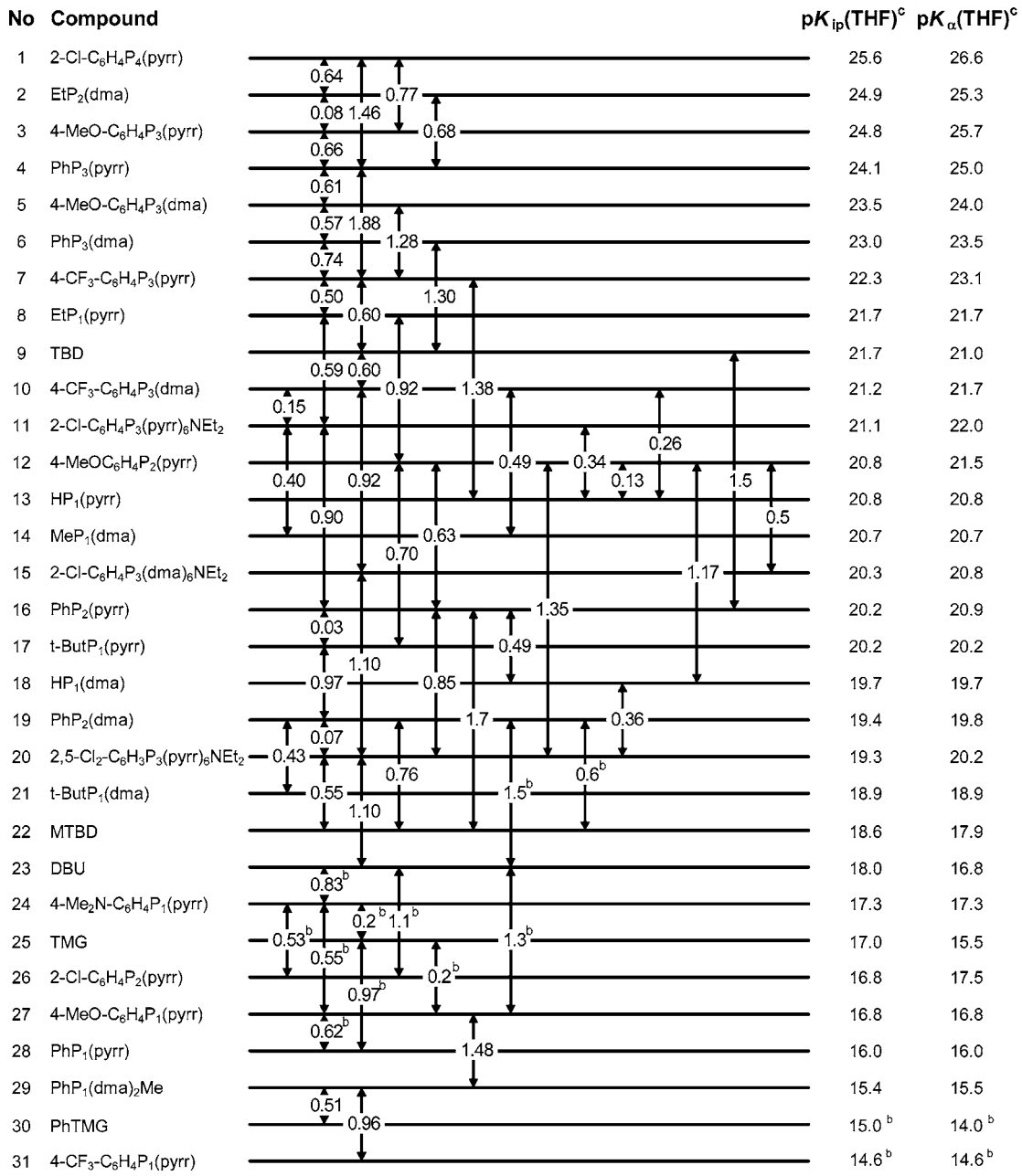
TABLE 2. Continuous Self-Consistent UV−Vis Spectrophotometric Basicity Scale of Neutral Bases in THF Solution[a]



