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Electrochemical Behaviour of Hen-Egg-White Lysozyme at the

Polarised Water | 1, 2-Dichloroethane Interface

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(RSC Electronic supplementary information)





Fig. S1 Scan rate studies of HEWL: CV response of blank (black) and 10 μ M HEWL at scan rates of 5 (light grey), 10, 15, 20, 25, 30, 40 and 50 (black) mVs⁻¹. Inset top: Peak current (μ A) versus square root of the scan rate ((Vs⁻¹)^{1/2}) for the forward and reverse HEWL peaks. Inset bottom: Peak current (μ A) versus the scan rate (Vs⁻¹) for the HEWL pre-peak on the forward sweep. Experimental setup as detailed in cell 2, with 10 mM BTPPATPBCl acting as the organic electrolyte salt.





Fig. S2 Studies of increasing concentration HEWL: A representative CV response for blank (grey) and 25 μ M HEWL (black) is shown. Dynamic range studied was 5 – 30 μ M HEWL. Inset top: Peak current (μ A) versus increasing concentration HEWL (μ M) for the forward and reverse HEWL peaks respectively. Inset bottom: Peak current (μ A) versus increasing concentration HEWL (μ M) for the HEWL pre-peak on the forward sweep. Experimental setup as detailed in cell 2, with 10 mM BTPPATPBCl acting as the organic electrolyte salt. Scan rate used was 10 mVs⁻¹.





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Fig. S3 The effect of the ionic strength of the aqueous phase solution on the cyclic voltammetry response of HEWL: CV response of 25 μ M HEWL at aqueous solution ionic strengths of (A) 0.011 M, (B) 0.02 M, (C) 0.06 M, and (D) 0.11 M. Transfer potentials are corrected for the formal TEA⁺ transfer potential in water | 1,2-dichloroethane ($\Delta_o^w \phi_i^o$) and are on the Galvani scale. Experimental setup as detailed in cell 3. Scan rate used was 5 mVs⁻¹.





Fig. S4 (A) Comparison of blank (light grey), CV 1 (black) and CV 2 (dark grey). (B) Expansion of the area in (A) highlighted in the dashed box. A change in behavior of the HEWL pre-peak on the forward sweep is clearly evident with successive scans. Experimental setup as detailed in cell 2, with 10 mM BTPPATPBCl acting as the organic electrolyte salt. Scan rate used was 5 mVs⁻¹.





Fig. S5 Picture of the interface after 100 CVs. (A) Aqueous phase containing 25 μ M HEWL. (B) Liquid | Liquid interface with white HEWL film visible. (C) Organic phase.