

-Supporting Information-

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Nucleophilic Reactivities of Imide and Amide Anions

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1 General

Materials

Commercially available DMSO and acetonitrile (both: H₂O content < 50 ppm) were used without further purification. The reference electrophiles used in this work were synthesized according to literature procedures.¹ Ethyl acetylcarbamate was synthesized according to ref.².

NMR spectroscopy

In the ¹H and ¹³C NMR spectra chemical shifts are given in ppm and refer to tetramethylsilane ($\delta_{\text{H}} = 0.00$, $\delta_{\text{C}} = 0.0$), d₆-DMSO ($\delta_{\text{H}} = 2.50$, $\delta_{\text{C}} = 39.4$), CD₃CN ($\delta_{\text{H}} = 1.94$, $\delta_{\text{C}} = 1.3$ and 118.3), or to CDCl₃ ($\delta_{\text{H}} = 7.26$, $\delta_{\text{C}} = 77.0$) as internal standards. The coupling constants are given in Hz.

Kinetics

As the reactions of colored benzhydrylium ions or quinone methides with colorless imide- or amide-anions result in colorless products, the reactions could be followed by UV-Vis spectroscopy. Slow reactions ($\tau_{1/2} > 10$ s) were determined by using conventional UV-Vis spectrophotometers. Stopped-flow techniques were used for the investigation of rapid reactions ($\tau_{1/2} < 10$ s). The temperature of all solutions was kept constant at 20.0 ± 0.1 °C during all kinetic studies by using a circulating bath thermostat. In all runs the nucleophile concentration was at least 10 times higher than the concentration of the electrophile, resulting in pseudo-first-order kinetics with an exponential decay of the electrophile's concentration. First-order rate constants k_{obs} were obtained by least-squares fitting of the absorbance data to a single-exponential $A_t = A_0 \exp(-k_{\text{obs}}t) + C$. The second-order rate constants k_2 were obtained from the slopes of the linear plots of k_{obs} against the nucleophile's concentration.

2 Hammett Correlations

	Nucleophile	k_2 (1i)	$\log k_2$	σ_p^3	$\sigma_{p^-}^{-3}$	σ_m	$\sigma^*{}^3$	$\sigma_i{}^3$
2d		4.66×10^3	3.67	0.80^3	1.09^4	0.63^3	3.70^3	0.45^5
2i		1.57×10^4	4.20	0.67^6	0.93^7	-	3.32^6	0.55^8
2j		2.73×10^4	4.44	0.72^9	1.13^{10}	0.60^9	3.68^8	0.59^5
2n		3.85×10^6	6.59	0.66^{11}	1.00^3	0.56^9	3.64^3	0.53^3

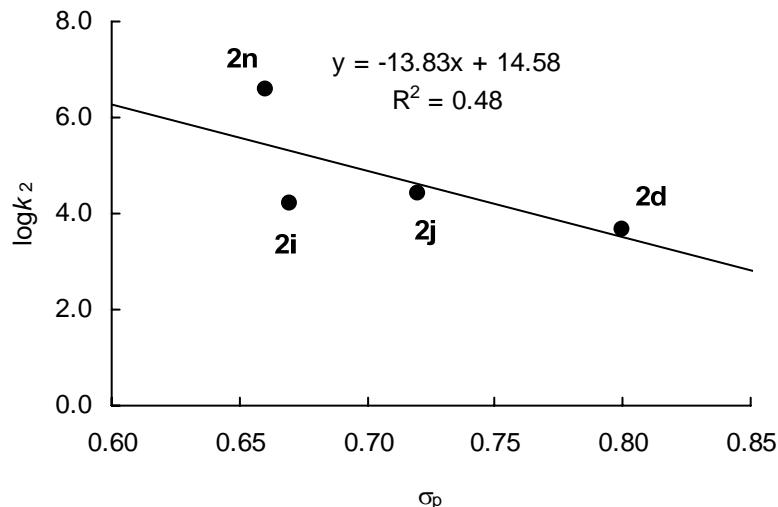


Figure 1: Correlation of the second-order rate constant ($\log k_2$) of **1i** and the amide anions with σ_p .

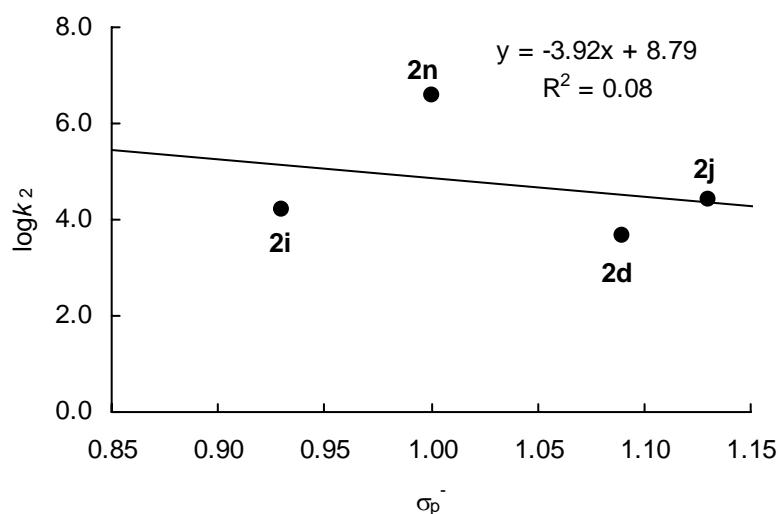


Figure 2: Correlation of the second-order rate constant ($\log k_2$) of **1i** and the amide anions with σ_{p^-} .

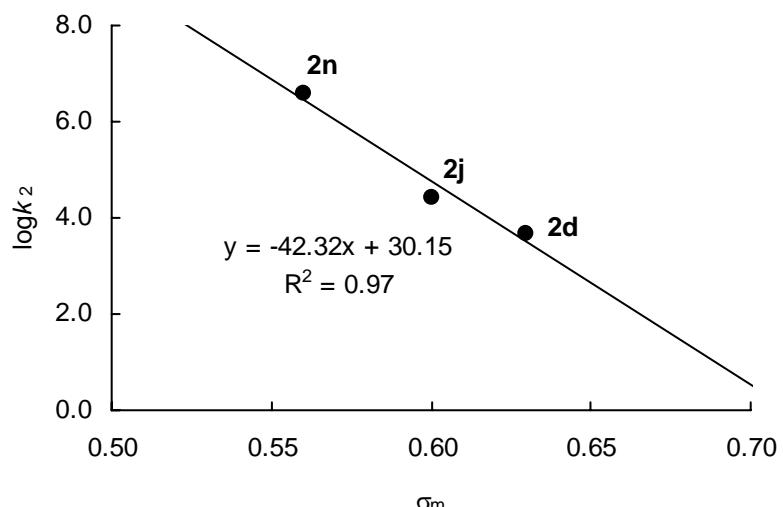


Figure 3: Correlation of the second-order rate constant ($\log k_2$) of **1i** and the amide anions with σ_m .

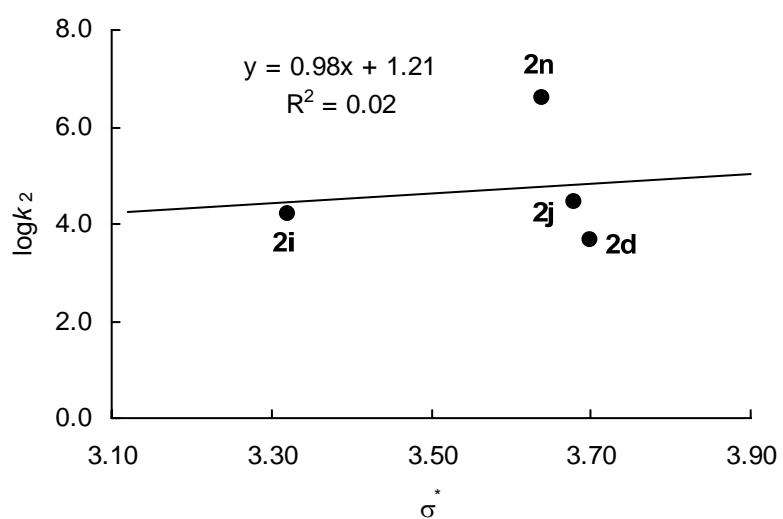
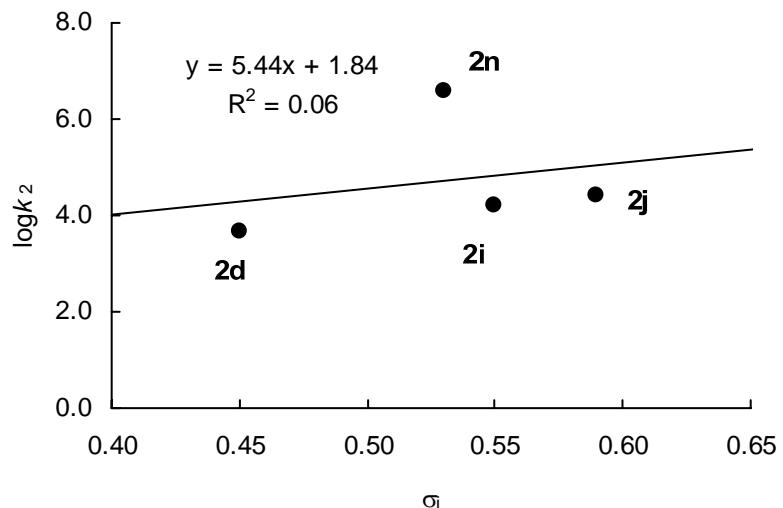


Figure 4: Correlation of the second-order rate constant ($\log k_2$) of **1i** and the amide anions with σ^* .



3 Synthesis of Potassium Salts of Imides and Amides

3.1 General

Tetrabutylammonium succinimide and potassium phthalimide were purchased. Tetramethylammonium phthalimide and tetramethylammonium saccharin were synthesized according to ref. ¹². Potassium salts of 2,2,2-trifluoroacetamide and of other amides were prepared by treatment of the corresponding amide with KO*t*Bu in dimethoxyethane.¹³

General Procedure:

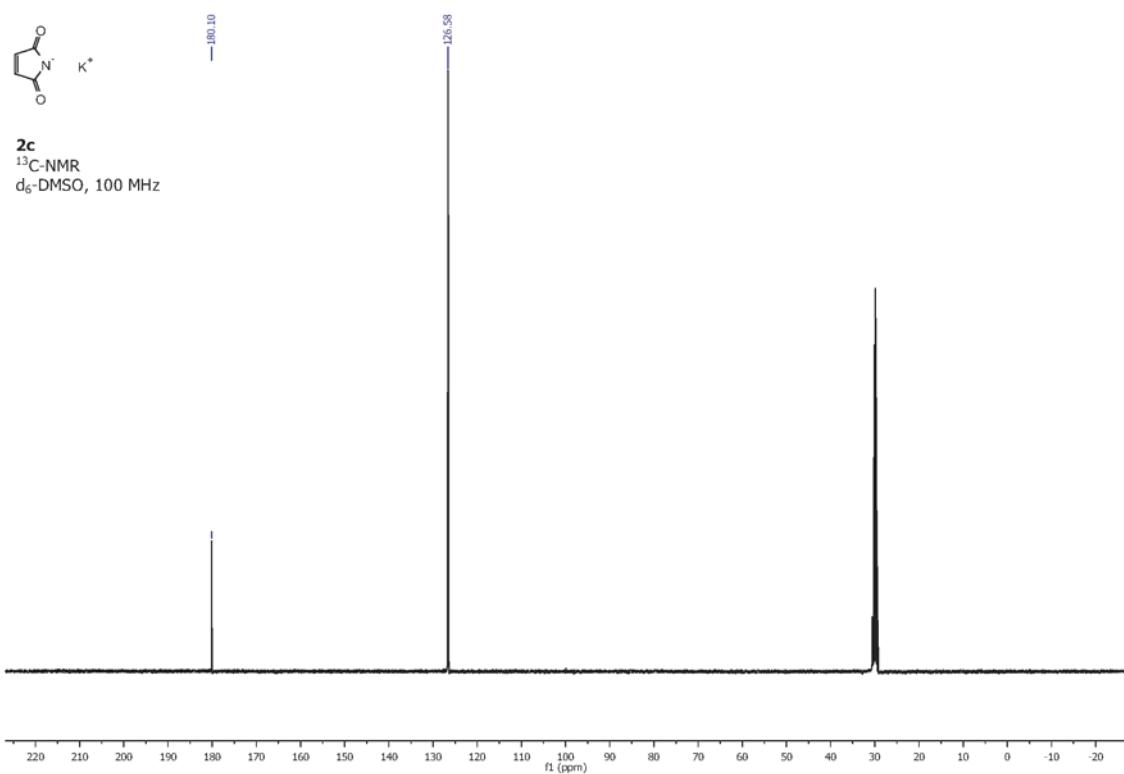
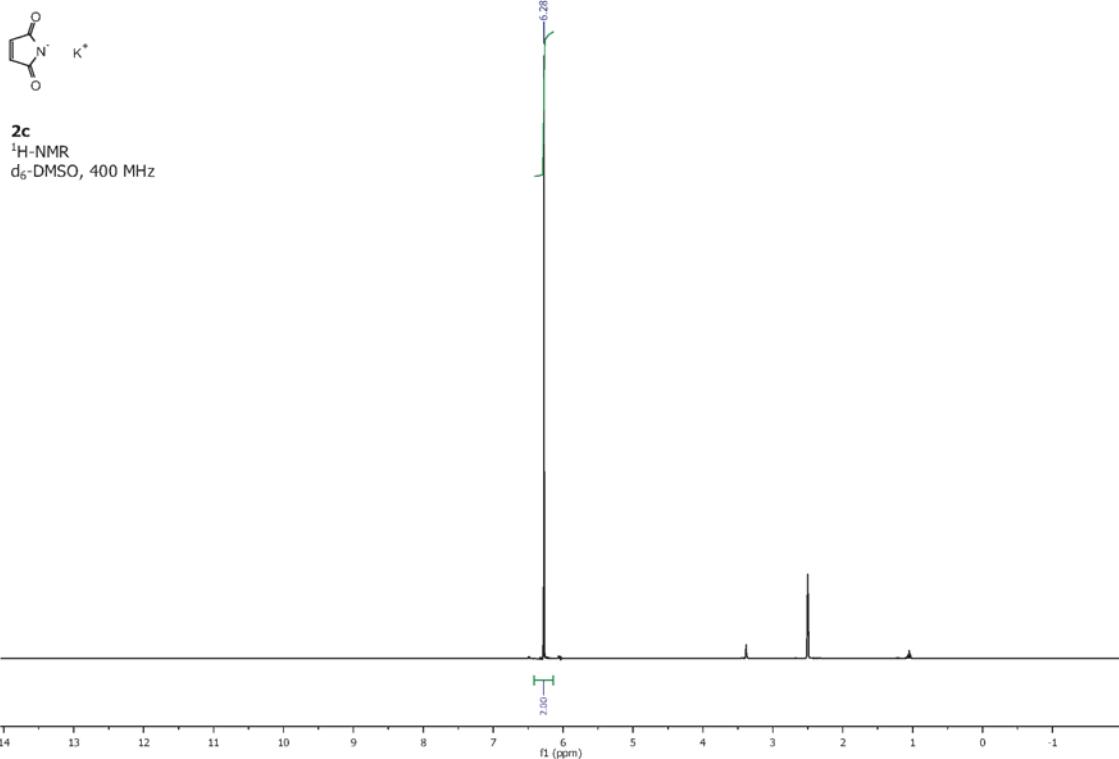
The potassium salts **2c-n-K⁺** were generated by deprotonation of the corresponding compound **2c-n-H** with KO*t*Bu in dry dimethoxyethane or dry ethanol under nitrogen atmosphere. After removal of volatiles, the remaining solid was crushed and washed several times with dry ether.¹³

3.2 Maleimide-Potassium (2c-K⁺**)**

3.0 g (22 mmol, 96 %) of maleimide-potassium (**2c-K⁺**) was obtained from maleimide (2.2 g, 23 mmol) and KO*t*Bu (2.6 g, 23 mmol).

¹H-NMR (400 MHz, d₆-DMSO): δ = 6.28 (s).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 126.6 (d), 180.1 (s).

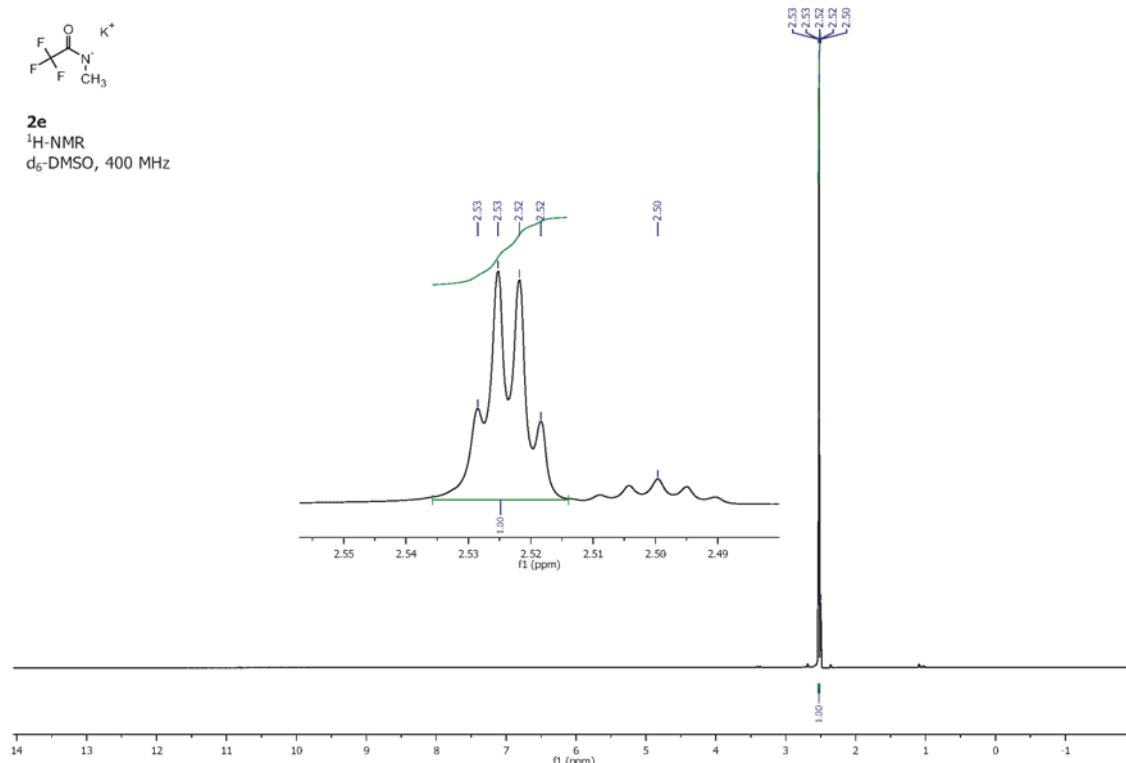


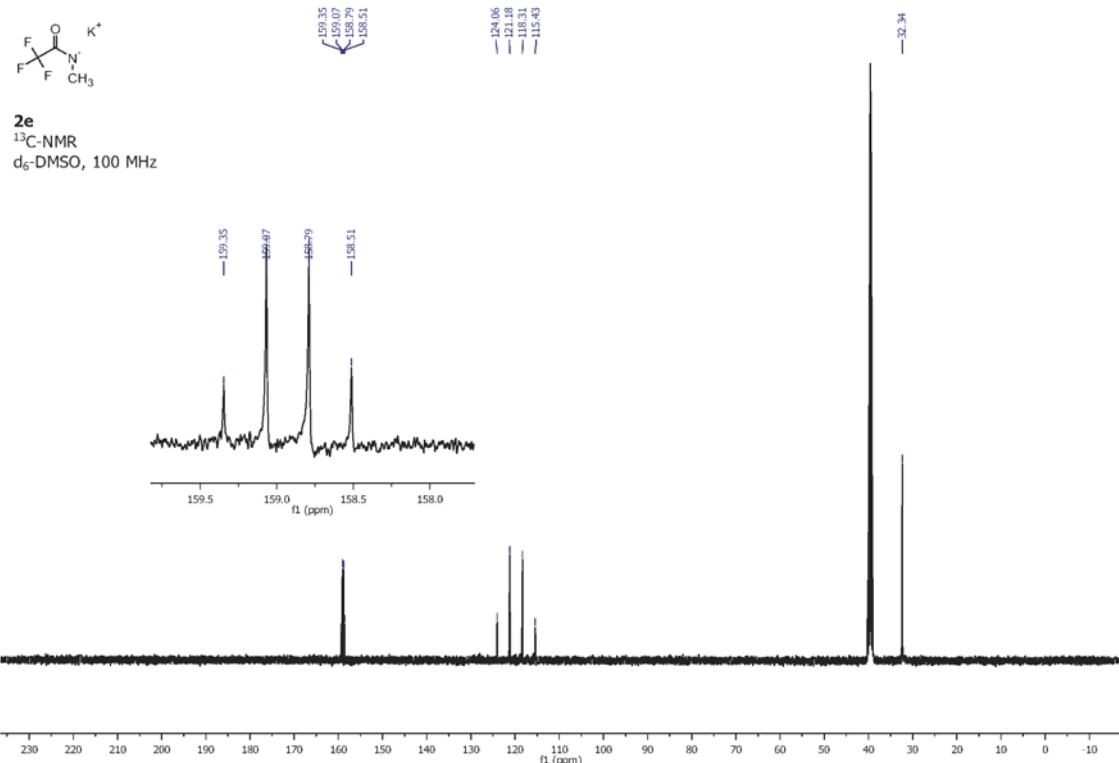
3.3 N-Methyl-2,2,2-trifluoroacetamide-Potassium (**2e-K⁺**)

2.46 g (14.9 mmol, 95 %) of *N*-methyl-2,2,2-trifluoroacetamide-potassium (**2e-K⁺**) (mp 249–250 °C, decomp.) was obtained from *N*-methyl-2,2,2-trifluoroacetamide (2.05 g, 16.1 mmol) and KO*t*Bu (1.76 g, 15.7 mmol).

¹H-NMR (400 MHz, d₆-DMSO): δ = 2.52 (q, J_{CF} = 2.5 Hz).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 32.3, 119.7 (q, J_{CF} = 287 Hz), 158.9 (q, J_{CF} = 28.9 Hz).



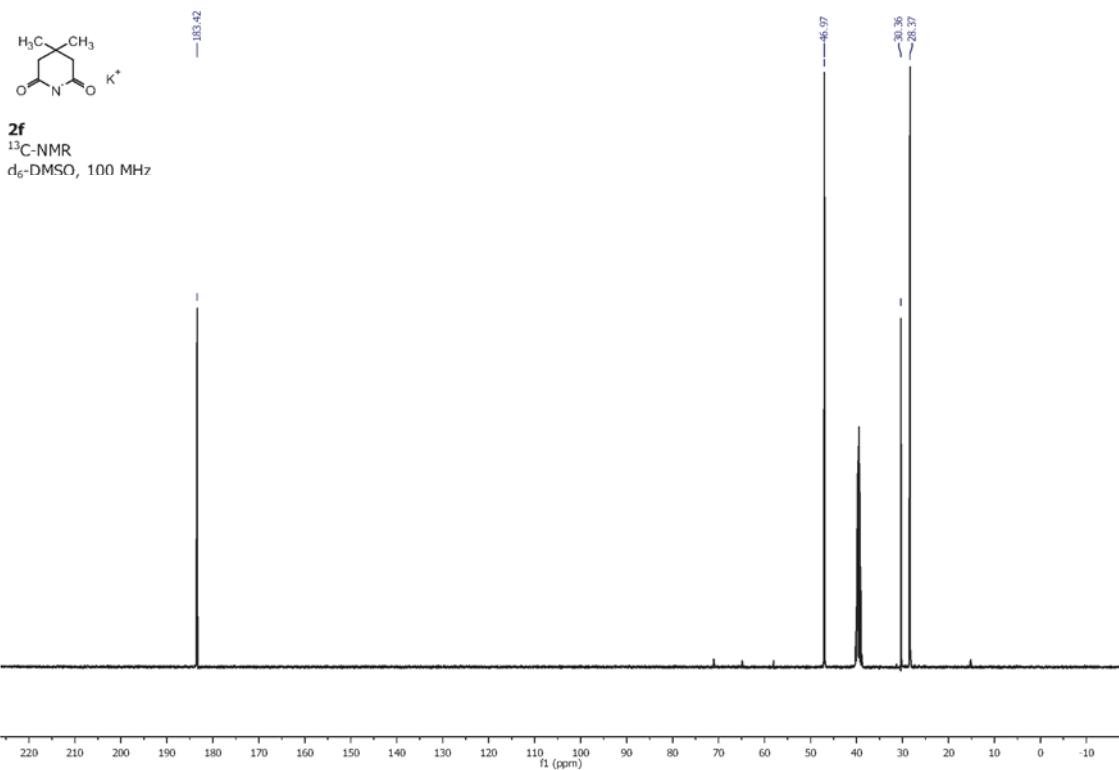
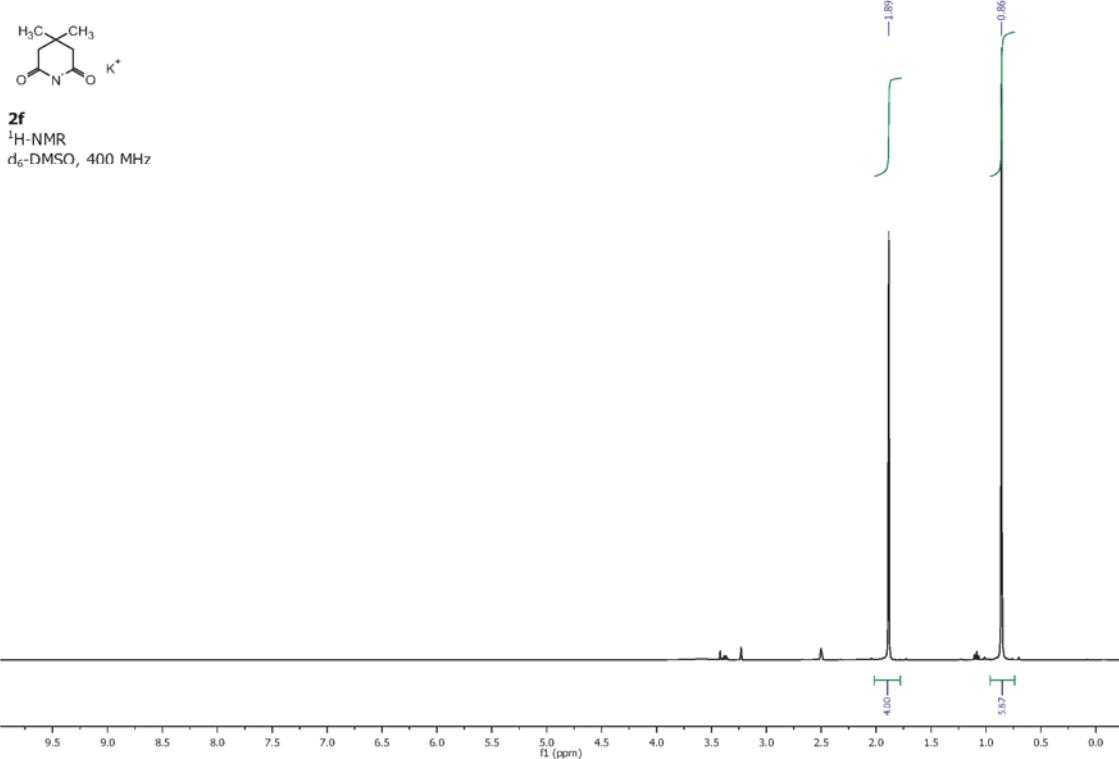


3.4 3,3-Dimethylglutarimide-Potassium (**2f-K⁺**)

2.0 g (11 mmol, 79 %) of 3,3-dimethylglutarimide-potassium (**2f-K⁺**) (mp 247–249 °C) was obtained from 3,3-dimethylglutarimide (2.0 g, 14 mmol) and KOtBu (1.7 g, 15 mmol).

^1H -NMR (400 MHz, d_6 -DMSO): δ = 0.86 (s, 6 H), 1.89 (s, 4 H).

^{13}C -NMR (100 MHz, d_6 -DMSO); δ = 28.4 (q), 30.4 (s), 47.0 (t), 183.4 (s).

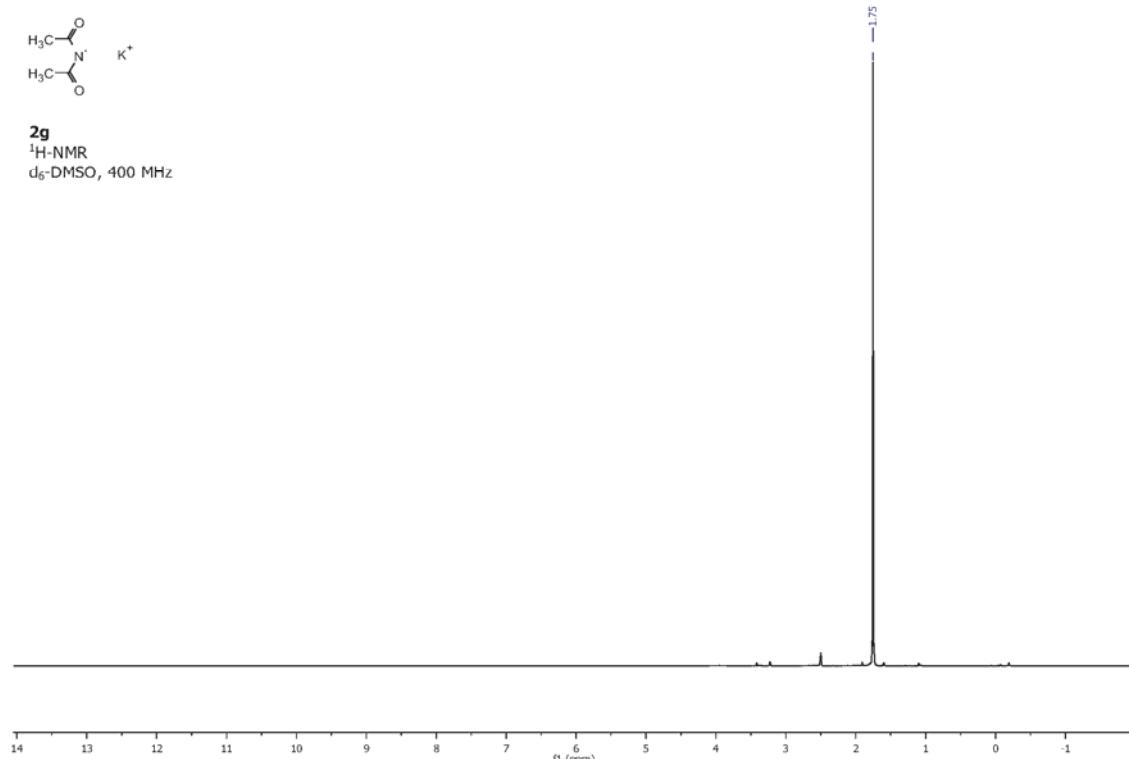
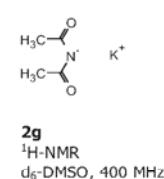


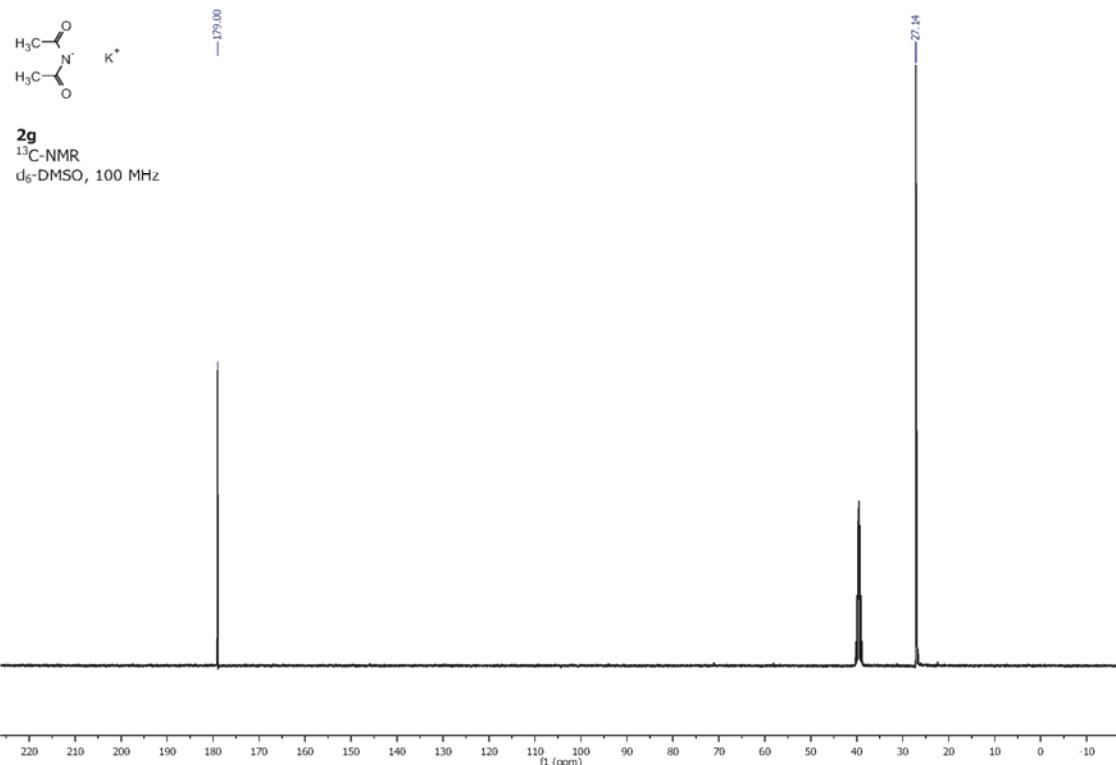
3.5 Diacetamide-Potassium (**2g-K⁺**)

2.5 g (18 mmol, 90 %) of diacetamide-potassium (**2g-K⁺**) (mp 140–142 °C) was obtained from diacetamide (2.0 g, 20 mmol) and KO*t*Bu (2.3 g, 20 mmol).

¹H-NMR (400 MHz, d₆-DMSO): δ = 1.75 (s, 6 H).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 27.1 (q), 179.0 (s).



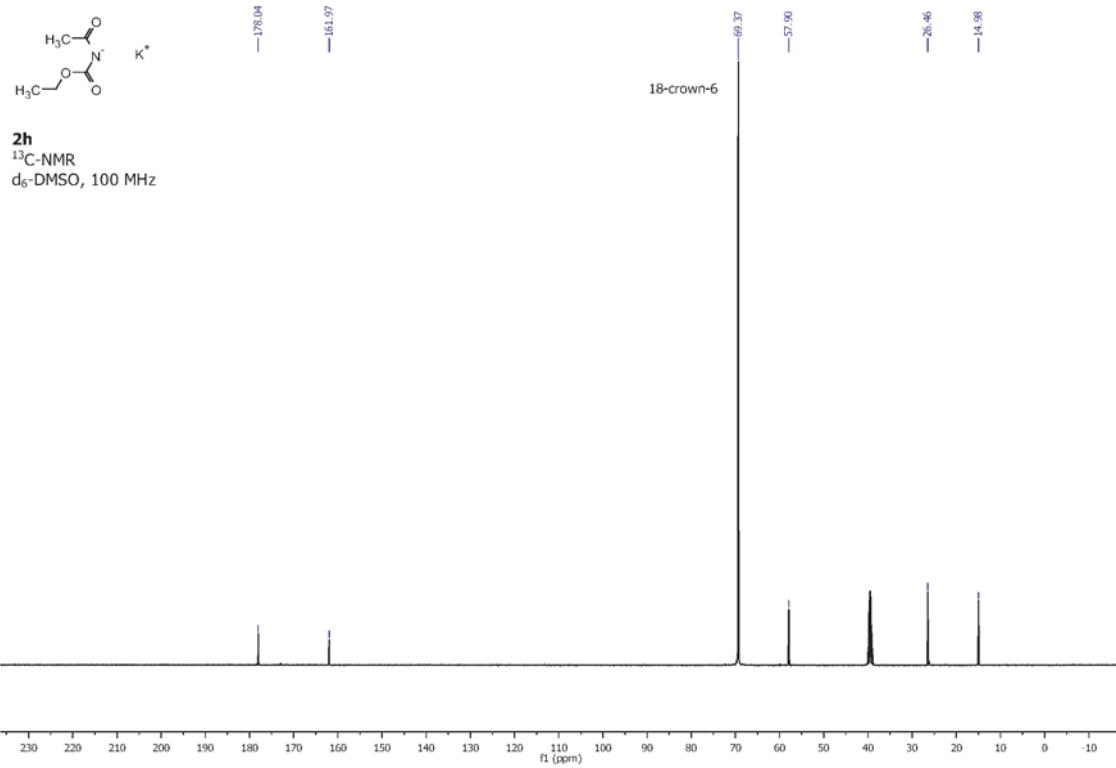
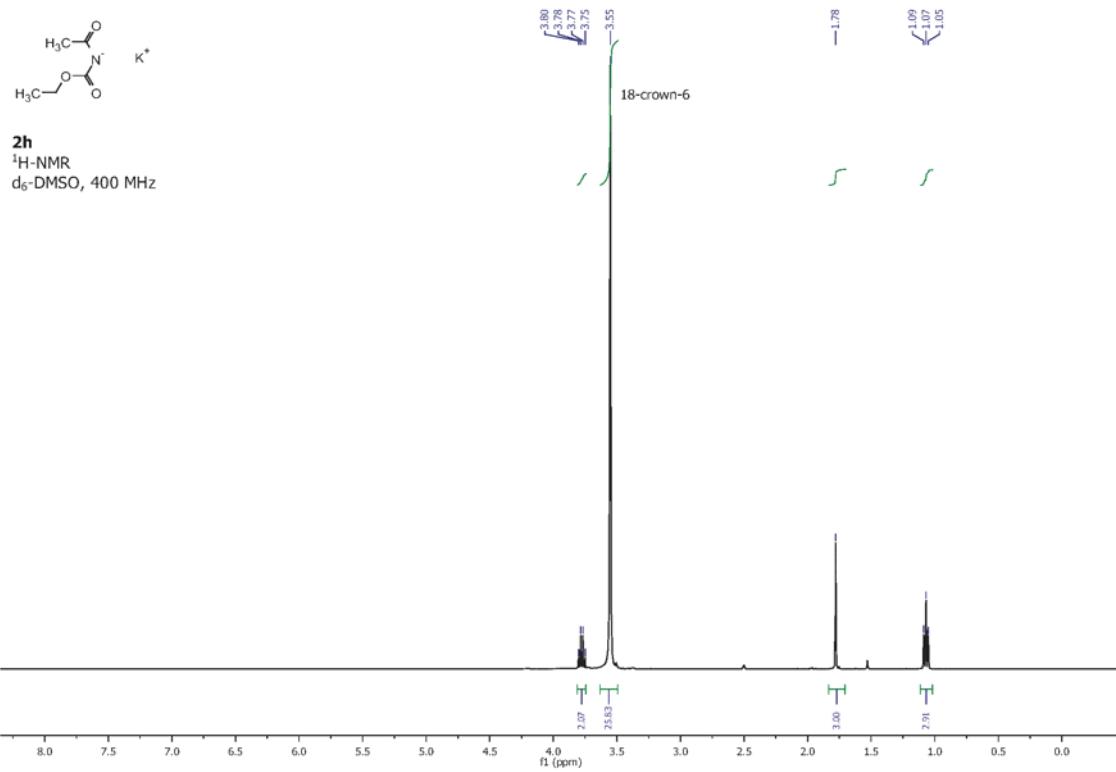


3.6 Ethyl acetylcarbamate-Potassium (**2h-K⁺**)

2.1 g (12 mmol, 80 %) of ethyl acetylcarbamate-potassium (**2h-K⁺**) (mp 260–261 °C, decomp.) was obtained from ethyl acetylcarbamate (2.0 g, 15 mmol) and KO*t*Bu (1.8 g, 16 mmol).

