SUPPORTING INFORMATION

Protein-protein interaction regulates the direction of catalysis and electron transfer in a redox enzyme complex

Duncan G. G. McMillan, Sophie J. Marritt, Mackenzie A. Firer-Sherwood, Liang Shi, David J. Richardson, Stephen D. Evans, Sean J. Elliott, Julea N. Butt and Lars J. C. Jeuken

RESULS

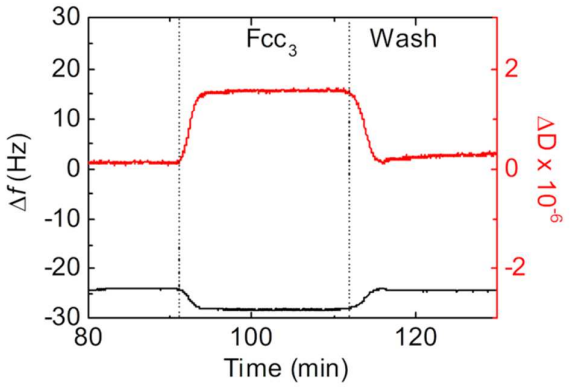

Figure S1

QCM-D results of a SiO_2 surface in buffer, plotting (black line, left axis) frequency and (red line, right axis) dissipation against time. For clarity reasons, only the traces after the formation of the SSM are shown. Changes in the solution composition flowing over the SSM are indicated: (Fcc3) 5μM Fcc3/1mM fumarate; (Wash) buffer only. SSM was formed with liposomes (90:10 POPC:Cardiolipin; 1% (w/w) MQ-7).

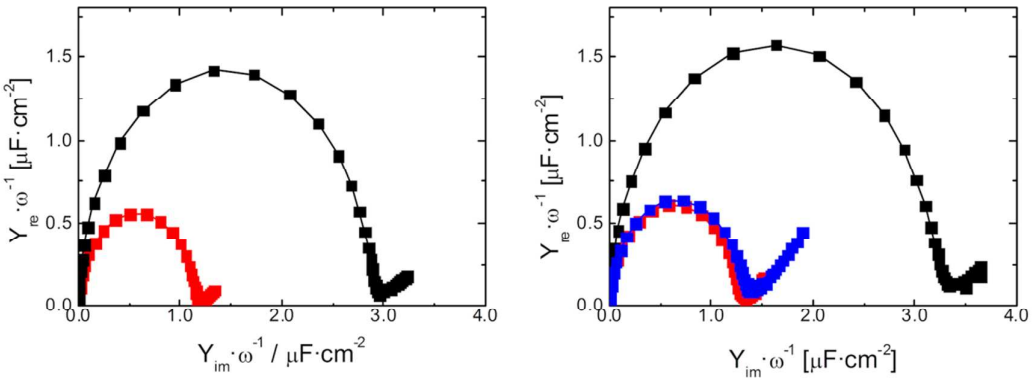

Figure S2

Electrochemical impedance spectra (EIS), represented in a Cole-Cole plot, of the SSM formation on a gold electrode modified with cholesterol tether. Frequency range 100 kHz to 100 mHz. (Left) EIS (Black) before and (Red) after addition of CymA proteoliposomes (90:10 POPC:Cardiolipin; 1% (w/w) CymA; 1% (w/w) MQ-7) are shown. (Right) EIS (Black) before and (Red, closed) after addition of liposomes (90:10 POPC:Cardiolipin; 1% (w/w) MQ-7) are shown and (Blue, open) after addition of 0.1 µM $CymA_{sol}$

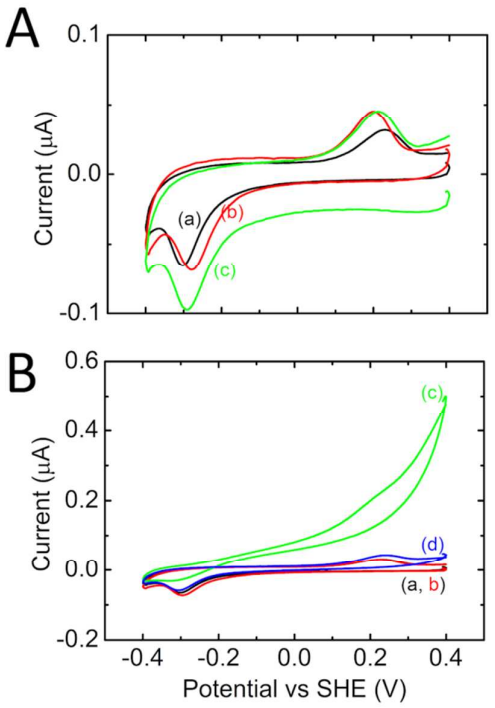

Figure S3

CVs of a SSM on a gold electrode modified with cholesterol tether. SSM was formed with liposomes (90:10 POPC:Cardiolipin; 1% (w/w) MQ-7). A) CVs (10 mV/s) (a) before and (b) after addition of 0.1 μM $CymA_{sol}$ and (c) a CV after rinsing out unbound $CymA_{sol}$ and addition of 1mM potassium ferricyanide B) CVs (a) before and (b, c) after addition of (b) 0.1 μM $CymA_{sol}$ and CVs after rinsing out unbound $CymA_{sol}$ and addition (c) 1mM sodium dithionite and (d) 1mM sodium dithionite with 10μM HQNO. On this scale, the difference between (a) and (b) is almost not visible.