No	Compound	pK_{ip}(THF)[c]	pK_{α}(THF)[c]
1	2-Cl-$C_6H_4P_4$(pyrr)	25.6	26.6
2	EtP_2(dma)	24.9	25.3
3	4-MeO-$C_6H_4P_3$(pyrr)	24.8	25.7
4	PhP_3(pyrr)	24.1	25.0
5	4-MeO-$C_6H_4P_3$(dma)	23.5	24.0
6	PhP_3(dma)	23.0	23.5
7	4-CF_3-$C_6H_4P_3$(pyrr)	22.3	23.1
8	EtP_1(pyrr)	21.7	21.7
9	TBD	21.7	21.0
10	4-CF_3-$C_6H_4P_3$(dma)	21.2	21.7
11	2-Cl-$C_6H_4P_3$(pyrr)$_6NEt_2$	21.1	22.0
12	4-$MeOC_6H_4P_2$(pyrr)	20.8	21.5
13	HP_1(pyrr)	20.8	20.8
14	MeP_1(dma)	20.7	20.7
15	2-Cl-$C_6H_4P_3$(dma)$_6NEt_2$	20.3	20.8
16	PhP_2(pyrr)	20.2	20.9
17	t-$ButP_1$(pyrr)	20.2	20.2
18	HP_1(dma)	19.7	19.7
19	PhP_2(dma)	19.4	19.8
20	2,5-Cl_2-$C_6H_3P_3$(pyrr)$_6NEt_2$	19.3	20.2
21	t-$ButP_1$(dma)	18.9	18.9
22	MTBD	18.6	17.9
23	DBU	18.0	16.8
24	4-Me_2N-$C_6H_4P_1$(pyrr)	17.3	17.3
25	TMG	17.0	15.5
26	2-Cl-$C_6H_4P_2$(pyrr)	16.8	17.5
27	4-MeO-$C_6H_4P_1$(pyrr)	16.8	16.8
28	PhP_1(pyrr)	16.0	16.0
29	PhP_1(dma)$_2$Me	15.4	15.5
30	PhTMG	15.0[b]	14.0[b]
31	4-CF_3-$C_6H_4P_1$(pyrr)	14.6[b]	14.6[b]

[a] The numbers on the arrows are the direct experimental ΔpK_{ip} values (uncorrected for ion pairing) obtained from UV−vis spectrophotometric titration of neutral bases with methanesulfonic acid. [b] Value from ref 1. [c] Absolute pK_{ip}(THF) and pK_{α}(THF) estimated values for conjugate acids of the respective bases. TMG denotes *N*,*N*,*N*′,*N*′-tetramethylguanidine.

TABLE 3. Results of the Gas-Phase Basicity Measurements[a]

No	Base	GB [c]
27	4-MeO-$C_6H_4P_1$(pyrr)	255.2
21	t-ButP_1(dma)	253.2
14	MeP_1(dma)	252.2
28	PhP_1(pyrr)	252.0
32	1-NaphtP_1(pyrr)	251.1
33	2-Cl-$C_6H_4P_1$(pyrr)	251.1
18	HP_1(dma)	250.0
34	2,5-Cl_2-$C_6H_3P_1$(pyrr)	248.4
35	ITBD	248.2 [b]
22	MTBD	246.2 [b]

[a] The numbers on the arrows are the direct experimental $\Delta\Delta G_b$ (kcal/mol) values obtained from FT-ICR measurements. [b] Values from ref 12. [c] Estimated absolute GB (kcal/mol) values for bases.

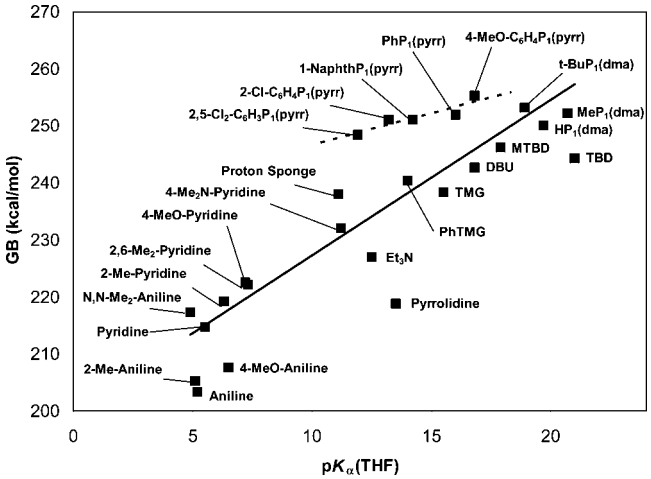


FIGURE 1. Comparison of the basicity data in THF (pK_α values) and in the gas phase (GB). The solid line corresponds to overall correlation (all available data included) and the dotted line corresponds to the series of aryl-P_1(pyrr) phosphazenes.