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**Supporting Information for Bilirubin as Antioxidant: Kinetic Studies of
the Reaction of Bilirubin with Peroxyl Radicals in Solution, Micelles
and Lipid Bilayers**

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Table S1. Inhibition Rate Constants, k_{inh} , and Stoichiometric Factors, n , of Bilirubin, BR, Trolox, and PMHC for the Inhibited Oxidation of Methyl Linoleate, ML^a, in 0.50 M SDS Micelles Initiated with ABAP^b in Phosphate Buffer, pH 7.4 at 37 °C.

method ^c	inhibitor	R_i	τ	v^d	k_{inh}	n^e
	M x 10 ⁶	M s ⁻¹ x 10 ⁸	s x 10 ⁻³	range	M ⁻¹ s ⁻¹ x 10 ⁻⁴	
OE	BR					
	4.93	1.04	0.76	26-35	5.2	1.6
	14.8	1.73	1.16	12-14	5.0	1.4
PT	BR					
	39.0	1.93	9.89	2-6	4.7	1.3
OE	Trolox					
	14.8	1.40	2.09	9-13	4.2	2
	14.8	1.73	1.70	7-11	4.6	2
PT	Trolox					
	81.2	1.93	8.42	1-5	5.6	2
PT	PMHC					
	8.15	1.59	1.03	13-21	4.9	2

^a ML, 0.193 M on OE, 0.440 ± 0.049 M on PT.

^b ABAP, 30.6 ± 1.3 mM on OE, 18.7 ± 2.6 mM on PT. Concentrations calculated for the micellar volume in 3.0 ml of 0.50 M SDS used with the OE and 2.0 ml with the PT method.^{10b}

^c OE refers to the oxygen electrode, PT the pressure transducer.

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^d Kinetic chain length range during inhibition period.

^e The stoichiometric value for Trolox and PMHC, is 2. The value for BR was calculated from $n = R_i \times \tau / [BR]$ where $R_i = 2 \times [ArOH] / \tau$ and τ is the induction period of Trolox or PMHC.

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Table S2. Inhibition Rate Constants, k_{inh} , and Stoichiometric Factors, n , of BR, and Trolox for the Inhibited Oxidation of PLPC Bilayers Initiated with DMVN at 37 °C, pH 7.4^a.

method ^b	inhibitor	R_i	τ	v^c	k_{inh}	n^d
	$M \times 10^3$	$M \text{ s}^{-1} \times 10^8$	$s \times 10^{-3}$	range	$M^{-1} \text{ s}^{-1} \times 10^{-3}$	
Coevap.	BR, 0.466	2.60	33.4	9-19	3.0	1.9
Coevap.	BR, 0.466	2.10	38.9	9-18	3.2	1.8
Injected	Trolox, 0.161	2.10	15.0	4-11	10.4	2
Injected	Trolox, 0.162	2.60	12.1	5-8	10.7	2

^a Concentrations were PLPC, 1.06 M; DMVN, 0.226 M. calculated for the bilayer lipid volume.^{10a}

^b Coevap. refers to coevaporation of BR with PLPC. The Trolox was injected in the phosphate buffer solution.

^c The kinetic chain length range during the inhibition period.

^d The stoichiometric factors relative to $n = 2$ for Trolox, see Table S1, footnote e.