^1H -NMR (400 MHz, $\text{d}_6\text{-DMSO}$, 18-crown-6): $\delta = 1.07$ (t, $^3J = 7.1$ Hz), 1.78 (s), 3.78 (q, $^3J = 7.1$ Hz).

^{13}C -NMR (100 MHz, $\text{d}_6\text{-DMSO}$, 18-crown-6): $\delta = 15.0$ (q), 26.5 (q), 57.9 (t), 162.0 (s), 178.0 (s).

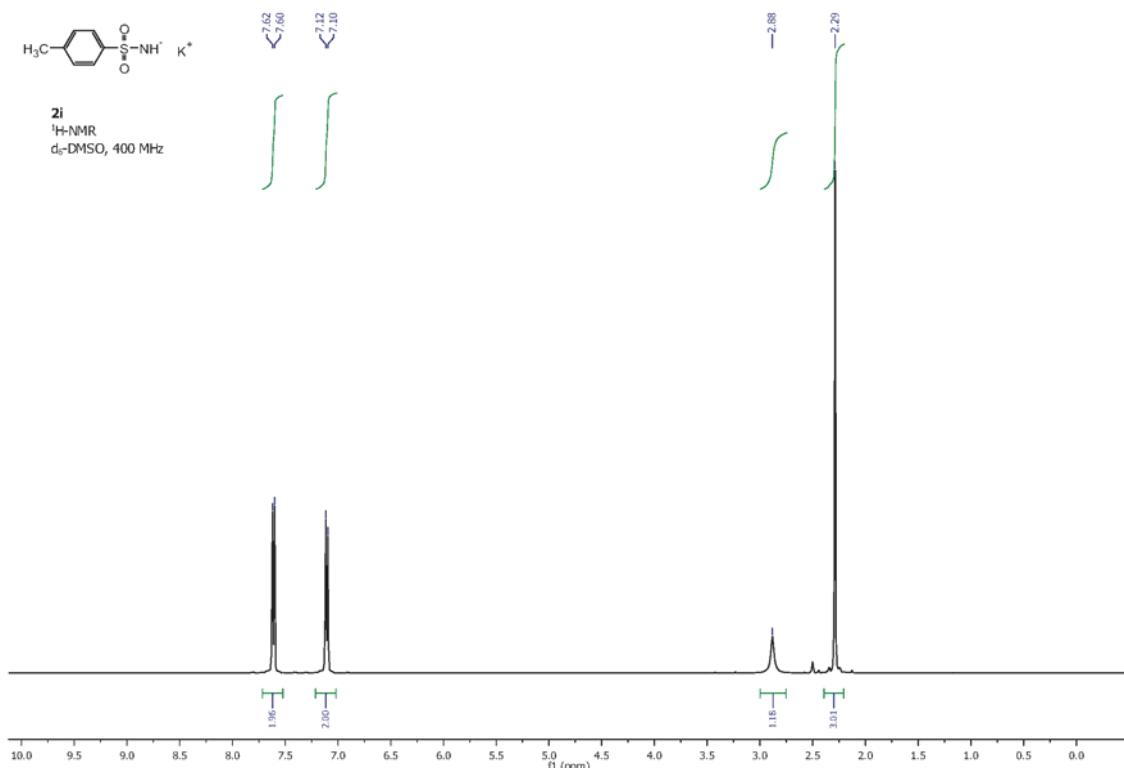


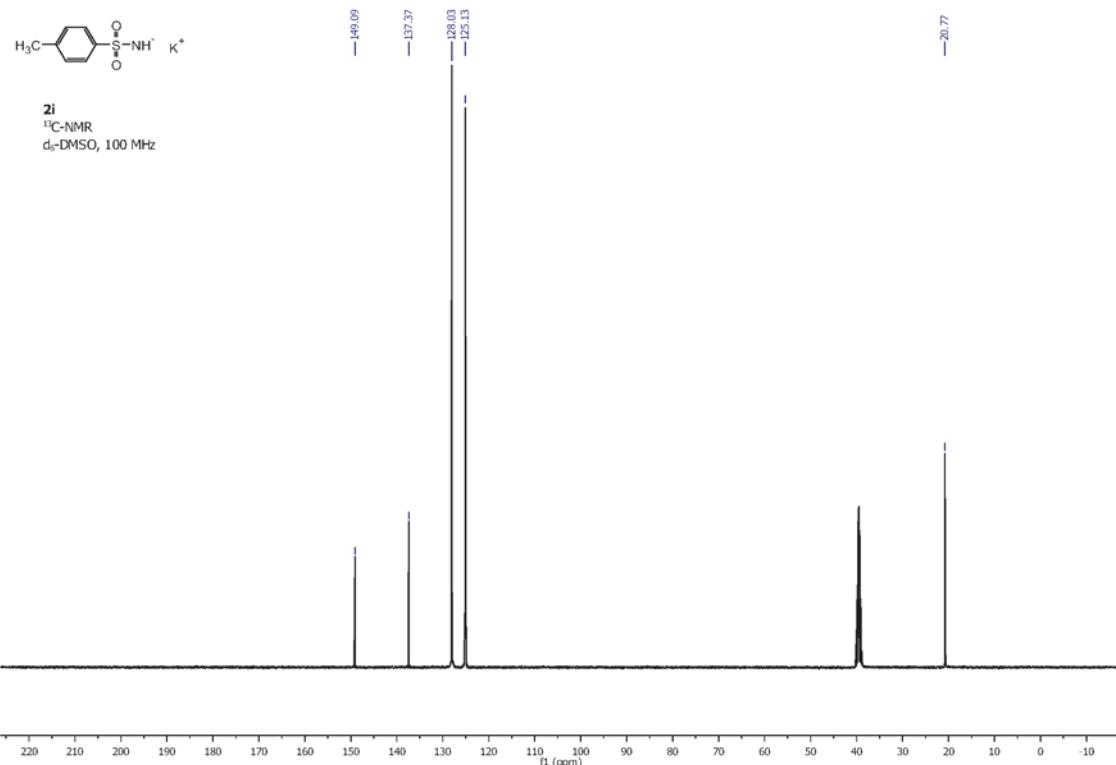
3.7 *p*-Toluenesulfonamide-Potassium (**2i-K⁺**)

2.10 g (10.0 mmol, 88 %) of *p*-toluenesulfonamide-potassium (**2i-K⁺**) (mp 224-225 °C) was obtained from *p*-toluenesulfonamide (2.00 g, 11.7 mmol) and KOtBu (1.28 g, 11.3 mmol).

¹H-NMR (400 MHz, d₆-DMSO): δ = 2.29 (s, 3 H), 2.88 (br s, 1 H), 7.11 (d, 2 H, ³J = 8.0 Hz), 7.61 (d, 2 H, ³J = 8.0 Hz).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 20.8 (q), 125.1 (d), 128.0 (d), 137.4 (s), 149.1 (s).





3.8 Methanesulfonamide-Potassium (**2j-K⁺**)

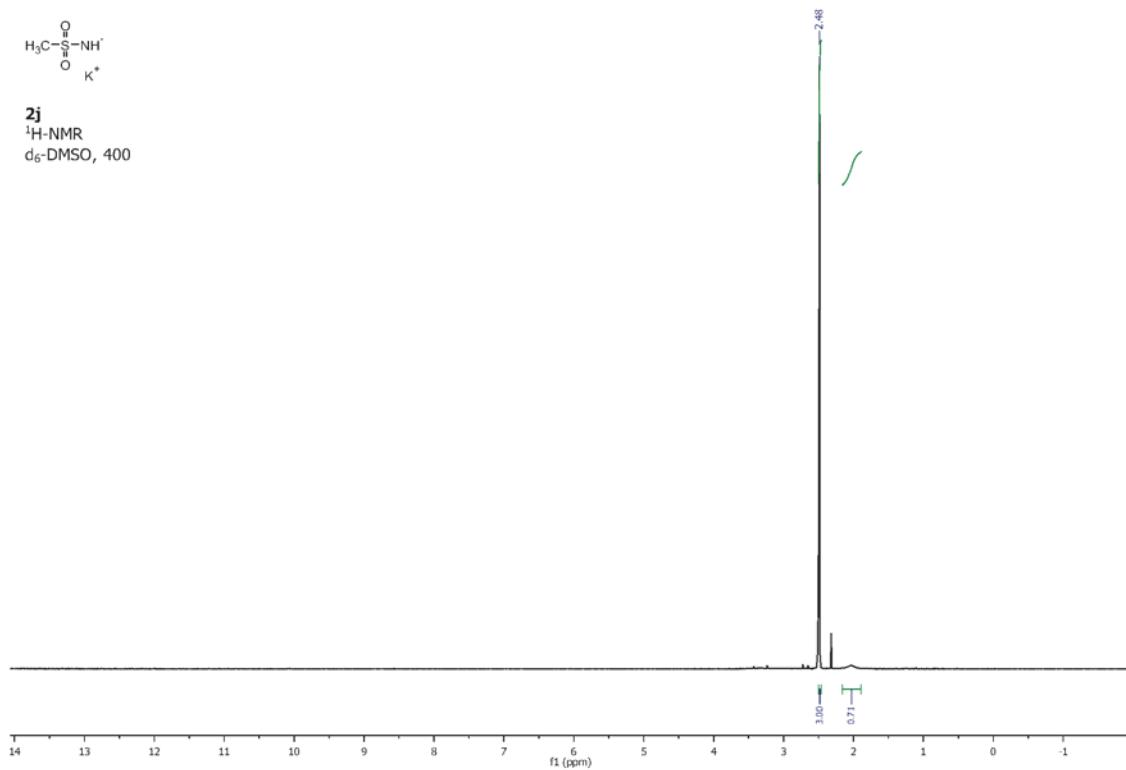
2.61 g (19.6 mmol, 96 %) of methanesulfonamide-potassium (**2j-K⁺**) was obtained from methanesulfonamide (2.00 g, 21.0 mmol) and KO*t*Bu (2.29 g, 20.4 mmol).

¹H-NMR (400 MHz, d₆-DMSO): δ = 2.04 (br s, 1 H), 2.48 (s, 3 H).

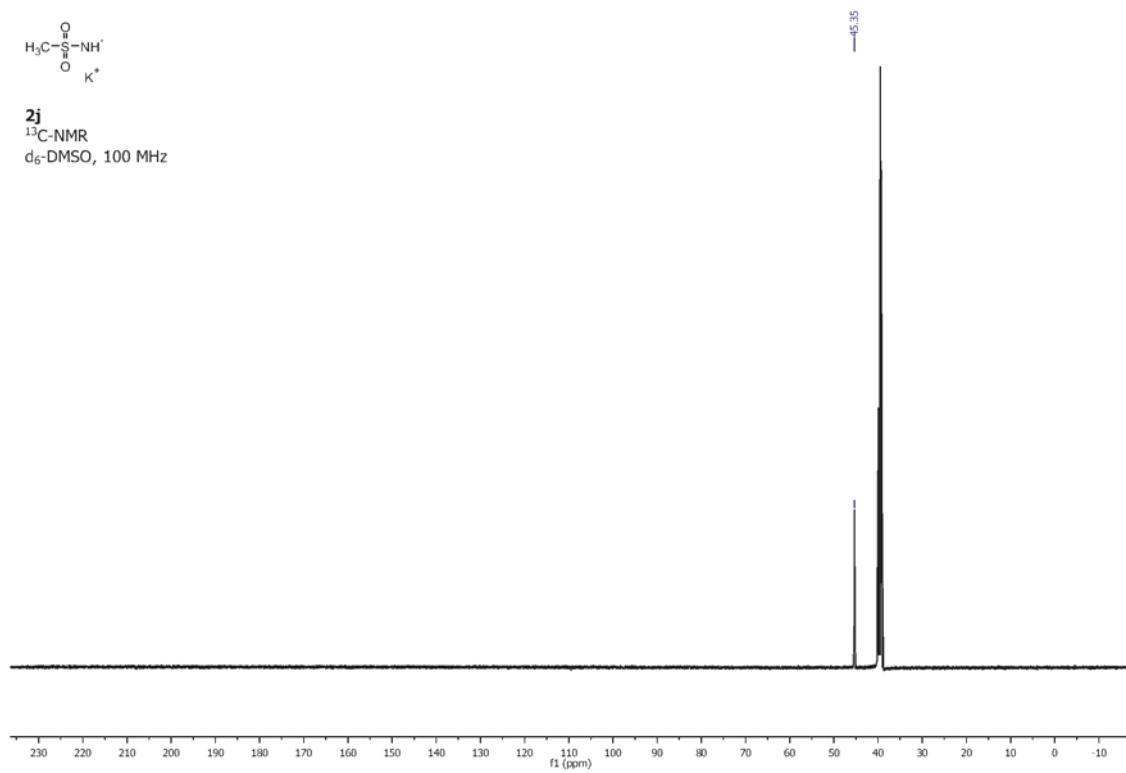
¹³C-NMR (100 MHz, d₆-DMSO): δ = 45.4 (q).



2j
¹H-NMR
d₆-DMSO, 400



2j
¹³C-NMR
d₆-DMSO, 100 MHz

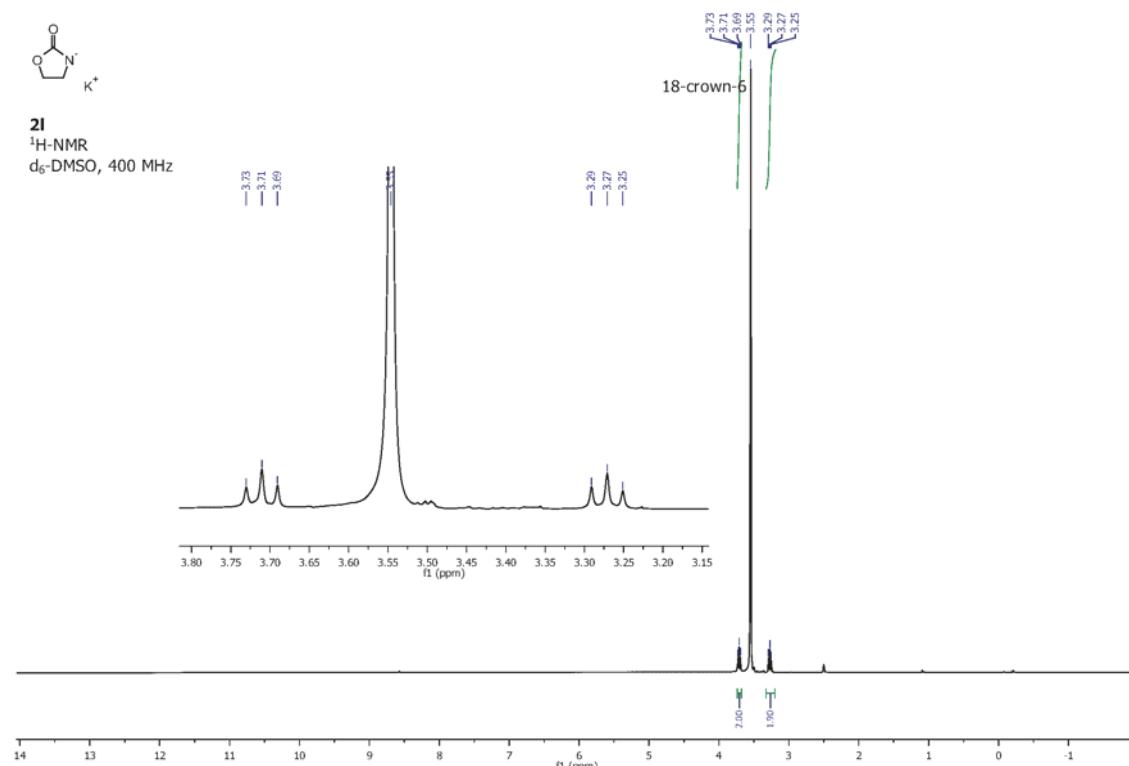


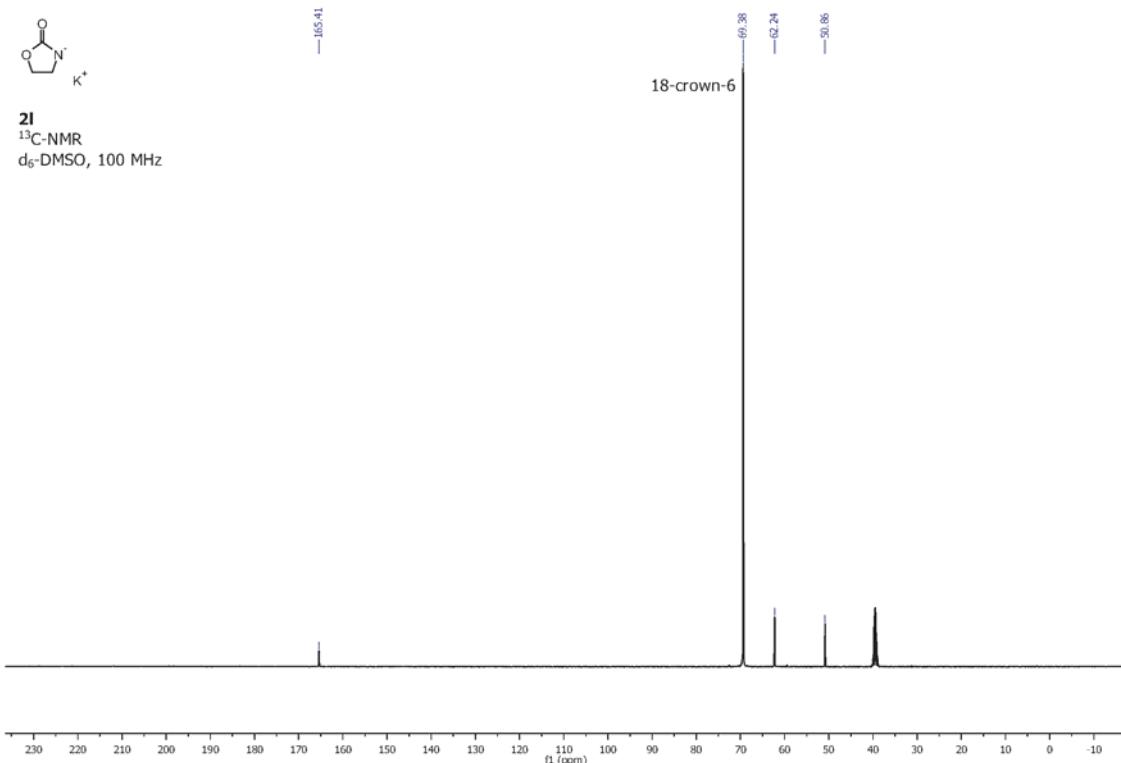
3.9 2-Oxazolidinon-Potassium (**2l-K⁺**)

2.45 g (19.6 mmol, 88 %) of 2-Oxazolidinon-potassium (**2l-K⁺**) (mp 180-182 °C) was obtained from 2-Oxazolidinon (2.00 g, 23.0 mmol) and KOtBu (2.50 g, 22.3 mmol).

¹H-NMR (400 MHz, d₆-DMSO, 18-crown-6): δ = 3.27 (t, 2 H, ³J = 8.0 Hz), 3.71 (t, 2 H, ³J = 8.0 Hz).

¹³C-NMR (100 MHz, d₆-DMSO, 18-crown-6): δ = 50.9 (t), 62.2 (t), 165.4 (s).



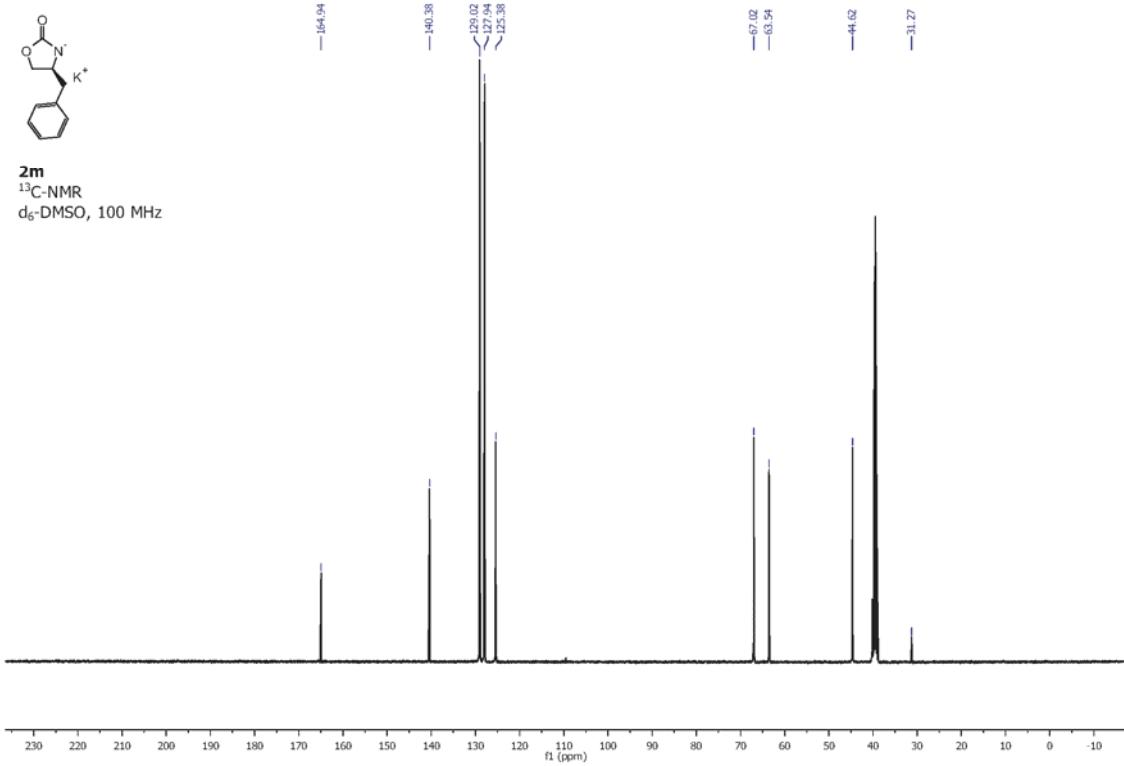
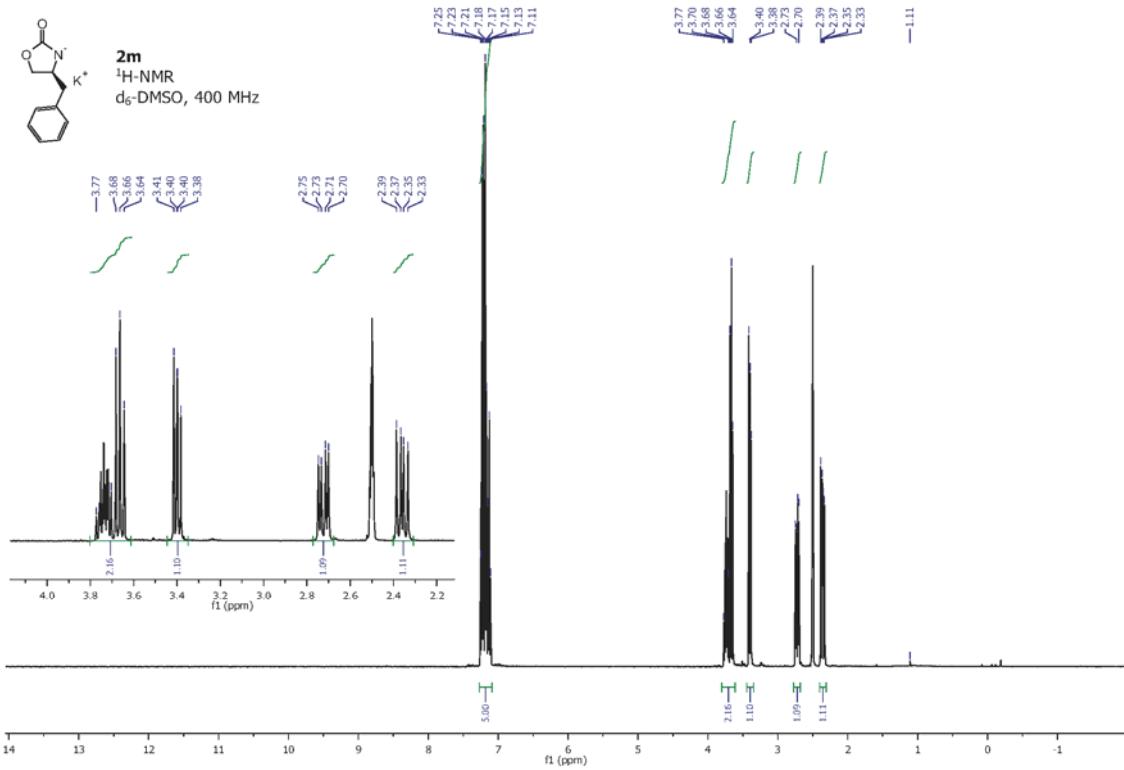


3.10 (*S*)-4-Benzylloxazolidin-2-one-Potassium (**2m-K⁺**)

3.31 g (15.4 mmol, 93 %) of (*S*)-4-benzylloxazolidin-2-one-potassium (**2m-K⁺**) was obtained from (*S*)-4-benzylloxazolidin-2-one (3.00 g, 16.9 mmol) and KO*i*Bu (1.86 g, 16.6 mmol).

^1H -NMR (400 MHz, $d_6\text{-DMSO}$): $\delta = 2.36$ (dd, 1 H, $^3J = 8.0$ and 13.2 Hz), 2.72 (dd, 1 H, $^3J = 5.3$ and 13.2 Hz), 3.64-3.77 (m, 2 H), 7.11-7.25 (m, 5 H).

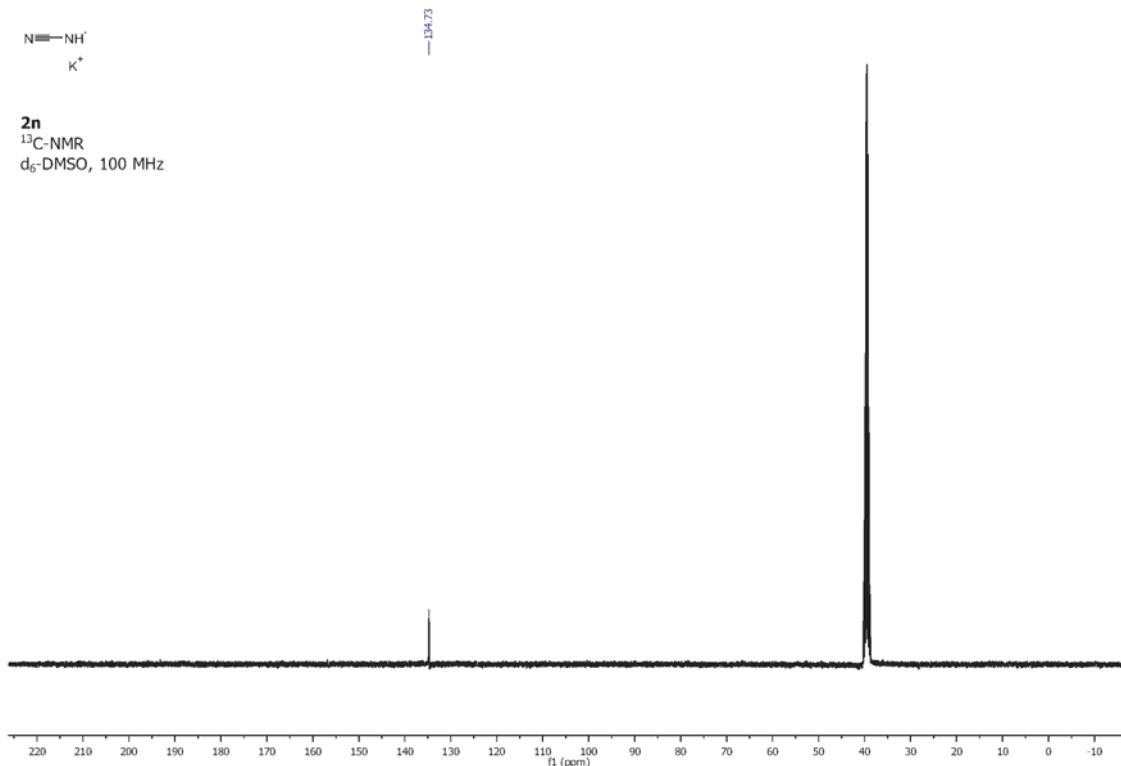
^{13}C -NMR (100 MHz, $d_6\text{-DMSO}$): $\delta = 44.6$ (t), 63.5 (d), 67.0 (t), 125.4 (d) 127.9 (d), 129.0 (d), 140.4 (s), 164.9 (s).



3.11 Cyanamide-Potassium (**2n-K⁺**)

2.21 g (27.6 mmol, 97 %) of cyanamide-potassium (**2n-K⁺**) (mp 200 °C, decomp.) was obtained from cyanamide (1.20 g, 28.5 mmol) and KOtBu (3.40 g, 30.3 mmol).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 134.7 (s).



4 Reaction Products

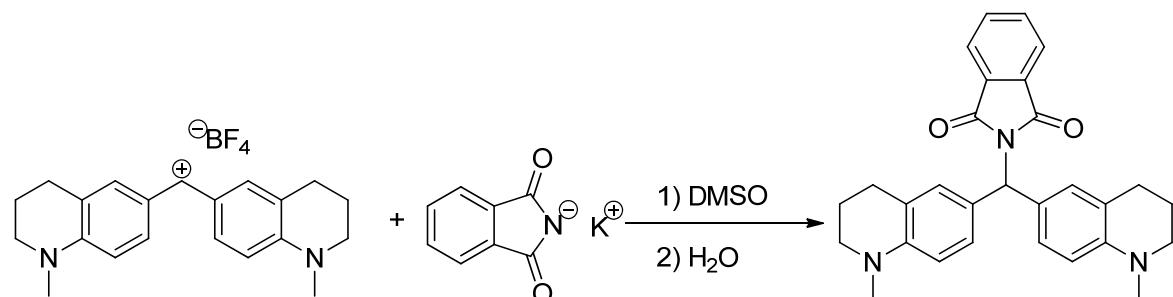
4.1 Isolated Reaction Products

General Procedure:

In a carefully dried, nitrogen-flushed Schlenk-flask a solution of the amide- or imide-salt in approx. 5 mL DMSO was added dropwise to a solution of the benzhydrylium tetrafluoroborate in 5 mL DMSO. After stirring at ambient temperature for several minutes, approx. 50 mL cold water was added and then, the precipitated material was collected by filtration. After washing with water, the solid was dried under reduced pressure.

The differentiation between nitrogen and oxygen attack is based on two-dimensional NMR spectroscopy (HSQC and HMBC).

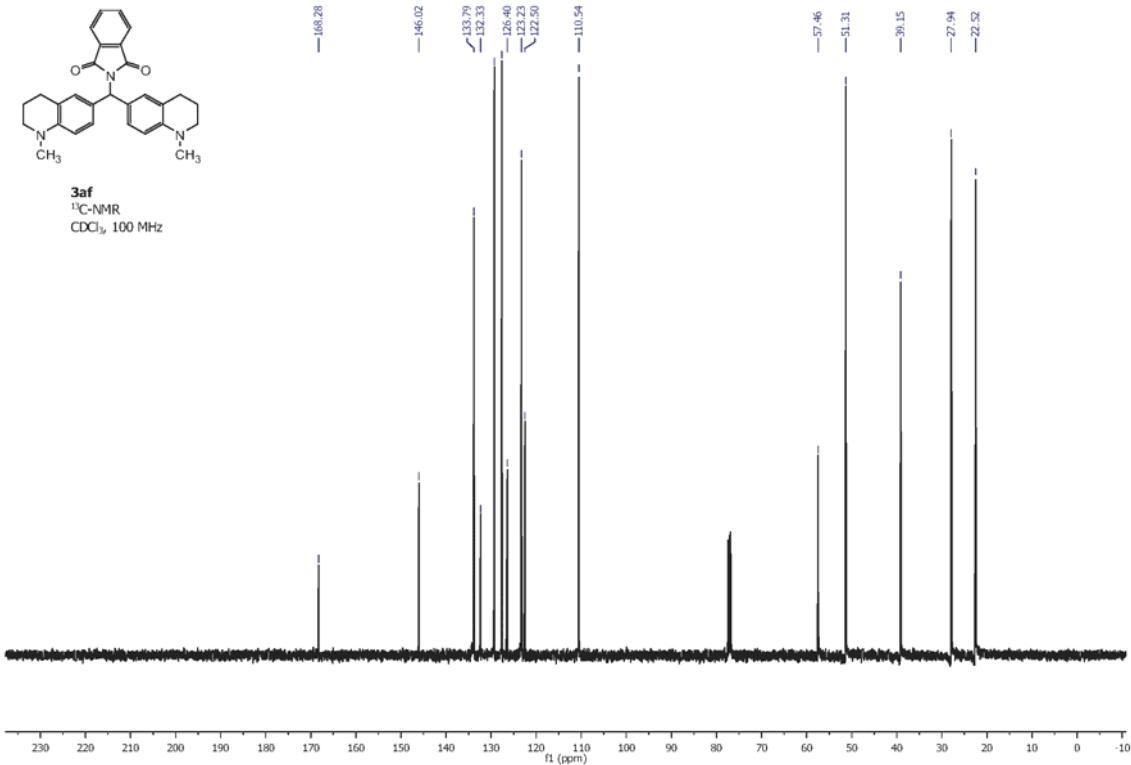
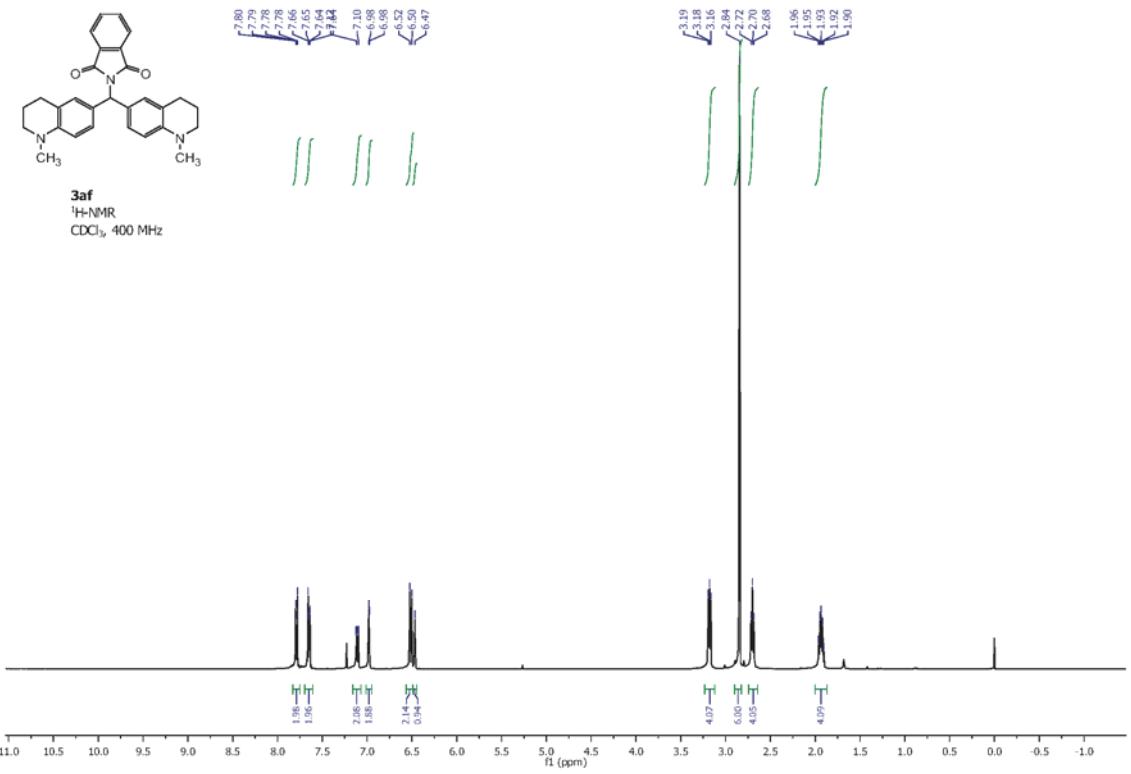
Reaction of $(thq)_2CH^+$ with phthalimide potassium salt **2a-K⁺**:



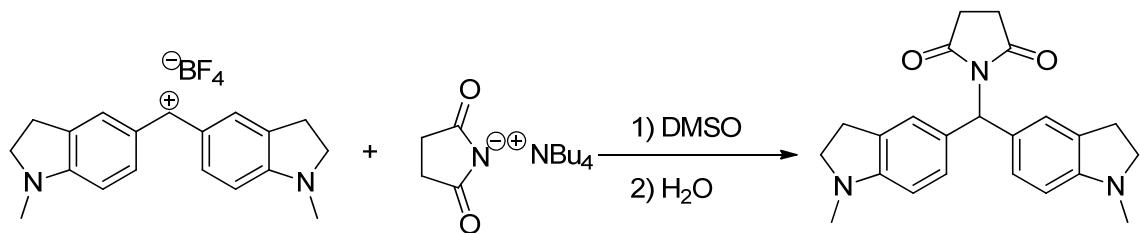
230 mg (0.509 mmol, 51 %) of (2-(Bis(1-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)isoindoline-1,3-dione (**3af**) were obtained from 223 mg (1.20 mmol) of **1a-K⁺** and 393 mg (1.00 mmol) of benzhydrylium tetrafluoroborate **1f** with a melting point of 151–152 °C (from dichloromethane-cyclohexane).

