

Supporting information

Molecular Wiring of Chlorophyll a and Cytochrome c on Carbon Black for Amplified Photocurrent Generation and ROS Profiling in Cancer Cells

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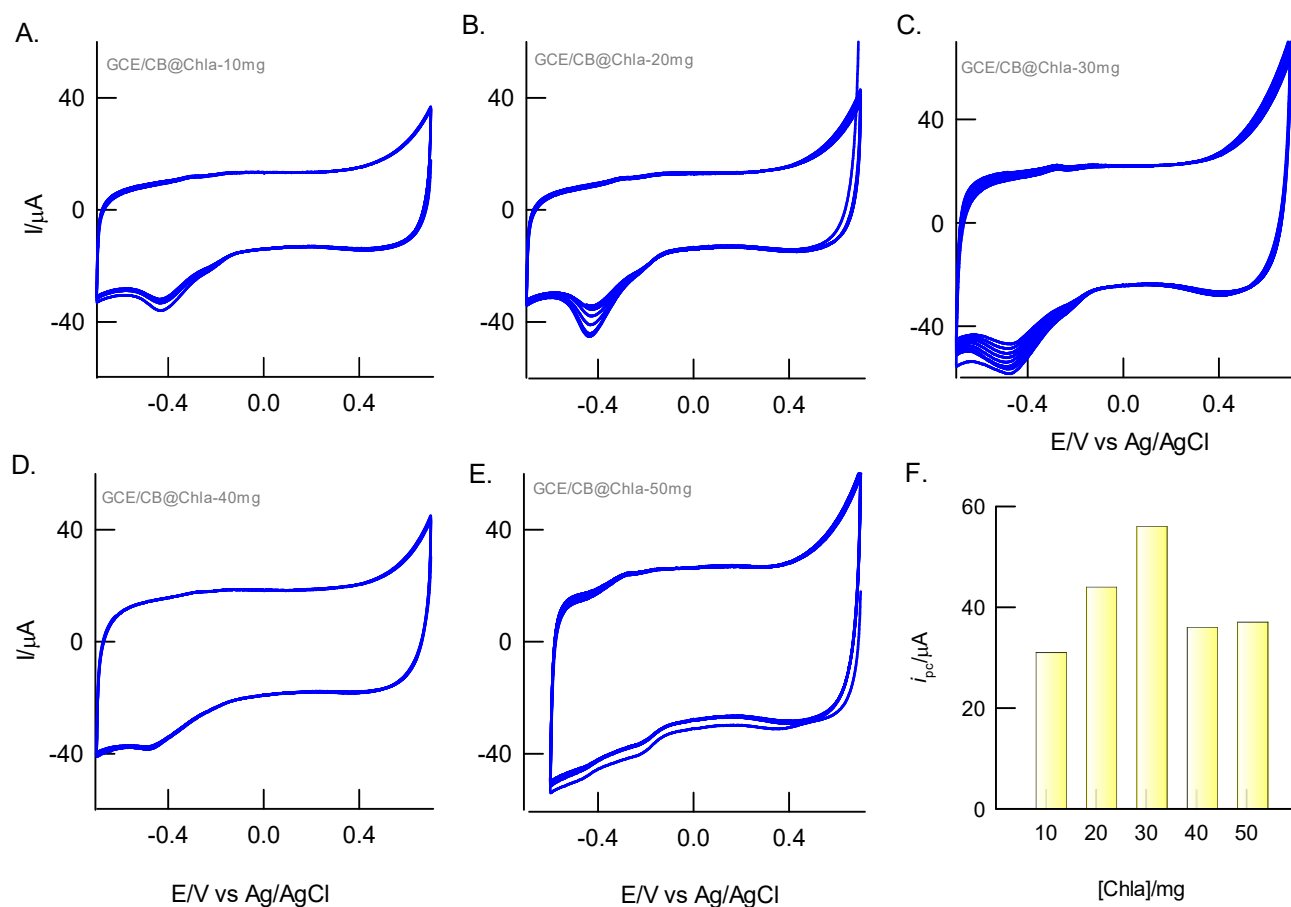


Figure S1. Effect of loading of various concentrations of Chla on GCE/CB (A) 10 (B) 20 (C) 30 (D) 40 and (E) 50mg of Chla in pH 7 PBS (N_2 purged) and (F) The plot of $|i_{pc}|$ vs $[\text{Chla}]$. i_{pc} – Baseline not corrected.

