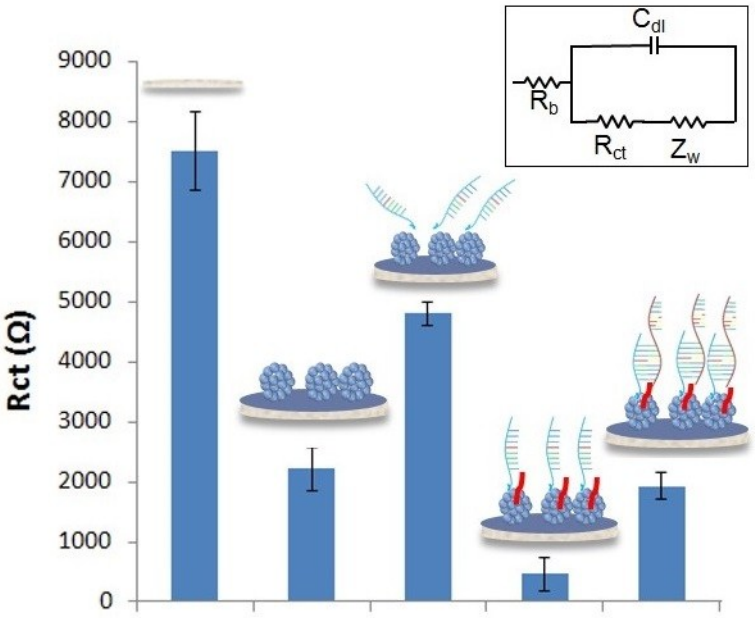

Figure S2. Rct values each fabrication step of the genosensor. Inset: equivalent electrical circuit: Randless model modified with Warburg impedance (Zw) composed by resistance of the solution (Rb) on the electrode, capacity of the double layer (Cdl) and charge transfer resistance (Rct) associated to the redox processes on the electrode surface used to calculate Rct value. Error bars correspond to the standard deviations obtained from triplicate experiments.

