Supplementary Material (ESI) for Photochemical & Photobiological Sciences

Electronic Supplementary Information

Photooxidation of alcohols by a porphyrin/quinone/TEMPO system

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Figure S1. Raw experimental data for the transient absorption measurements and Stern-Volmer plots for the determination of the rates of electron transfer.

(a) Compound **1a**.

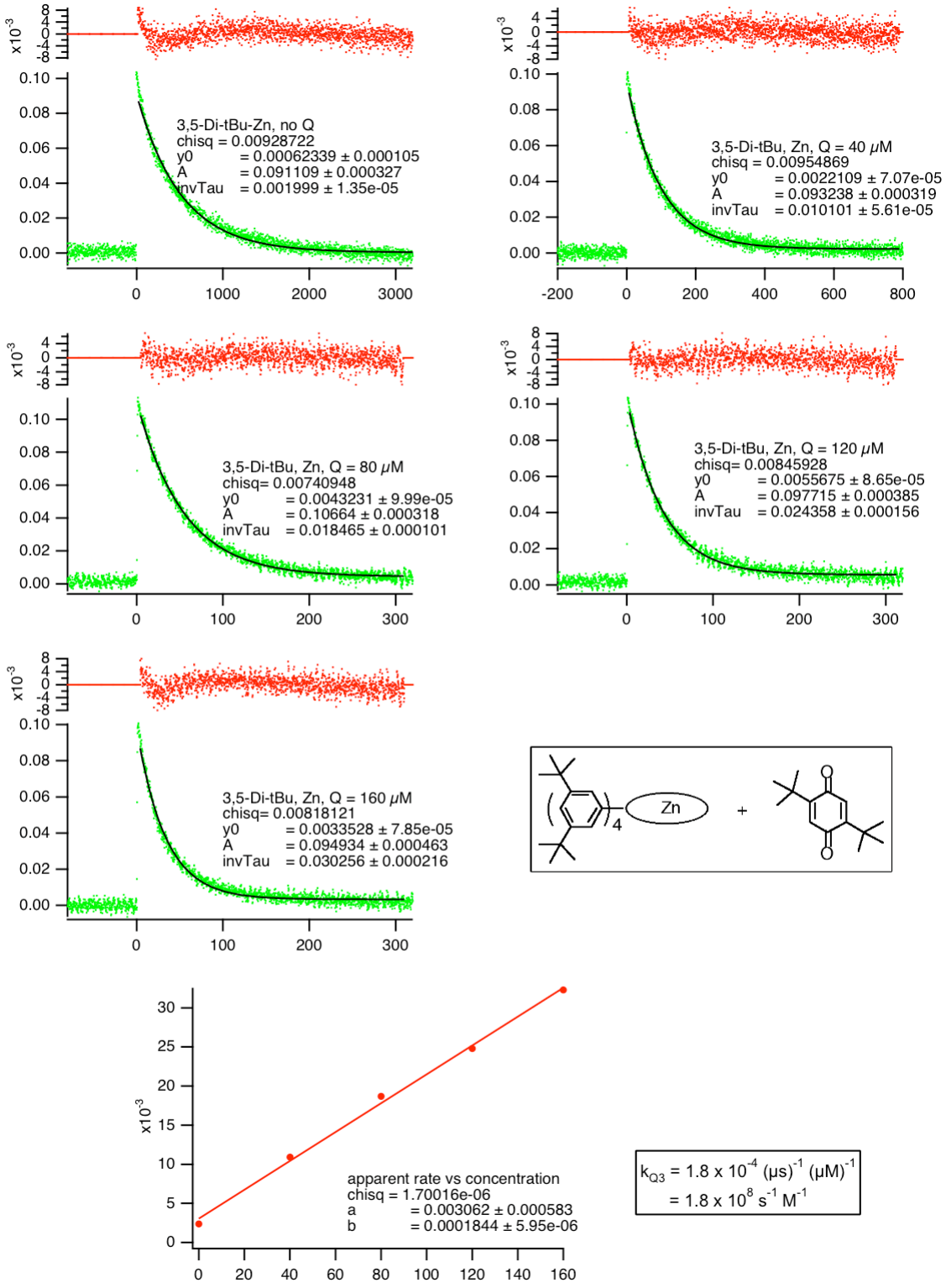


Figure S1. (Continued)

(b) Compound **1b**.