¹H-NMR (400 MHz, CDCl₃): δ =1.90-1.96 (m, 4 H), 2.68-2.72 (m, 4 H), 2.84 (s, 6 H), 3.16-3.19 (m, 4 H), 6.47 (s, 1 H), 6.51 (d, 2 H, ³J = 8.5 Hz), 6.98 (m, 2 H), 7.10-7.12 (m, 2H), 7.64-7.66 (m, 2 H), 7.78-7.80 (m, 2 H).

¹³C-NMR (100 MHz, CDCl₃): δ =22.5 (t), 27.9 (t), 39.2 (q), 51.3 (t), 57.5 (d), 110.5 (d), 122.5 (s), 123.2 (d), 126.4 (d), 127.6 (s), 129.3 (d), 132.3 (s), 133.8 (d), 146.0 (s), 168.3 (s).



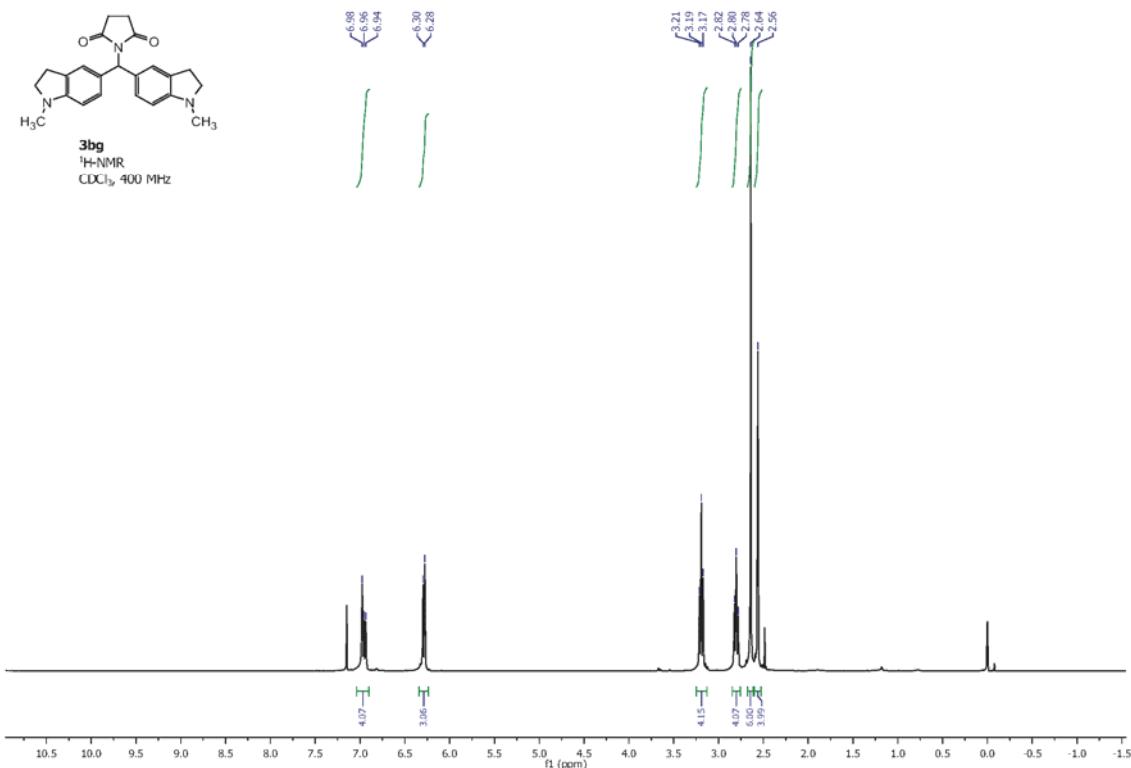
Reaction of $(\text{ind})_2\text{CH}^+$ with succinimide tetrabutylammonium salt **2b-NBu**₄⁺:

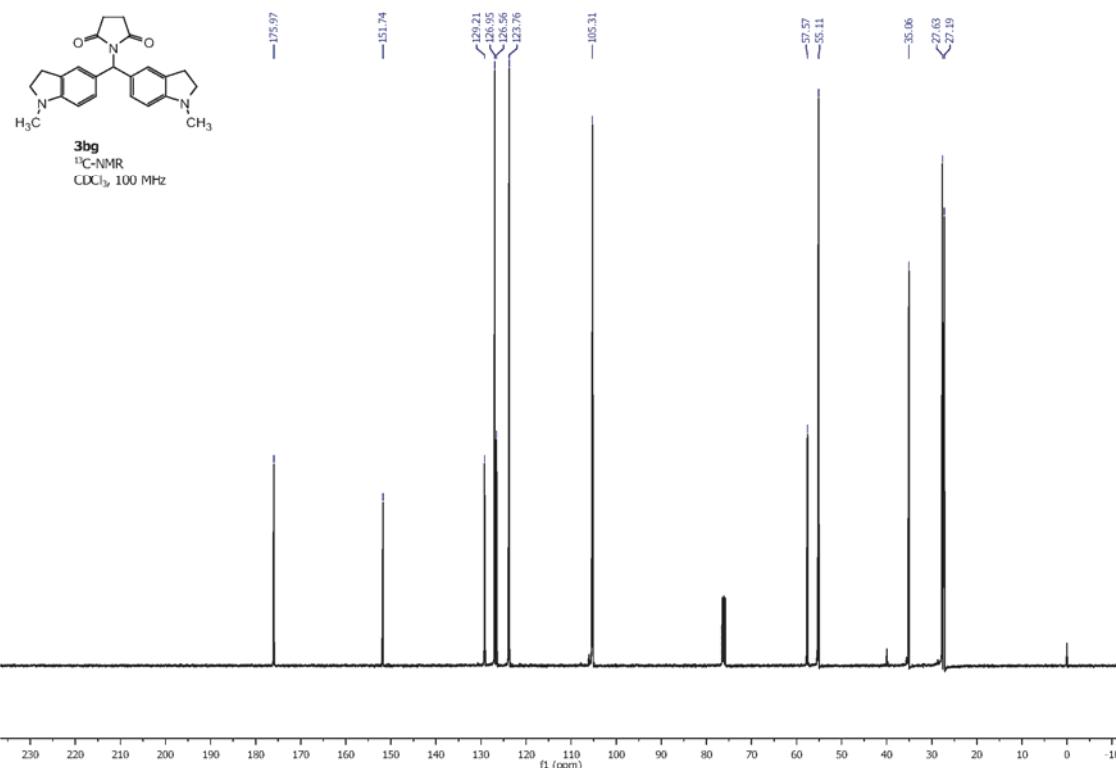


321 mg (0.855 mmol, 85 %) of 1-(Bis(1-methylindolin-5-yl)methyl)pyrrolidine-2,5-dione (**3bg**) were obtained from 402 mg (1.18 mmol) of **2b-NBu**₄⁺ and 367 mg (1.01 mmol) of benzhydrylium tetrafluoroborate **1g** with a melting point of 149 – 150 °C (from dichloromethane-cyclohexane).

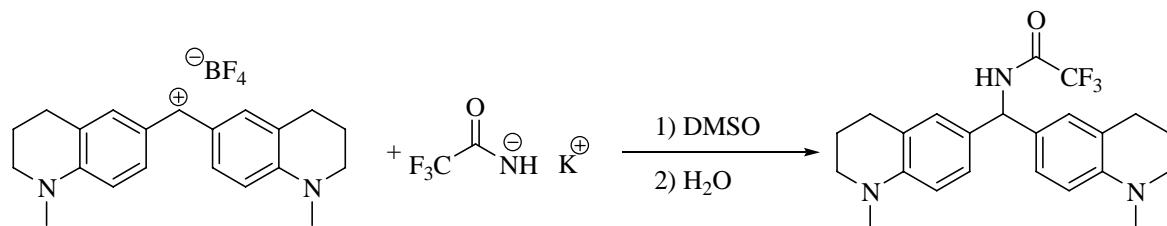
¹H-NMR (400 MHz, CDCl₃): δ = 2.56 (s, 4 H), 2.64 (s, 6 H), 2.80 (t, 4 H, ³J = 8.2 Hz), 3.19 (t, 4 H, ³J = 8.2 Hz), 6.28-6.30 (m, 3 H), 6.94 (d, 2 H, ³J = 8.0 Hz), 6.97 (s, 2 H).

¹³C-NMR (100 MHz, CDCl₃): δ = 27.2 (t), 27.6 (t), 35.1 (q), 55.1 (t), 57.6 (d), 105.3 (d), 123.8 (d), 126.6 (s), 127.0 (d), 129.2 (s), 151.7 (s), 176.0 (s).





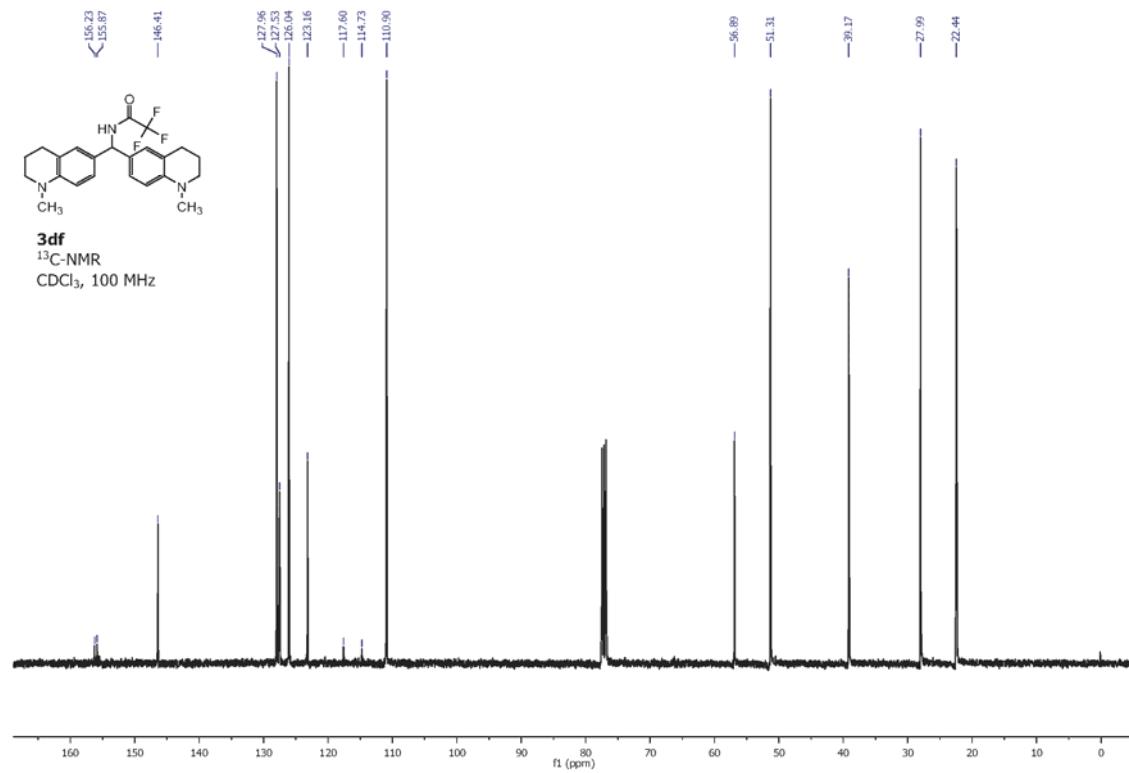
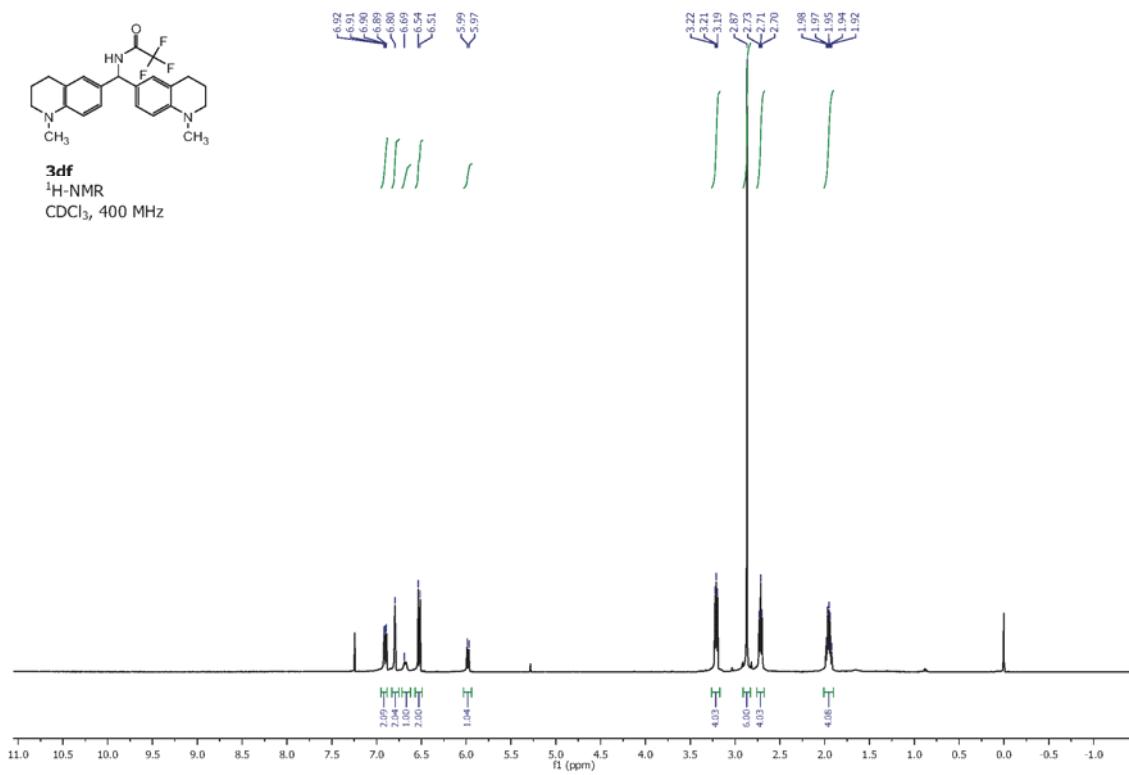
Reaction of (thq)₂CH⁺ with 2,2,2-trifluoroacetamide potassium salt **2d-K**:



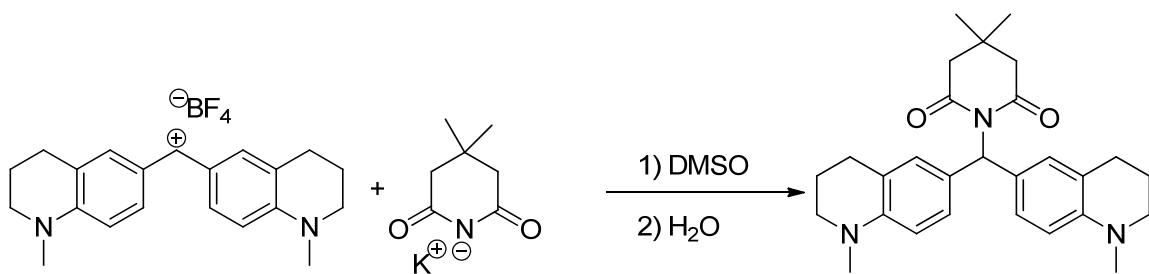
330 mg (0.790 mmol, 85 %) of *N*-(bis(1-methyl-1,2,3,4-tetrahydroquinolin-6-yl)methyl)-2,2,2-trifluoroacetamide (**3df**) were obtained from 197 mg (1.30 mmol) of **2d-K**⁺ and 365 mg (0.931 mmol) of benzhydrylium tetrafluoroborate **1f** with a melting point of 165 – 167 °C (from dichloro-methane-cyclohexane).

¹H-NMR (400 MHz, CDCl₃): δ = 1.92–1.98 (m, 4 H), 2.71 (t, 4 H, ³J = 6.4 Hz), 2.87 (s, 6 H), 3.19–3.22 (m, 4 H), 5.98 (d, 1 H, ³J = 8.1 Hz), 6.52 (d, 2 H, ³J = 8.5 Hz), 6.69 (br d, 1 H, ³J = 8.0 Hz), 6.80 (s, 2 H), 6.91 (dd, 2 H, ³J = 8.4 Hz, ⁴J = 2.3 Hz)

¹³C-NMR (100 MHz, CDCl₃): δ = 22.4 (t), 28.0 (t), 39.2 (q), 51.3 (t), 56.7 (d), 110.9 (d), 116.2 (q, J_{CF} = 282 Hz), 123.2 (d), 126.0 (s), 127.5 (s), 128.0 (d), 146.4 (s), 155.9 (q, J_{CF} = 40 Hz).



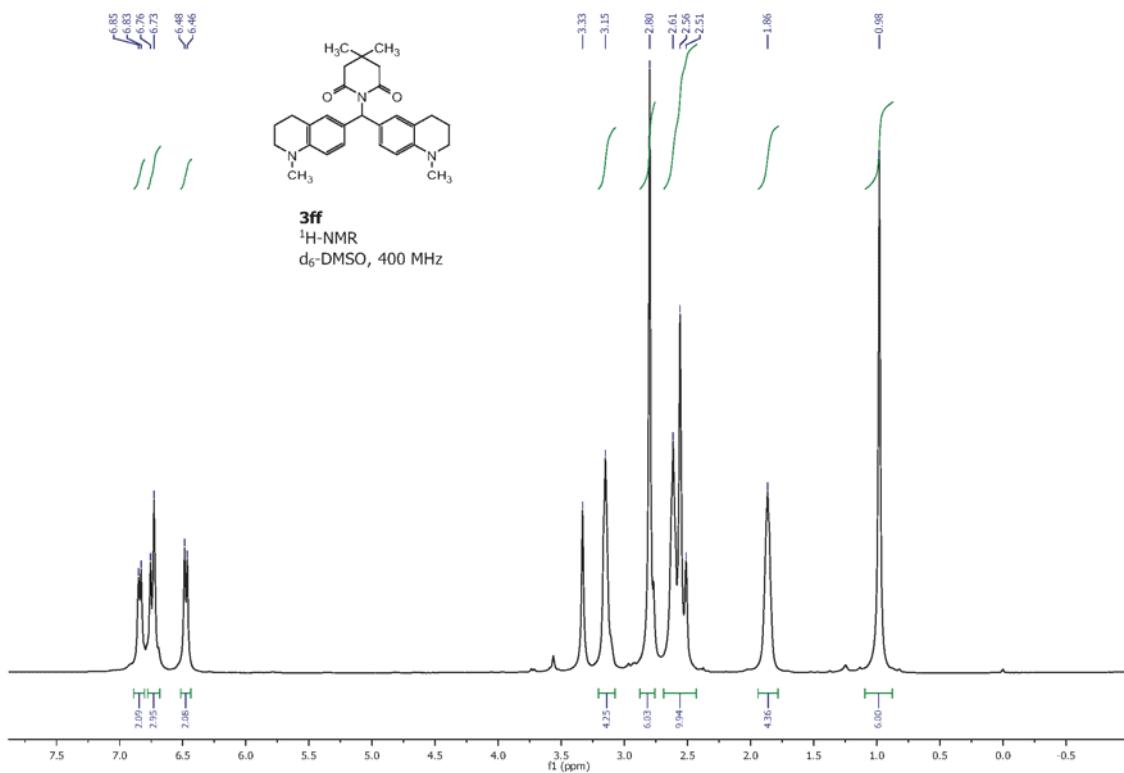
Reaction of $(\text{thq})_2\text{CH}^+$ with 3,3'-Dimethylglutarimide potassium salt **2f-K**⁺:

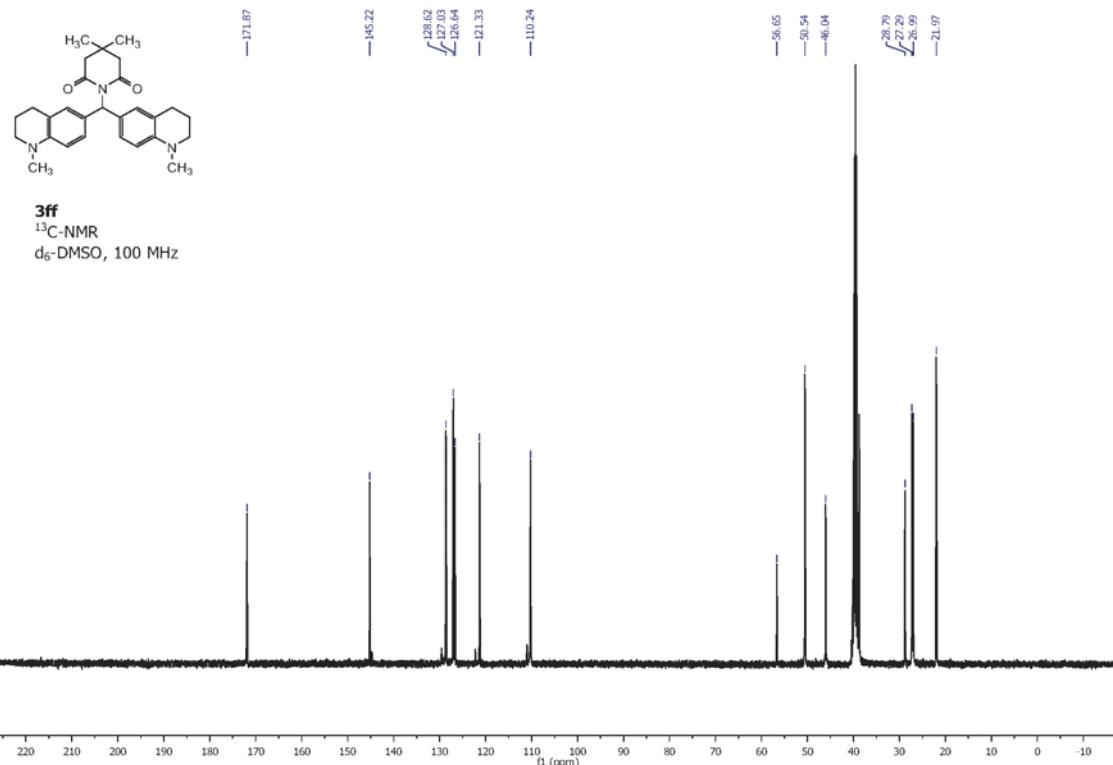


40 mg (0.090 mmol, 51 %) of 1-(Bis(1-methylindolin-5-yl)methyl)-4,4-dimethylpiperidine-2,6-dione (**3ff**) were obtained from 32.2 mg (0.180 mmol) of **2f-K**⁺ and 69.4mg (0.177 mmol) of benzhydrylium tetrafluoroborate **1f**.

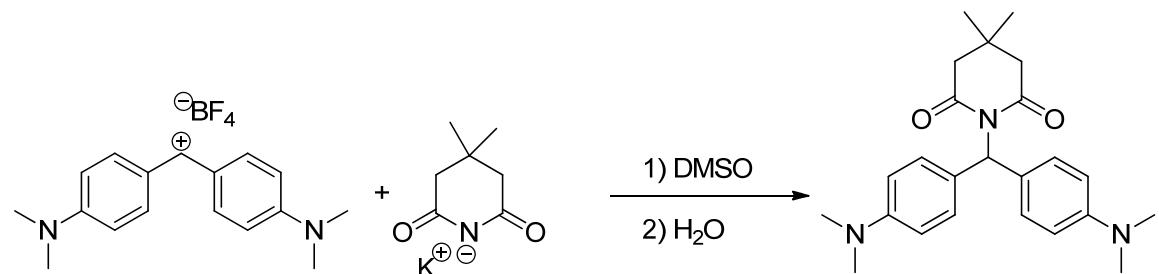
¹H-NMR (400 MHz, d₆-DMSO): $\delta = 0.98$ (s, 6 H), 1.86 (m, 4 H), 2.51-2.61 (m, 8 H), 2.80 (s, 6 H), 3.15 (m, 4 H), 6.47 (d, 2 H, ³J = 8.3 Hz), 6.73-6.76 (m, 3 H), 6.84 (d, 2 H, ³J = 8.3 Hz).

¹³C-NMR (100 MHz, d₆-DMSO): $\delta = 22.0$ (t), 27.0 (q), 27.3 (t), 28.8 (s), 38.7 (q), 46.0 (t), 50.5 (t), 56.7 (d), 110.2 (d), 121.3 (s), 126.6 (s), 127.0 (d), 128.6 (d), 145.2 (s), 171.9 (s).





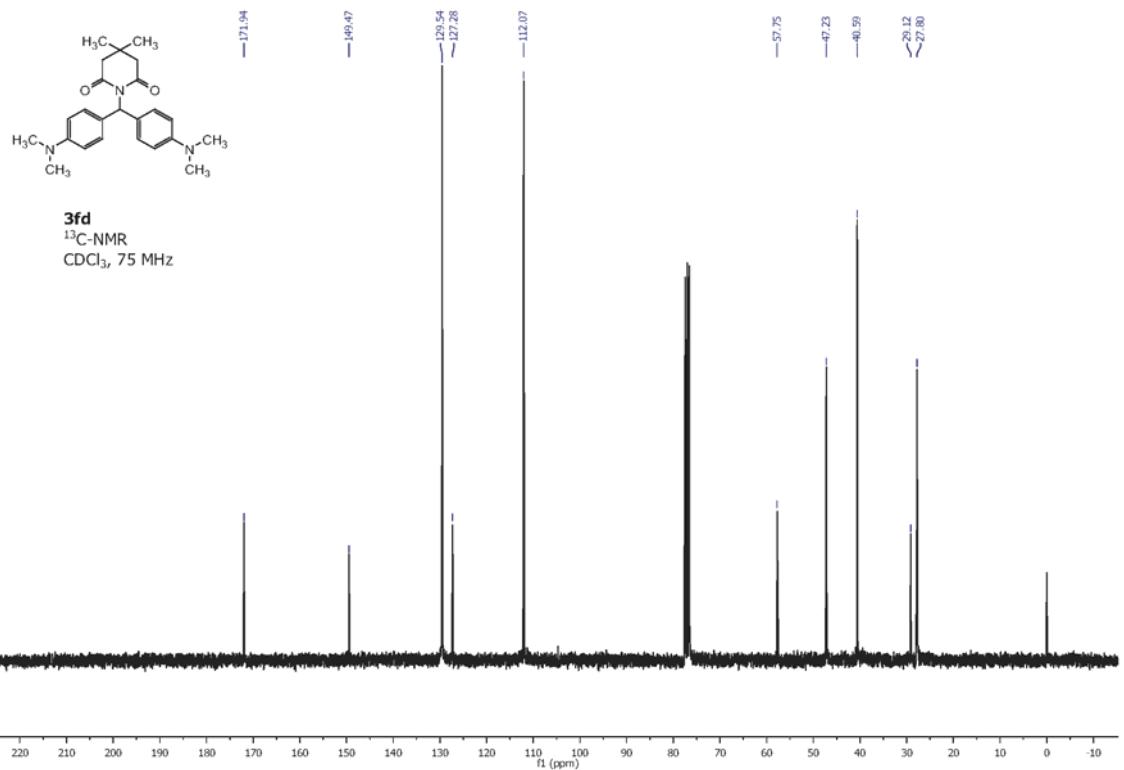
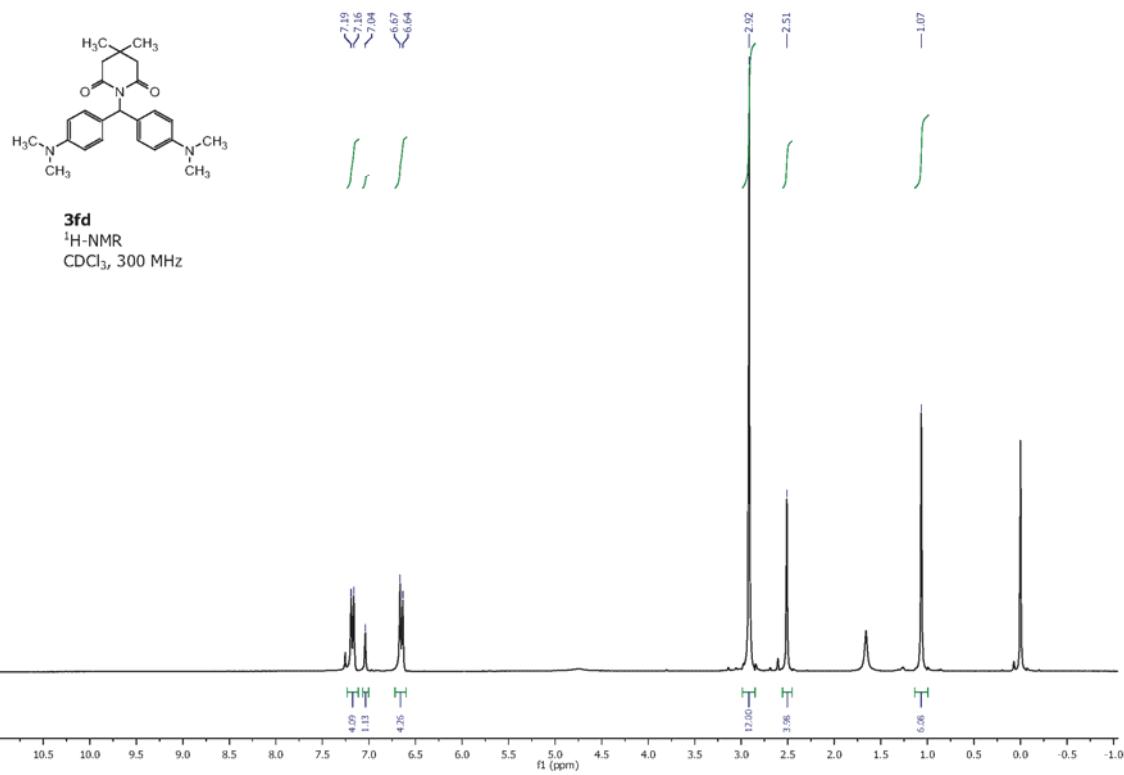
Reaction of $(\text{dma})_2\text{CH}^+$ with 3,3'-Dimethylglutarimide potassium salt **2f-K**⁺:



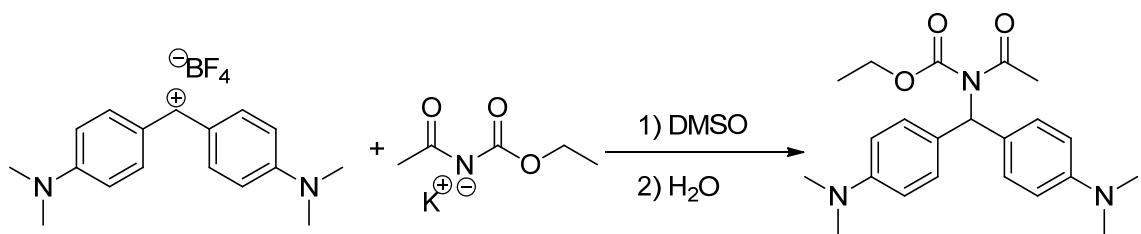
34 mg (0.086 mmol, 86 %) of 1-(Bis(4-(dimethylamino)phenyl)methyl)-4,4-dimethylpiperidine-2,6-dione (**3fd**) were obtained from 18 mg (0.10 mmol) of **2f-K**⁺ and 34 mg (0.10 mmol) of benzhydrylium tetrafluoroborate **1d**.

^1H -NMR (300 MHz, CDCl_3): δ = 1.07 (s, 6 H), 2.51 (s, 4 H), 2.92 (s, 12 H), 6.65 (d, 4 H, 3J = 8.7 Hz), 7.04 (s, 1H), 7.18 (d, 4 H, 3J = 8.7 Hz).

^{13}C -NMR (75 MHz, CDCl_3): δ = 27.8 (q), 29.1 (s), 40.6 (q), 47.2 (t), 57.8 (d), 112.1 (d), 127.3 (s), 129.5 (d), 149.5 (s), 171.9 (s).



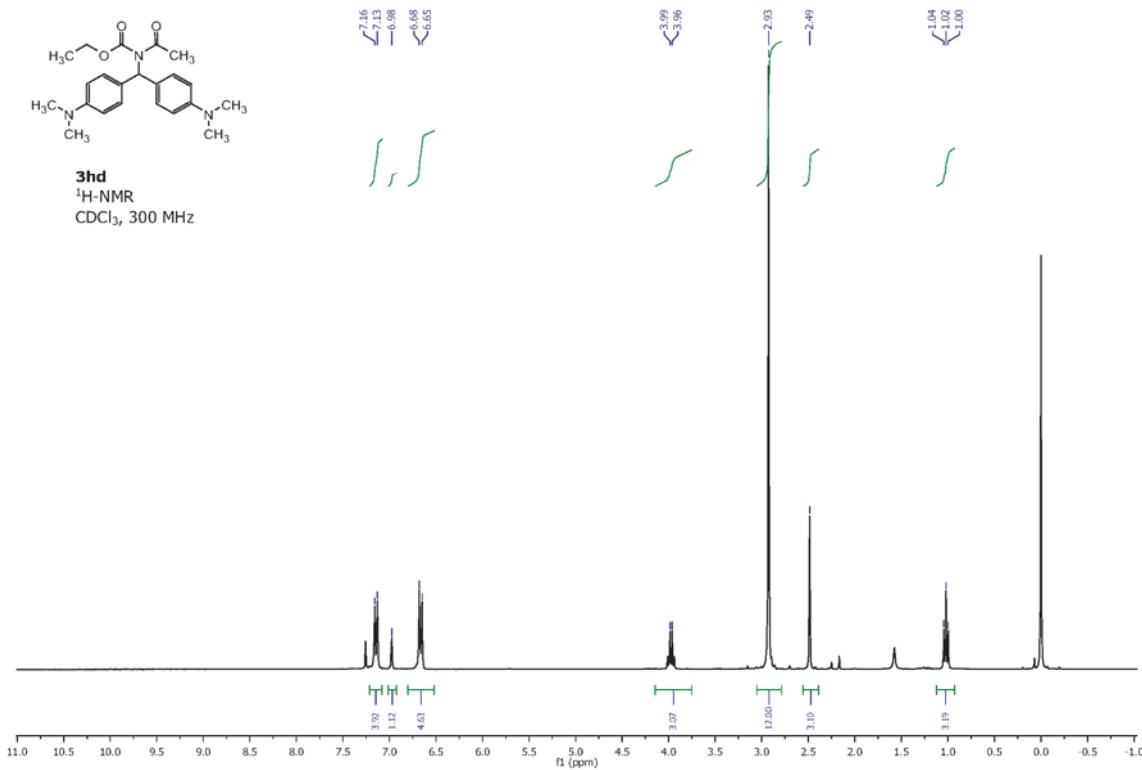
Reaction of $(\text{dma})_2\text{CH}^+$ with ethyl acetyl carbamate potassium salt **2h-K⁺**:

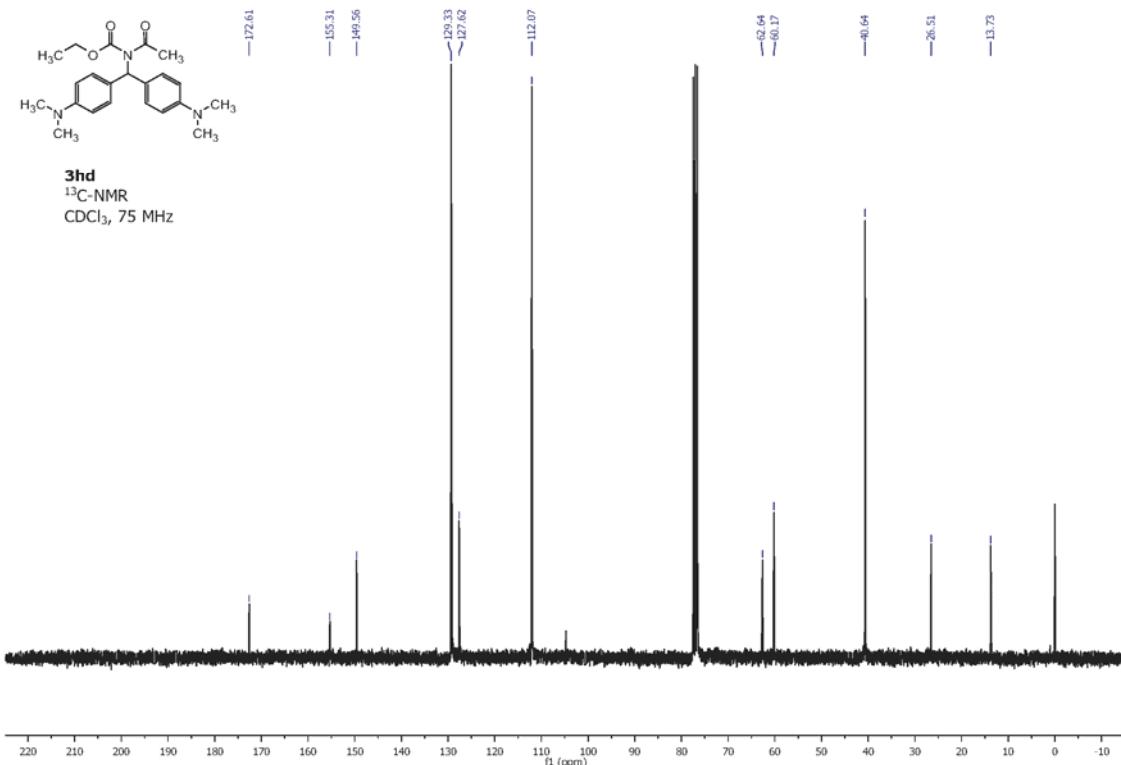


25 mg (0.065 mmol, 54 %) of ethyl acetyl(bis(4-(dimethylamino)phenyl)methyl)carbamate (**3hd**) were obtained from 21 mg (0.12 mmol) of **2h-K⁺** and 41 mg (0.12 mmol) of benzhydrylium tetrafluoroborate **1d**.