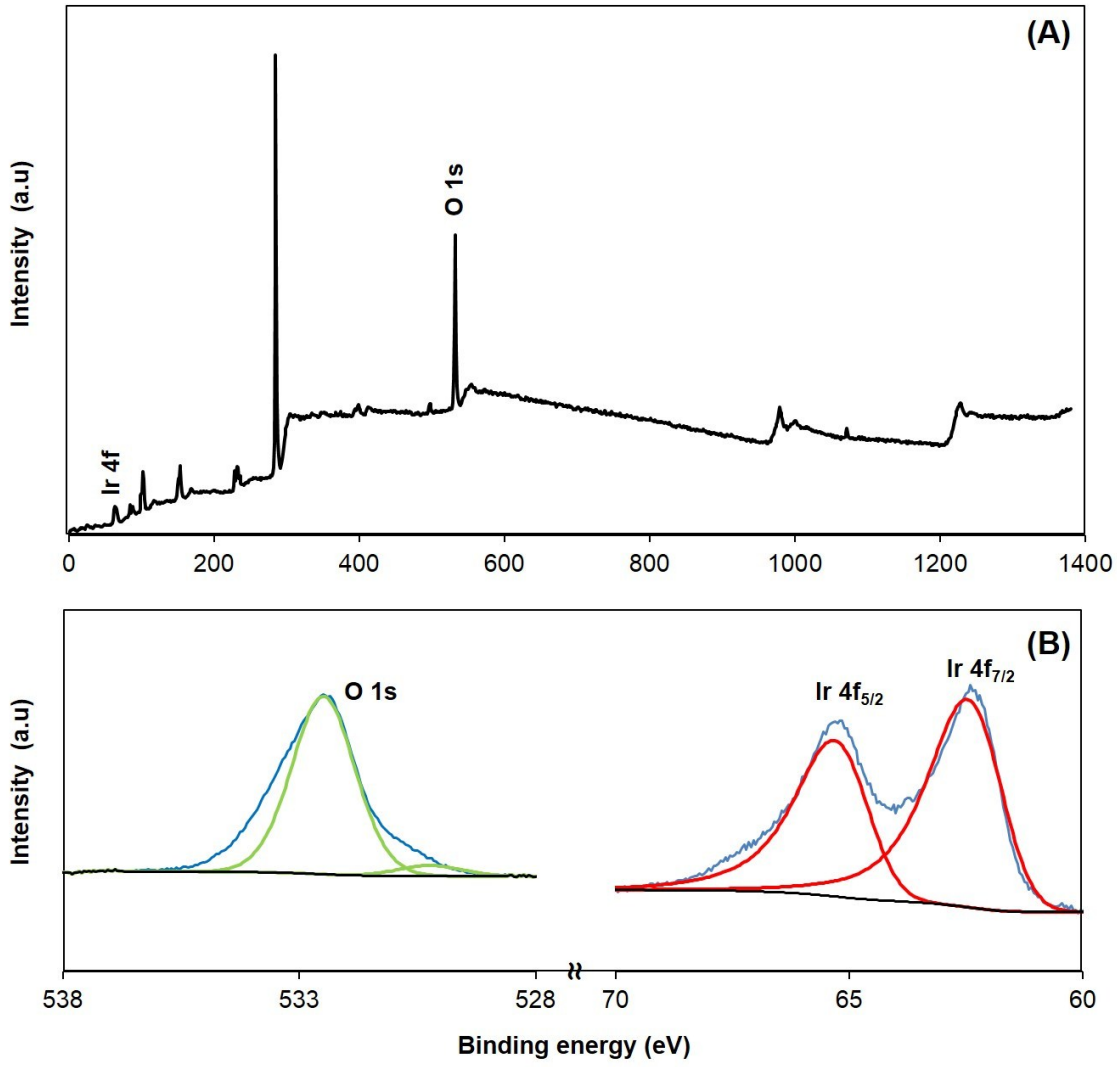

Figure S3. Survey XPS analysis (A) and high resolution XPS spectra of O 1s and Ir 4f of IrO_2 NPs (B).

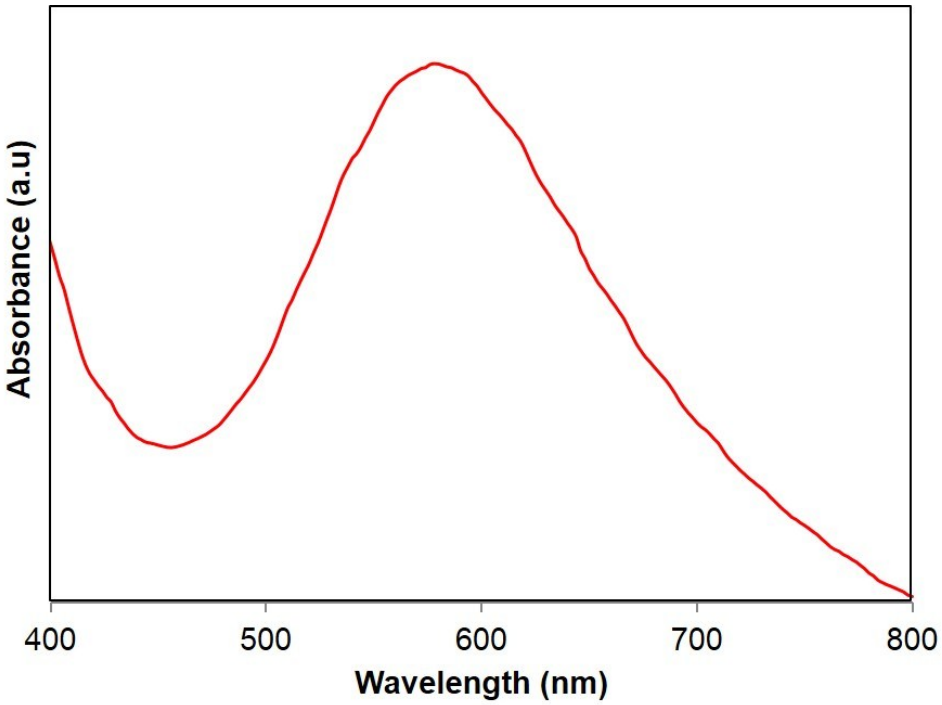

Figure S4. UV-Vis spectra of IrO_2 NPs.