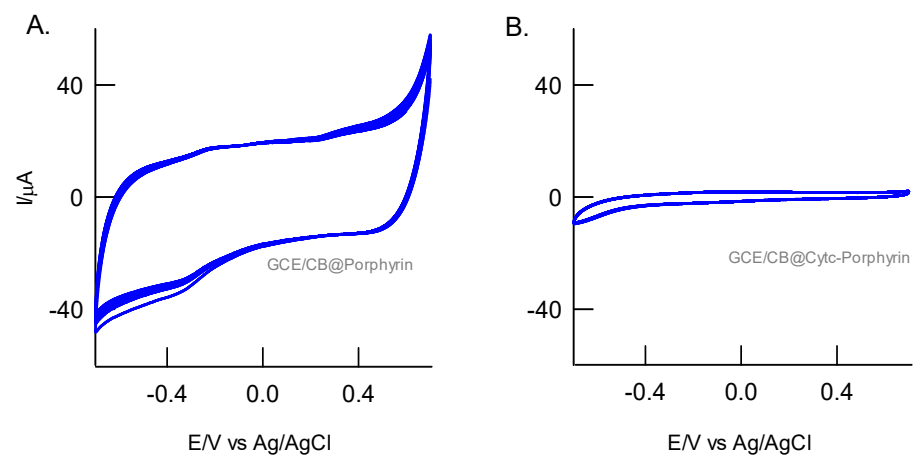


Figure S2. (A) CV response of GCE modified CB@porphyrin and (B) CB/CytC@porphyrin in pH 7 PBS (N_2 purged).

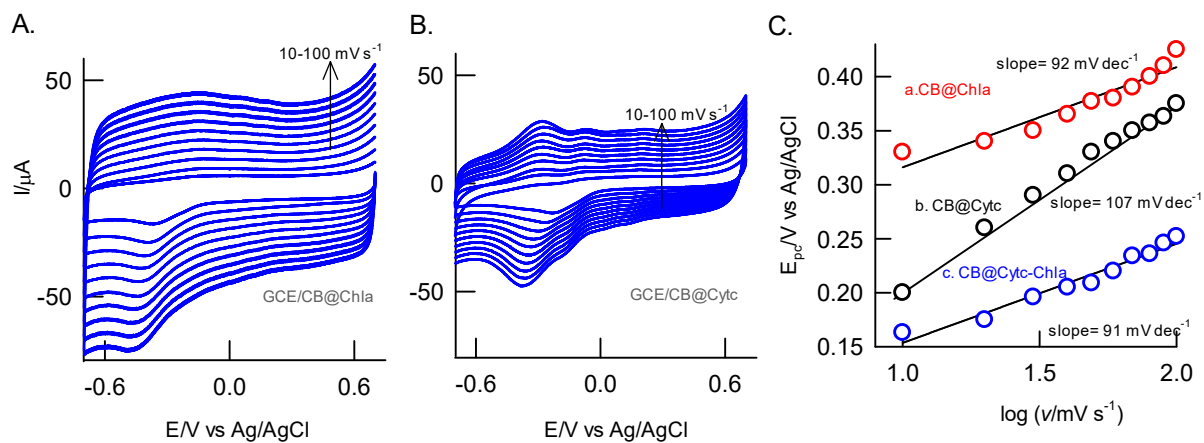


Figure S3. (A-B) The effect of scan rate (10-100 mV s⁻¹) of GCE/CB@Chla and GCE/CB@CytC-Chla in blank pH 7 PBS solution (N₂ purged) in dark conditions and (C) Plot of E_{pc} vs log(v).