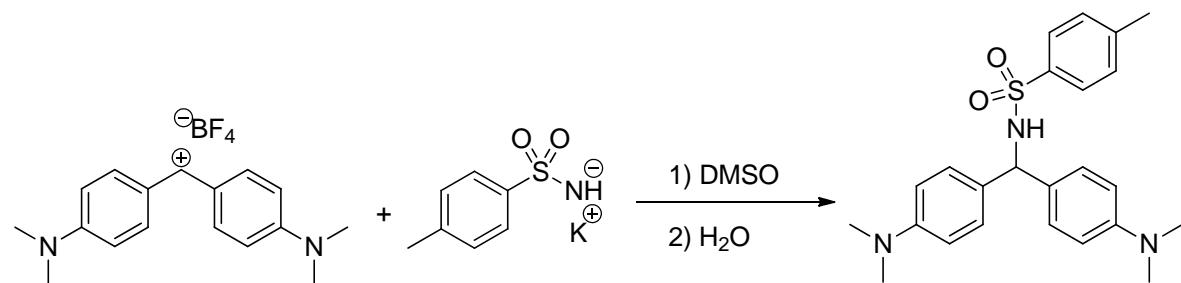
¹H-NMR (300 MHz, CDCl₃): δ =1.02 (t, 3 H, ³J = 7.1 Hz), 2.49 (s, 3 H), 2.93 (s, 12 H), 3.97 (q, 2 H, ³J = 7.1 Hz), 6.66 (d, 4 H, ³J = 8.8 Hz), 6.98 (s, 1 H), 7.14 (d, 4 H, ³J = 8.7 Hz).

¹³C-NMR (75 MHz, CDCl₃): δ =13.7 (q), 26.5 (q), 40.6 (q), 60.2 (d), 62.6 (t), 112.1 (d), 127.6 (s), 129.3 (d), 149.6 (s), 155.3 (s), 172.6 (s).





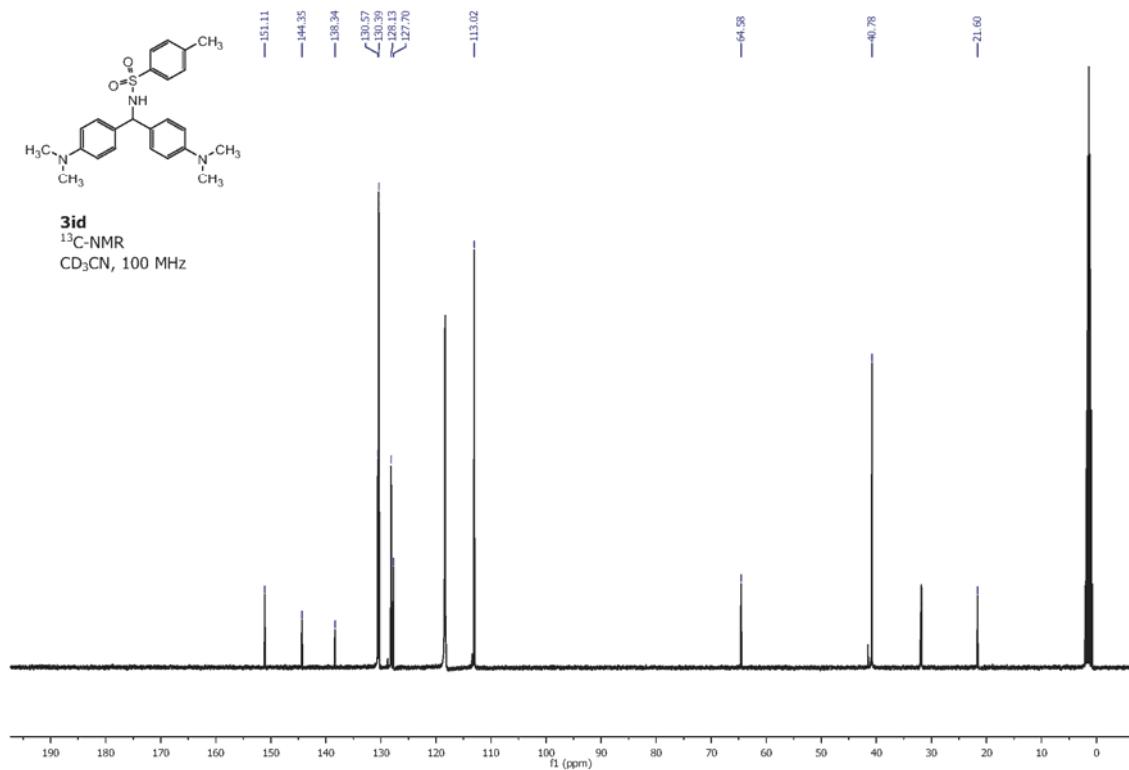
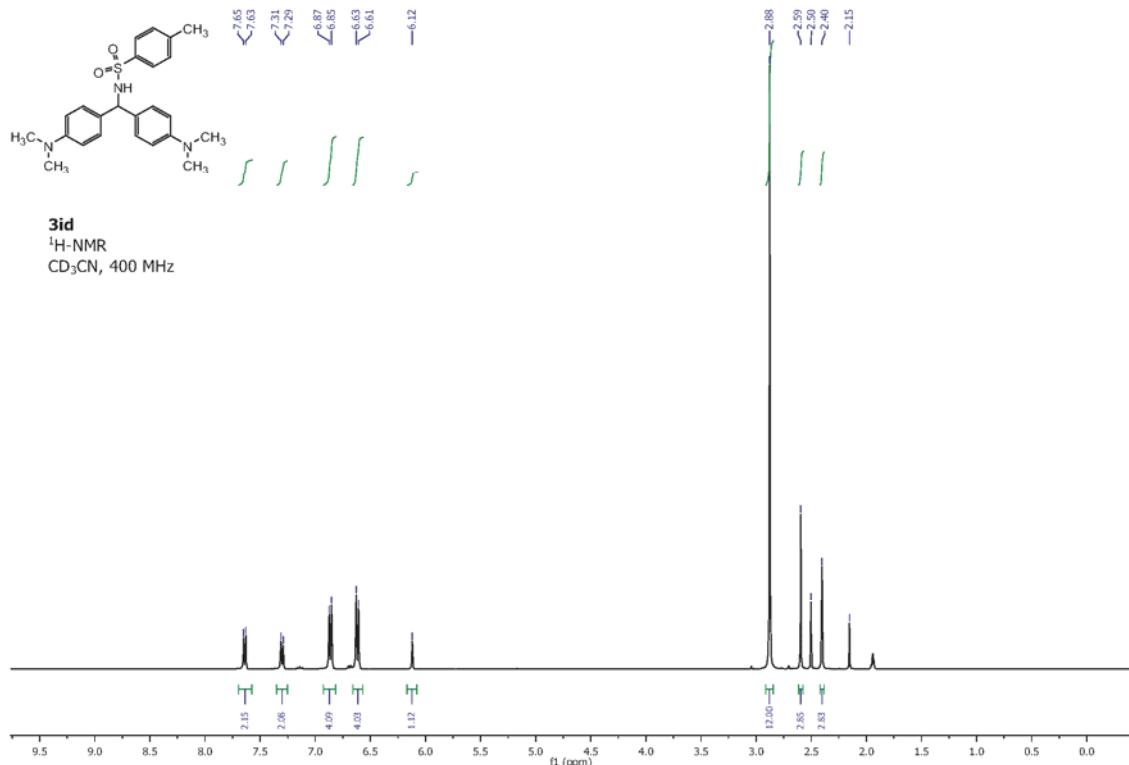
Reaction of $(\text{dma})_2\text{CH}^+$ with *p*-toluenesulfoneamide potassium salt **2i-K⁺**:



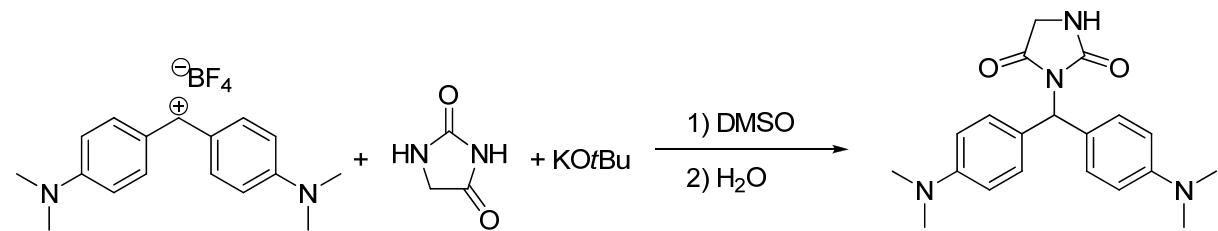
68 mg (0.16 mmol, 73 %) of *N*-(bis(4-(dimethylamino)phenyl)methyl)-4-methylbenzenesulfonamide (**3id**) were obtained from 46 mg (0.22 mmol) of **2i-K⁺** and 75 mg (0.22 mmol) of benzhydrylium tetrafluoroborate **1d**.

^1H -NMR (400 MHz, CD_3CN): δ = 2.40 (s, 3H), 2.88 (s, 12 H), 6.12 (s, 1H), 6.62 (d, 4 H, 3J = 8.7 Hz), 6.86 (d, 4 H, 3J = 8.7 Hz), 7.30 (d, 2 H, 3J = 8.2 Hz), 7.64 (d, 2 H, 3J = 8.2 Hz).

^{13}C -NMR (100 MHz, CD_3CN): δ = 21.6 (q), 40.8 (q), 64.6 (d), 113.0 (d), 127.7 (d), 128.1 (s), 130.4 (d), 130.6 (d), 138.3 (s), 144.4 (s), 151.1 (s).



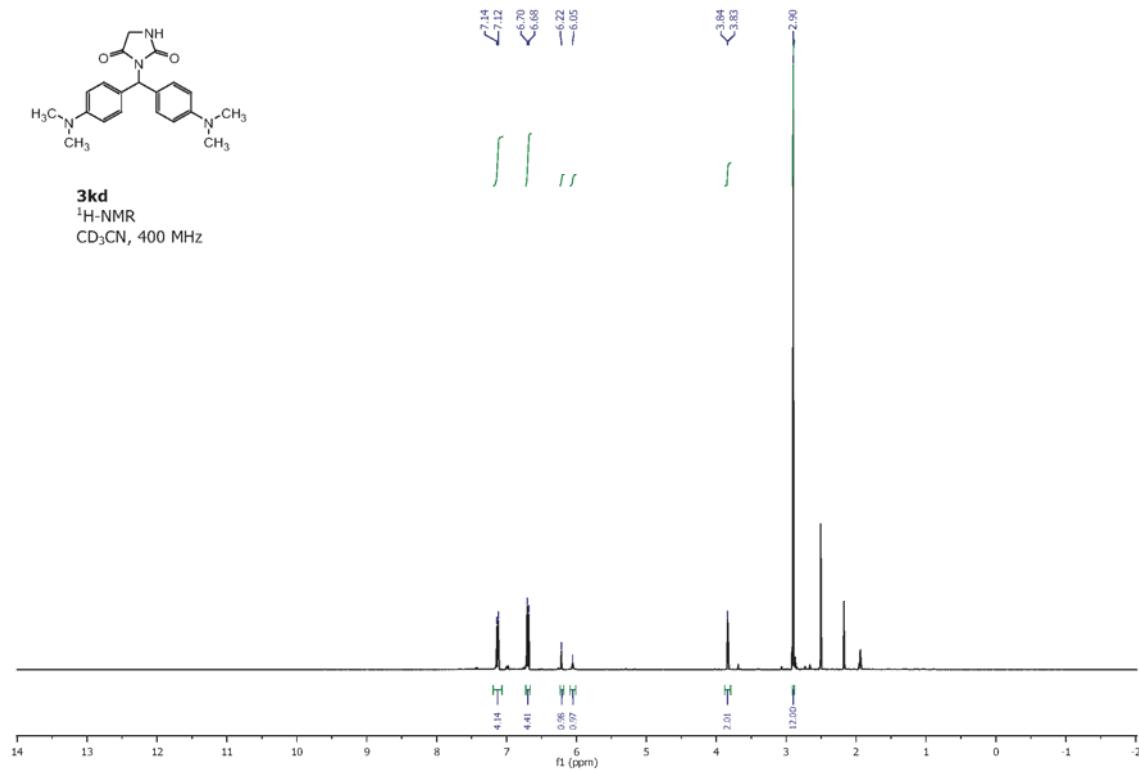
Reaction of (dma)₂CH⁺ with hydantoin postassium salt **2k-K⁺:**

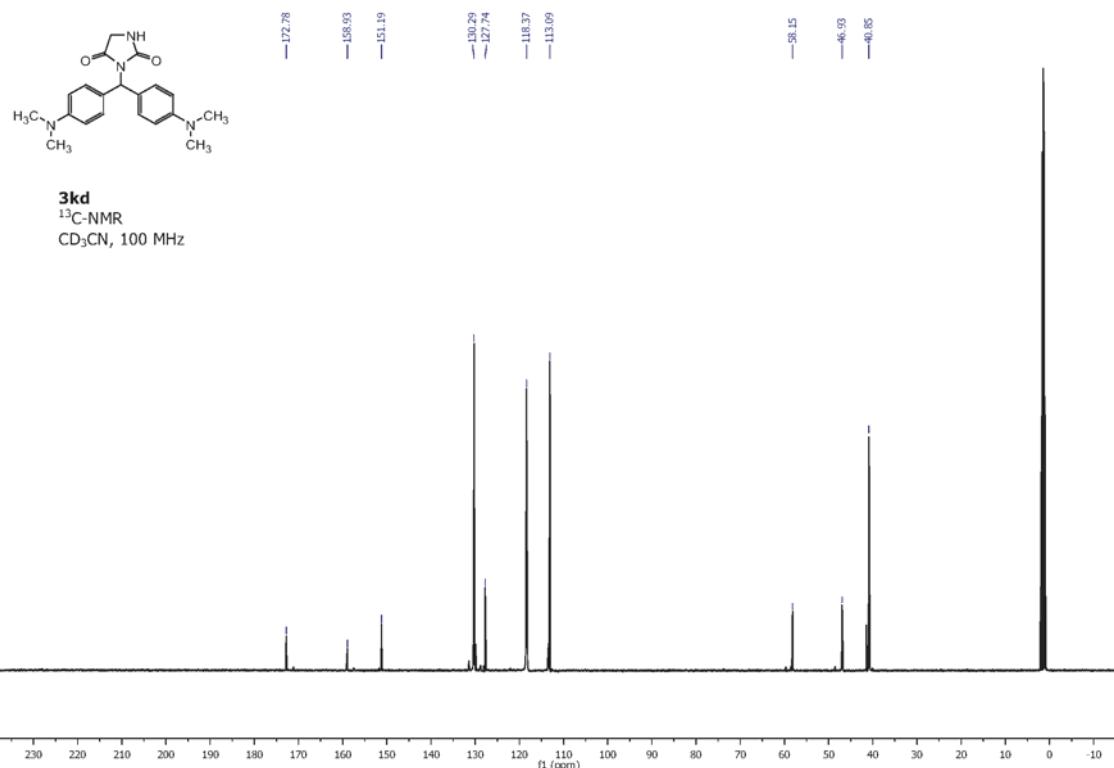


118 mg (0.335 mmol, 84 %) of 3-(bis(4-(dimethylamino)phenyl)methyl)imidazolidine-2,4-dione (**3kd**) were obtained from 43 mg (0.43 mmol) of **2k-H**, 52 mg (0.46 mmol) of KOtBu and 135 mg (0.397 mmol) of benzhydrylium tetrafluoroborate **1d**.

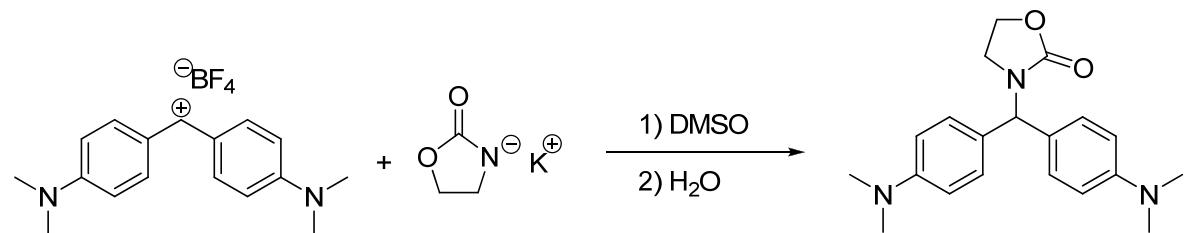
¹H-NMR (400 MHz, CD₃CN): $\delta = 2.90$ (s, 12 H), 3.84 (d, 2 H, ³J = 1.3 Hz), 6.05 (br s, 1H), 6.22 (s, 1 H), 6.69 (d, 4 H, ³J = 8.7 Hz), 7.13 (d, 4 H, ³J = 8.7 Hz).

¹³C-NMR (100 MHz, CD₃CN): $\delta = 40.9$ (q), 46.9 (t), 58.2 (d), 113.1 (d), 127.7 (s), 130.3 (d), 151.2 (s), 158.9 (s), 172.8 (s).





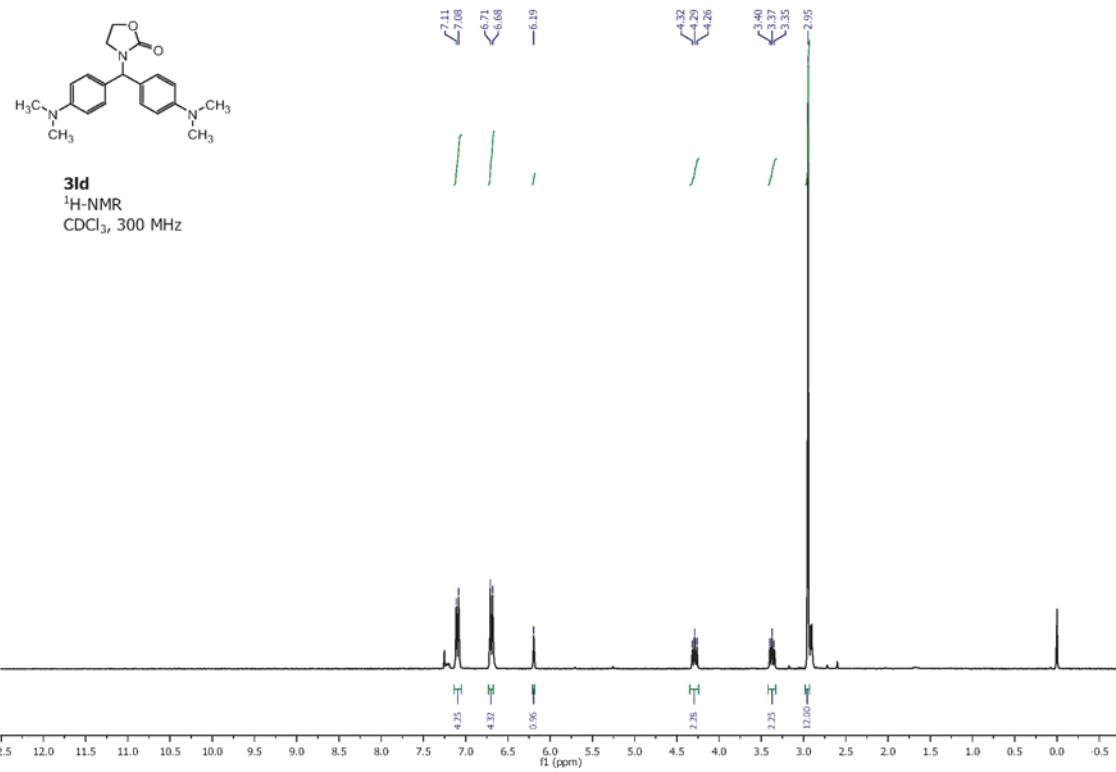
Reaction of (dma)₂CH⁺ with 2-oxazolidinone potassium salt **2l-K⁺**:



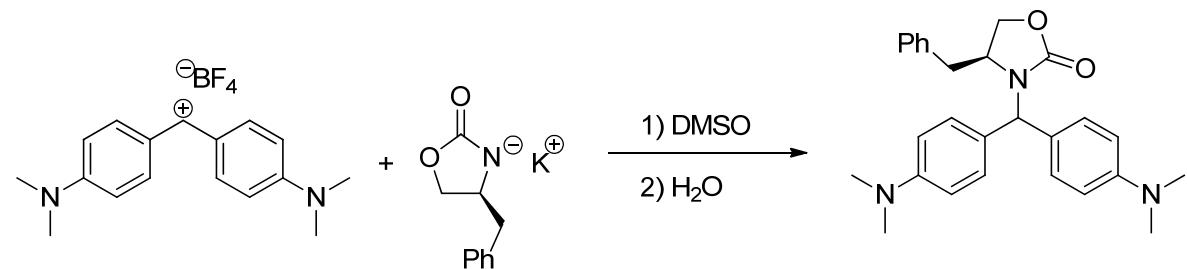
70 mg (0.21 mmol, 84 %) of 3-(bis(4-(dimethylamino)phenyl)methyl)oxazolidin-2-one (**3ld**) were obtained from 32 mg (0.26 mmol) of **2l-K⁺** and 86 mg (0.25 mmol) of benzhydrylium tetrafluoroborate **1d**.

¹H-NMR (300 MHz, CDCl₃): δ = 2.95 (s, 12 H), 3.37 (t, 2 H, ³J = 8.0 Hz), 4.29 (t, 2 H, ³J = 8.0 Hz), 6.19 (s, 1H), 6.69 (d, 4 H, ³J = 8.5 Hz), 7.09 (d, 4 H, ³J = 8.5 Hz).

¹³C-NMR (75 MHz, CDCl₃): δ = 40.5 (q), 41.5 (t), 59.7 (d), 62.0 (t), 112.3 (d), 126.2 (s), 129.2 (d), 149.9 (s), 158.3 (s).



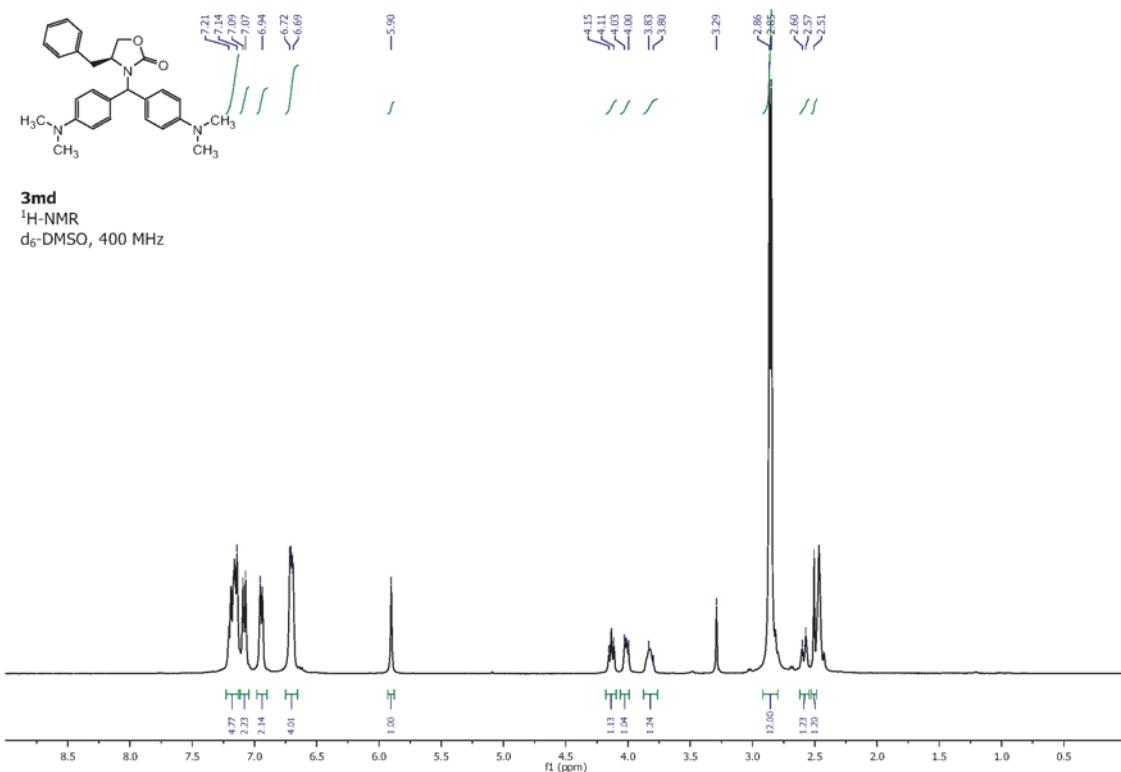
Reaction of $(dma)_2CH^+$ with (*S*)-4-benzyloxazolidin-2-one-potassium salt **2m-K⁺**:

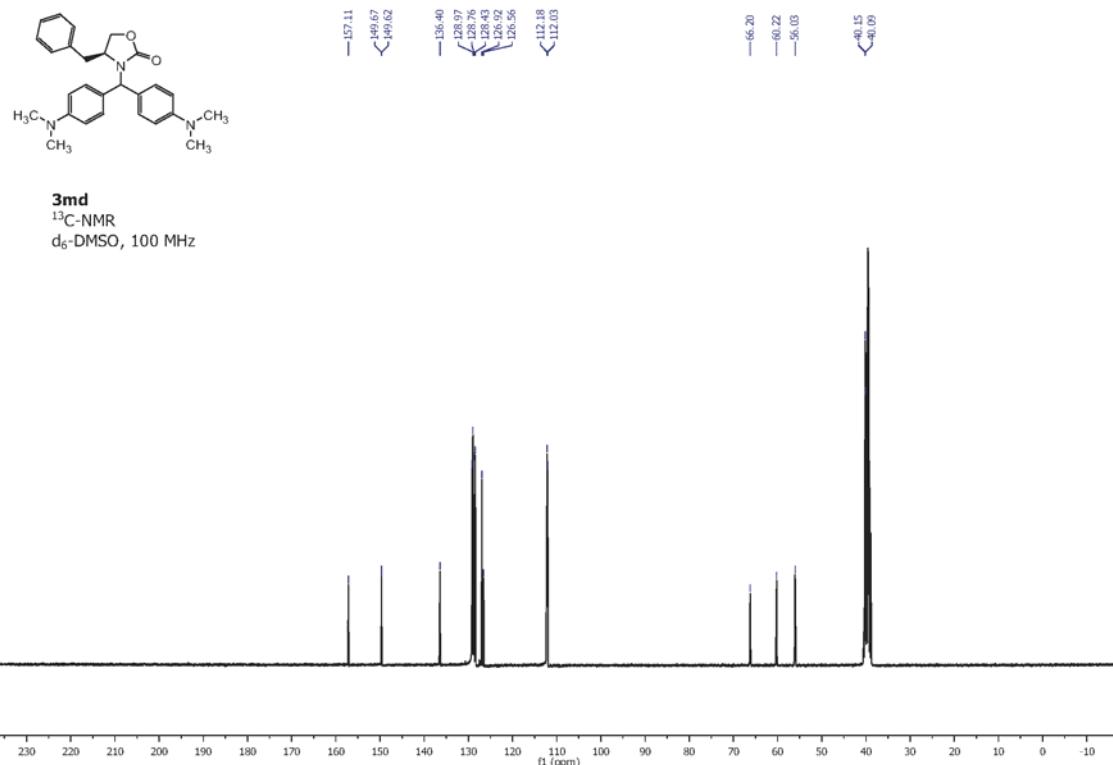


190 mg (0.442 mmol, 94 %) of (*S*)-4-benzyl-3-(bis(4-(dimethylamino)phenyl)methyl)oxazolidin-2-one (**3md**) were obtained from 106 mg (0.492 mmol) of **2m-K⁺** and 160 mg (0.470 mmol) of benzhydrylium tetrafluoroborate **1d**.

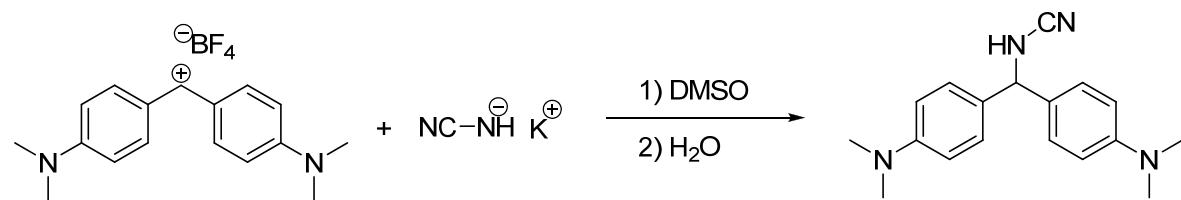
¹H-NMR (400 MHz, d₆-DMSO): δ = 2.51 (m, 1 H), 2.57-2.60 (m, 1 H), 2.85 (s, 6 H), 2.86 (s, 6 H), 3.80-3.83 (m, 1H), 4.00-4.03 (m, 1 H), 4.11-4.15 (m, 1 H), 5.90 (s, 1 H), 6.69-6.72 (m, 4 H), 6.94-6.95 (m, 2 H), 7.07-7.09 (m, 2 H), 7.14-7.21 (m, 5 H).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 40.1 (t), 40.2 (q), 56.0 (d), 60.2 (d), 66.2 (t), 112.0 (d), 112.2 (d), 126.6 (s), 126.9 (d), 128.4 (d), 128.8 (d), 129.0 (d), 129.1 (d), 136.4 (s), 149.7 (s), 157.1 (s).





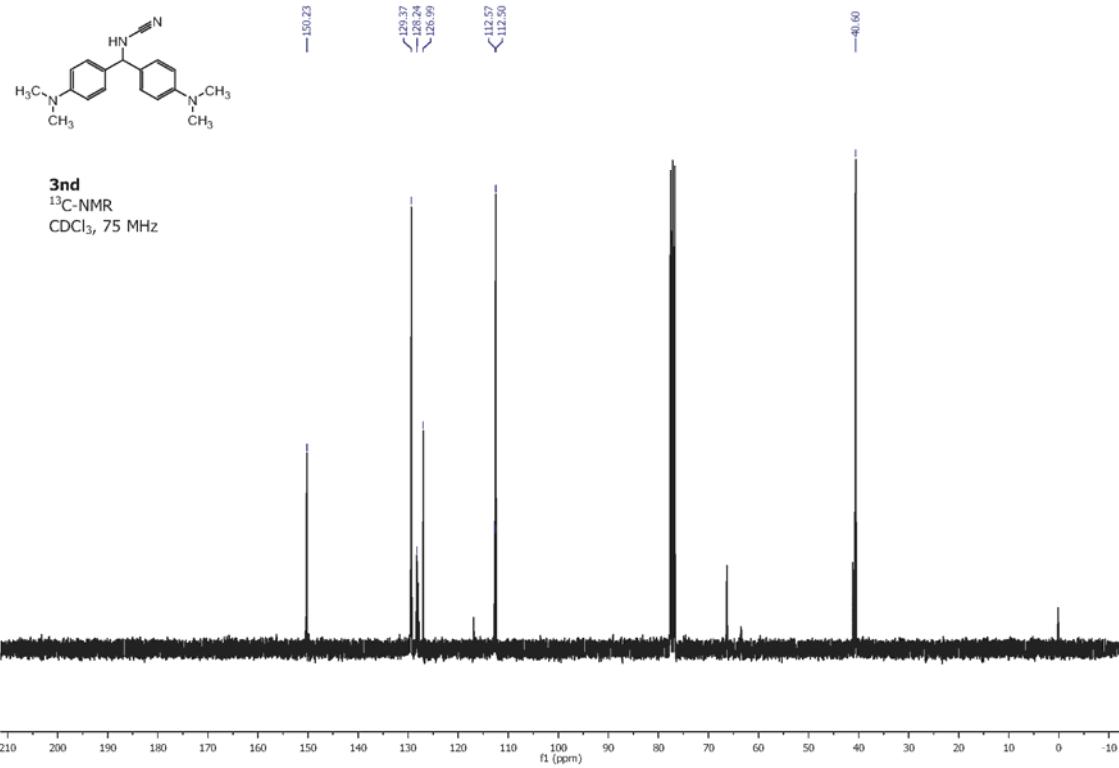
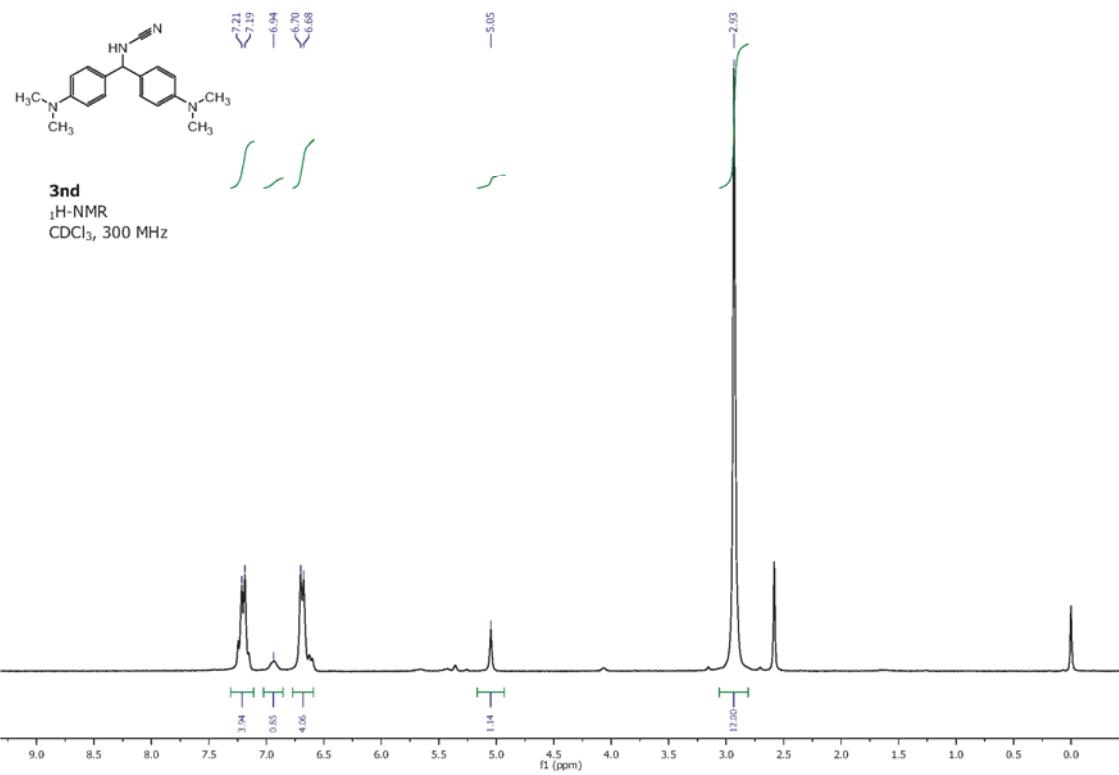
Reaction of $(\text{dma})_2\text{CH}^+$ with cyanamide potassium salt **2n-K⁺**:



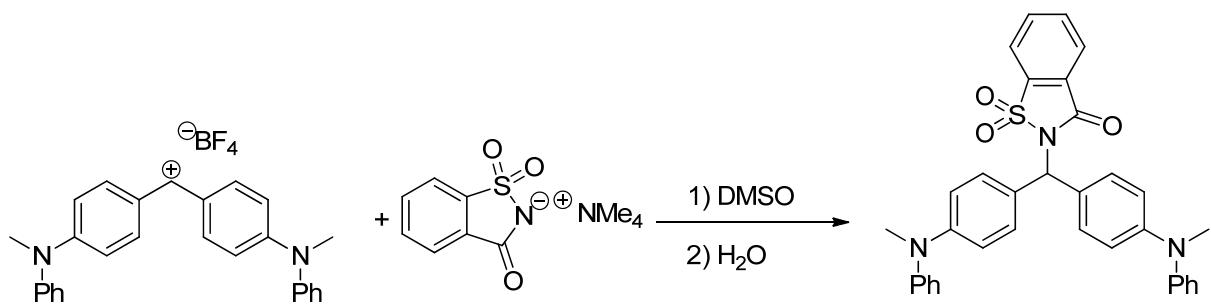
179 mg (0.608 mmol, 95 %) of *N*-(bis(4-(dimethylamino)phenyl)methyl)cyanamide (**3nd**) were obtained from 51.4 mg (0.641 mmol) of **2n-K⁺** and 217 mg (0.638 mmol) of benzhydrylium tetrafluoroborate **1d**.

^1H -NMR (300 MHz, CDCl_3): $\delta = 2.93$ (s, 12 H), 5.05 (s, 1 H), 6.69 (d, 4 H, $^3J = 6.7 \text{ Hz}$), 6.94 (br s 1H), 7.20 (d, 4 H, $^3J = 6.7 \text{ Hz}$).

^{13}C -NMR (75 MHz, CDCl_3): $\delta = 40.6$ (q), 66.3 (d), 112.5 (d), 127.0 (s), 128.2 (s), 129.4 (d), 150.2 (s).