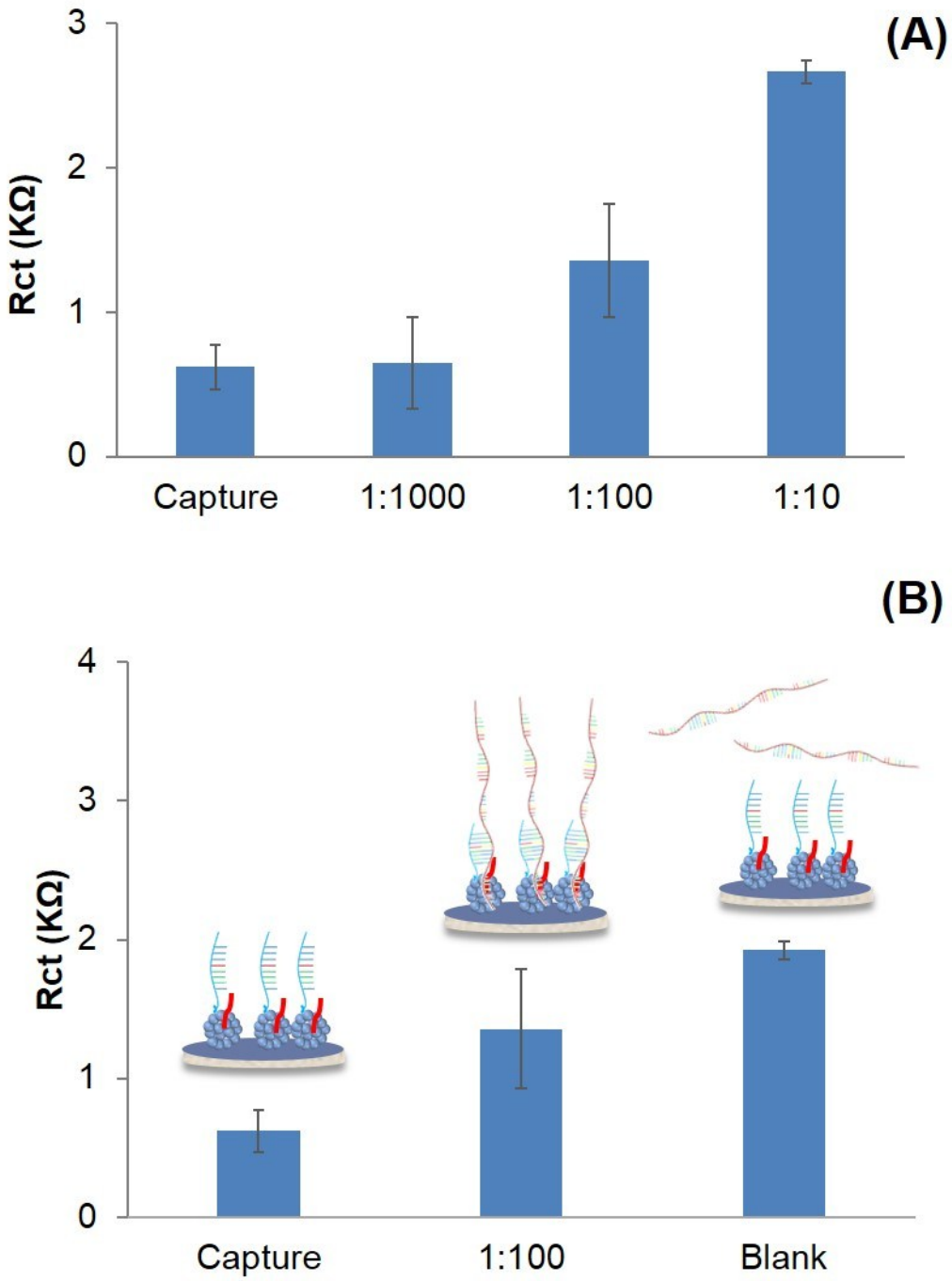

Figure S5. (A) Rct as a function of different dilutions of PCR amplified DNA samples. (B) Comparison of Rct values of the genosensor modified with the capture probe and hybridized with PCR amplified DNA samples of dog affected (Positive) or not (Blank) with Leishmania. Dilutions of 1:10 and 1:100 for the blank and positive samples respectively and 0.1% ethanolamine during the blocking step was used.