

Table 1. <sup>1</sup>H NMR Data

	proton	mult	CDCl <sub>3</sub>	(CD <sub>3</sub> ) <sub>2</sub> CO	(CD <sub>3</sub> ) <sub>2</sub> SO	C <sub>6</sub> D <sub>6</sub>	CD <sub>3</sub> CN	CD <sub>3</sub> OD	D <sub>2</sub> O
solvent residual peak			7.26	2.05	2.50	7.16	1.94	3.31	4.79
H <sub>2</sub> O		s	1.56	2.84 <sup>a</sup>	3.33 <sup>a</sup>	0.40	2.13	4.87	
acetic acid	CH <sub>3</sub>	s	2.10	1.96	1.91	1.55	1.96	1.99	2.08
acetone	CH <sub>3</sub>	s	2.17	2.09	2.09	1.55	2.08	2.15	2.22
acetonitrile	CH <sub>3</sub>	s	2.10	2.05	2.07	1.55	1.96	2.03	2.06
benzene	CH	s	7.36	7.36	7.37	7.15	7.37	7.33	
<i>tert</i> -butyl alcohol	CH <sub>3</sub>	s	1.28	1.18	1.11	1.05	1.16	1.40	1.24
	OH <sup>c</sup>	s			4.19	1.55	2.18		
<i>tert</i> -butyl methyl ether	CCH <sub>3</sub>	s	1.19	1.13	1.11	1.07	1.14	1.15	1.21
	OCH <sub>3</sub>	s	3.22	3.13	3.08	3.04	3.13	3.20	3.22
BHT <sup>b</sup>	ArH	s	6.98	6.96	6.87	7.05	6.97	6.92	
	OH <sup>c</sup>	s	5.01		6.65	4.79	5.20		
	ArCH <sub>3</sub>	s	2.27	2.22	2.18	2.24	2.22	2.21	
	ArC(CH <sub>3</sub> ) <sub>3</sub>	s	1.43	1.41	1.36	1.38	1.39	1.40	
chloroform	CH	s	7.26	8.02	8.32	6.15	7.58	7.90	
cyclohexane	CH <sub>2</sub>	s	1.43	1.43	1.40	1.40	1.44	1.45	
1,2-dichloroethane	CH <sub>2</sub>	s	3.73	3.87	3.90	2.90	3.81	3.78	
dichloromethane	CH <sub>2</sub>	s	5.30	5.63	5.76	4.27	5.44	5.49	
diethyl ether	CH <sub>3</sub>	t, 7	1.21	1.11	1.09	1.11	1.12	1.18	1.17
	CH <sub>2</sub>	q, 7	3.48	3.41	3.38	3.26	3.42	3.49	3.56
diglyme	CH <sub>2</sub>	m	3.65	3.56	3.51	3.46	3.53	3.61	3.67
	CH <sub>2</sub>	m	3.57	3.47	3.38	3.34	3.45	3.58	3.61
	OCH <sub>3</sub>	s	3.39	3.28	3.24	3.11	3.29	3.35	3.37
1,2-dimethoxyethane	CH <sub>3</sub>	s	3.40	3.28	3.24	3.12	3.28	3.35	3.37
	CH <sub>2</sub>	s	3.55	3.46	3.43	3.33	3.45	3.52	3.60
dimethylacetamide	CH <sub>3</sub> CO	s	2.09	1.97	1.96	1.60	1.97	2.07	2.08
	NCH <sub>3</sub>	s	3.02	3.00	2.94	2.57	2.96	3.31	3.06
	NCH <sub>3</sub>	s	2.94	2.83	2.78	2.05	2.83	2.92	2.90
dimethylformamide	CH	s	8.02	7.96	7.95	7.63	7.92	7.97	7.92
	CH <sub>3</sub>	s	2.96	2.94	2.89	2.36	2.89	2.99	3.01
	CH <sub>3</sub>	s	2.88	2.78	2.73	1.86	2.77	2.86	2.85
dimethyl sulfoxide	CH <sub>3</sub>	s	2.62	2.52	2.54	1.68	2.50	2.65	2.71
dioxane	CH <sub>2</sub>	s	3.71	3.59	3.57	3.35	3.60	3.66	3.75
ethanol	CH <sub>3</sub>	t, 7	1.25	1.12	1.06	0.96	1.12	1.19	1.17
	CH <sub>2</sub>	q, 7 <sup>d</sup>	3.72	3.57	3.44	3.34	3.54	3.60	3.65
	OH	s <sup>c,d</sup>	1.32	3.39	4.63		2.47		
ethyl acetate	CH <sub>3</sub> CO	s	2.05	1.97	1.99	1.65	1.97	2.01	2.07
	CH <sub>2</sub> CH <sub>3</sub>	q, 7	4.12	4.05	4.03	3.89	4.06	4.09	4.14
	CH <sub>2</sub> CH <sub>3</sub>	t, 7	1.26	1.20	1.17	0.92	1.20	1.24	1.24
ethyl methyl ketone	CH <sub>3</sub> CO	s	2.14	2.07	2.07	1.58	2.06	2.12	2.19