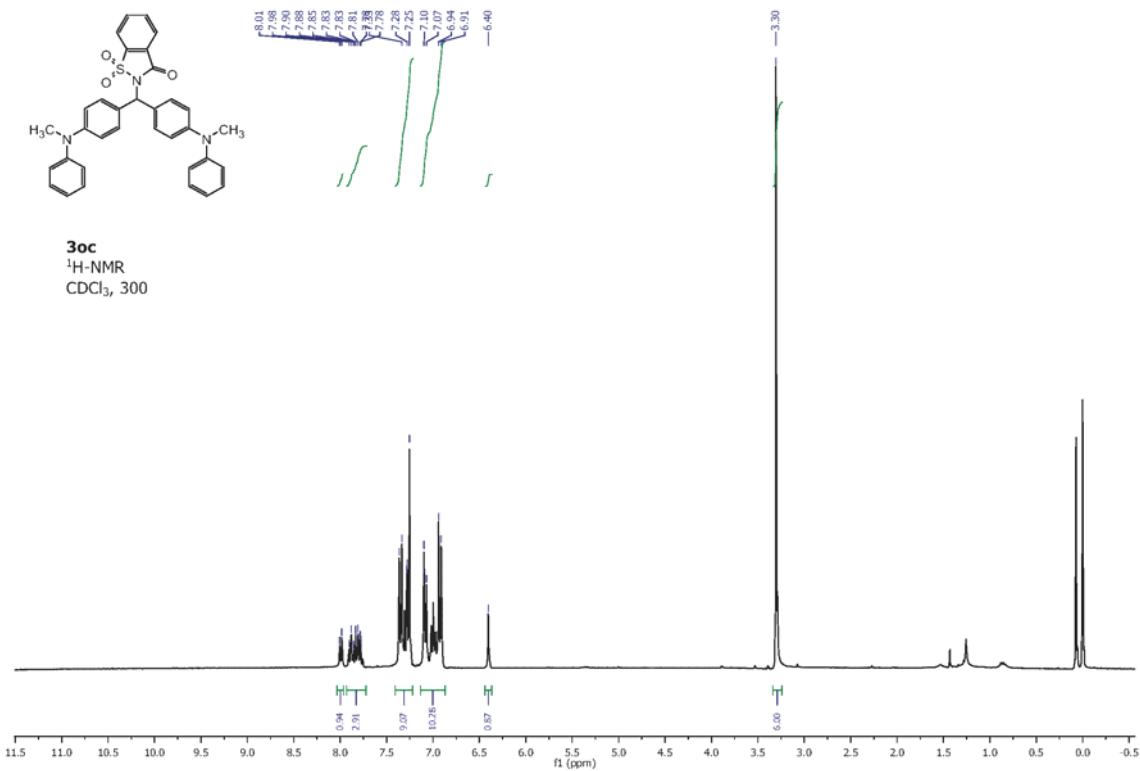
Reaction of $(dpa)_2\text{CH}^+$ with saccharin tetramethylammonium salt **2o-NMe₄**⁺:

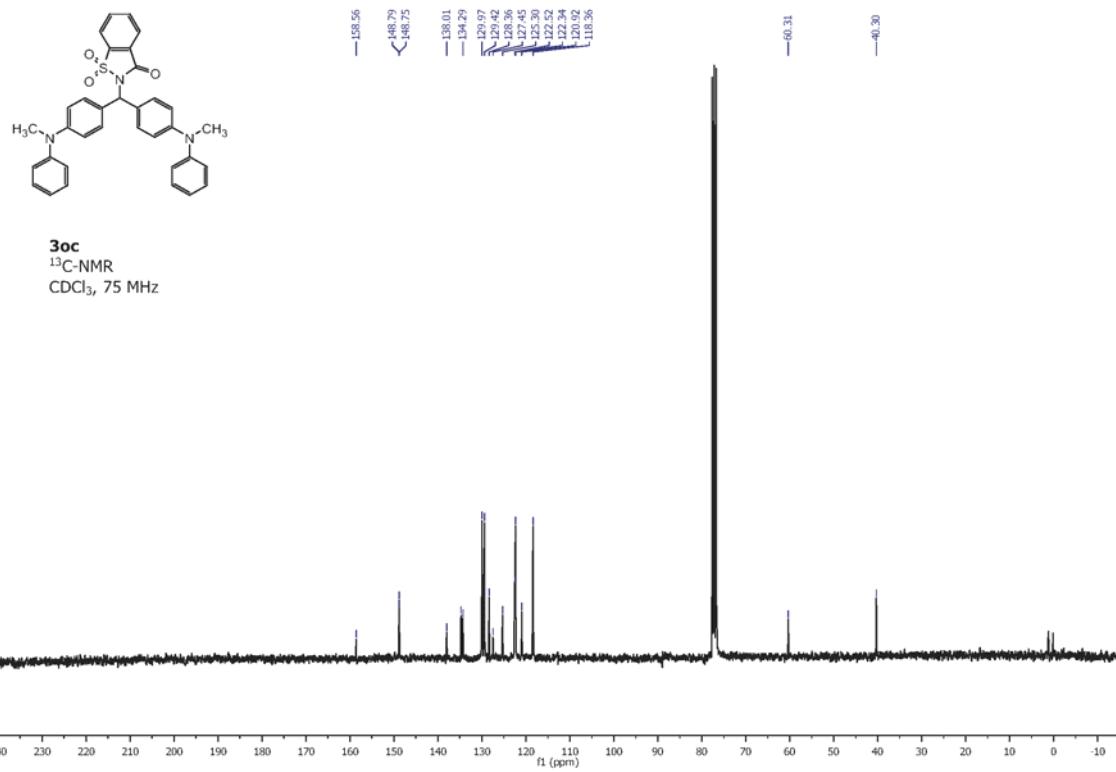


112 mg (0.200 mmol, 31 %) of 2-(bis(4-(methylphenylamino)phenyl)methyl)-1,1-dioxo-1,2-benzoisothiazol-3-one (**3oc**) were obtained from 352 mg (1.37 mmol) of **2o-NMe₄**⁺ and 304 mg (0.655 mmol) of benzhydrylium tetrafluoroborate **1c** with a melting point of 65 – 70 °C (from ether-pentane).

¹H-NMR (300 MHz, CDCl₃): δ = 3.30 (s, 6 H), 6.40 (s, 1H), 6.91-7.10 (m, 10 H), 7.25-7.37 (m, 8 H), 7.77-7.90 (m, 3 H), 7.98-8.01 (m, 1 H).

¹³C-NMR (75 MHz, CDCl₃): δ = 40.3 (q), 60.3 (d), 118.4 (d), 120.9 (d), 122.3 (d), 122.5 (d), 125.3 (d), 127.5 (s), 128.4 (s), 129.4 (d), 130.0 (d), 134.3 (d), 134.7 (d), 138.0 (s), 148.8 (s), 148.8 (s), 158.6 (s).



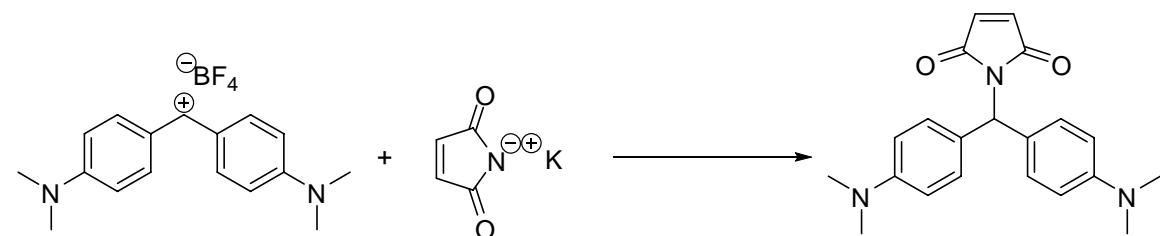


4.2 NMR-Characterized Products

General Procedure:

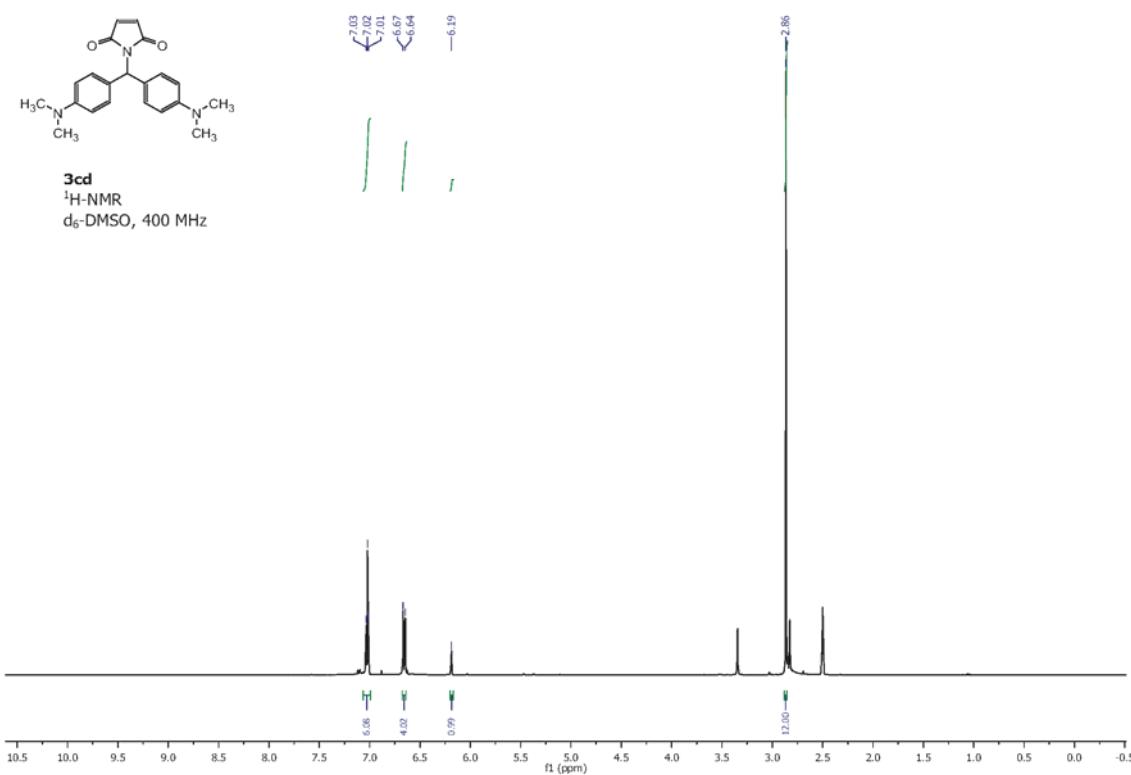
In a NMR-tube equimolar amounts (approx. 5-20 mg) of the amide- or imide-salt and the benzhydrylium tetrafluoroborate were mixed in 1 mL d₆-DMSO. NMR spectra were recorded shortly after the mixing.

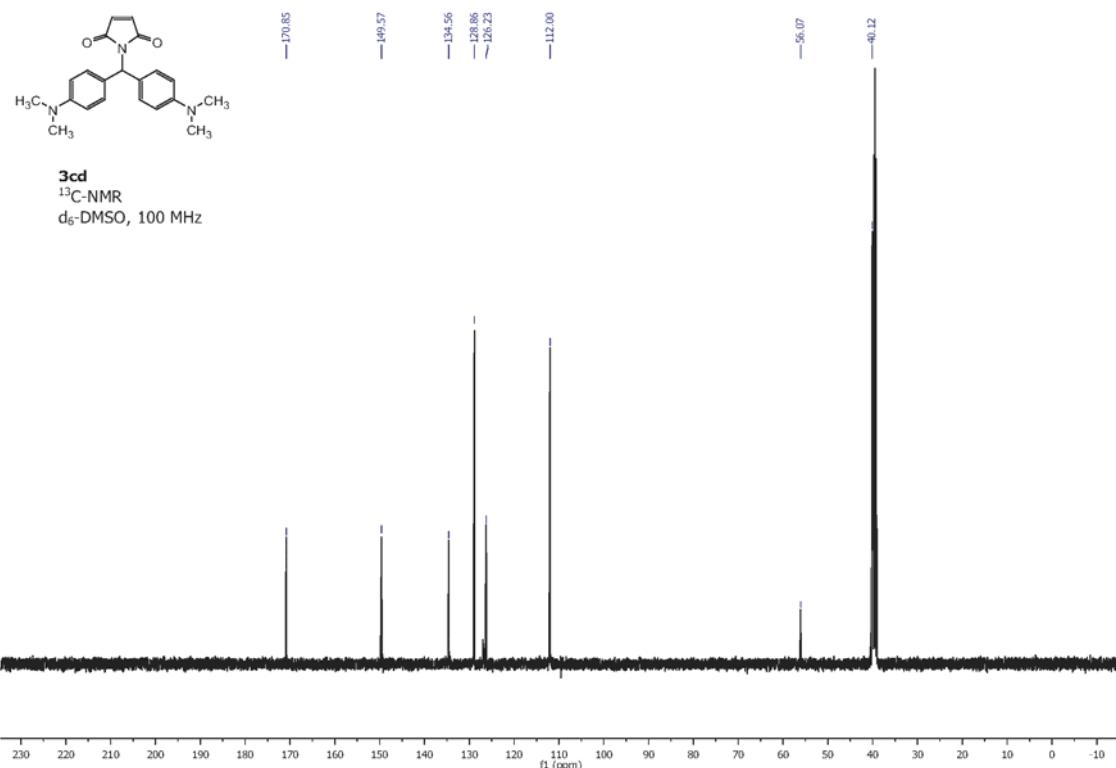
Reaction of (dma)₂CH⁺ with maleimide potassium salt 2c-K⁺:



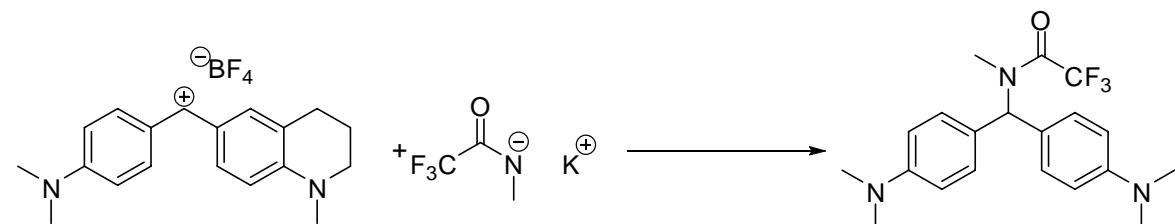
¹H-NMR (400 MHz, d₆-DMSO): δ = 2.86 (s, 12 H), 6.19 (s, 1 H), 6.66 (d, 4 H, ³J = 8.9 Hz), 7.01-7.03 (m, 6 H).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 40.1 (q), 56.1 (d), 112.0 (d), 126.2 (s), 128.9 (d), 134.6 (d), 149.6 (s), 170.9 (s).



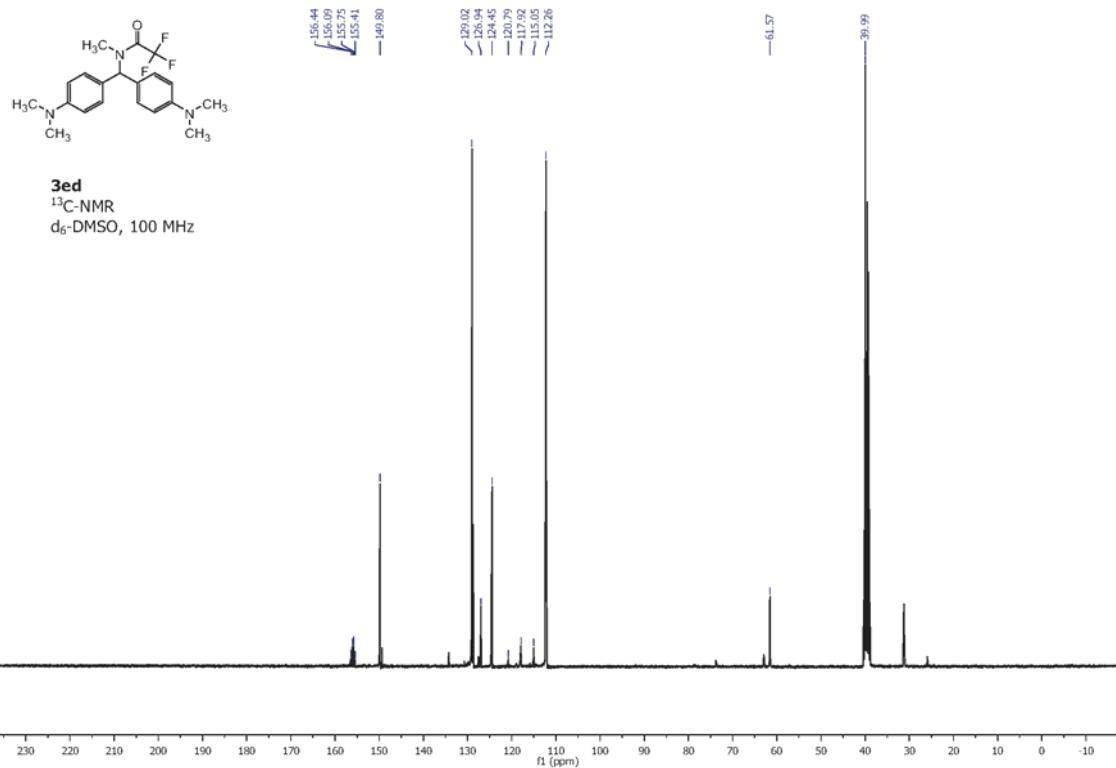
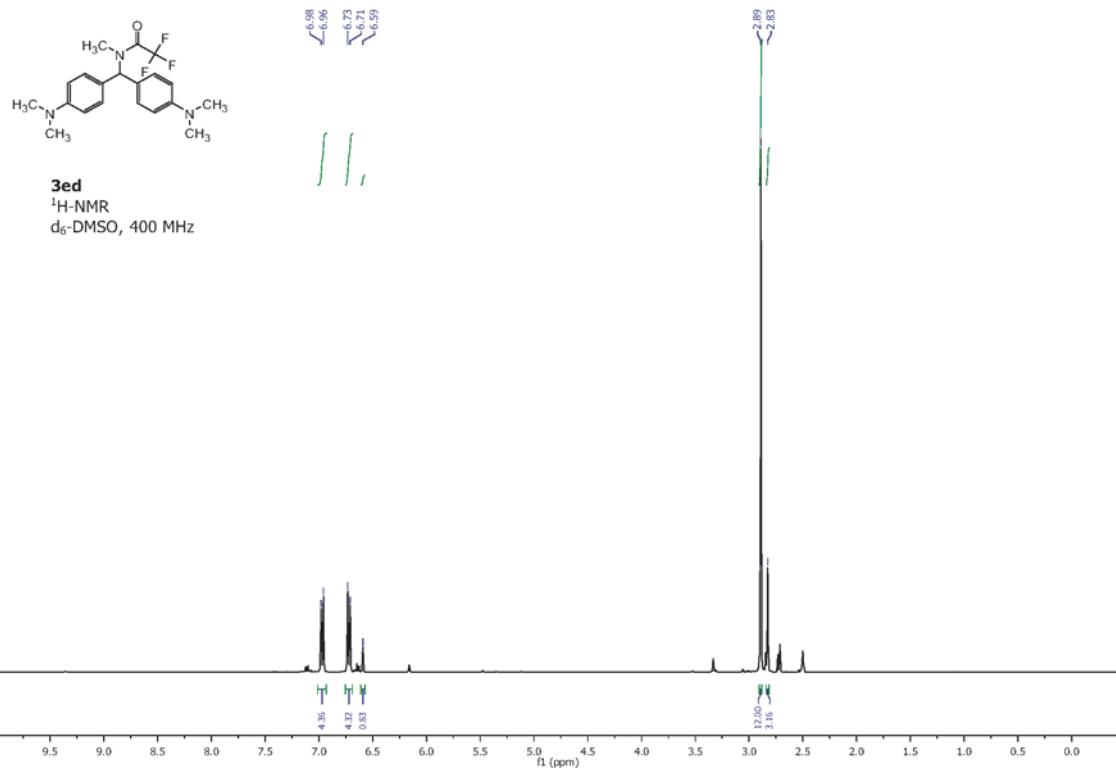


Reaction of $(\text{dma})_2\text{CH}^+$ with *N*-methyl-trifluoroacetamide potassium salt **2e-K**⁺:

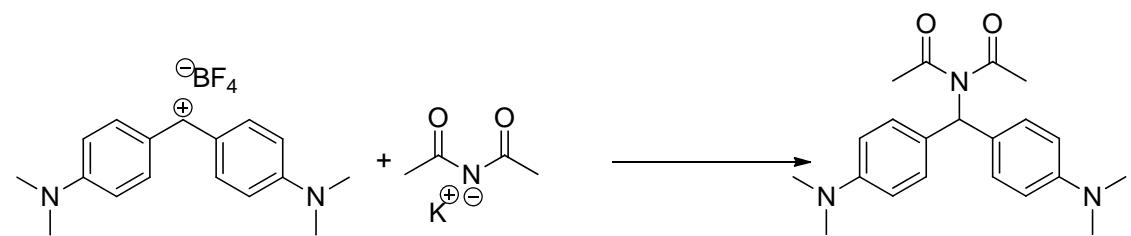


^1H -NMR (400 MHz, $d_6\text{-DMSO}$): $\delta = 2.83$ (s, 3 H), 2.89 (s, 12 H), 6.59 (s, 1 H), 6.72 (d, 4 H, $^3J = 8.8$ Hz), 6.97 (d, 4 H, $^3J = 8.7$ Hz).

^{13}C -NMR (100 MHz, $d_6\text{-DMSO}$): $\delta = 40.0$ (q), 61.6 (d), 112.3 (d), 116.5 (q, $J_{\text{CF}} = 286$ Hz), 124.5 (s), 129.0 (d), 149.8 (s), 155.9 (q, $J_{\text{CF}} = 35$ Hz).

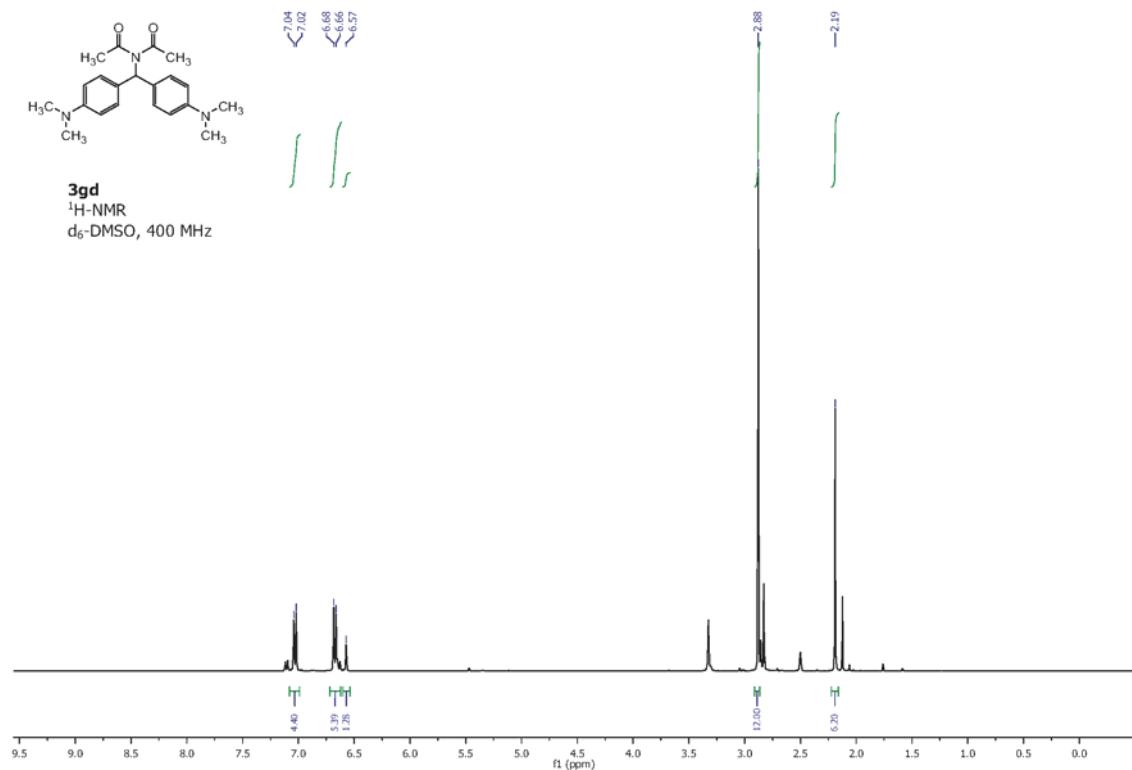


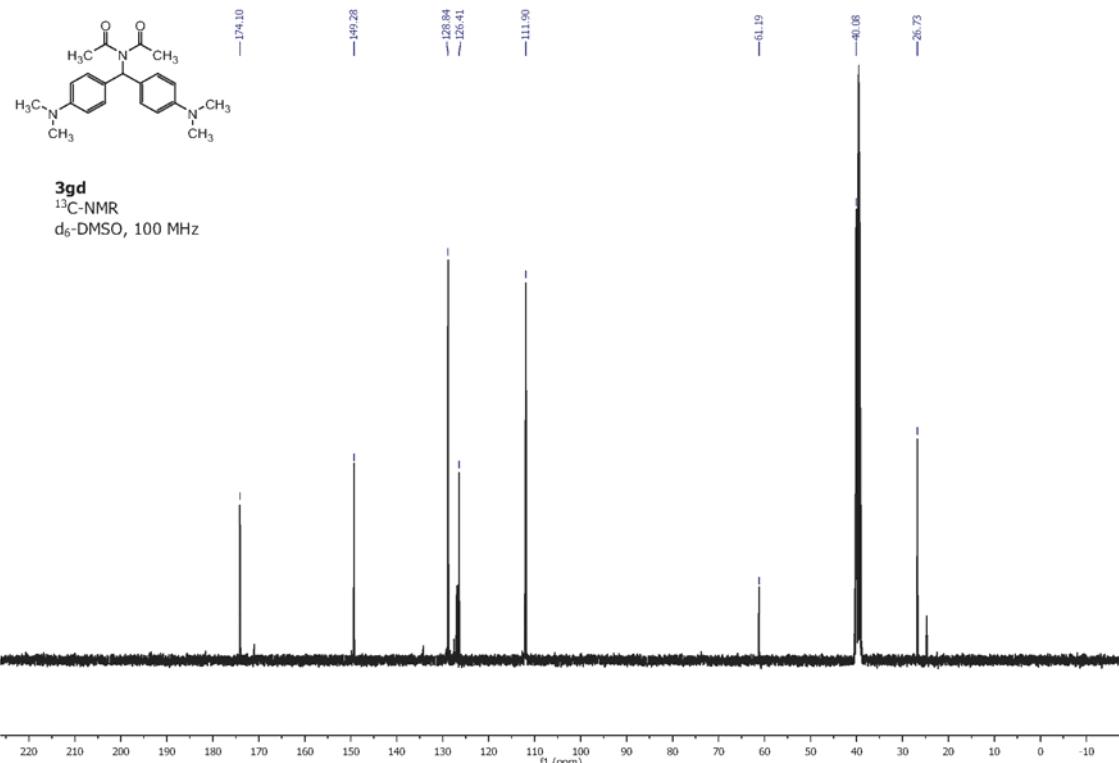
Reaction of $(dma)_2CH^+$ with diacetamide potassium salt **2g-K⁺**:



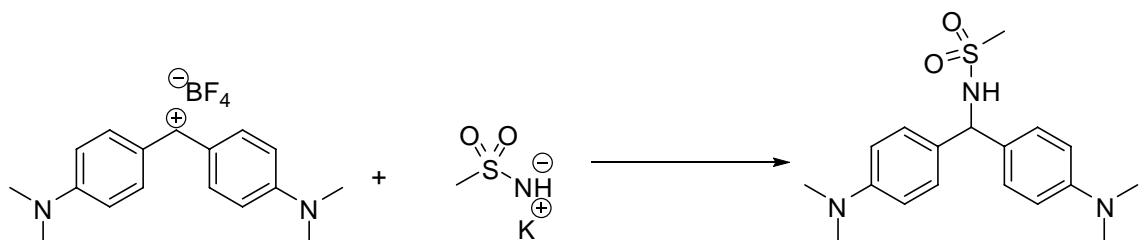
¹H-NMR (400 MHz, d₆-DMSO): δ = 2.19 (s, 6 H), 2.88 (s, 12 H), 6.57 (s, 1 H), 6.67 (d, 4 H, ³J = 8.8 Hz), 7.03 (d, 4 H, ³J = 8.8 Hz).

¹³C-NMR (100 MHz, d₆-DMSO): δ = 26.7 (q), 40.1 (q), 61.2 (d), 111.9 (d), 126.4 (s), 128.8 (d), 149.3 (s), 174.1 (s).



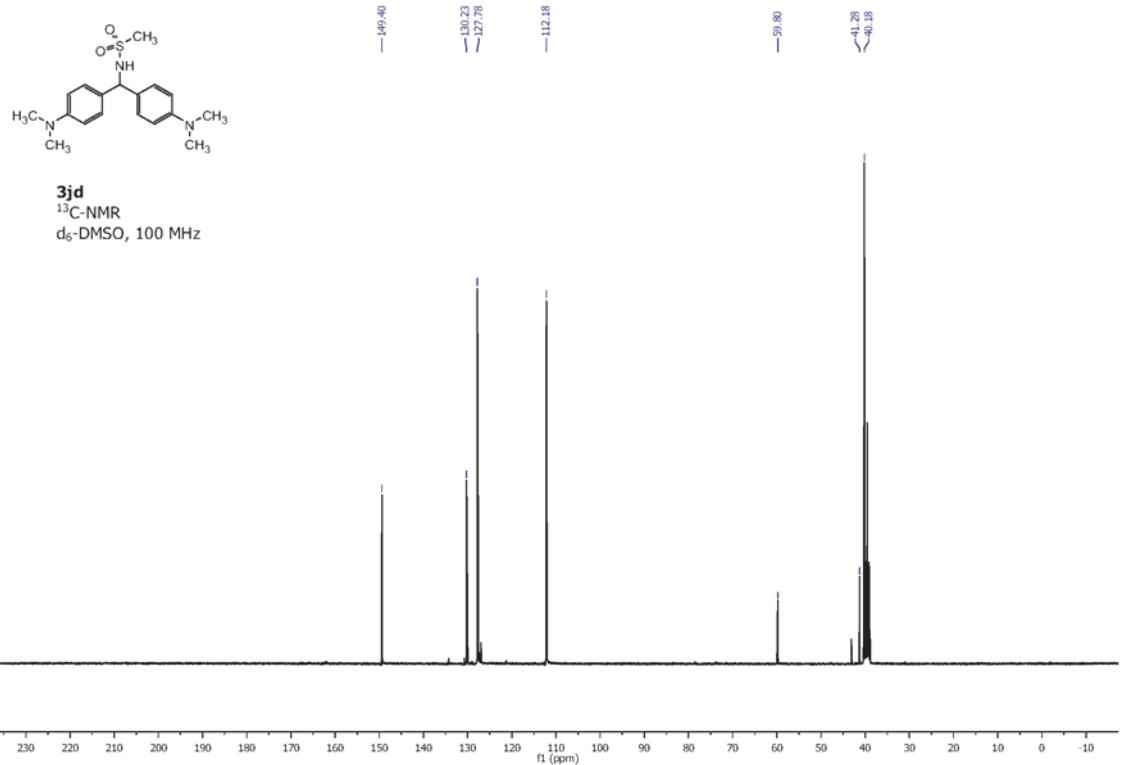
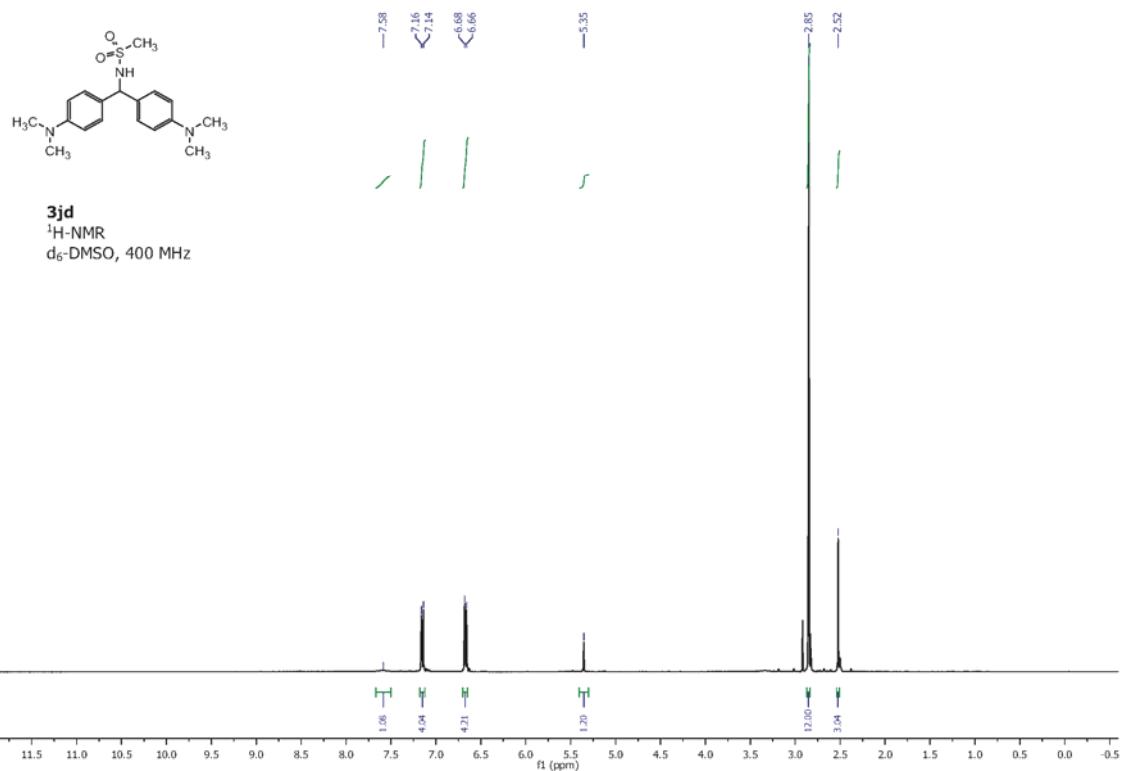


Reaction of $(\text{dma})_2\text{CH}^+$ with methanesulfonamide potassium salt **2j-K⁺**:



^1H -NMR (400 MHz, $d_6\text{-DMSO}$): $\delta = 2.52$ (s, 3 H), 2.85 (s, 12 H), 5.35 (s, 1 H), 6.67 (d, 4 H, $^3J = 8.9$ Hz), 7.15 (d, 4 H, $^3J = 8.8$ Hz), 7.58 (br s, 1H).

^{13}C -NMR (100 MHz, $d_6\text{-DMSO}$): $\delta = 40.2$ (q), 41.3 (q), 59.8 (d), 112.1 (d), 127.8 (d), 130.2 (s), 149.4 (s).

