Electronic Supplementary information

Modulating the ion-transfer electrochemistry of perfluorooctanoate with serum albumin and β-cyclodextrin

Hum Bahadur Lamichhane and Damien W. M. Arrigan*

School of Molecular and Life Sciences, Curtin University, GPO Box U1987, Perth, Western Australia 6845, Australia

Corresponding author,

Emails d.arrigan@curtin.edu.au (D.W.M. Arrigan)

List of contents:

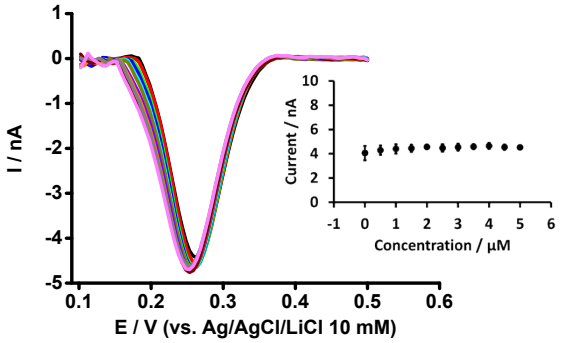

Figure S1: DPVs of 5 µM $TPrA^+$ at different concentrations of BSA in 10 mM LiCl as the aqueous phase and 10 mM BTPPATPBCl (1,2-DCE) as the organic phase. Inset: relationship between current and concentration of BSA. All DPVs are background subtracted followed by baseline corrected. Error bars are ±1 standard deviation of three independent measurements. When error bars are not visible, they are smaller than the symbol size.

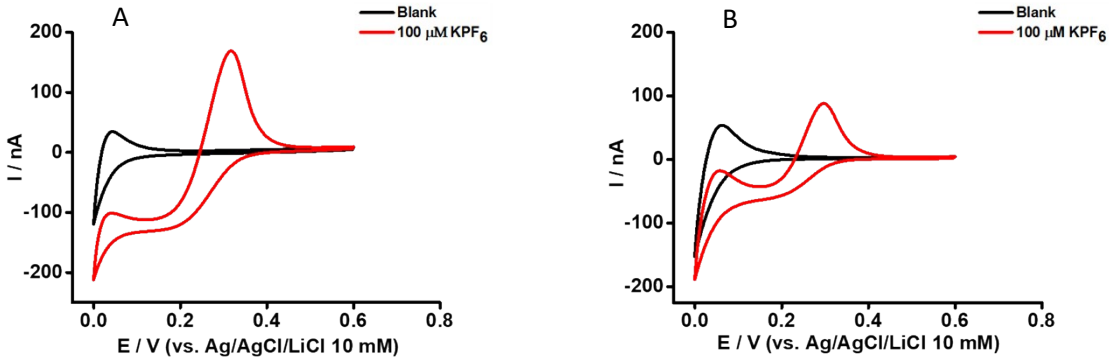

Figure S2. CVs of the absence (black) and presence (red) of 100 µM KPF_6. 10 mM BTPPATPBCl (1,2-DCE) as the organic phase. A) 10 mM LiCl as the aqueous phase. B) 10 mM LiCl + 0.6 mM BSA as the aqueous phase. Scan rate: 10 mV s^{-1}.

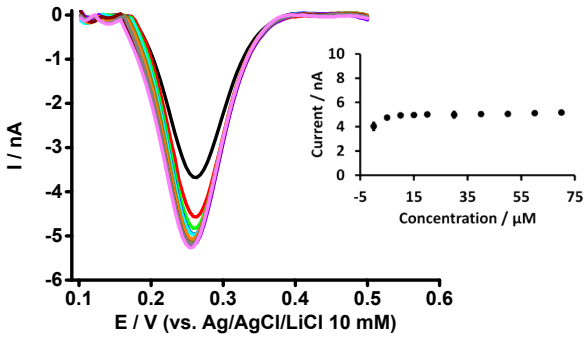

Figure S3. DPVs of 5 µM $TPrA^+$ at different concentration of β-CD in 10 mM LiCl aqueous phase with 10 mM BTPPATPBCl (1,2-DCE) organic phase. Inset: relationship between current and concentration of β-CD. All DPVs are background subtracted followed by baseline corrected. Error bars are ±1 standard deviation of three independent measurements. When error bars are not visible, they are smaller than the symbol size.

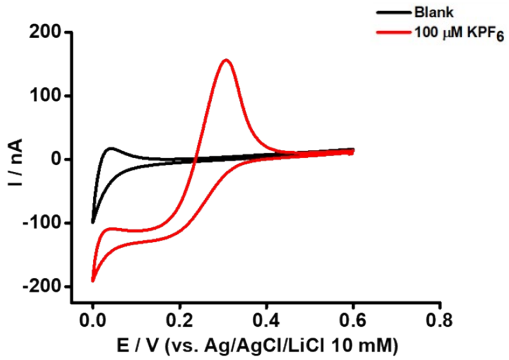

Figure S4. CVs of the absence (black) and presence (red) of 100 µM KPF_6. 10 mM BTPPATPBCl (1,2-DCE) as the organic phase. 10 mM LiCl + 0.6 mM β-CD as the aqueous phase. Scan rate: 10 mV s^{-1}.

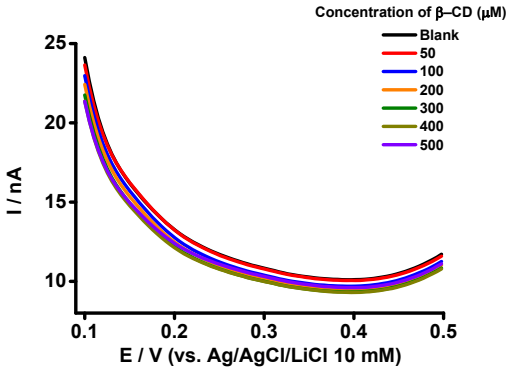

Figure S5. DPVs without β-CD and with different concentrations of β-CD at a fixed concentration of BSA (0.6 mM) at the µITIES array using 10 mM LiCl as the aqueous phase (without PFOA). The organic phase is 10 mM BTPPATPBCl (1,2-DCE).

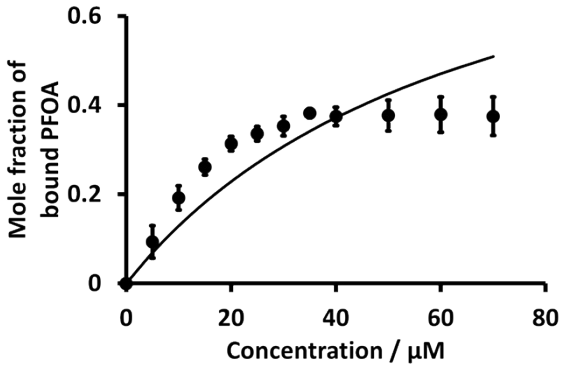

Figure S6. Plot of mole fraction of bound PFOA obtained during titration of a fixed concentration of PFOA (i.e. 5 µM) at different concentration of β-CD (dotted line). Nonlinear fitting using the Langmuir binding isotherm model (equation 3) (solid line) using all concentrations studied for 1:1 β-CD:PFOA complex. Error bars are ±1 standard deviation of three independent measurements. When error bars are not visible, they are smaller than the symbol size.