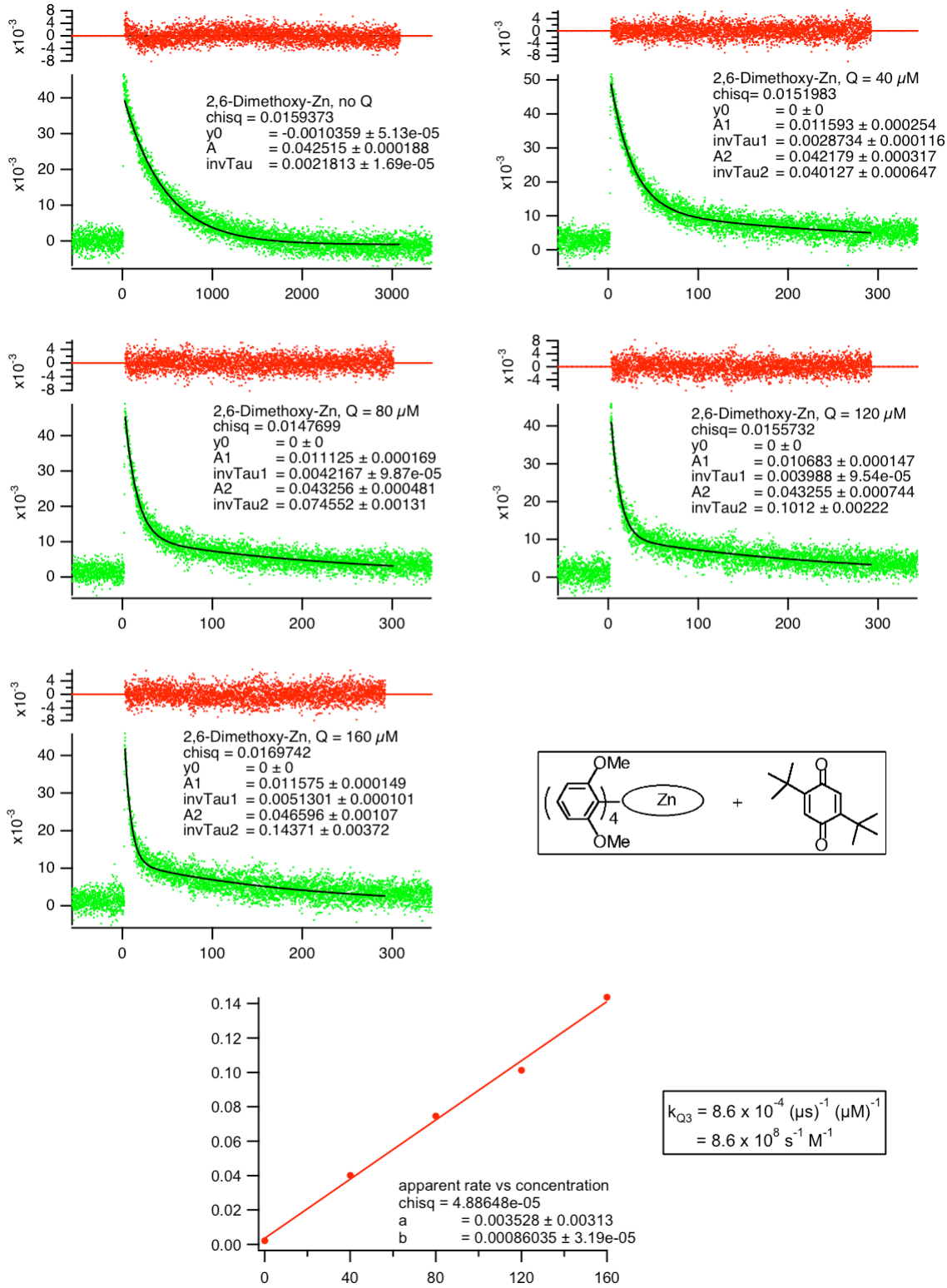
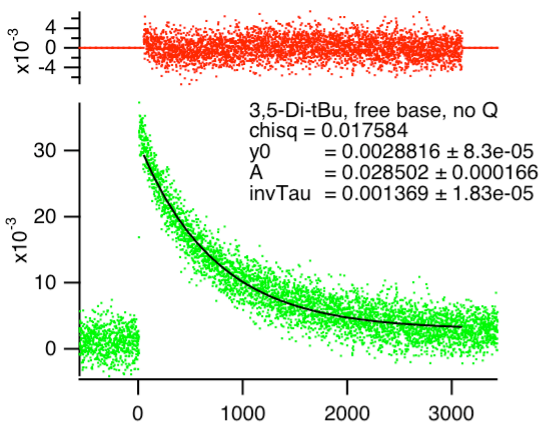
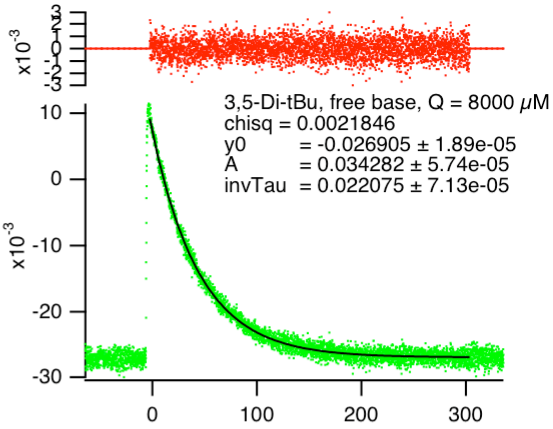
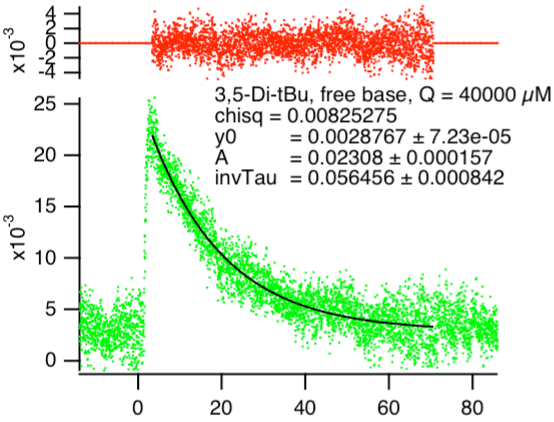