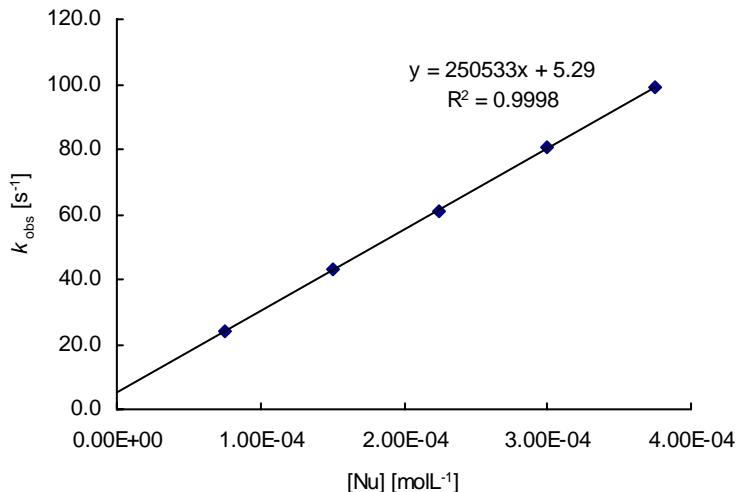


5 Kinetic Studies

5.1 Potassium Salt of Phthalimide (**2a-K⁺**)

Table 1: Kinetics of the reaction of **2a-K⁺** with **1e** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 620 nm)

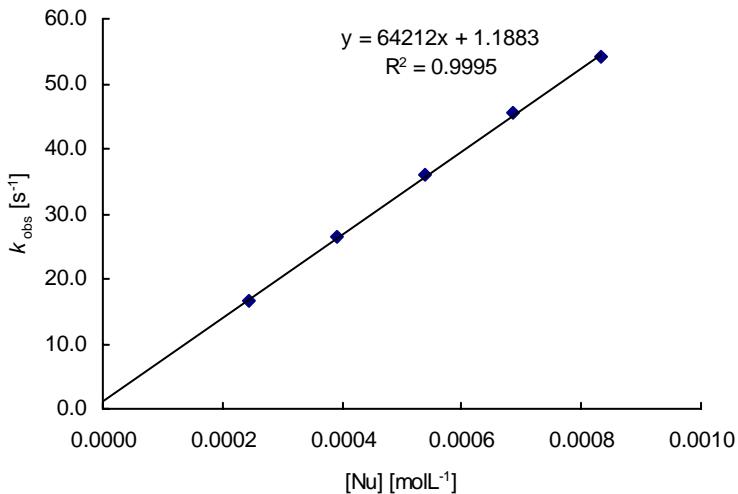
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
5.10×10^{-6}	7.50×10^{-5}	9.30×10^{-5}	14.7	1.24	24.0
5.10×10^{-6}	1.50×10^{-4}	1.86×10^{-4}	29.4	1.24	43.3
5.10×10^{-6}	2.25×10^{-4}	2.79×10^{-4}	44.1	1.24	61.0
5.10×10^{-6}	3.00×10^{-4}	3.72×10^{-4}	58.8	1.24	80.8
5.10×10^{-6}	3.75×10^{-4}	4.65×10^{-4}	73.5	1.24	99.2



$$k_2 = 2.51 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 2: Kinetics of the reaction of **2a-K⁺** with **1f** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 618 nm)

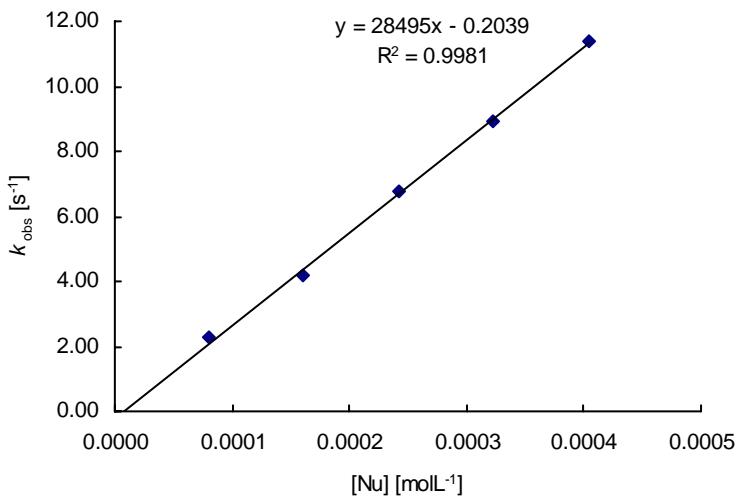
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
1.54×10^{-5}	2.45×10^{-4}	2.79×10^{-4}	15.9	1.14	16.7
1.54×10^{-5}	3.92×10^{-4}	4.46×10^{-4}	25.5	1.14	26.4
1.54×10^{-5}	5.38×10^{-4}	6.14×10^{-4}	34.9	1.14	35.9
1.54×10^{-5}	6.85×10^{-4}	7.81×10^{-4}	44.5	1.14	45.6
1.54×10^{-5}	8.32×10^{-4}	9.49×10^{-4}	54.0	1.14	54.2



$$k_2 = 6.42 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 3: Kinetics of the reaction of **2a-K⁺** with **1g** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 627 nm)

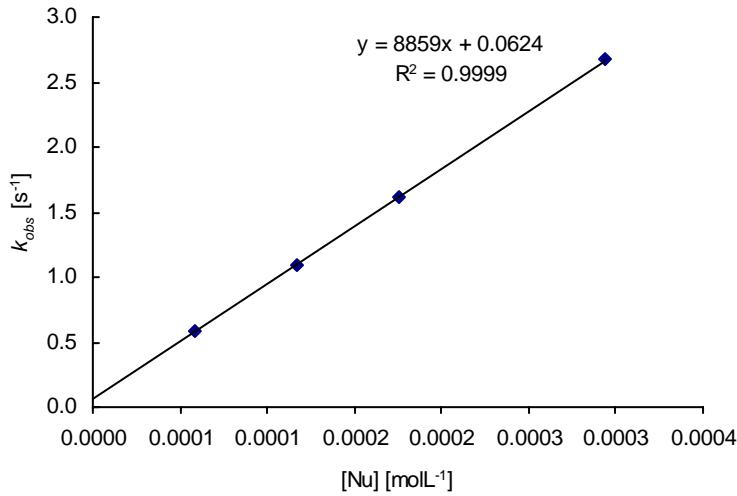
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
7.18×10^{-6}	8.07×10^{-5}	1.00×10^{-4}	11.2	1.24	2.25
7.18×10^{-6}	1.61×10^{-4}	1.76×10^{-4}	22.4	1.09	4.16
7.18×10^{-6}	2.42×10^{-4}	2.76×10^{-4}	33.7	1.14	6.77
7.18×10^{-6}	3.23×10^{-4}	3.51×10^{-4}	45.0	1.09	8.90
7.18×10^{-6}	4.04×10^{-4}	4.27×10^{-4}	56.3	1.06	11.4



$$k_2 = 2.85 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 4: Kinetics of the reaction of **2a**-K⁺ with **1h** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 635 nm)

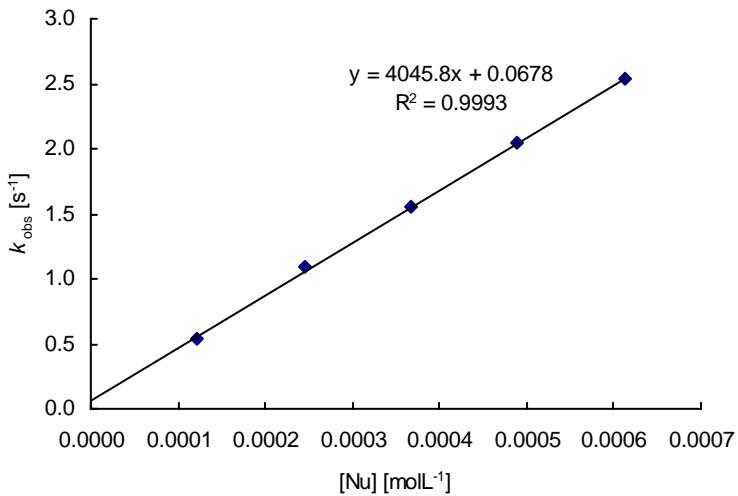
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k _{obs} [s ⁻¹]
4.06 × 10 ⁻⁶	5.87 × 10 ⁻⁵	9.30 × 10 ⁻⁵	14.5	1.58	0.59
4.06 × 10 ⁻⁶	1.17 × 10 ⁻⁴	1.86 × 10 ⁻⁴	28.8	1.59	1.09
4.06 × 10 ⁻⁶	1.76 × 10 ⁻⁴	2.79 × 10 ⁻⁴	43.3	1.59	1.62
4.06 × 10 ⁻⁶	2.94 × 10 ⁻⁴	4.65 × 10 ⁻⁴	72.4	1.58	2.67



$$k_2 = 8.86 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 5: Kinetics of the reaction of **2a**-K⁺ with **1i** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 630 nm)

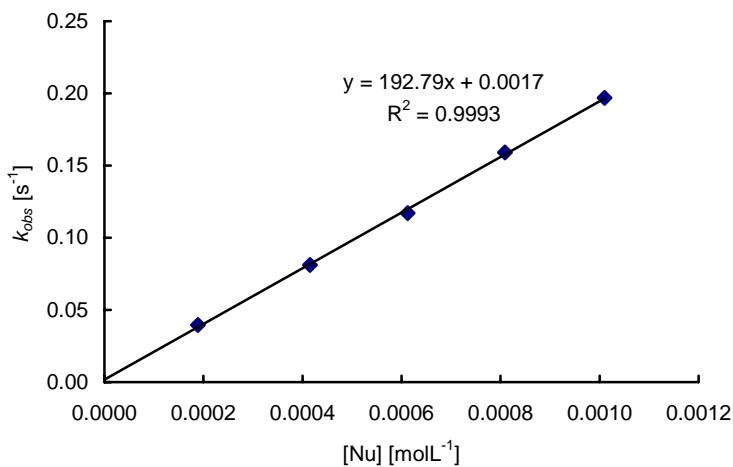
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k _{obs} [s ⁻¹]
6.53 × 10 ⁻⁶	1.22 × 10 ⁻⁴	1.86 × 10 ⁻⁴	18.7	1.52	0.537
6.53 × 10 ⁻⁶	2.45 × 10 ⁻⁴	3.72 × 10 ⁻⁴	37.5	1.52	1.09
6.53 × 10 ⁻⁶	3.67 × 10 ⁻⁴	5.58 × 10 ⁻⁴	56.2	1.52	1.56
6.53 × 10 ⁻⁶	4.90 × 10 ⁻⁴	7.44 × 10 ⁻⁴	75.0	1.52	2.04
6.53 × 10 ⁻⁶	6.12 × 10 ⁻⁴	9.30 × 10 ⁻⁴	93.7	1.52	2.54



$$k_2 = 4.05 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 6: Kinetics of the reaction of **2a-K⁺** with **1j** (20 °C, in DMSO, additive: 18-crown-6, Conventional UV/Vis for 1st run, rest stopped-flow, at 422 nm)

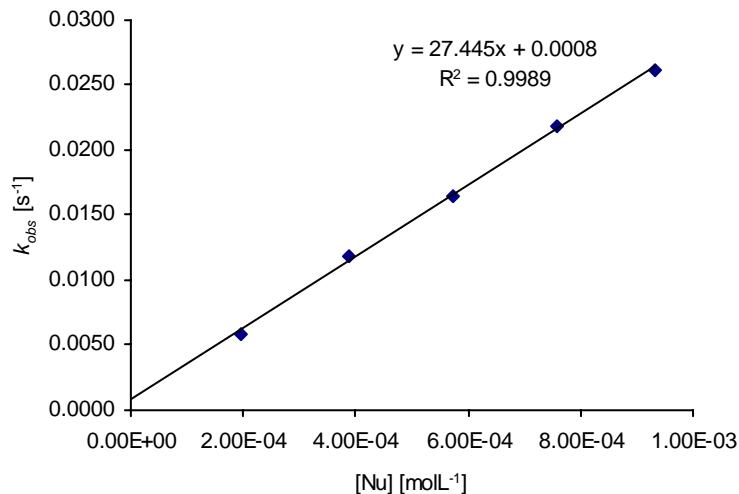
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
1.29×10^{-5}	1.89×10^{-4}	2.32×10^{-4}	14.7	1.23	3.95×10^{-2}
1.04×10^{-5}	4.15×10^{-4}	5.24×10^{-4}	39.9	1.26	8.14×10^{-2}
1.04×10^{-5}	6.12×10^{-4}	7.15×10^{-4}	58.8	1.17	1.17×10^{-1}
1.04×10^{-5}	8.09×10^{-4}	9.53×10^{-4}	77.8	1.18	1.59×10^{-1}
1.04×10^{-5}	1.01×10^{-3}	1.19×10^{-3}	97.1	1.18	1.97×10^{-1}



$$k_2 = 1.93 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 7: Kinetics of the reaction of **2a**- K^+ with **1k** (20 °C, in DMSO, additive: 18-crown-6, J&M, at 533 nm)

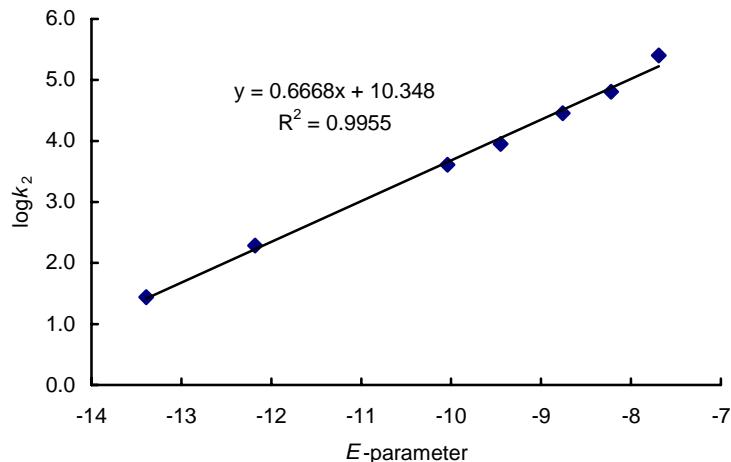
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
1.28×10^{-5}	1.97×10^{-4}	2.44×10^{-4}	15.4	1.24	5.92×10^{-3}
1.26×10^{-5}	3.88×10^{-4}	4.81×10^{-4}	30.8	1.24	1.18×10^{-2}
1.25×10^{-5}	5.74×10^{-4}	7.12×10^{-4}	45.9	1.24	1.65×10^{-2}
1.24×10^{-5}	7.59×10^{-4}	9.41×10^{-4}	61.2	1.24	2.18×10^{-2}
1.22×10^{-5}	9.33×10^{-4}	1.16×10^{-3}	76.5	1.24	2.62×10^{-2}



$$k_2 = 2.74 \times 10^1 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 8: Determination of N- and s-parameters for **2a** at 20 °C in DMSO.

Electrophile	E-parameter	k_2 [L mol ⁻¹ s ⁻¹]	$\log k_2$
1e	-7.69	2.51×10^5	5.40
1f	-8.22	6.42×10^4	4.81
1g	-8.76	2.85×10^4	4.45
1h	-9.45	8.86×10^3	3.95
1i	-10.04	4.05×10^3	3.61
1j	-12.18	1.93×10^2	2.29
1k	-13.39	2.74×10^1	1.44



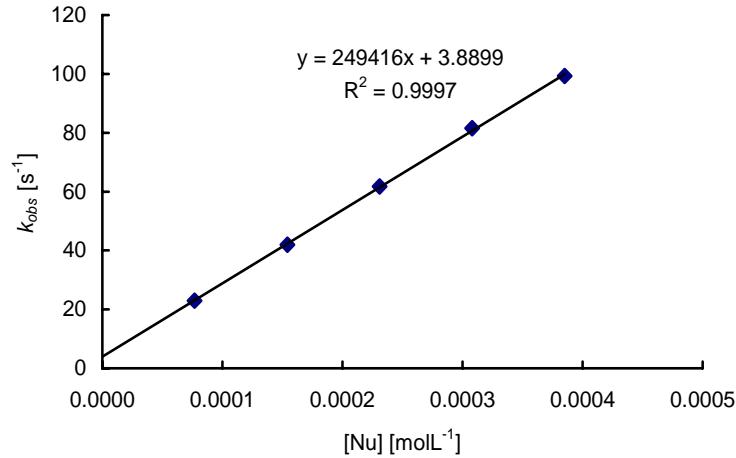
$$N = 15.52; s = 0.67$$

5.2 Tetramethylammonium Salt of Phthalimide (**2a-NMe₄⁺**)

5.2.1 Reactions in Dimethylsulfoxide

Table 9: Kinetics of the reaction of **2a-NMe₄⁺** with **1e** (20 °C, in DMSO, stopped-flow, at 620 nm)

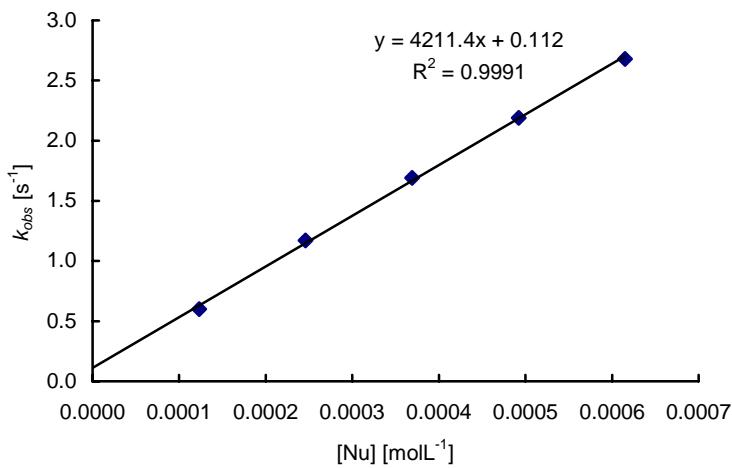
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
7.39 × 10 ⁻⁶	7.69 × 10 ⁻⁵	10.4	23.0
7.39 × 10 ⁻⁶	1.54 × 10 ⁻⁴	20.8	42.0
7.39 × 10 ⁻⁶	2.31 × 10 ⁻⁴	31.3	61.7
7.39 × 10 ⁻⁶	3.08 × 10 ⁻⁴	41.7	81.5
7.39 × 10 ⁻⁶	3.85 × 10 ⁻⁴	52.1	99.3



$$k_2 = 2.49 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 10: Kinetics of the reaction of **2a-NMe₄⁺** with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

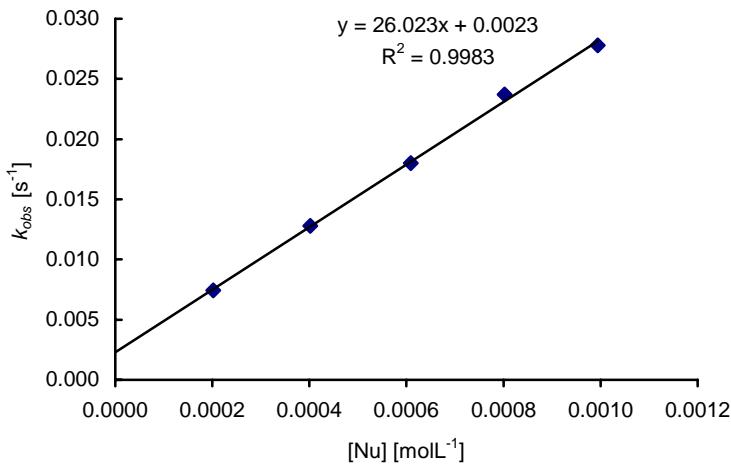
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
6.91 × 10 ⁻⁶	1.23 × 10 ⁻⁴	17.8	0.601
6.91 × 10 ⁻⁶	2.46 × 10 ⁻⁴	35.6	1.17
6.91 × 10 ⁻⁶	3.69 × 10 ⁻⁴	53.4	1.69
6.91 × 10 ⁻⁶	4.92 × 10 ⁻⁴	71.2	2.19
6.91 × 10 ⁻⁶	6.15 × 10 ⁻⁴	89.0	2.68



$$k_2 = 4.21 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 11: Kinetics of the reaction of **2a-NMe₄⁺** with **1k** (20 °C, in DMSO, J&M, at 533 nm)

[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
1.20 × 10 ⁻⁵	2.02 × 10 ⁻⁴	16.8	7.44 × 10 ⁻³
1.20 × 10 ⁻⁵	4.02 × 10 ⁻⁴	33.5	1.28 × 10 ⁻²
1.20 × 10 ⁻⁵	6.09 × 10 ⁻⁴	50.8	1.80 × 10 ⁻²
1.20 × 10 ⁻⁵	8.02 × 10 ⁻⁴	66.8	2.37 × 10 ⁻²
1.20 × 10 ⁻⁵	9.94 × 10 ⁻⁴	82.8	2.78 × 10 ⁻²

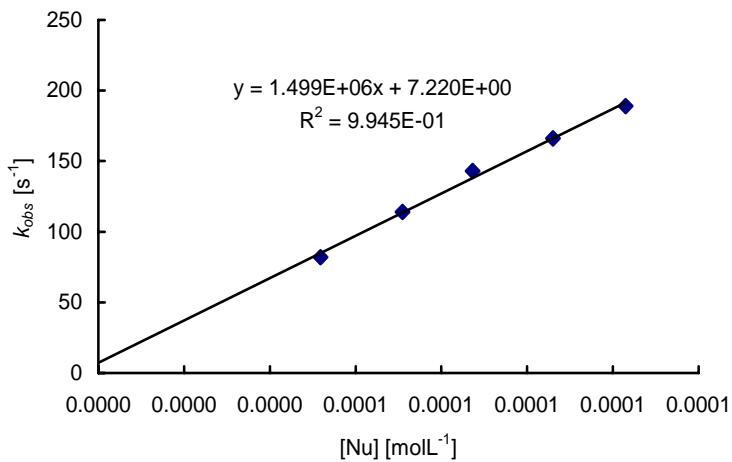


$$k_2 = 2.60 \times 10^1 \text{ L mol}^{-1} \text{ s}^{-1}$$

5.2.2 Reactions in Acetonitrile

Table 12: Kinetics of the reaction of **2a-NMe₄⁺** with **1e** (20 °C, in CH₃CN, stopped-flow, at 620 nm)

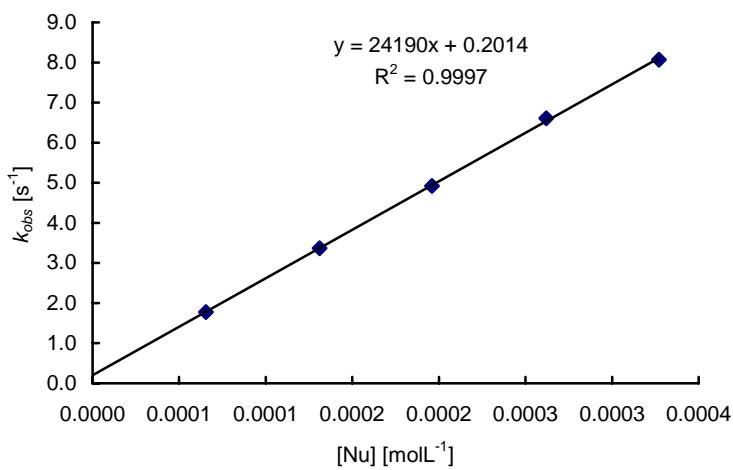
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
4.67 × 10 ⁻⁶	5.18 × 10 ⁻⁵	11.1	82.0
4.67 × 10 ⁻⁶	7.09 × 10 ⁻⁵	15.2	114
4.67 × 10 ⁻⁶	8.73 × 10 ⁻⁵	18.7	143
4.67 × 10 ⁻⁶	1.06 × 10 ⁻⁴	22.7	166
4.67 × 10 ⁻⁶	1.23 × 10 ⁻⁴	26.3	189



$$k_2 = 1.50 \times 10^6 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 13: Kinetics of the reaction of **2a-NMe₄⁺** with **1i** (20 °C, in CH₃CN, stopped-flow, at 630 nm)

[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
5.60 × 10 ⁻⁶	6.55 × 10 ⁻⁵	11.7	1.78
5.60 × 10 ⁻⁶	1.31 × 10 ⁻⁴	23.4	3.37
5.60 × 10 ⁻⁶	1.96 × 10 ⁻⁴	35.0	4.92
5.60 × 10 ⁻⁶	2.62 × 10 ⁻⁴	46.8	6.61
5.60 × 10 ⁻⁶	3.27 × 10 ⁻⁴	58.4	8.07



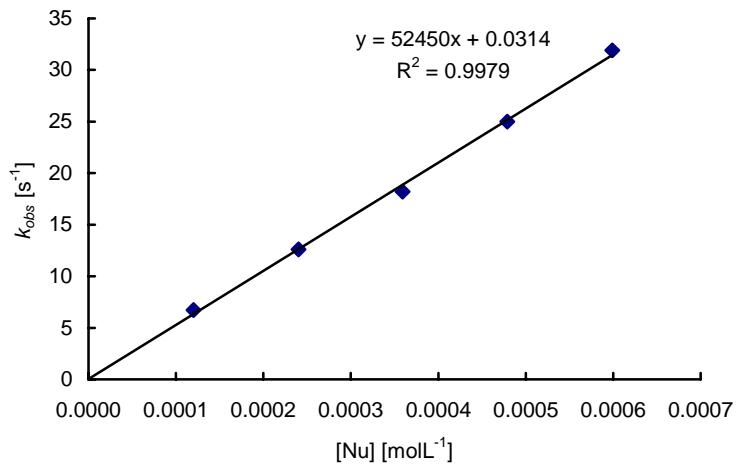
$$k_2 = 2.42 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

5.3 Tetrabutylammonium Salt of Succinimide (**2b-NBu₄⁺**)

5.3.1 Reactions in Dimethylsulfoxide

Table 14: Kinetics of the reaction of **2b-NBu₄⁺** with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

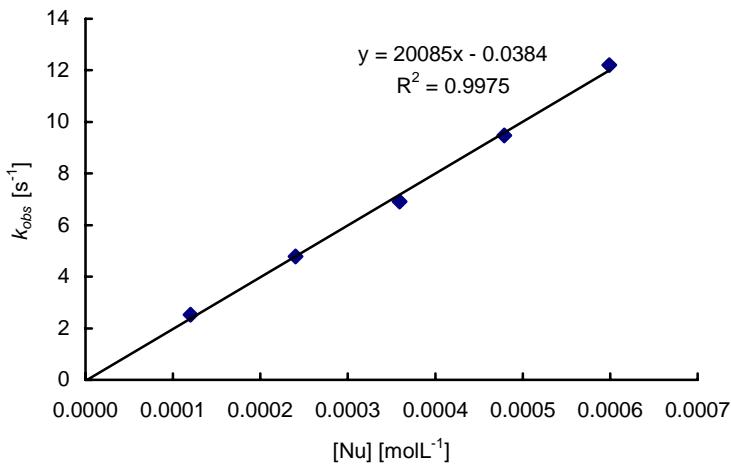
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
1.08 × 10 ⁻⁵	1.20 × 10 ⁻⁴	11.1	6.71
1.08 × 10 ⁻⁵	2.40 × 10 ⁻⁴	22.2	12.6
1.08 × 10 ⁻⁵	3.59 × 10 ⁻⁴	33.3	18.2
1.08 × 10 ⁻⁵	4.79 × 10 ⁻⁴	44.4	25.0
1.08 × 10 ⁻⁵	5.99 × 10 ⁻⁴	55.5	31.9



$$k_2 = 5.25 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 15: Kinetics of the reaction of **2b-NBu₄⁺** with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

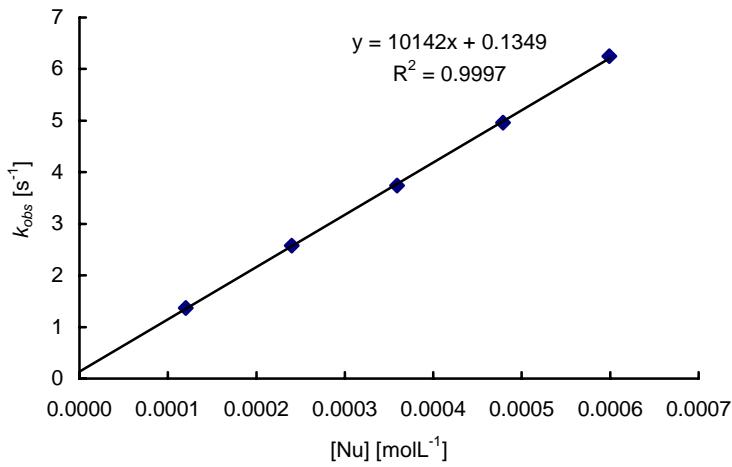
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
6.85 × 10 ⁻⁶	1.20 × 10 ⁻⁴	17.5	2.53
6.85 × 10 ⁻⁶	2.40 × 10 ⁻⁴	35.0	4.78
6.85 × 10 ⁻⁶	3.59 × 10 ⁻⁴	52.4	6.91
6.85 × 10 ⁻⁶	4.79 × 10 ⁻⁴	69.9	9.48
6.85 × 10 ⁻⁶	5.99 × 10 ⁻⁴	87.4	12.2



$$k_2 = 2.01 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 16: Kinetics of the reaction of **2b-NBu₄⁺** with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

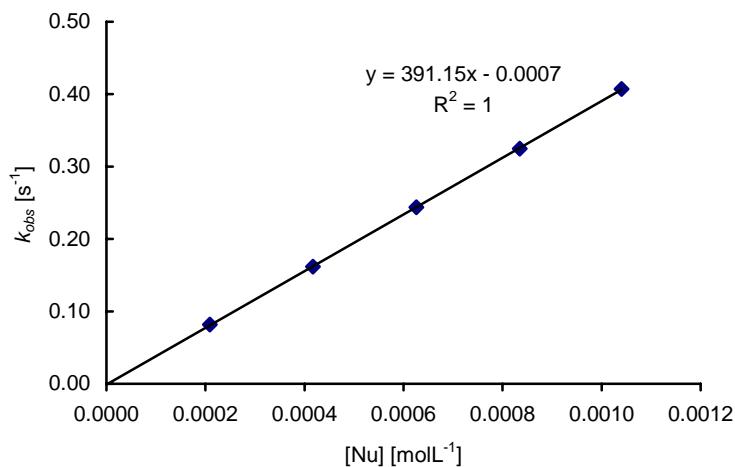
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
6.53×10^{-6}	1.20×10^{-4}	18.4	1.37
6.53×10^{-6}	2.40×10^{-4}	36.8	2.58
6.53×10^{-6}	3.59×10^{-4}	55.0	3.74
6.53×10^{-6}	4.79×10^{-4}	73.4	4.96
6.53×10^{-6}	5.99×10^{-4}	91.7	6.25



$$k_2 = 1.01 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 17: Kinetics of the reaction of **2b-NBu₄⁺** with **1j** (20 °C, in DMSO, stopped-flow, at 422 nm)

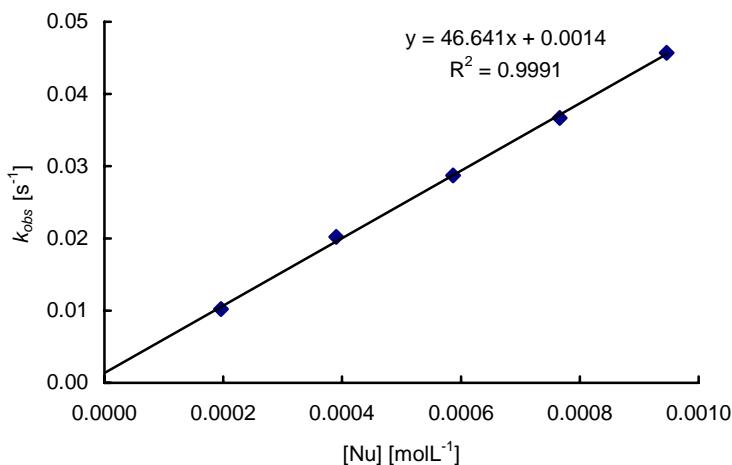
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
1.04 × 10 ⁻⁵	2.09 × 10 ⁻⁴	20.1	8.17 × 10 ⁻²
1.04 × 10 ⁻⁵	4.17 × 10 ⁻⁴	40.1	0.162
1.04 × 10 ⁻⁵	6.26 × 10 ⁻⁴	60.2	0.244
1.04 × 10 ⁻⁵	8.35 × 10 ⁻⁴	80.3	0.325
1.04 × 10 ⁻⁵	1.04 × 10 ⁻³	100	0.407



$$k_2 = 3.91 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 18: Kinetics of the reaction of **2b-NBu₄⁺** with **1k** (20 °C, in DMSO, Conventional UV/Vis, at 533 nm)

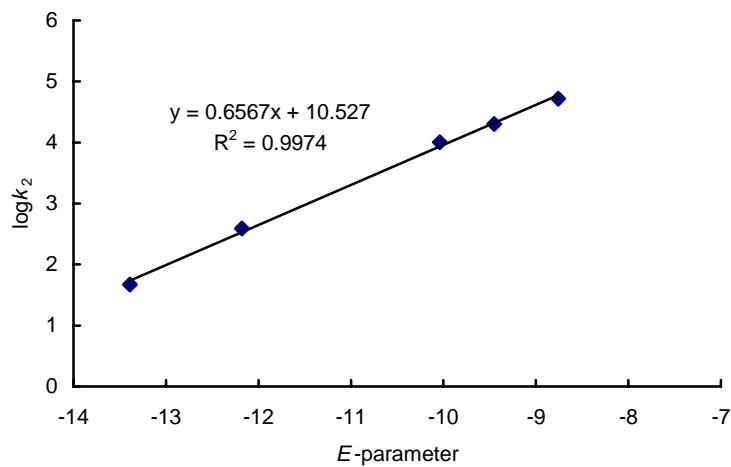
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
1.22 × 10 ⁻⁵	1.96 × 10 ⁻⁴	16.1	1.02 × 10 ⁻²
1.22 × 10 ⁻⁵	3.90 × 10 ⁻⁴	32.0	2.02 × 10 ⁻²
1.22 × 10 ⁻⁵	5.87 × 10 ⁻⁴	48.1	2.87 × 10 ⁻²
1.19 × 10 ⁻⁵	7.66 × 10 ⁻⁴	64.4	3.67 × 10 ⁻²
1.18 × 10 ⁻⁵	9.46 × 10 ⁻⁴	80.2	4.57 × 10 ⁻²



$$k_2 = 4.66 \times 10^1 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 19: Determination of N - and s -parameters for **2b** at 20 °C in DMSO.

Electrophile	E -parameter	$k_2 [\text{L mol}^{-1} \text{ s}^{-1}]$	$\log k_2$
1g	-8.76	5.25×10^4	4.72
1h	-9.45	2.01×10^4	4.30
1i	-10.04	1.01×10^4	4.01
1j	-12.18	3.91×10^2	2.59
1k	-13.39	4.66×10^1	1.67

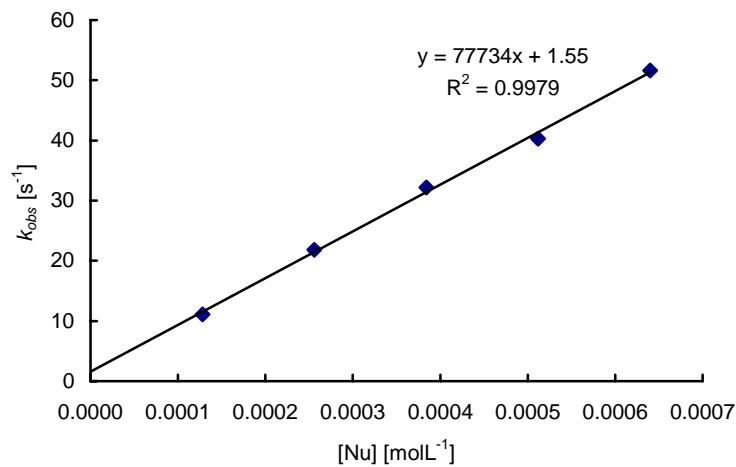


$$N = 16.03; s = 0.66$$

5.3.2 Reactions in Acetonitrile

Table 20: Kinetics of the reaction of **2b-NBu₄⁺** with **1h** (20 °C, in CH₃CN, stopped-flow, at 635 nm)

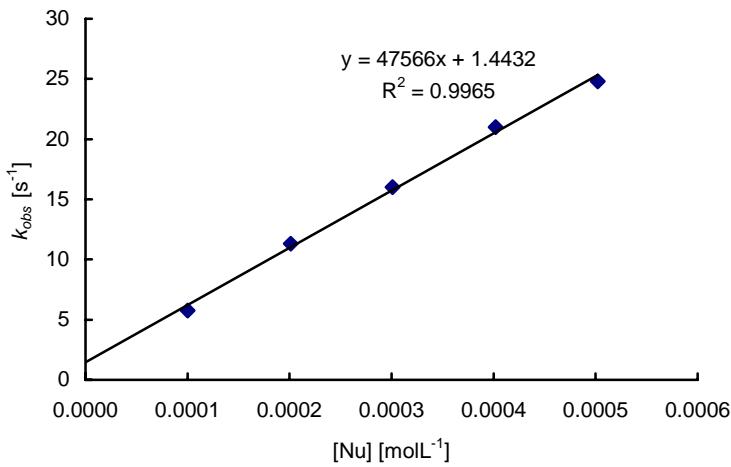
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
5.98 × 10 ⁻⁶	1.28 × 10 ⁻⁴	21.4	11.1
5.98 × 10 ⁻⁶	2.56 × 10 ⁻⁴	42.8	21.8
5.98 × 10 ⁻⁶	3.84 × 10 ⁻⁴	64.2	32.2
5.98 × 10 ⁻⁶	5.12 × 10 ⁻⁴	85.6	40.3
5.98 × 10 ⁻⁶	6.40 × 10 ⁻⁴	107	51.6



$$k_2 = 7.77 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 21: Kinetics of the reaction of **2b-NBu₄⁺** with **1i** (20 °C, in CH₃CN, stopped-flow, at 630 nm)

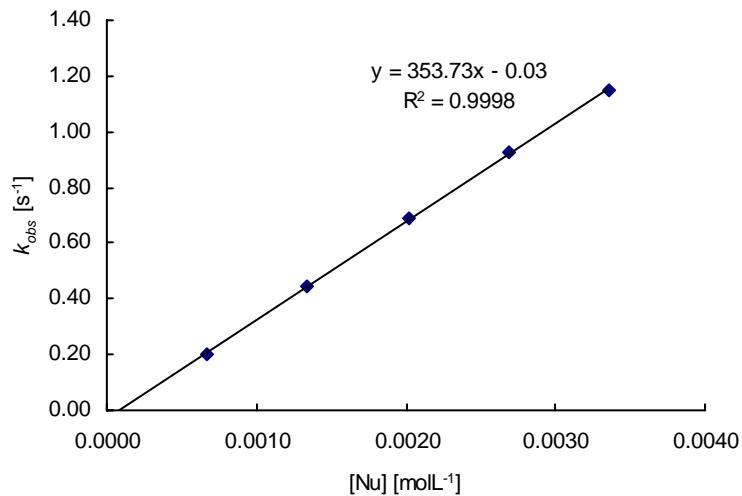
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
5.63 × 10 ⁻⁶	1.00 × 10 ⁻⁴	17.8	5.75
5.63 × 10 ⁻⁶	2.01 × 10 ⁻⁴	35.7	11.3
5.63 × 10 ⁻⁶	3.01 × 10 ⁻⁴	53.5	16.0
5.63 × 10 ⁻⁶	4.02 × 10 ⁻⁴	71.4	21.0
5.63 × 10 ⁻⁶	5.02 × 10 ⁻⁴	89.2	24.8



$$k_2 = 4.76 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 22: Kinetics of the reaction of **2b-NBu₄⁺** with **1j** (20 °C, in CH₃CN, stopped-flow, at 422 nm)

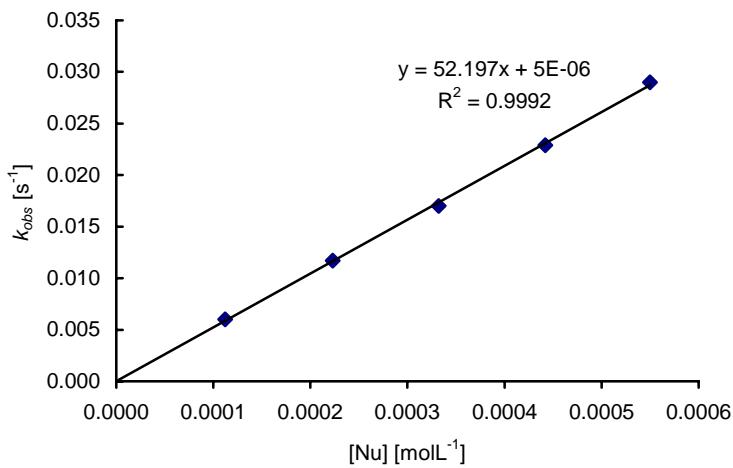
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
5.13×10^{-5}	6.71×10^{-4}	13.1	2.03×10^{-1}
5.13×10^{-5}	1.34×10^{-3}	26.2	4.46×10^{-1}
5.13×10^{-5}	2.01×10^{-3}	39.2	6.87×10^{-1}
5.13×10^{-5}	2.69×10^{-3}	52.3	9.26×10^{-1}
5.13×10^{-5}	3.36×10^{-3}	65.4	1.15×10^0



$$k_2 = 3.54 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 23: Kinetics of the reaction of **2b-NBu₄⁺** with **1k** (20 °C, in CH₃CN, Conventional UV/Vis, at 533 nm)

[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
1.02 × 10 ⁻⁵	1.12 × 10 ⁻⁴	11.0	6.02 × 10 ⁻³
1.01 × 10 ⁻⁵	2.23 × 10 ⁻⁴	22.1	1.17 × 10 ⁻²
1.00 × 10 ⁻⁵	3.32 × 10 ⁻⁴	33.2	1.70 × 10 ⁻²
9.98 × 10 ⁻⁶	4.42 × 10 ⁻⁴	44.3	2.29 × 10 ⁻²
9.94 × 10 ⁻⁶	5.50 × 10 ⁻⁴	55.3	2.90 × 10 ⁻²

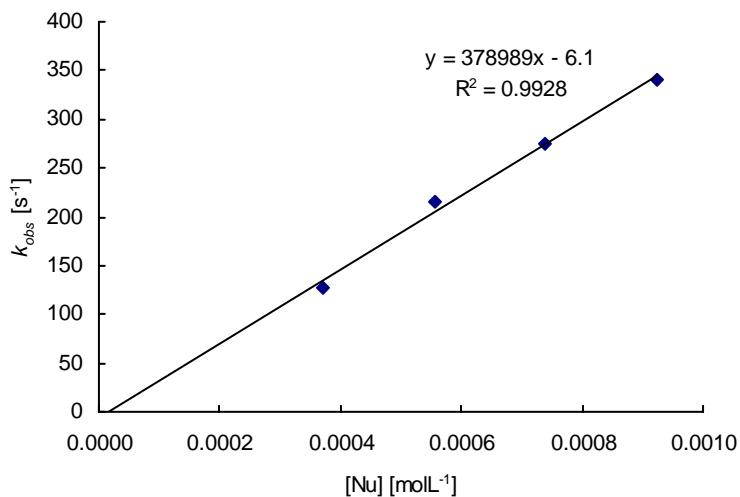


$$k_2 = 5.22 \times 10^1 \text{ L mol}^{-1} \text{ s}^{-1}$$

5.4 Potassium Salt of Maleimide (**2c-K⁺**)

Table 24: Kinetics of the reaction of **2c-K⁺** with **1e** (20 °C, in DMSO, stopped-flow, at 620 nm)