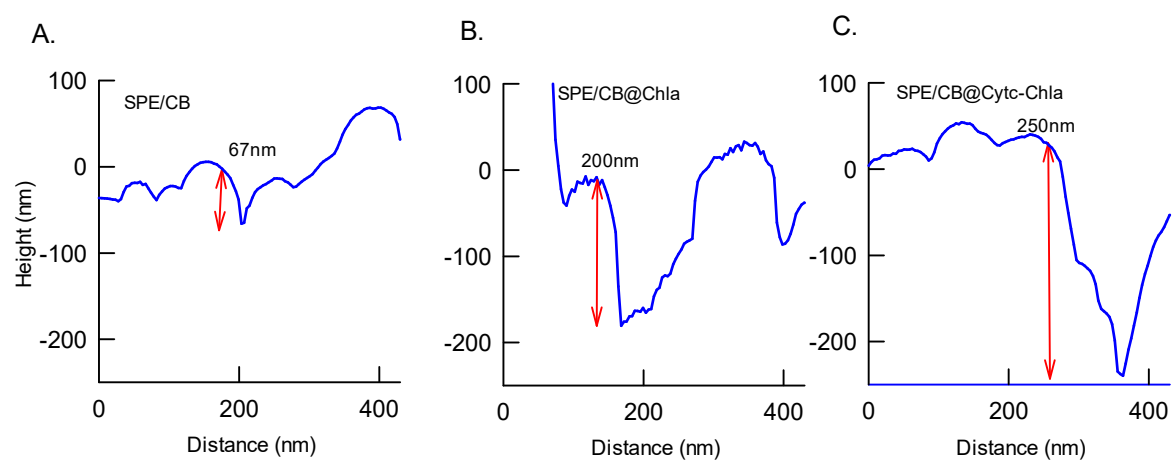


Figure S4. AFM height calculation of (A) CB, (B) CB@Chla and (C) CB@CytC-Chla.

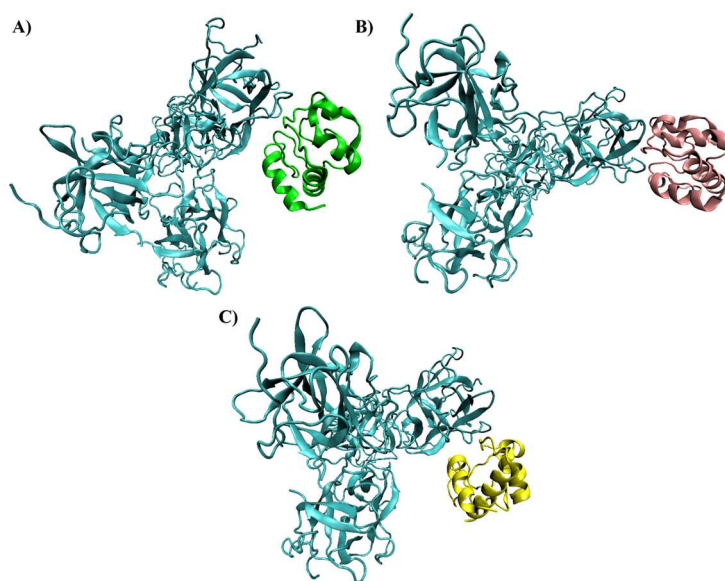


Figure S5. The selected top 3 docking conformations of Chla and cytochrome *c*. A) dock1 B) dock2 and C) dock3.

