

**Determination of the triplet state energies of a series of conjugated porphyrin oligomers**

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**Table 1.** Quenching constants obtained for monomer **1** with the series of triplet energy acceptors following 640 nm excitation of toluene solutions containing 1% pyridine and  $10^{-5}$  -  $10^{-2}$  M of the triplet quencher.

Quencher	$E_T$ (quencher) / kJ/mol	$k_q^{en} \times 10^{-8} / s^{-1}$	Log ( $k_q^{en}$ )
$\beta$ -carotene	75	9.0	8.9
bacteriochlorophyll	95	2.0	8.3
rubrene	111	1.3	8.1
all- <i>trans</i> -retinal	123	1.5	8.2
tetracene	124	1.7	8.2
TPP	137	0.53	7.7
perylene	146	0.030	6.5

**Table 2.** Quenching constants obtained for dimer **2** with the series of triplet energy acceptors following 670-700 nm excitation of toluene solutions containing 1% pyridine and  $10^{-5}$  -  $10^{-2}$  M of the triplet quencher.

Quencher	$E_T$ (quencher) / kJ/mol	$k_q^{en} \times 10^{-8} / s^{-1}$	Log ( $k_q^{en}$ )
$\beta$ -carotene	75	11	9.0
bacteriochlorophyll	95	14	9.1
ZnPc	109	2.9	8.5
rubrene	111	0.82	7.9
all- <i>trans</i> -retinal	123	1.4	8.1
tetracene	124	1.9	8.3
TPP	137	0.055	6.7
perylene	146	0.038	6.6

**Table 3.** Quenching constants obtained for tetramer **3** with the series of triplet energy acceptors following 700-730 nm excitation of toluene solutions containing 1% pyridine and  $10^{-5}$  -  $10^{-2}$  M of the triplet quencher.

Quencher	$E_T$ (quencher) / kJ/mol	$k_q^{en} \times 10^{-8} / s^{-1}$	Log ( $k_q^{en}$ )
$\beta$ -carotene	75	50	9.7
bacteriochlorophyll	95	30	9.5
ZnPc*	109	300	10.5
rubrene	111	30	9.5
all- <i>trans</i> -retinal*	123	0.012	7.1
chlorophyll a	123	0.028	7.4
1,8-diphenyl-octatetraene	132	0.060	7.8
TPP	137	0.026	7.4
perylene	146	0.0020	6.3

\* the data for these quenchers were not taken into account while performing the fit according to Equation 1.

**Table 4.** Quenching constants obtained for octamer **4** with the series of triplet energy acceptors following 700-730 nm excitation of toluene solutions containing 1% pyridine and  $10^{-5}$  -  $10^{-2}$  M of the triplet quencher.

Quencher	$E_T$ (quencher) / kJ/mol	$k_q^{en} \times 10^{-8} / s^{-1}$	Log ( $k_q^{en}$ )
$\beta$ -carotene	75	76	9.9
bacteriochlorophyll	95	34	9.5
ZnPc*	109	140	10.1
rubrene	111	36	9.6
all- <i>trans</i> -retinal*	123	0.0050	6.7
chlorophyll a	123	2.80	8.4
1,8-diphenyl-octatetaene	132	0.040	7.6
TPP	137	0.028	7.4
Perylene	146	0.0023	6.4

\* the data for these quenchers were not taken into account while performing the fit according to Equation 1.