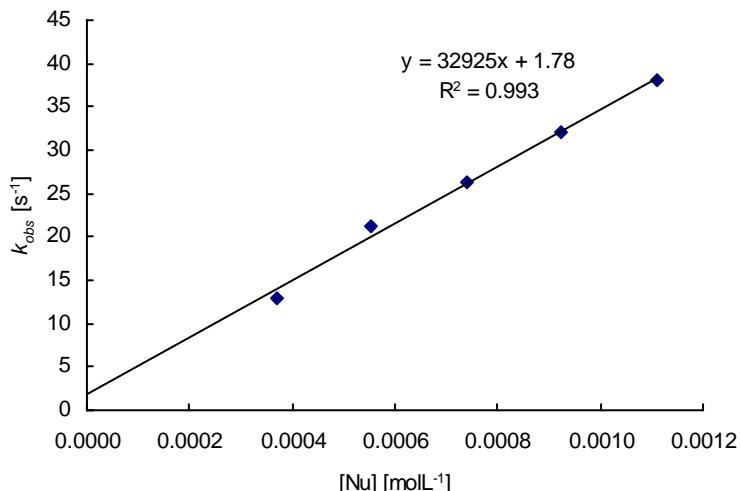
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.20 × 10 ⁻⁵	3.70 × 10 ⁻⁴	16.8	127
2.20 × 10 ⁻⁵	5.55 × 10 ⁻⁴	25.2	216
2.20 × 10 ⁻⁵	7.40 × 10 ⁻⁴	33.6	274
2.20 × 10 ⁻⁵	9.25 × 10 ⁻⁴	42.0	341



$$k_2 = 3.79 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 25: Kinetics of the reaction of **2c-K⁺** with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

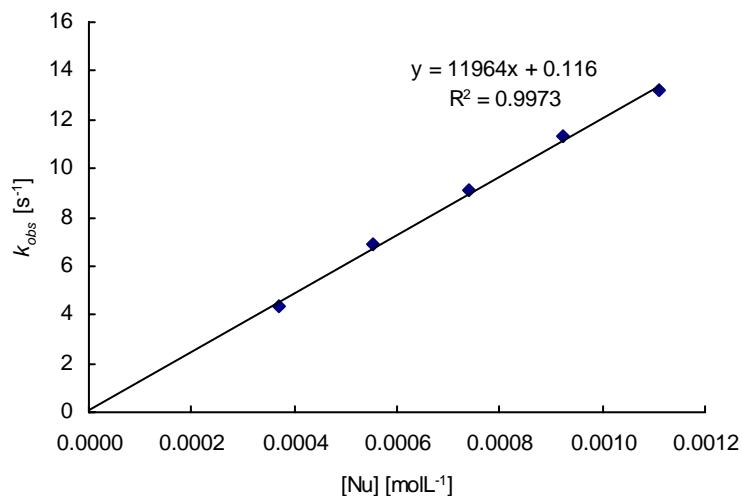
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.06×10^{-5}	3.70×10^{-4}	18.0	13.0
2.06×10^{-5}	5.55×10^{-4}	26.9	21.3
2.06×10^{-5}	7.40×10^{-4}	35.9	26.3
2.06×10^{-5}	9.25×10^{-4}	44.9	32.0
2.06×10^{-5}	1.11×10^{-3}	53.9	38.1



$$k_2 = 3.29 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 26: Kinetics of the reaction of **2c**-K⁺ with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

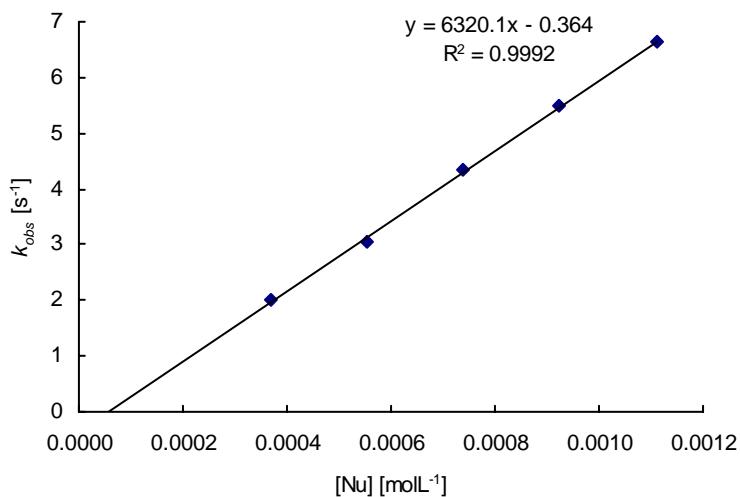
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.34×10^{-5}	3.70×10^{-4}	15.8	4.34
2.34×10^{-5}	5.55×10^{-4}	23.7	6.89
2.34×10^{-5}	7.40×10^{-4}	31.6	9.11
2.34×10^{-5}	9.25×10^{-4}	39.5	11.3
2.34×10^{-5}	1.11×10^{-3}	47.4	13.2



$$k_2 = 1.20 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 27: Kinetics of the reaction of **2c**-K⁺ with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

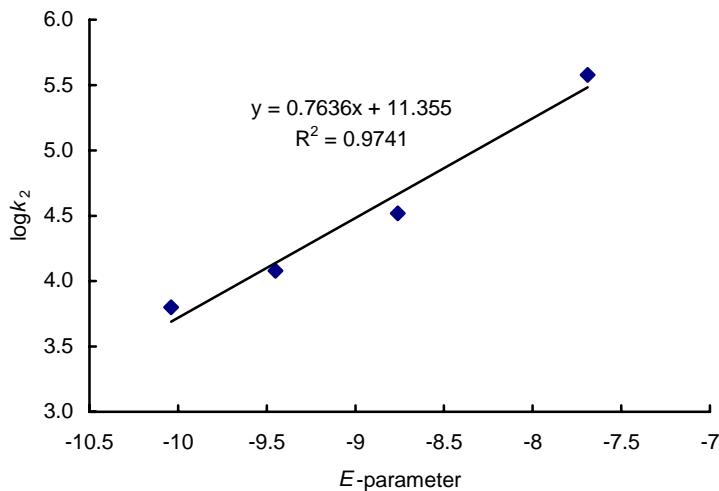
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.50×10^{-5}	3.70×10^{-4}	14.8	2.01
2.50×10^{-5}	5.55×10^{-4}	22.2	3.06
2.50×10^{-5}	7.40×10^{-4}	29.6	4.35
2.50×10^{-5}	9.25×10^{-4}	37.0	5.51
2.50×10^{-5}	1.11×10^{-3}	44.4	6.63



$$k_2 = 6.32 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 28: Determination of N - and s -parameters for **2c** at 20 °C in DMSO.

Electrophile	E -parameter	k_2 [$\text{L mol}^{-1} \text{ s}^{-1}$]	$\log k_2$
1e	-7.69	3.79×10^5	5.58
1g	-8.76	3.29×10^4	4.52
1h	-9.45	1.20×10^4	4.08
1i	-10.04	6.32×10^3	4.80

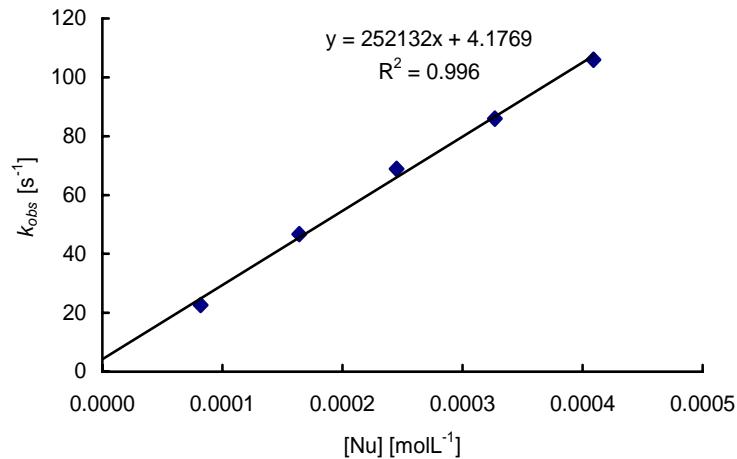


$$N = 14.87; s = 0.76$$

5.5 Potassium Salt of 2,2,2-Trifluoroacetamide (**2d-K⁺**)

Table 29: Kinetics of the reaction of **2d-K⁺** with **1e** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 620 nm)

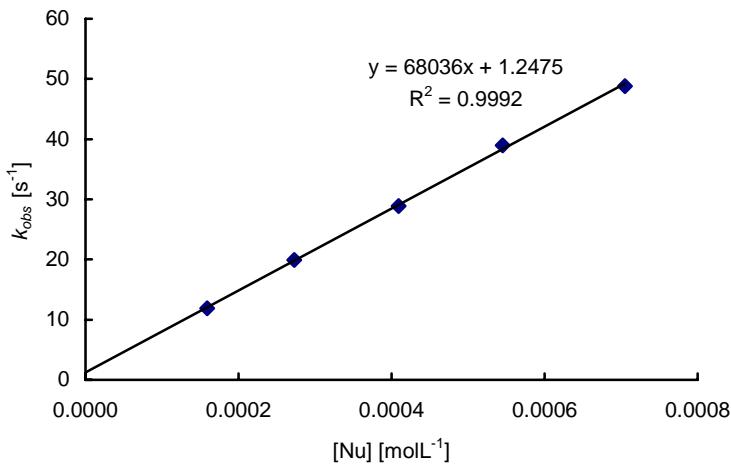
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	<i>k_{obs}</i> [s ⁻¹]
6.88×10^{-6}	8.18×10^{-5}	9.34×10^{-5}	11.9	1.14	22.6
6.88×10^{-6}	1.64×10^{-4}	1.87×10^{-4}	23.8	1.14	46.7
6.88×10^{-6}	2.45×10^{-4}	2.80×10^{-4}	35.6	1.14	68.9
6.88×10^{-6}	3.27×10^{-4}	3.74×10^{-4}	47.5	1.14	86.1
6.88×10^{-6}	4.09×10^{-4}	4.67×10^{-4}	59.4	1.14	106



$$k_2 = 2.52 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 30: Kinetics of the reaction of **2d-K⁺** with **1f** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 618 nm)

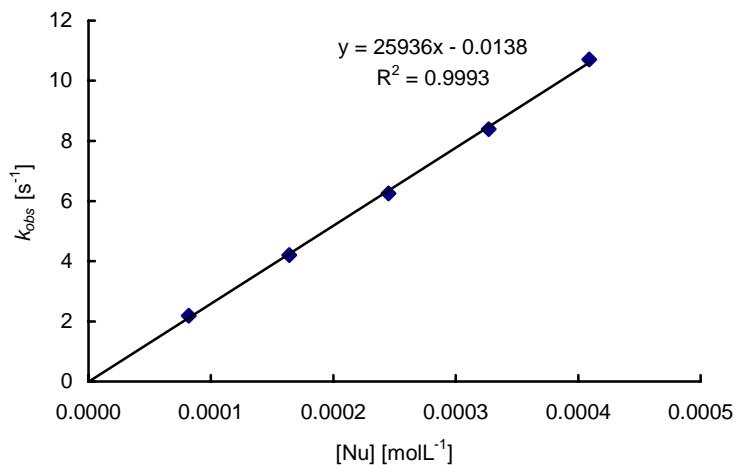
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	<i>k_{obs}</i> [s ⁻¹]
1.30×10^{-5}	1.59×10^{-4}	1.93×10^{-4}	12.2	1.21	11.9
1.30×10^{-5}	2.73×10^{-4}	3.41×10^{-4}	21.0	1.25	19.9
1.30×10^{-5}	4.09×10^{-4}	5.00×10^{-4}	31.5	1.22	28.9
1.30×10^{-5}	5.45×10^{-4}	6.59×10^{-4}	41.9	1.21	39.0
1.30×10^{-5}	7.05×10^{-4}	8.41×10^{-4}	54.2	1.19	48.8



$$k_2 = 6.80 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 31: Kinetics of the reaction of **2d-K⁺** with **1g** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 627 nm)

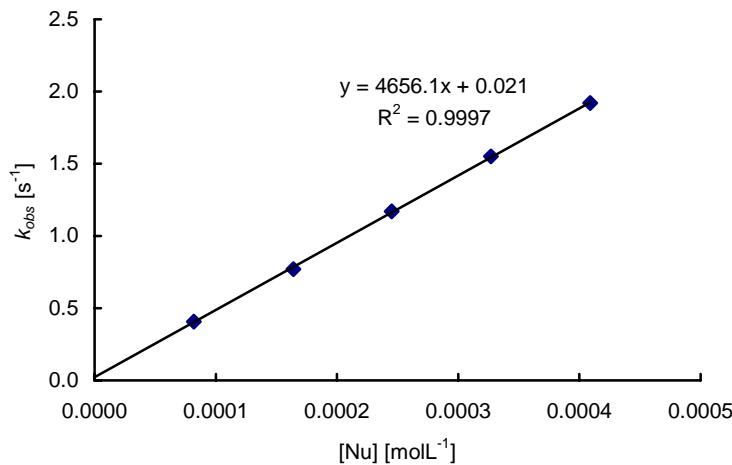
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
6.92×10^{-6}	8.18×10^{-5}	9.34×10^{-5}	11.8	1.14	2.19
6.92×10^{-6}	1.64×10^{-4}	1.87×10^{-4}	23.7	1.14	4.21
6.92×10^{-6}	2.45×10^{-4}	2.80×10^{-4}	35.4	1.14	6.26
6.92×10^{-6}	3.27×10^{-4}	3.74×10^{-4}	47.3	1.14	8.39
6.92×10^{-6}	4.09×10^{-4}	4.67×10^{-4}	59.1	1.14	10.7



$$k_2 = 2.59 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 32: Kinetics of the reaction of **2d**-K⁺ with **1i** (20 °C, in DMSO, additive: 18-crown-6, stopped-flow, at 630 nm)

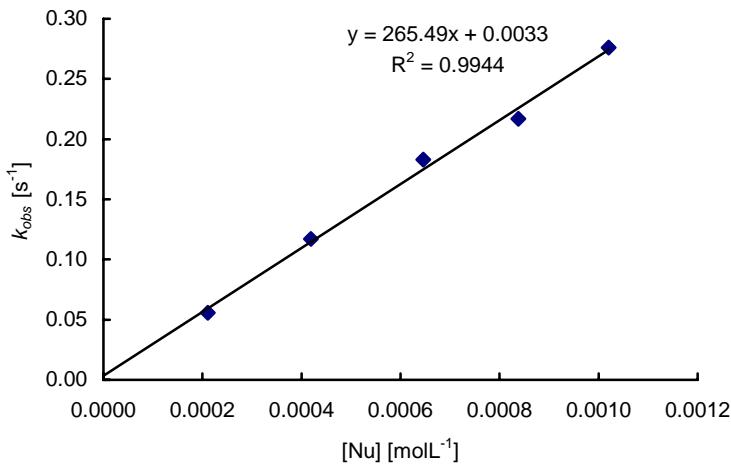
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	<i>k</i> _{obs} [s ⁻¹]
6.97 × 10 ⁻⁶	8.18 × 10 ⁻⁵	9.34 × 10 ⁻⁵	11.7	1.14	0.407
6.97 × 10 ⁻⁶	1.64 × 10 ⁻⁴	1.87 × 10 ⁻⁴	23.5	1.14	0.771
6.97 × 10 ⁻⁶	2.45 × 10 ⁻⁴	2.80 × 10 ⁻⁴	35.2	1.14	1.17
6.97 × 10 ⁻⁶	3.27 × 10 ⁻⁴	3.74 × 10 ⁻⁴	46.9	1.14	1.55
6.97 × 10 ⁻⁶	4.09 × 10 ⁻⁴	4.67 × 10 ⁻⁴	58.7	1.14	1.92



$$k_2 = 4.66 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 33: Kinetics of the reaction of **2d**-K⁺ with **1j** (20 °C, in DMSO, additive: 18-crown-6, Conventional UV/Vis for 1st-3rd run, stopped-flow for 4th and 5th run, at 422 nm)

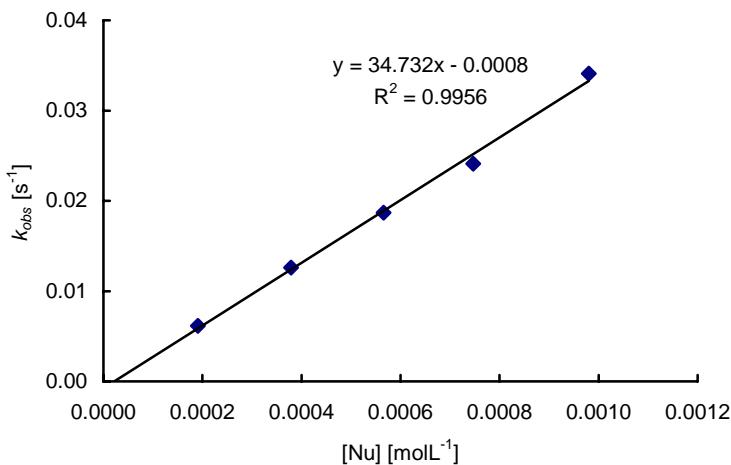
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	<i>k</i> _{obs} [s ⁻¹]
1.35 × 10 ⁻⁵	2.11 × 10 ⁻⁴	2.70 × 10 ⁻⁴	15.6	1.28	5.59 × 10 ⁻²
1.34 × 10 ⁻⁵	4.19 × 10 ⁻⁴	5.36 × 10 ⁻⁴	31.3	1.28	0.117
1.38 × 10 ⁻⁵	6.46 × 10 ⁻⁴	8.26 × 10 ⁻⁴	46.8	1.28	0.183
1.04 × 10 ⁻⁵	8.38 × 10 ⁻⁴	1.07 × 10 ⁻³	80.6	1.28	0.217
1.04 × 10 ⁻⁵	1.02 × 10 ⁻³	1.33 × 10 ⁻³	98.1	1.30	0.276



$$k_2 = 2.65 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 34: Kinetics of the reaction of **2d-K⁺** with **1k** (20 °C, in DMSO, additive: 18-crown-6, Conventional UV/Vis, at 533 nm)

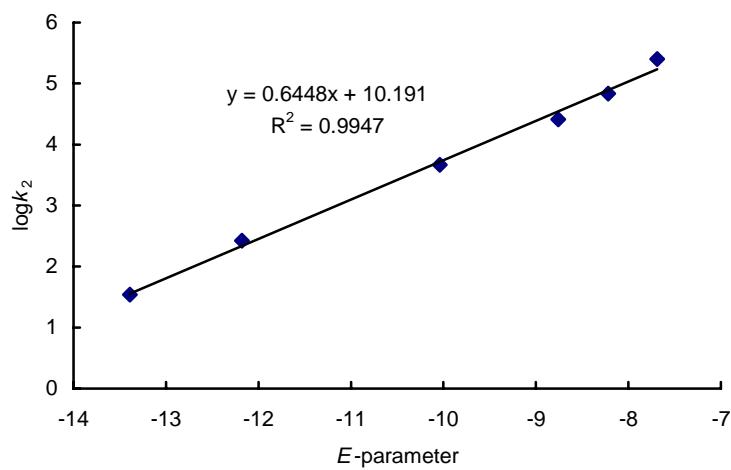
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	[18-crown-6]/[Nu]	k_{obs} [s ⁻¹]
1.35×10^{-5}	1.91×10^{-4}	2.58×10^{-4}	14.1	1.35	6.16×10^{-3}
1.35×10^{-5}	3.79×10^{-4}	4.93×10^{-4}	28.1	1.30	1.26×10^{-2}
1.34×10^{-5}	5.66×10^{-4}	7.46×10^{-4}	42.2	1.32	1.87×10^{-2}
1.32×10^{-5}	7.47×10^{-4}	9.70×10^{-4}	56.6	1.30	2.41×10^{-2}
1.36×10^{-5}	9.80×10^{-4}	1.23×10^{-3}	72.1	1.26	3.41×10^{-2}



$$k_2 = 3.47 \times 10^1 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 35: Determination of *N*- and *s*-parameters for **2d** at 20 °C in DMSO.

Electrophile	<i>E</i> -parameter	k_2 [L mol ⁻¹ s ⁻¹]	lg k_2
1e	-7.69	2.52×10^5	5.40
1f	-8.22	6.80×10^4	4.83
1g	-8.76	2.59×10^4	4.41
1i	-10.04	4.66×10^3	3.67
1j	-12.18	2.65×10^2	2.42
1k	-13.39	3.47×10^1	1.54

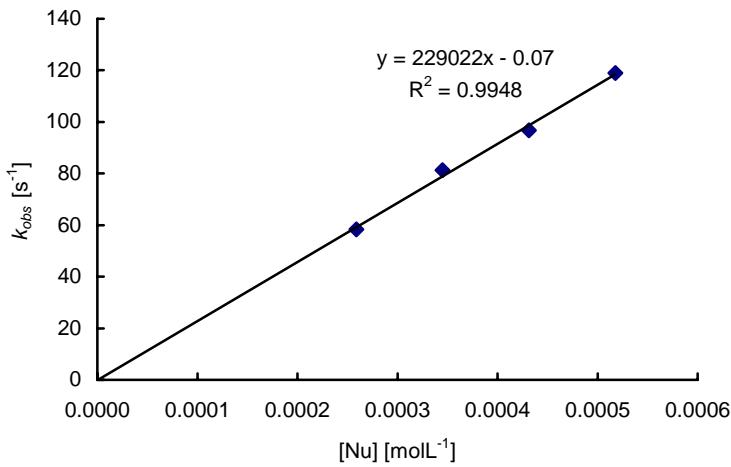


$$N = 15.81; s = 0.64$$

5.6 Potassium Salt of *N*-Methyl-2,2,2-Trifluoroacetamide (**2e-K⁺**)

Table 36: Kinetics of the reaction of **2e-K⁺** with **1f** (20 °C, in DMSO, stopped-flow, at 618 nm)

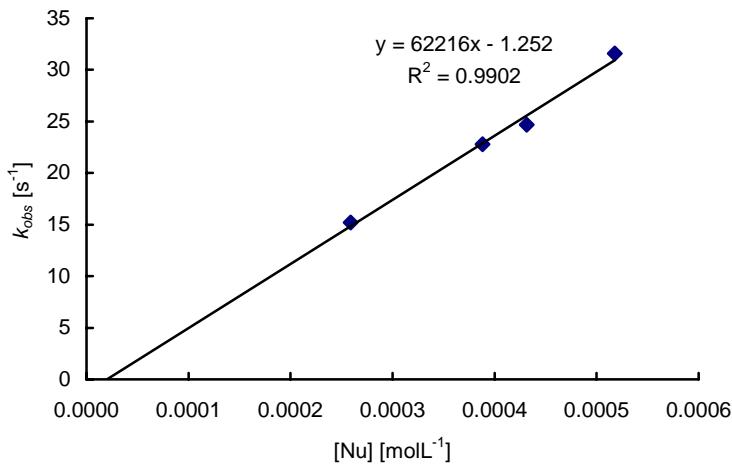
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.35×10^{-5}	2.59×10^{-4}	11.0	58.3
2.35×10^{-5}	3.45×10^{-4}	14.7	81.3
2.35×10^{-5}	4.31×10^{-4}	18.4	96.8
2.35×10^{-5}	5.18×10^{-4}	22.1	119



$$k_2 = 2.29 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 37: Kinetics of the reaction of **2e-K⁺** with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

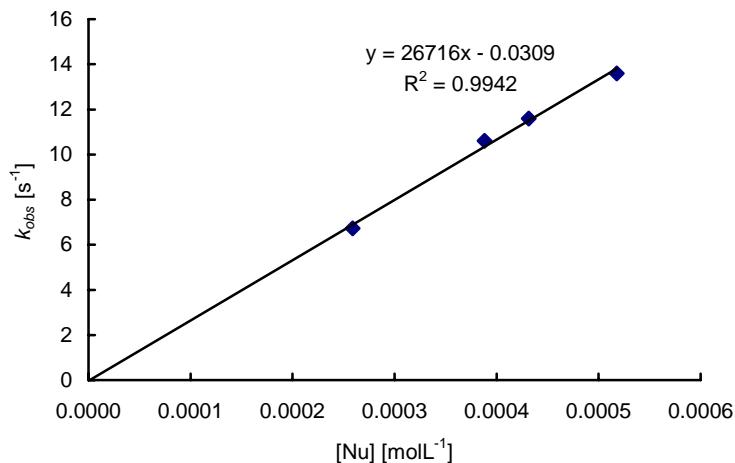
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.23 × 10 ⁻⁵	2.59 × 10 ⁻⁴	11.6	15.2
2.23 × 10 ⁻⁵	3.88 × 10 ⁻⁴	17.4	22.8
2.23 × 10 ⁻⁵	4.31 × 10 ⁻⁴	19.3	24.7
2.23 × 10 ⁻⁵	5.18 × 10 ⁻⁴	23.2	31.6



$$k_2 = 6.22 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 38: Kinetics of the reaction of **2e-K⁺** with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

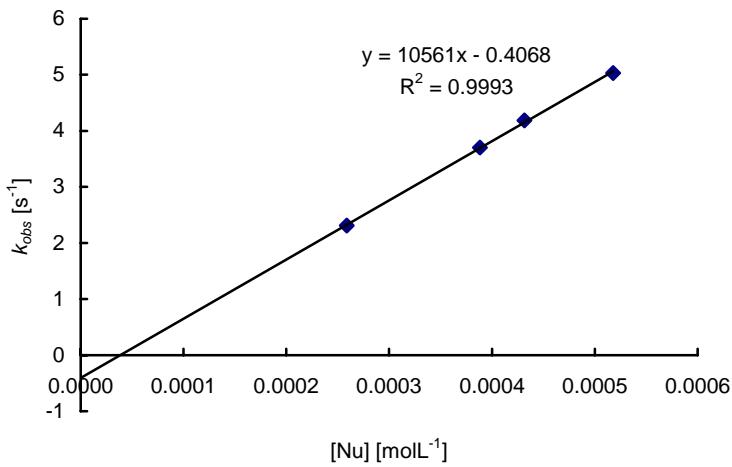
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.49×10^{-5}	2.59×10^{-4}	10.4	6.72
2.49×10^{-5}	3.88×10^{-4}	15.6	10.6
2.49×10^{-5}	4.31×10^{-4}	17.3	11.6
2.49×10^{-5}	5.18×10^{-4}	20.8	13.6



$$k_2 = 2.67 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 39: Kinetics of the reaction of **2e-K⁺** with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

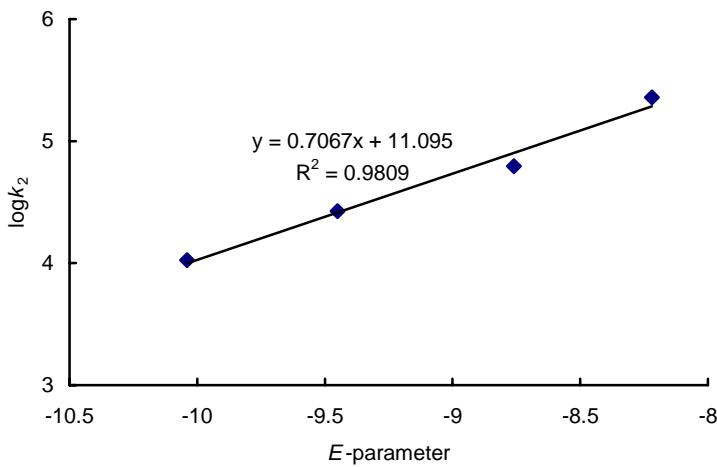
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.32×10^{-5}	2.59×10^{-4}	11.2	2.31
2.32×10^{-5}	3.88×10^{-4}	16.7	3.70
2.32×10^{-5}	4.31×10^{-4}	18.6	4.19
2.32×10^{-5}	5.18×10^{-4}	22.3	5.03



$$k_2 = 1.06 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 40: Determination of N - and s -parameters for **2e** at 20 °C in DMSO.

Electrophile	E -parameter	k_2 [L mol ⁻¹ s ⁻¹]	$\lg k_2$
1f	-8.22	2.29×10^5	5.36
1g	-8.76	6.22×10^4	4.79
1h	-9.45	2.67×10^4	4.42
1i	-10.04	1.06×10^4	4.03

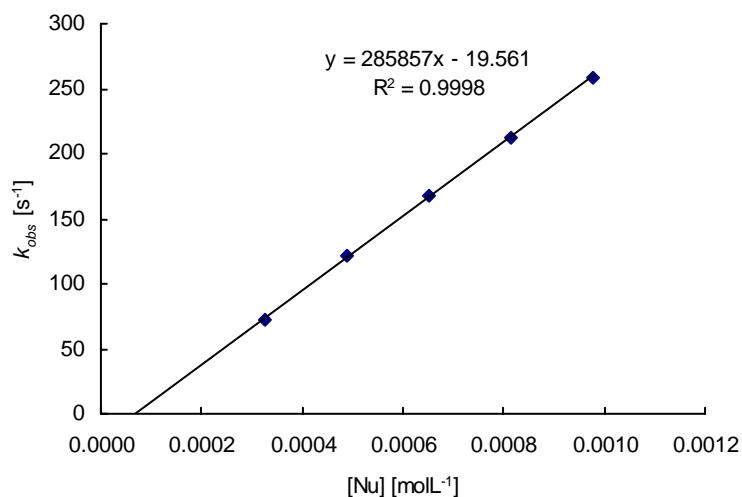


$$N = 15.70; s = 0.71$$

5.7 Potassium Salt of 3,3-Dimethylglutarimide (**2f-K⁺**)

Table 41: Kinetics of the reaction of **2f-K⁺** with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

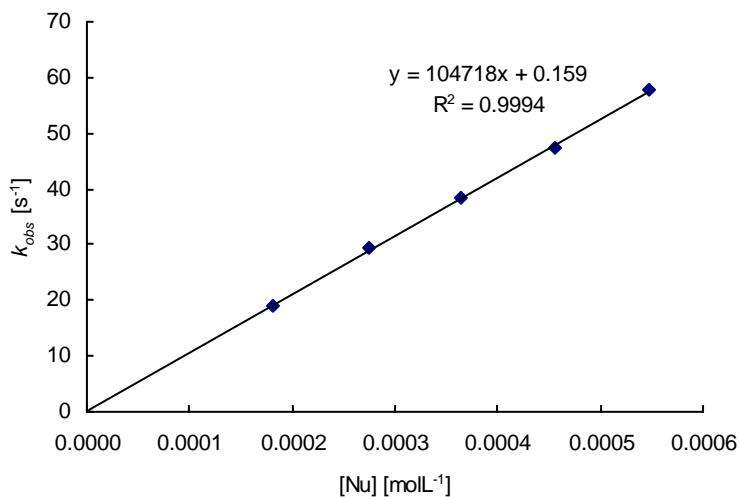
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.91×10^{-5}	3.26×10^{-4}	11.2	72.4
2.91×10^{-5}	4.89×10^{-4}	16.8	121
2.91×10^{-5}	6.52×10^{-4}	22.4	168
2.91×10^{-5}	8.14×10^{-4}	28.0	213
2.91×10^{-5}	9.77×10^{-4}	33.6	259



$$k_2 = 2.86 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 42: Kinetics of the reaction of **2f-K⁺** with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

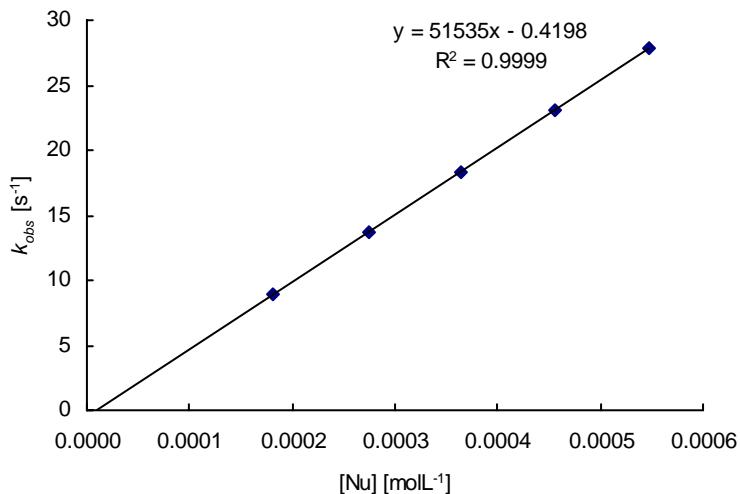
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.95×10^{-5}	1.82×10^{-4}	8.9	19.0
2.95×10^{-5}	2.74×10^{-4}	13.4	29.3
2.95×10^{-5}	3.65×10^{-4}	17.8	38.4
2.95×10^{-5}	4.56×10^{-4}	22.2	47.4
2.95×10^{-5}	5.47×10^{-4}	26.7	57.7



$$k_2 = 1.05 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 43: Kinetics of the reaction of **2f-K⁺** with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

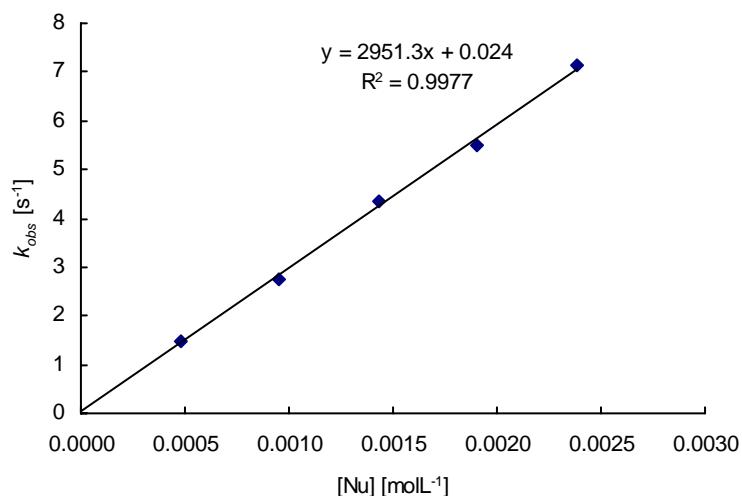
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.54×10^{-5}	1.82×10^{-4}	7.2	9.00
2.54×10^{-5}	2.74×10^{-4}	10.8	13.7
2.54×10^{-5}	3.65×10^{-4}	14.4	18.3
2.54×10^{-5}	4.56×10^{-4}	18.0	23.1
2.54×10^{-5}	5.47×10^{-4}	21.5	27.8



$$k_2 = 5.15 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 44: Kinetics of the reaction of **2f-K⁺** with **1j** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 422 nm)

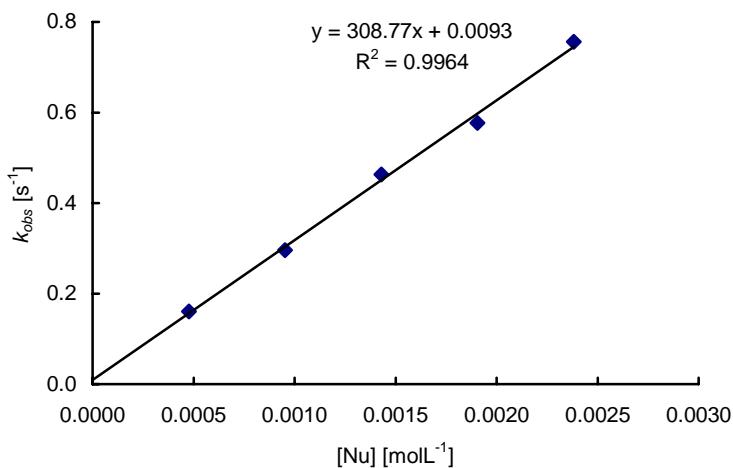
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.74 × 10 ⁻⁵	4.76 × 10 ⁻⁴	-	17.4	1.47
2.74 × 10 ⁻⁵	9.53 × 10 ⁻⁴	1.18 × 10 ⁻³	34.8	2.75
2.74 × 10 ⁻⁵	1.43 × 10 ⁻³	-	52.2	4.36
2.74 × 10 ⁻⁵	1.91 × 10 ⁻³	2.53 × 10 ⁻³	69.5	5.51
2.74 × 10 ⁻⁵	2.38 × 10 ⁻³	-	86.9	7.12



$$k_2 = 2.95 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 45: Kinetics of the reaction of **2f-K⁺** with **1k** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 533 nm)

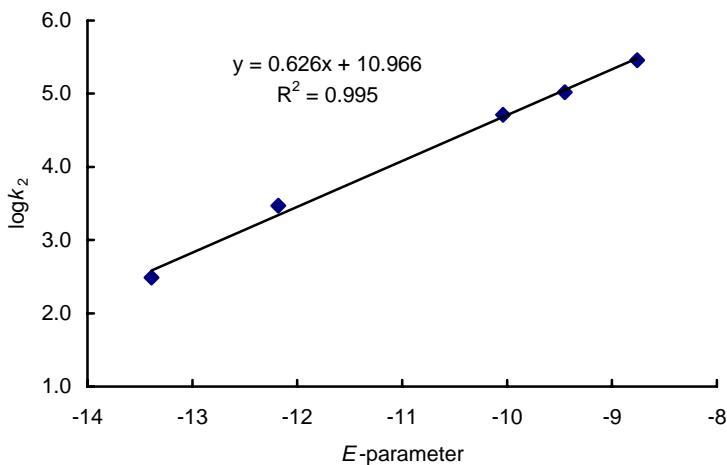
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.07 × 10 ⁻⁵	4.76 × 10 ⁻⁴	-	23.1	0.161
2.07 × 10 ⁻⁵	9.53 × 10 ⁻⁴	1.18 × 10 ⁻³	46.1	0.296
2.07 × 10 ⁻⁵	1.43 × 10 ⁻³	-	69.2	0.463
2.07 × 10 ⁻⁵	1.91 × 10 ⁻³	2.53 × 10 ⁻³	92.2	0.577
2.07 × 10 ⁻⁵	2.38 × 10 ⁻³	-	115	0.756



$$k_2 = 3.09 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 46: Determination of N - and s -parameters for **2f** at 20 °C in DMSO.