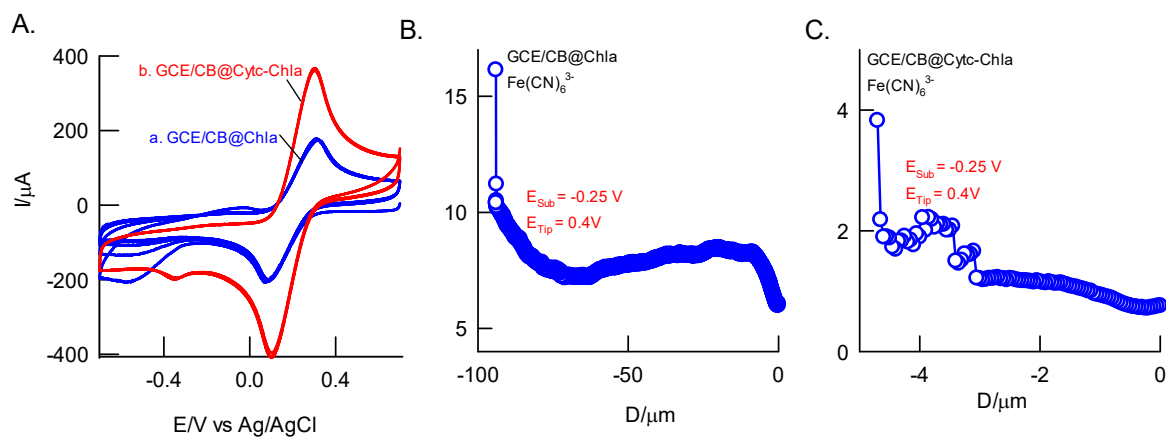


Figure S6 (A) CV response of (a) GCE/CB@Chla and (b) GCE/CB@CytC-Chla using 5mM $\text{Fe}(\text{CN})_6^{3-}$ containing N_2 purged 0.1M KCl solution and (B-C) Approach curves response of GCE/CB@Chla and GCE/CB@CytC-Chla in 5mM $\text{Fe}(\text{CN})_6^{3-}$ containing N_2 purged 0.1M KCl solution.

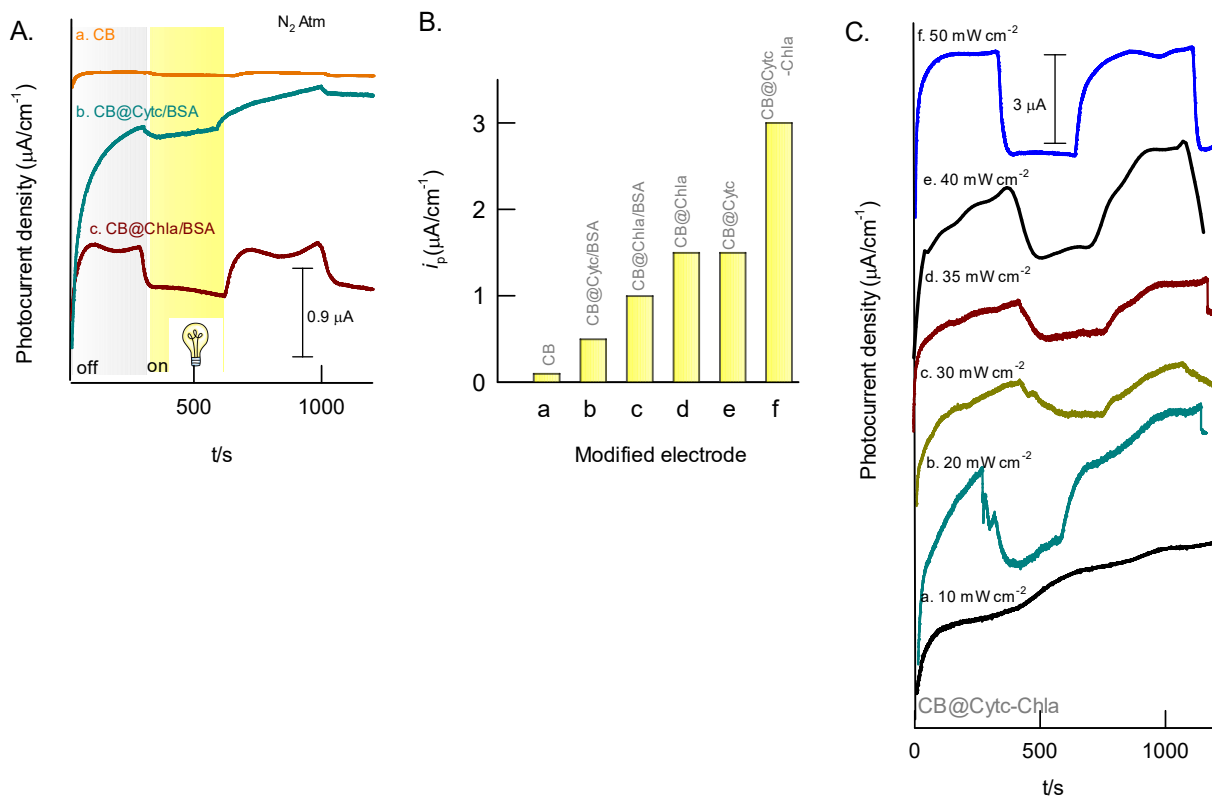


Figure S7. Photocurrent response was recorded in amp-it at -0.25V vs Ag/AgCl : (A) CB (a), CB/CytC/BSA (b) and CB@Chla/BSA (c) modified electrodes in pH 7 PBS N_2 atm. (B) I_p of modified electrodes and (C) CB@CytC-Chla in different light intensities ($10\text{--}50 \text{ mW cm}^{-2}$).