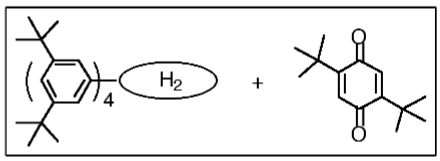
Figure S1. (Continued)

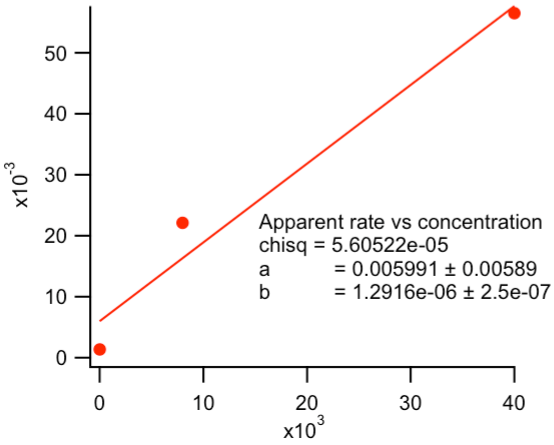
(c) Compound **2a**.











k_{Q3} = 1.3 x 10^{-6} $(\mu s)^{-1}$ $(\mu M)^{-1}$
= 1.3 x 10^{6} s^{-1} M^{-1}

Figure S2. The initial rates of formation of PhCHO plotted versus the concentration of added 4-nitrobenzaldehyde. The reaction conditions are the same as the "standard" conditions except for the added 4-nitrobenzaldehyde. The point with a circle indicates the "standard" conditions.

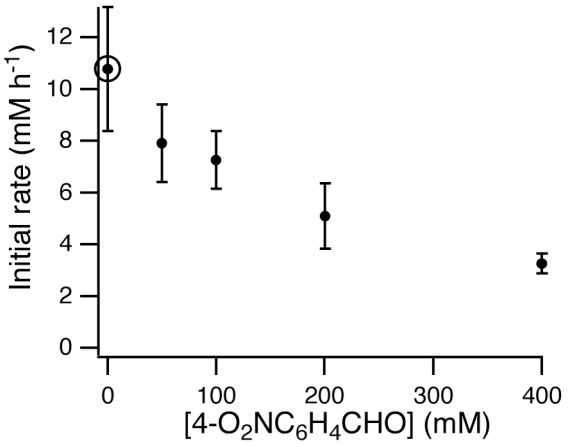


Table S1. The $S_0 \rightarrow T_1$ excitation energies for free base porphyrins calculated by the TD-DFT methods.

Compound	Calculated (eV)[1]	Experimental (eV)
H_2TPP[2]	1.41	1.45[3]
2a	1.41	
2b	1.40	
2d	1.41	
2e	1.40	
2f	1.46	

[1] Vertical excitation energies calculated by TD-DFT/B3LYP/6-31G* with C-PCM model (epsilon = 13.26, no dispersion, no cavitation).

[2] 5,10,15,20-Tetraphenylporphine.

[3] Taken from ref. 23 in the main text.