

SUPPORTING INFORMATION

Lipid Binding to the Carotenoid Binding Site in Photosynthetic Reaction Centers

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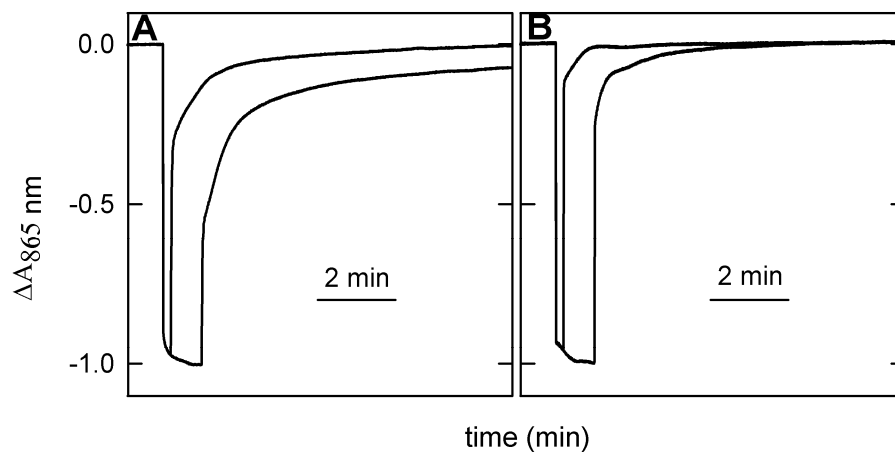


Figure S1. Kinetics of the light-induced absorption changes in RCs from semiaerobically grown WT (panel A) and R-26 (panel B) measured at the center of the Q_y absorption band of P. The kinetic traces were recorded at two different illumination times for both RCs: 0.2 and 1 min. Note the much larger amplitude of the longer lived components in WT. Conditions: 1 μM RCs, 15 mM Bis-tris-propane pH 7.0, 1 mM EDTA, 0.05 % TX-100.

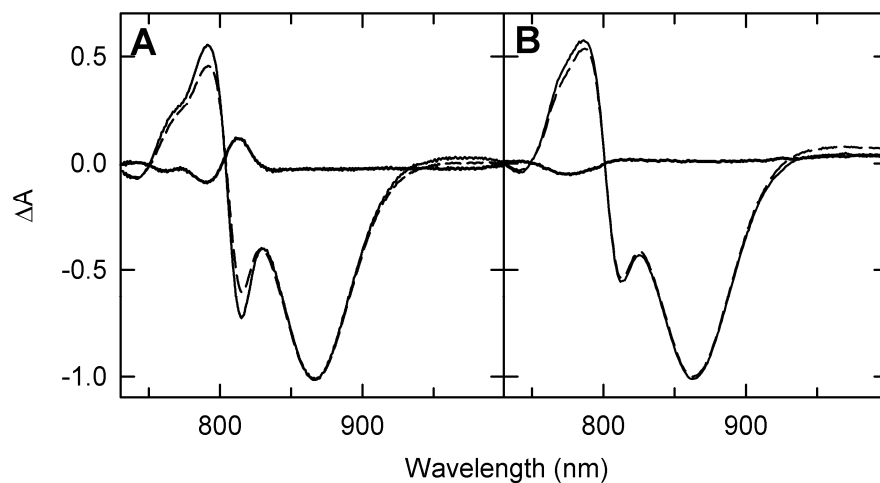


Figure S2. Normalized light-minus-dark difference spectra (solid lines) recorded immediately after the onset of the light and 1 minute after the illumination was turned off (dashed lines) for RCs isolated from semiaerobically grown cells from WT (A) and R-26 (B). The thick solid lines show the double difference spectra (dashed-minus-solid) and feature changes around 800 nm consistent with the decrease of the electrochromic absorption changes involving the monomers during the illumination. Note the larger decrease in WT than in R-26. Conditions as in Figure S1.

Table S1. Fitting parameters of the kinetic traces recorded in TX-100 and presented in Figure 2.

sample	$k_{(22\text{ }^{\circ}\text{C})}^a$ (s^{-1}) $\times 10^3$	$A_{(22\text{ }^{\circ}\text{C})}^b$	$k_{(8\text{ }^{\circ}\text{C})}^c$ (s^{-1}) $\times 10^3$	$A_{(8\text{ }^{\circ}\text{C})}^d$
WT	48	0.33	75	0.45
	4	0.23	1.1	0.55
R-26	12	0.34	9.6	0.6
R-26+DOPC	15	0.66	8.6	0.62
R-26+DMPC	8	0.35	3.1	0.53
R-26+DLPC	13	0.43	0.7	0.6
WT+DLPC	36	0.45	62	0.57
	2.6	0.15	1.1	0.43

^{a, c} Rate constants of the slower kinetic components observed in the recovery kinetics at 22 and 8 °C, respectively;

^{b, d} Relative amplitudes of the slower kinetic components at 22 and 8 °C, respectively;

Table S2. Fitting parameters of the kinetic traces recorded in proteoliposomes and presented in Figure 5.

sample	$k_{(22\text{ }^{\circ}\text{C})}^a$ (s^{-1}) $\times 10^3$	$A_{(22\text{ }^{\circ}\text{C})}^b$	$k_{(8\text{ }^{\circ}\text{C})}^c$ (s^{-1}) $\times 10^3$	$A_{(8\text{ }^{\circ}\text{C})}^d$
R-26-DLPC	41	0.5	0.13	0.93
	1	0.5	28	0.07
R-26-DOPC	7.8	0.5	2.5	0.62
	0.41	0.5	0.4	0.38
R-26-DLPC*	ND	ND	26	0.64
			1.3	0.36
WT-DLPC	12	0.2	4.1	0.42
	0.47	0.8	0.15	0.58

^{a, c} Rate constants of the observed kinetic components at 22 and 8 °C, respectively;

^{b, d} Relative amplitudes of the observed kinetic components at 22 and 8 °C, respectively;

* Rapid cooling (4 °C/min);

ND, not determined.