Supplementary Material (ESI) for PCCP

Electronic Supplementary Information

Stepwise vs. concerted pathways in scandium ion-coupled electron transfer from superoxide ion to *p*-benzoquinone derivatives

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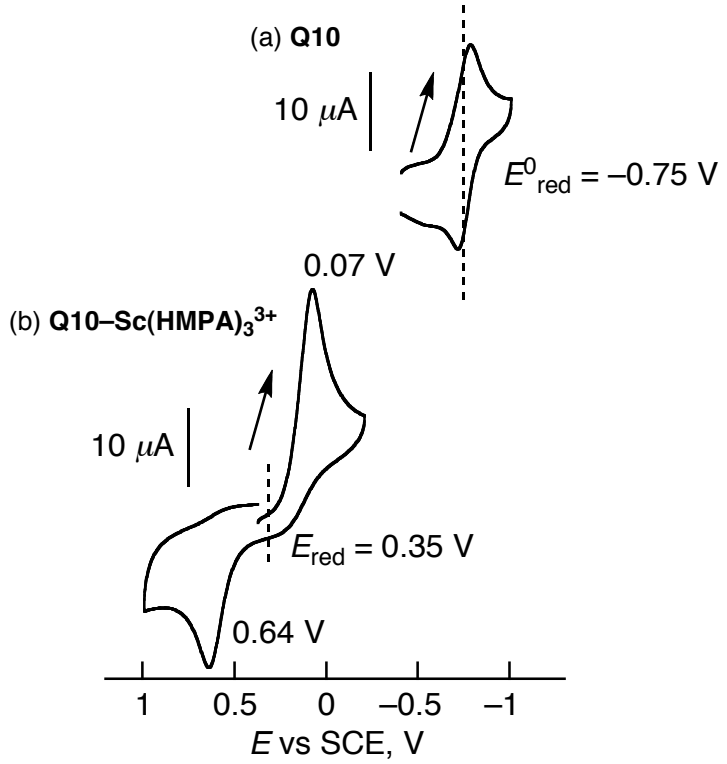

Fig. S1 Cyclic voltammograms of coenzyme Q10 (1.0×10^{-3} M) (a) in the absence and (b) in the presence of $Sc(HMPA)_3^{3+}$ (1.0×10^{-2} M) in deaerated EtCN containing $TBAPF_6$ (0.10 M) using glassy carbon working electrode at 298 K with a sweep rate of 100 mV s^{-1}.

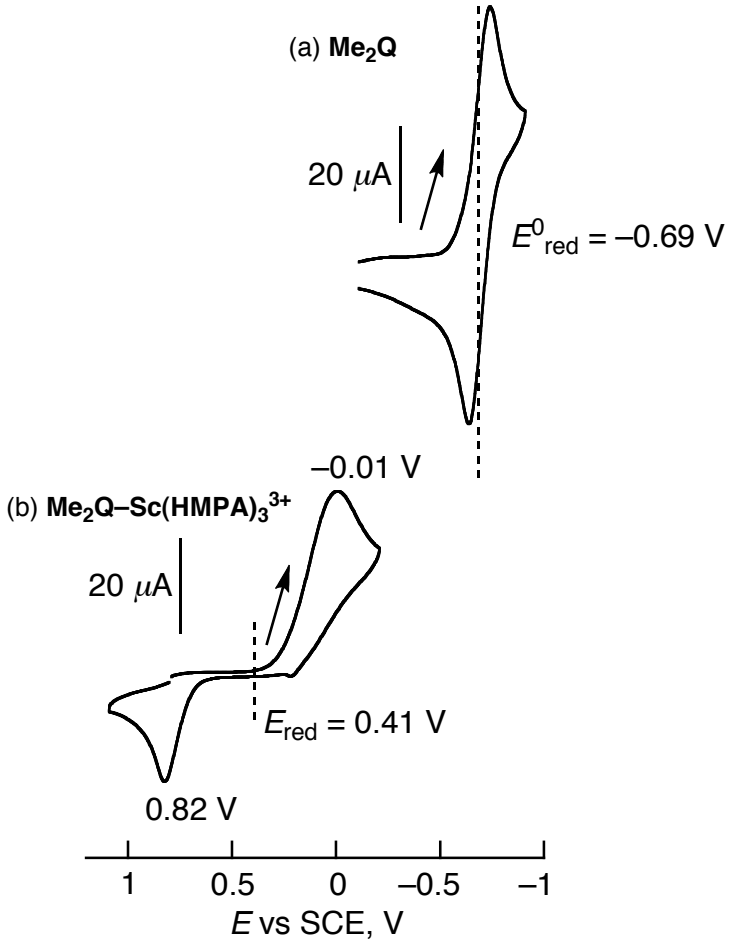

Fig. S2 Cyclic voltammograms of 2,5-dimetyl-*p*-benzoquinone (Me_2Q: 2.0×10^{-3} M) a) in the absence and b) in the presence of $Sc(HMPA)_3^{3+}$ (1.0×10^{-2} M) in deaerated EtCN containing $TBAPF_6$ (0.10 M) using glassy carbon working electrode at 298 K with a sweep rate of 100 mV s^{-1}.

