

Electrochemical Detection of Plasma Immunoglobulin as a Biomarker for Alzheimer's Disease

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Supplementary Information

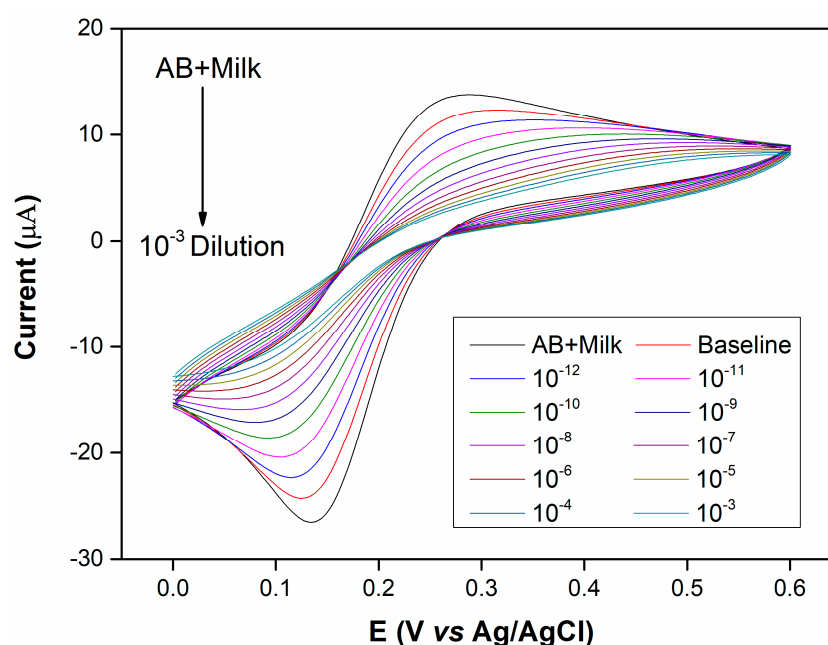


Figure S1. CVs (scan rate: 50 mV s⁻¹) carried out for the rabbit anti-human IgG covered surface, baseline solution (plain PBS) and increasing plasma concentrations from 10⁻¹² to 10⁻³ 10-fold dilutions of albumin depleted human plasma for the Control (2-a) case. Tested in 10 mM PBS containing 5 mM [Fe (CN)₆]^{4-/3-} and 150 mM NaCl. Electrode surface area: 0.02 cm².

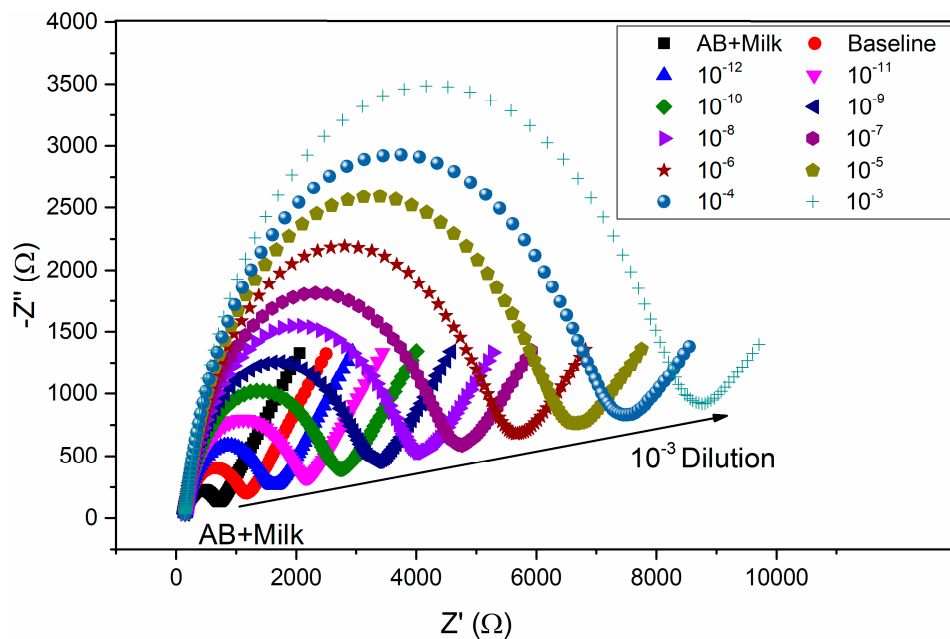


Figure S2. EIS (respectively) measurements carried out at OCP of 0.22 mV for the rabbit anti-human IgG covered surface, baseline solution (plain PBS) and increasing plasma concentrations from 10^{-12} to 10^{-3} 10-fold dilutions of albumin depleted human plasma for the Control (2-a) case. Inset figure is the electrical equivalent circuit which was used for data fitting and the solid lines represent fitted data. R_s is solution resistance, R_{cys} and C_{cys} are the resistance and capacitance of the cysteamine layer, R_{bl} is resistance of the biolayer and Q_{bl} a constant phase element representing the capacitance of the biolayer ($n > 0.7$ for our data) and W is the Warburg impedance representing diffusion. EIS test parameters: AC amplitude: 10 mV, frequency range: 0.1 Hz – 10 kHz. Tested in 10 mM PBS containing 5 mM $[\text{Fe}(\text{CN})_6]^{4-/3-}$ and 150 mM NaCl. Electrode surface area: 0.02 cm².