	CH <sub>2</sub> CH <sub>3</sub>	q, 7	2.46	2.45	2.43	1.81	2.43	2.50	3.18
	CH <sub>2</sub> CH <sub>3</sub>	t, 7	1.06	0.96	0.91	0.85	0.96	1.01	1.26
ethylene glycol	CH	s <sup>e</sup>	3.76	3.28	3.34	3.41	3.51	3.59	3.65
"grease" <sup>f</sup>	CH <sub>3</sub>	m	0.86	0.87		0.92	0.86	0.88	
	CH <sub>2</sub>	br s	1.26	1.29		1.36	1.27	1.29	
<i>n</i> -hexane	CH <sub>3</sub>	t	0.88	0.88	0.86	0.89	0.89	0.90	
	CH <sub>2</sub>	m	1.26	1.28	1.25	1.24	1.28	1.29	
HMPA <sup>g</sup>	CH <sub>3</sub>	d, 9.5	2.65	2.59	2.53	2.40	2.57	2.64	2.61
methanol	CH <sub>3</sub>	s <sup>h</sup>	3.49	3.31	3.16	3.07	3.28	3.34	3.34
	OH	s <sup>c,h</sup>	1.09	3.12	4.01		2.16		
nitromethane	CH <sub>3</sub>	s	4.33	4.43	4.42	2.94	4.31	4.34	4.40
<i>n</i> -pentane	CH <sub>3</sub>	t, 7	0.88	0.88	0.86	0.87	0.89	0.90	
	CH <sub>2</sub>	m	1.27	1.27	1.27	1.23	1.29	1.29	
2-propanol	CH <sub>3</sub>	d, 6	1.22	1.10	1.04	0.95	1.09	1.50	1.17
	CH	sep, 6	4.04	3.90	3.78	3.67	3.87	3.92	4.02
pyridine	CH(2)	m	8.62	8.58	8.58	8.53	8.57	8.53	8.52
	CH(3)	m	7.29	7.35	7.39	6.66	7.33	7.44	7.45
	CH(4)	m	7.68	7.76	7.79	6.98	7.73	7.85	7.87
silicone grease <sup>i</sup>	CH <sub>3</sub>	s	0.07	0.13		0.29	0.08	0.10	
tetrahydrofuran	CH <sub>2</sub>	m	1.85	1.79	1.76	1.40	1.80	1.87	1.88
	CH <sub>2</sub> O	m	3.76	3.63	3.60	3.57	3.64	3.71	3.74
toluene	CH <sub>3</sub>	s	2.36	2.32	2.30	2.11	2.33	2.32	
	CH( <i>o/p</i> )	m	7.17	7.1–7.2	7.18	7.02	7.1–7.3	7.16	
	CH( <i>m</i> )	m	7.25	7.1–7.2	7.25	7.13	7.1–7.3	7.16	
triethylamine	CH <sub>3</sub>	t, 7	1.03	0.96	0.93	0.96	0.96	1.05	0.99
	CH <sub>2</sub>	q, 7	2.53	2.45	2.43	2.40	2.45	2.58	2.57

<sup>a</sup> In these solvents the intermolecular rate of exchange is slow enough that a peak due to HDO is usually also observed; it appears at 2.81 and 3.30 ppm in acetone and DMSO, respectively. In the former solvent, it is often seen as a 1:1:1 triplet, with <sup>2</sup>J<sub>H,D</sub> = 1 Hz. <sup>b</sup> 2,6-Dimethyl-4-*tert*-butylphenol. <sup>c</sup> The signals from exchangeable protons were not always identified. <sup>d</sup> In some cases (see note a), the coupling interaction between the CH<sub>2</sub> and the OH protons may be observed (*J* = 5 Hz). <sup>e</sup> In CD<sub>3</sub>CN, the OH proton was seen as a multiplet at δ 2.69, and extra coupling was also apparent on the methylene peak. <sup>f</sup> Long-chain, linear aliphatic hydrocarbons. Their solubility in DMSO was too low to give visible peaks. <sup>g</sup> Hexamethylphosphoramide. <sup>h</sup> In some cases (see notes a, d), the coupling interaction between the CH<sub>3</sub> and the OH protons may be observed (*J* = 5.5 Hz). <sup>i</sup> Poly(dimethylsiloxane). Its solubility in DMSO was too low to give visible peaks.