

Flash photolytic generation of two keto tautomers of 1-naphthol in aqueous solution; kinetics and equilibria of enolization

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5 Electronic Supplementary Information

Table S1. Enolisation rates of benzo[*b*]cyclohexa-2,5-dien-1-one (5)

$-\log[\text{H}^+]$	k^E/s^{-1} ^{a)}	conditions
1.75	1.56 ± 0.02	HCl
2.00	1.04 ± 0.02	HCl
2.25	0.64 ± 0.01	HCl
2.50	0.43 ± 0.01	HCl
4.5	0.19 ± 0.01	HAc/NaAc
5.00	0.19 ± 0.01	HAc/NaAc
5.50	0.18 ± 0.01	HAc/NaAc
6.00	0.17 ± 0.01	HAc/NaAc
8.25	0.22 ± 0.01	HTris/Tris
11.50	23.4 ± 0.2	0.005 M KOH (pH measured 11.40)
11.50	29.0 ± 0.13	0.005 M NaOH (pH measured 11.60)
11.80	52.7 ± 0.4	0.01 M KOH (pH measured 11.79)
11.80	60.8 ± 0.5	0.01 M NaOH (pH measured 11.90)
12.50	290 ± 3	0.05 M KOH (pH measured 12.49)
12.50	235 ± 3	0.05 M NaOH (pH measured 12.57)
12.80	594 ± 12	0.10 M KOH (pH measured 12.90)
12.80	520 ± 22	0.10 M NaOH (pH measured 12.91)

^{a)} Error ranges are standard errors of the mean value determined by at least 10 experiments.

Table S2. Enolisation rates of benzo[*b*]cyclohexa-2,4-dien-1-one (4)

$-\log[\text{H}^+]$	k^E/s^{-1} ^{a)}	conditions
3.00	8.18 ± 0.30	0.001 M HCl
2.70	8.61 ± 0.16	0.002 M HCl
2.52	8.95 ± 0.15	0.003 M HCl
2.40	9.19 ± 0.17	0.004 M HCl
2.30	9.72 ± 0.29	0.005 M HCl
2.22	10.1 ± 0.22	0.006 M HCl
2.15	10.5 ± 0.22	0.007 M HCl
2.10	10.8 ± 0.21	0.008 M HCl
2.05	11.0 ± 0.23	0.009 M HCl
2.00	11.3 ± 0.48	0.010 M HCl
1.70	15.2 ± 0.25	0.020 M HCl
1.52	18.6 ± 0.53	0.030 M HCl
1.40	23.0 ± 1.2	0.040 M HCl
1.30	24.8 ± 1.3	0.050 M HCl
1.00	43.3 ± 3.4	0.100 M HCl
10.80	61.1 ± 1.6	0.001 M NaOH
11.10	121 ± 10	0.002 M NaOH
11.28	182 ± 11	0.003 M NaOH
11.40	243 ± 11	0.004 M NaOH
11.50	307 ± 48	0.005 M NaOH

^{a)} Error ranges are standard errors of the mean value determined by at least 10 experiments.