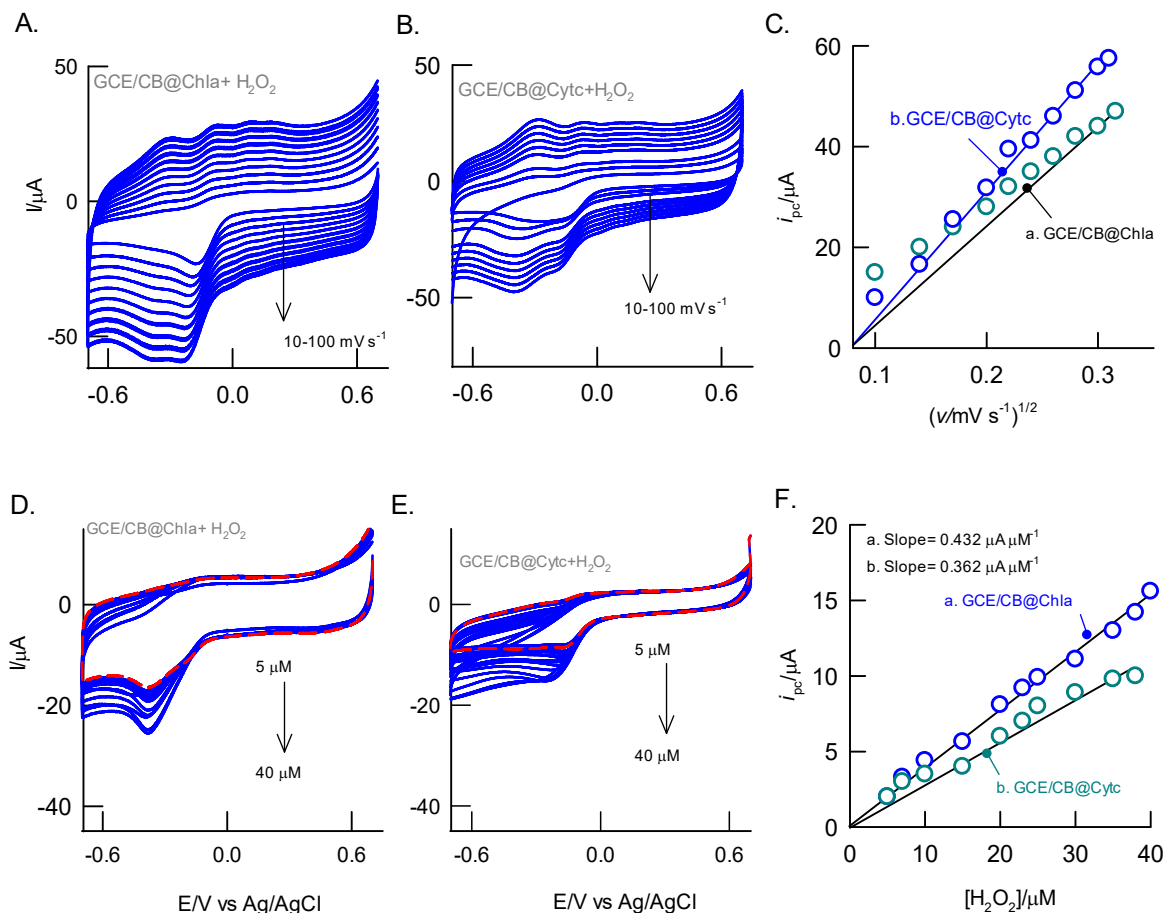


Figure S8. (A-B) Effect of scan rate of GCE/CB@Chla and GCE/CB/Cytc in the presence of 20 μM of H₂O₂ in pH 7 PBS (N₂ purged). (C) plot of cathodic peak current i_{pc} vs square root of v . (D-E) Effect of concentration (5-40) μM of H₂O₂ of GCE/CB@Chla and GCE/CB/Cytc in pH 7 PBS (N₂ purged) and (F) plot of $|i_{pc}|$ vs [H₂O₂]/(μM) (baseline corrected).