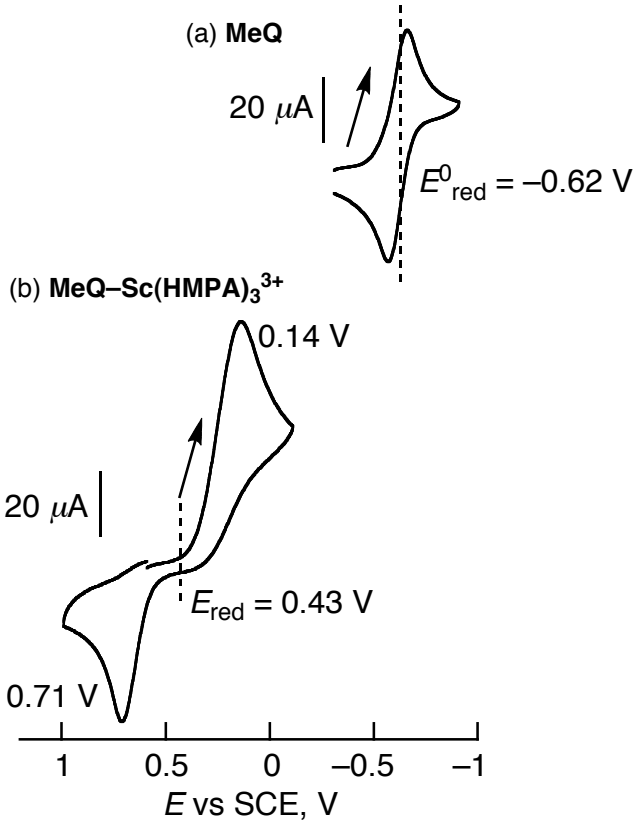

Fig. S3 Cyclic voltammograms of *p*-toluquinone (MeQ: 2.0×10^{-3} M) (a) in the absence and (b) in the presence of $Sc(HMPA)_3^{3+}$ (1.0×10^{-2} M) in deaerated EtCN containing $TBAPF_6$ (0.10 M) using glassy carbon working electrode at 298 K with a sweep rate of 100 mV s^{-1}.

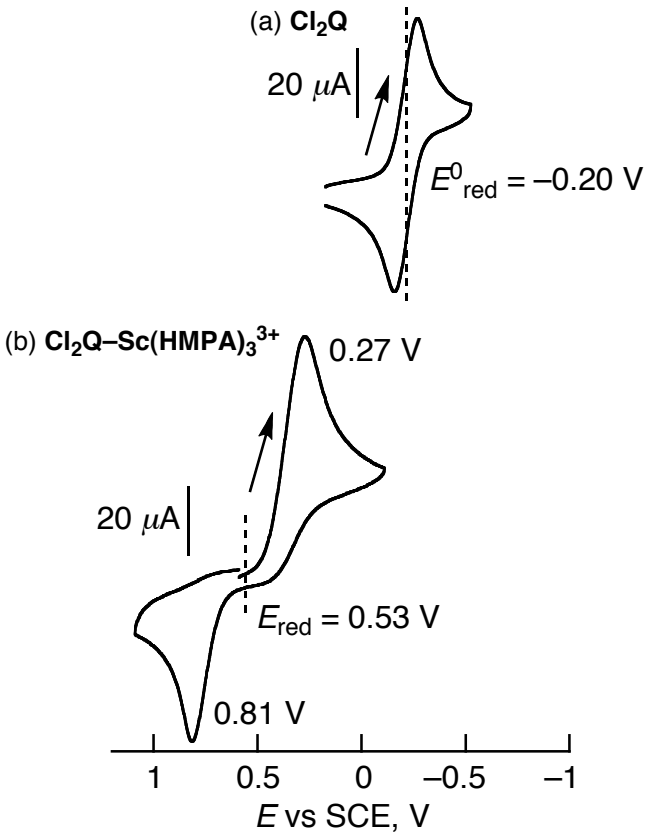

Fig. S4 Cyclic voltammograms of 2,5-dichrolo-*p*-benzoquinone (Cl_2Q: 2.0×10^{-3} M) (a) in the absence and (b) in the presence of $Sc(HMPA)_3^{3+}$ (1.0×10^{-2} M) in deaerated EtCN containing $TBAPF_6$ (0.10 M) using glassy carbon working electrode at 298 K with a sweep rate of 100 mV s^{-1}.

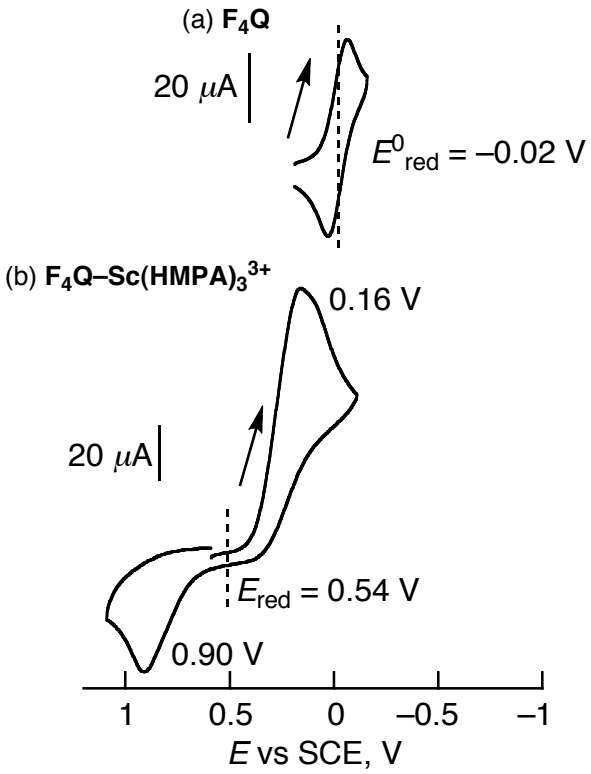

Fig. S5 Cyclic voltammograms of *p*-fluoranil (F_4Q: 2.0×10^{-3} M) (a) in the absence and (b) in the presence of $Sc(HMPA)_3^{3+}$ (1.0×10^{-2} M) in deaerated EtCN containing $TBAPF_6$ (0.10 M) using glassy carbon working electrode at 298 K with a sweep rate of 100 mV s^{-1}.

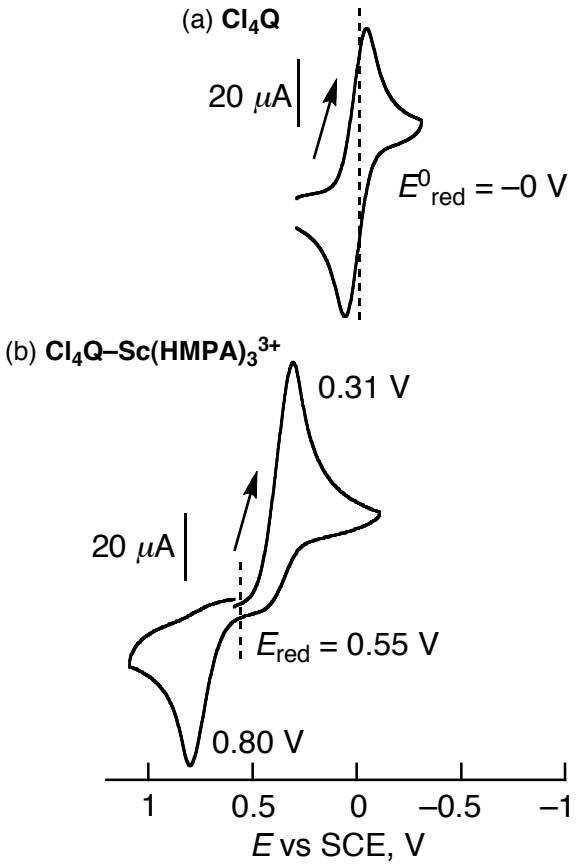

Fig. S6 Cyclic voltammograms of *p*-chloranil (Cl_4Q: 2.0×10^{-3} M) (a) in the absence and (b) in the presence of $Sc(HMPA)_3^{3+}$ (1.0×10^{-2} M) in deaerated EtCN containing $TBAPF_6$ (0.10 M) using glassy carbon working electrode at 298 K with a sweep rate of 100 mV s^{-1}.