Electrophile	E -parameter	k_2 [$\text{L mol}^{-1} \text{ s}^{-1}$]	$\lg k_2$
1g	-8.76	2.86×10^5	5.46
1h	-9.45	1.05×10^5	5.02
1i	-10.04	5.15×10^4	4.71
1j	-12.18	2.95×10^3	3.47
1k	-13.39	3.09×10^2	2.49

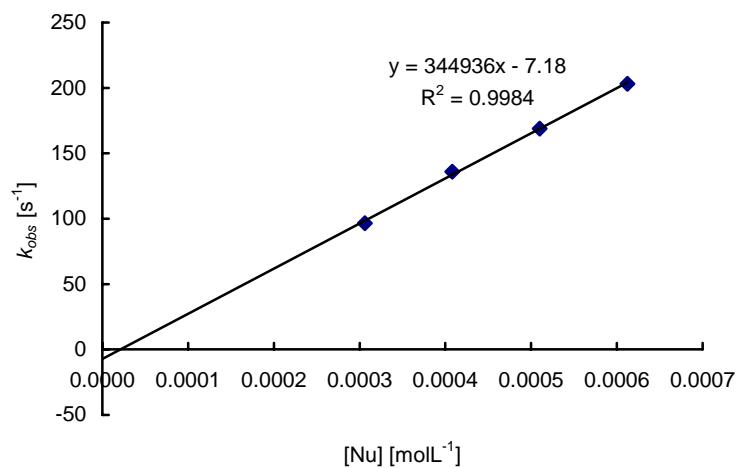


$$N = 17.52; s = 0.63$$

5.8 Potassium Salt of Diacetamide (2g-K^+)

Table 47: Kinetics of the reaction of 2g-K^+ with **1f** (20 °C, in DMSO, stopped-flow, at 618 nm)

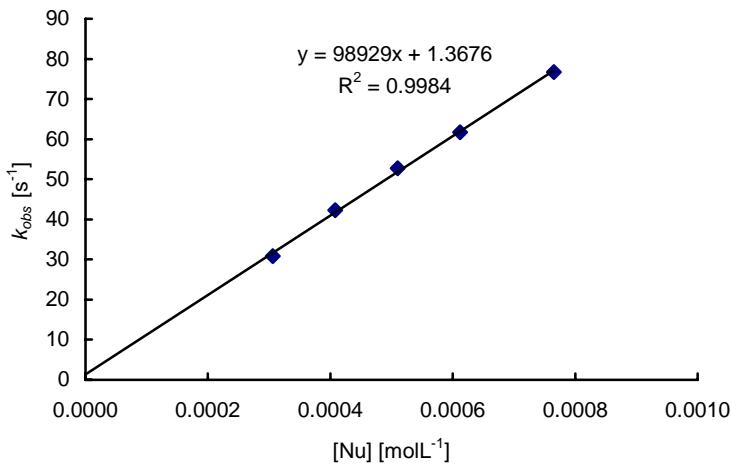
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
3.31×10^{-5}	3.06×10^{-4}	9.2	96.7
3.31×10^{-5}	4.08×10^{-4}	12.3	136
3.31×10^{-5}	5.10×10^{-4}	15.4	169
3.31×10^{-5}	6.12×10^{-4}	23.1	203



$$k_2 = 3.45 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 48: Kinetics of the reaction of 2g-K^+ with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

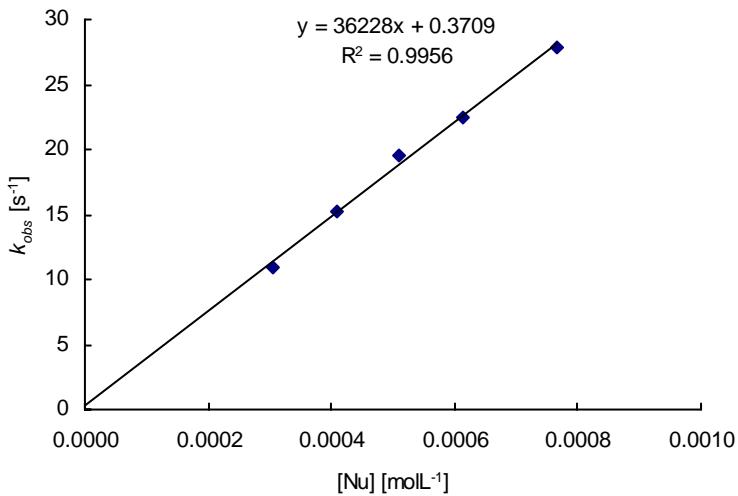
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.80×10^{-5}	3.06×10^{-4}	10.9	30.8
2.80×10^{-5}	4.08×10^{-4}	14.6	42.3
2.80×10^{-5}	5.10×10^{-4}	18.2	52.7
2.80×10^{-5}	6.12×10^{-4}	21.9	61.7
2.80×10^{-5}	7.65×10^{-4}	27.3	76.7



$$k_2 = 9.89 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 49: Kinetics of the reaction of **2g-K⁺** with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

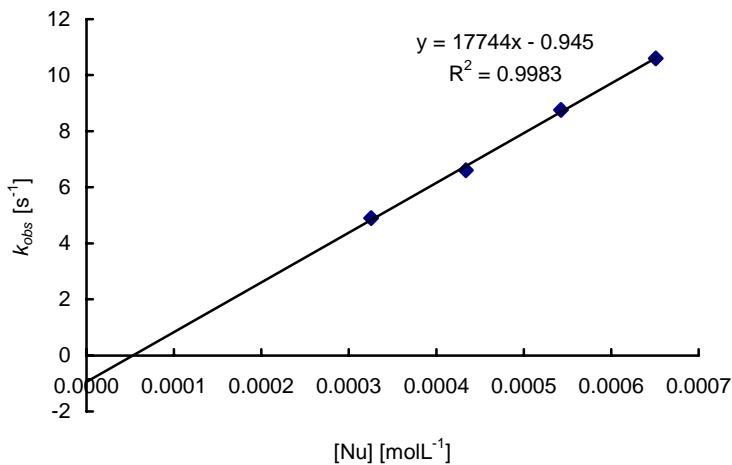
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.93 × 10 ⁻⁵	3.06 × 10 ⁻⁴	10.5	11.0
2.93 × 10 ⁻⁵	4.08 × 10 ⁻⁴	13.9	15.3
2.93 × 10 ⁻⁵	5.10 × 10 ⁻⁴	17.4	19.6
2.93 × 10 ⁻⁵	6.12 × 10 ⁻⁴	20.9	22.5
2.93 × 10 ⁻⁵	7.65 × 10 ⁻⁴	26.2	27.8



$$k_2 = 3.62 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 50: Kinetics of the reaction of **2g**-K⁺ with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

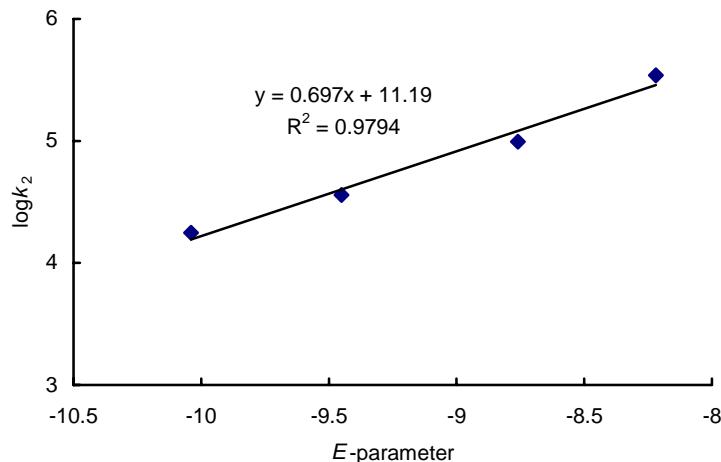
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
3.17×10^{-5}	3.25×10^{-4}	10.3	4.91
3.17×10^{-5}	4.34×10^{-4}	13.7	6.61
3.17×10^{-5}	5.42×10^{-4}	17.1	8.76
3.17×10^{-5}	6.51×10^{-4}	20.5	10.6



$$k_2 = 1.77 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 51: Determination of *N*- and *s*-parameters for **2g** at 20 °C in DMSO.

Electrophile	<i>E</i> -parameter	<i>k</i> ₂ [L mol ⁻¹ s ⁻¹]	lg <i>k</i> ₂
1f	-8.22	3.45×10^5	5.54
1g	-8.76	9.85×10^4	4.99
1h	-9.45	3.62×10^4	4.56
1i	-10.04	1.77×10^4	4.25

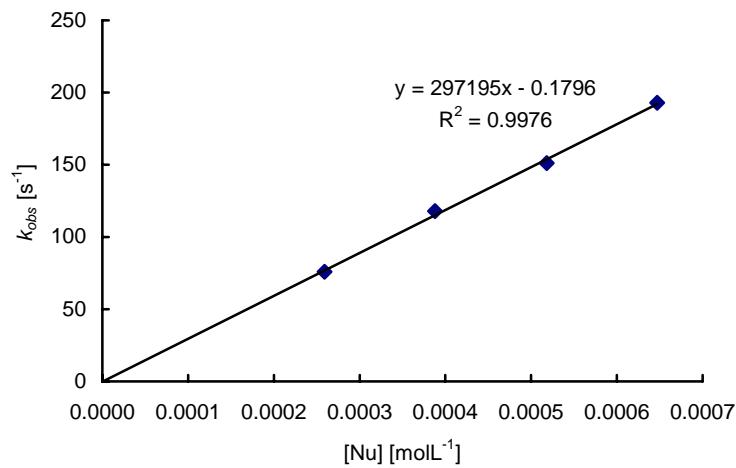


$$N = 16.05; s = 0.70$$

5.9 Potassium Salt of Ethyl Acetylcarbamate (**2h-K⁺**)

Table 52: Kinetics of the reaction of **2h-K⁺** with **1f** (20 °C, in DMSO, stopped-flow, at 618 nm)

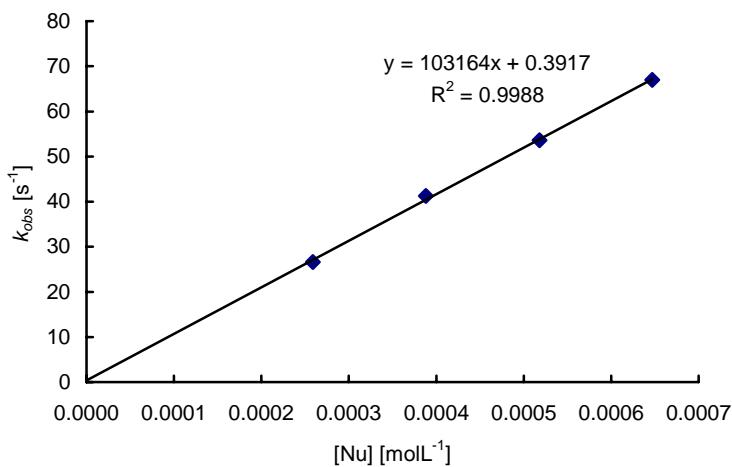
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.24×10^{-5}	2.59×10^{-4}	11.5	75.8
2.24×10^{-5}	3.88×10^{-4}	17.3	118
2.24×10^{-5}	5.18×10^{-4}	23.1	151
2.24×10^{-5}	6.47×10^{-4}	28.8	193



$$k_2 = 2.97 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 53: Kinetics of the reaction of **2h**-K⁺ with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

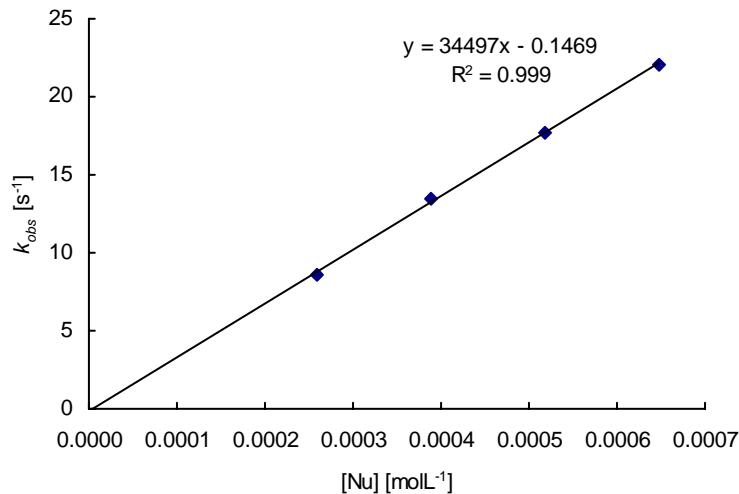
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.46×10^{-5}	2.59×10^{-4}	10.5	26.6
2.46×10^{-5}	3.88×10^{-4}	15.8	41.3
2.46×10^{-5}	5.18×10^{-4}	21.0	53.6
2.46×10^{-5}	6.47×10^{-4}	26.3	67.0



$$k_2 = 1.03 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 54: Kinetics of the reaction of **2h**-K⁺ with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

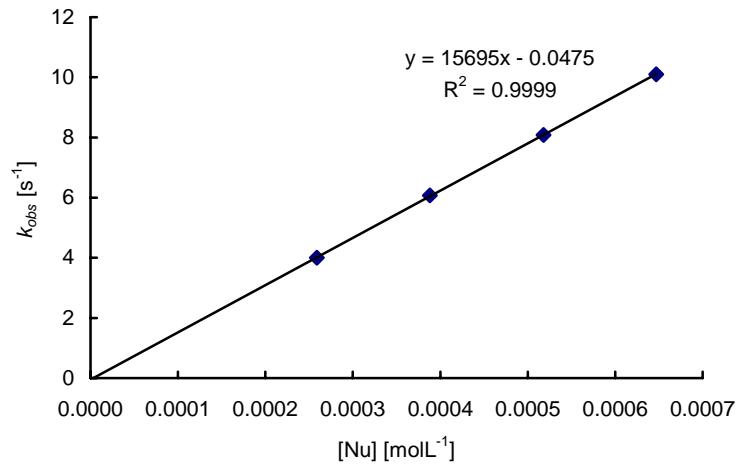
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.70×10^{-5}	2.59×10^{-4}	9.6	8.62
2.70×10^{-5}	3.88×10^{-4}	14.4	13.5
2.70×10^{-5}	5.18×10^{-4}	19.2	17.7
2.70×10^{-5}	6.47×10^{-4}	24.0	22.1



$$k_2 = 3.45 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 55: Kinetics of the reaction of **2h-K⁺** with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

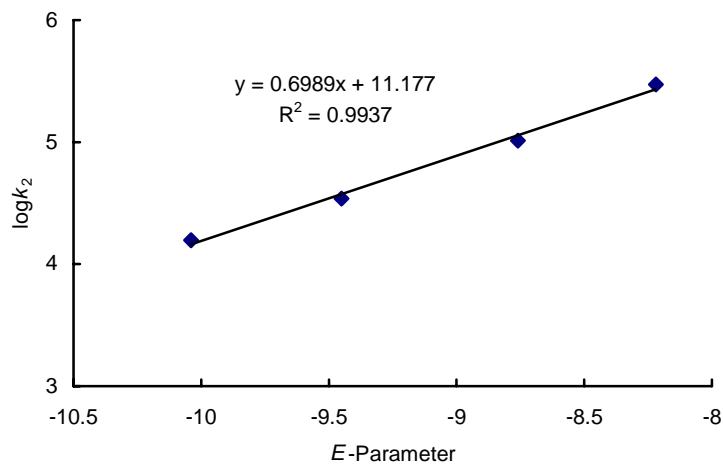
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.31 × 10 ⁻⁵	2.59 × 10 ⁻⁴	11.2	4.00
2.31 × 10 ⁻⁵	3.88 × 10 ⁻⁴	16.8	6.07
2.31 × 10 ⁻⁵	5.18 × 10 ⁻⁴	22.4	8.08
2.31 × 10 ⁻⁵	6.47 × 10 ⁻⁴	28.1	10.1



$$k_2 = 1.57 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 56: Determination of N - and s -parameters for **2h** at 20 °C in DMSO.

Electrophile	E -parameter	k_2 [L mol ⁻¹ s ⁻¹]	$\lg k_2$
1f	-8.22	2.97×10^5	5.47
1g	-8.76	1.03×10^5	5.01
1h	-9.45	3.45×10^4	4.54
1i	-10.04	1.57×10^4	4.20

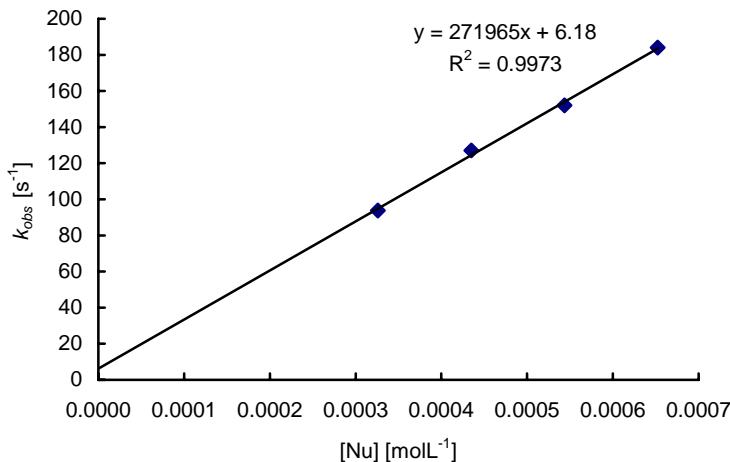


$$N = 15.99; s = 0.70$$

5.10 Potassium Salt of *p*-Toluenesulfonamide (**2i-K⁺**)

Table 57: Kinetics of the reaction of **2i-K⁺** with **1f** (20 °C, in DMSO, stopped-flow, at 618 nm)

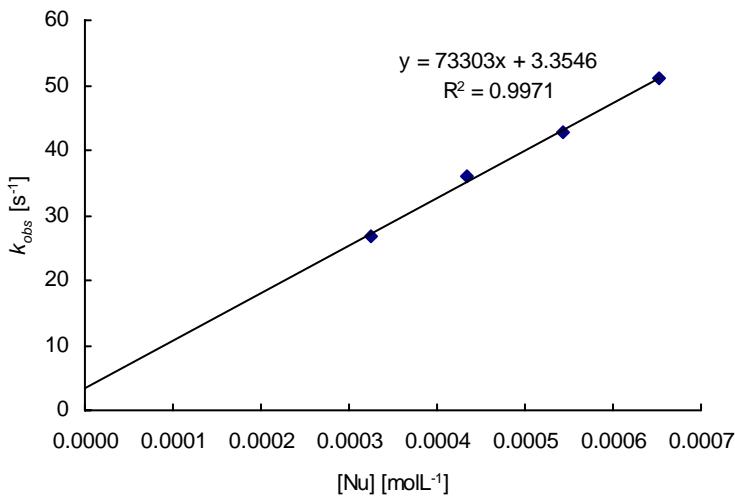
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.35×10^{-5}	3.26×10^{-4}	13.9	93.8
2.35×10^{-5}	4.35×10^{-4}	18.5	127
2.35×10^{-5}	5.43×10^{-4}	23.2	152
2.35×10^{-5}	6.52×10^{-4}	27.8	184



$$k_2 = 2.72 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 58: Kinetics of the reaction of **2i-K⁺** with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

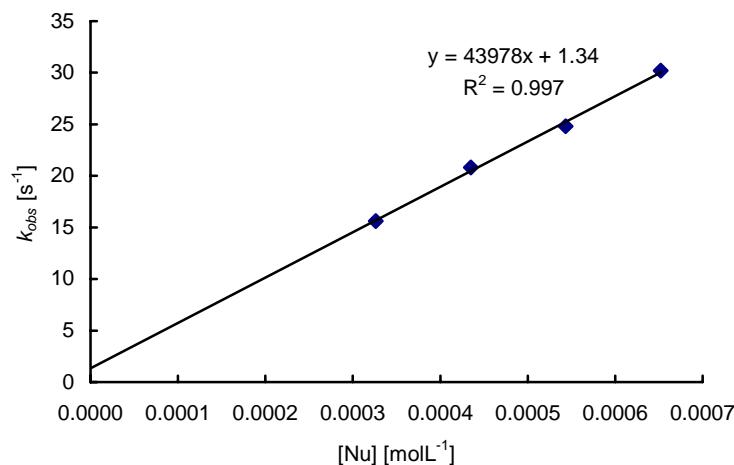
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.23 × 10 ⁻⁵	3.26 × 10 ⁻⁴	14.6	26.9
2.23 × 10 ⁻⁵	4.35 × 10 ⁻⁴	19.5	36.0
2.23 × 10 ⁻⁵	5.43 × 10 ⁻⁴	24.4	42.7
2.23 × 10 ⁻⁵	6.52 × 10 ⁻⁴	29.2	51.2



$$k_2 = 7.33 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 59: Kinetics of the reaction of **2i-K⁺** with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

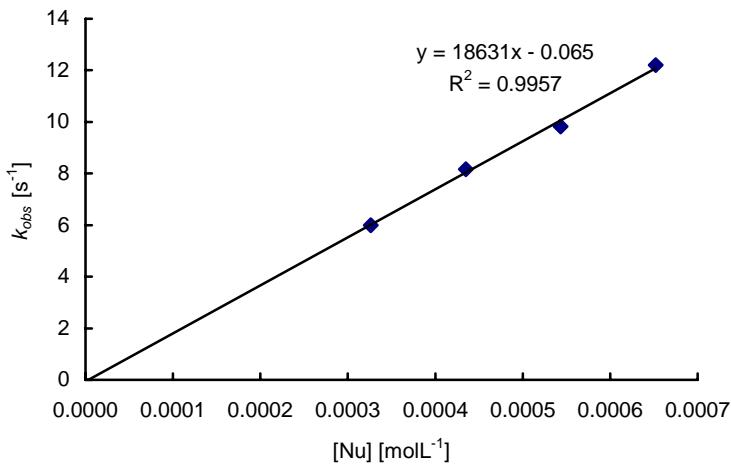
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.49×10^{-5}	3.26×10^{-4}	13.1	15.6
2.49×10^{-5}	4.35×10^{-4}	17.5	20.8
2.49×10^{-5}	5.43×10^{-4}	21.8	24.8
2.49×10^{-5}	6.52×10^{-4}	26.2	30.2



$$k_2 = 4.40 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 60: Kinetics of the reaction of **2i-K⁺** with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

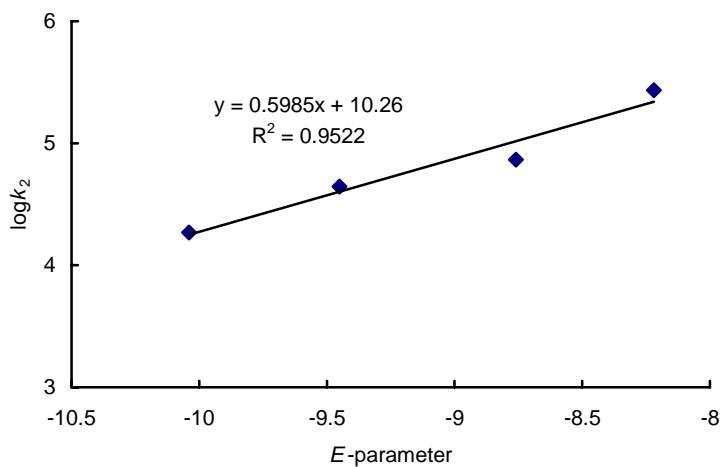
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.32×10^{-5}	3.26×10^{-4}	14.1	6.00
2.32×10^{-5}	4.35×10^{-4}	18.7	8.17
2.32×10^{-5}	5.43×10^{-4}	23.4	9.82
2.32×10^{-5}	6.52×10^{-4}	28.1	12.2



$$k_2 = 1.86 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 61: Determination of N - and s -parameters for **2i** at 20 °C in DMSO.

Electrophile	E -parameter	$k_2 [\text{L mol}^{-1} \text{ s}^{-1}]$	$\lg k_2$
1f	-8.22	2.72×10^5	5.44
1g	-8.76	7.33×10^4	4.87
1h	-9.45	4.40×10^4	4.64
1i	-10.04	1.86×10^4	4.27

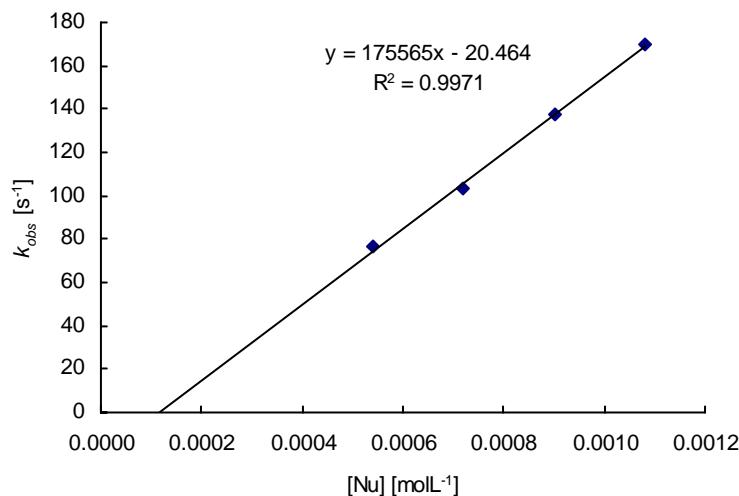


$$N = 17.14; s = 0.60$$

5.11 Anion of Methanesulfonamide (2j)

Table 62: Kinetics of the reaction of **2j** (generated in situ by addition of 1.11 equivalents P₂-tBu-base) with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

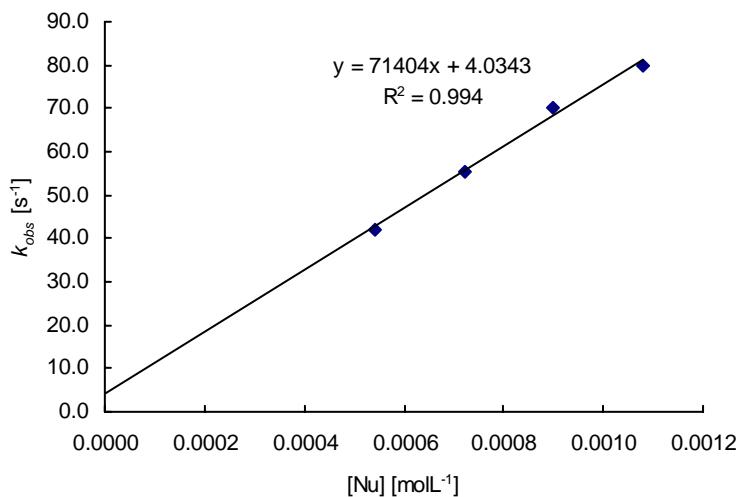
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
4.85×10^{-5}	5.41×10^{-4}	11.1	76.5
4.85×10^{-5}	7.21×10^{-4}	14.9	103
4.85×10^{-5}	9.01×10^{-4}	18.6	138
4.85×10^{-5}	1.08×10^{-3}	22.3	170



$$k_2 = 1.76 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 63: Kinetics of the reaction of **2j** (generated in situ by addition of 1.11 equivalents P₂-tBu-base) with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

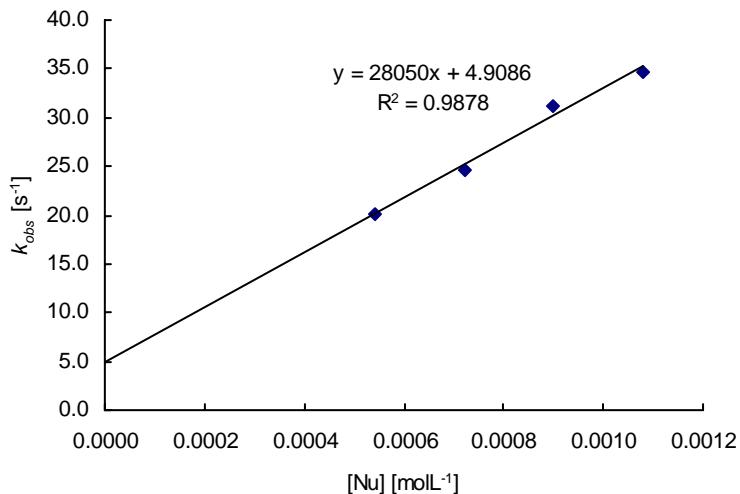
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
3.33×10^{-5}	5.41×10^{-4}	16.2	42.2
3.33×10^{-5}	7.21×10^{-4}	21.7	55.3
3.33×10^{-5}	9.01×10^{-4}	27.1	70.2
3.33×10^{-5}	1.08×10^{-3}	32.5	80.0



$$k_2 = 7.14 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 64: Kinetics of the reaction of **2j** (generated in situ by addition of 1.11 equivalents P₂-*t*Bu-base) with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

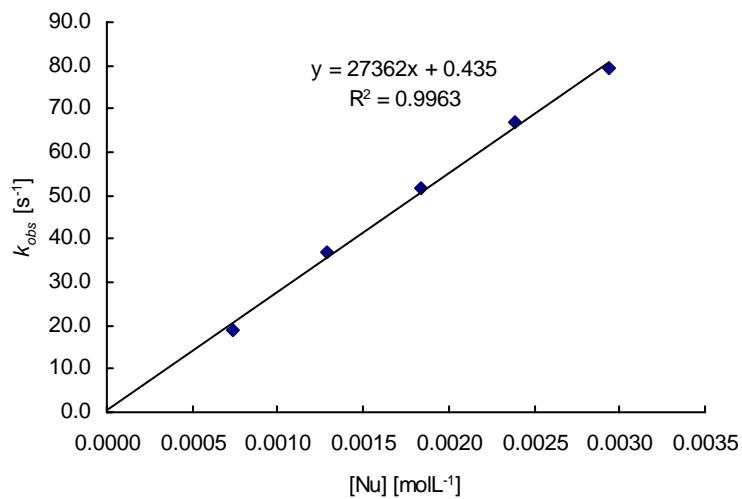
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.35 × 10 ⁻⁵	5.41 × 10 ⁻⁴	23.0	20.1
2.35 × 10 ⁻⁵	7.21 × 10 ⁻⁴	30.6	24.6
2.35 × 10 ⁻⁵	9.01 × 10 ⁻⁴	38.3	31.2
2.35 × 10 ⁻⁵	1.08 × 10 ⁻³	46.0	34.7



$$k_2 = 2.81 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 65: Kinetics of the reaction of **2j**-K⁺ with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

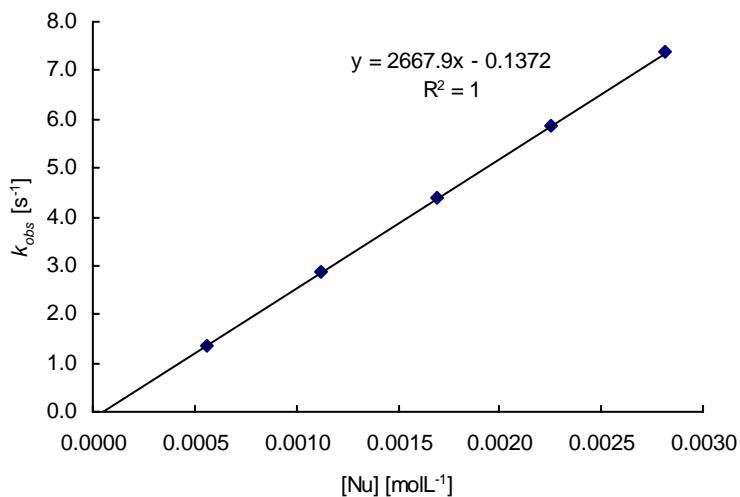
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
1.71 × 10 ⁻⁵	7.36 × 10 ⁻⁴	43.0	18.9
1.71 × 10 ⁻⁵	1.29 × 10 ⁻³	75.4	37.0
1.71 × 10 ⁻⁵	1.84 × 10 ⁻³	108	51.8
1.71 × 10 ⁻⁵	2.39 × 10 ⁻³	140	66.7
1.71 × 10 ⁻⁵	2.94 × 10 ⁻³	172	79.4



$$k_2 = 2.74 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 66: Kinetics of the reaction of **2j**-K⁺ with **1j** (20 °C, in DMSO, stopped-flow, at 422 nm)

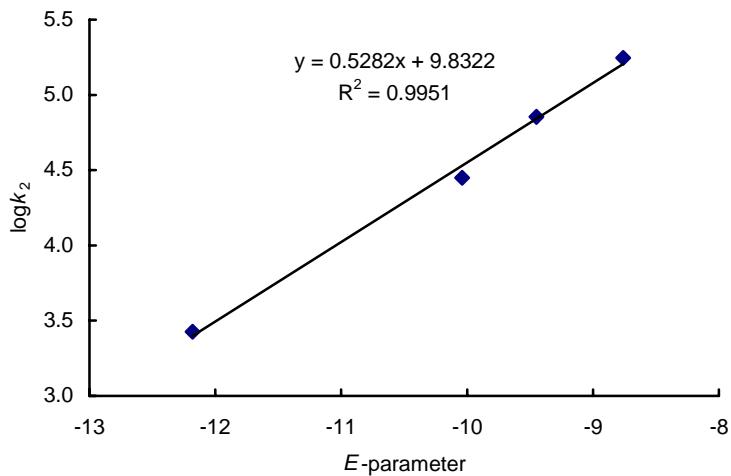
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
5.13 × 10 ⁻⁵	5.62 × 10 ⁻⁴	11.0	1.36
5.13 × 10 ⁻⁵	1.12 × 10 ⁻³	21.8	2.86
5.13 × 10 ⁻⁵	1.69 × 10 ⁻³	32.9	4.37
5.13 × 10 ⁻⁵	2.25 × 10 ⁻³	43.9	5.85
5.13 × 10 ⁻⁵	2.81 × 10 ⁻³	54.8	7.37



$$k_2 = 2.67 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 67: Determination of N - and s -parameters for **2j** at 20 °C in DMSO.

Electrophile	E-parameter	k_2 [L mol ⁻¹ s ⁻¹]	lg k_2
1g	-8.76	1.76×10^5	5.25
1h	-9.45	7.14×10^4	4.85
1i	-10.04	2.81×10^4	4.45
1j	-12.18	2.67×10^3	3.43

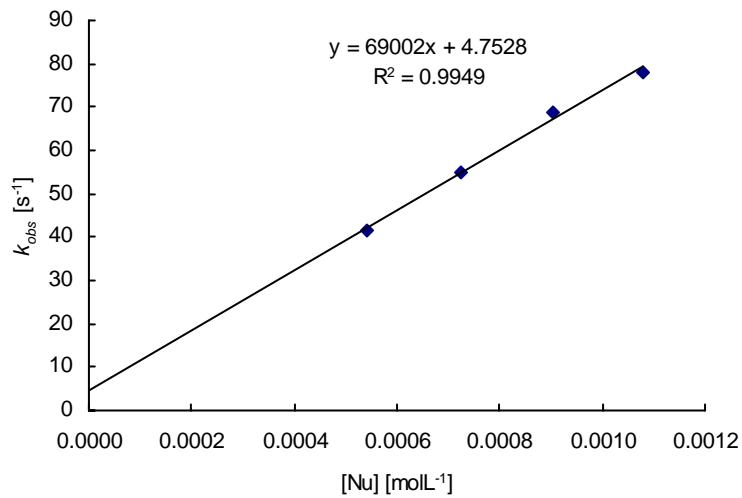


$$N = 18.61; s = 0.53$$

5.12 Anion of Hydantoin (2k)

Table 68: Kinetics of the reaction of **2k** (generated in situ by addition of 1.11 equivalents P₂-tBu-base) with **1g** (20 °C, in DMSO, stopped-flow, at 627 nm)

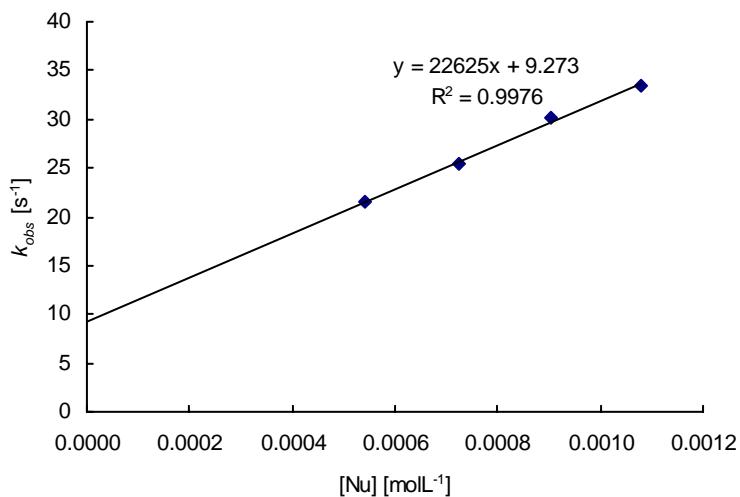
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
4.85×10^{-5}	5.42×10^{-4}	11.2	41.6
4.85×10^{-5}	7.23×10^{-4}	14.9	54.7
4.85×10^{-5}	9.04×10^{-4}	18.6	68.7
4.85×10^{-5}	1.08×10^{-3}	22.3	78.2



$$k_2 = 6.90 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 69: Kinetics of the reaction of **2k** (generated in situ by addition of 1.11 equivalents P₂-tBu-base) with **1h** (20 °C, in DMSO, stopped-flow, at 635 nm)

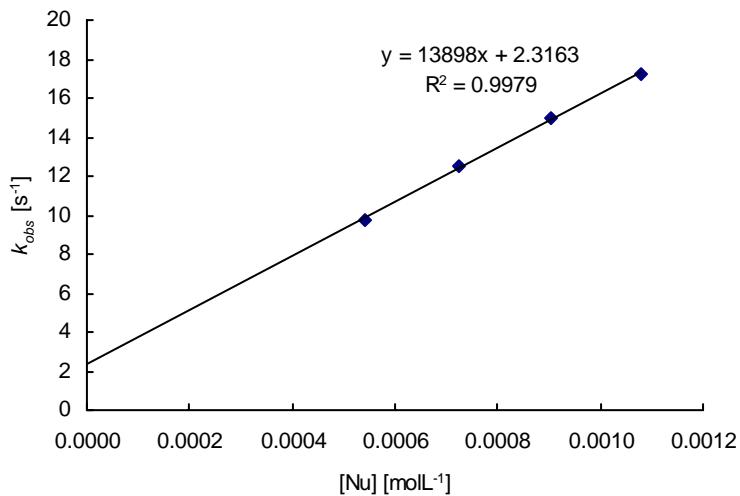
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
3.33×10^{-5}	5.42×10^{-4}	16.3	21.5
3.33×10^{-5}	7.23×10^{-4}	21.7	25.5
3.33×10^{-5}	9.04×10^{-4}	27.1	30.1
3.33×10^{-5}	1.08×10^{-3}	32.6	33.5



$$k_2 = 2.26 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 70: Kinetics of the reaction of **2k** (generated in situ by addition of 1.11 equivalents P₂-*t*Bu-base) with **1i** (20 °C, in DMSO, stopped-flow, at 630 nm)

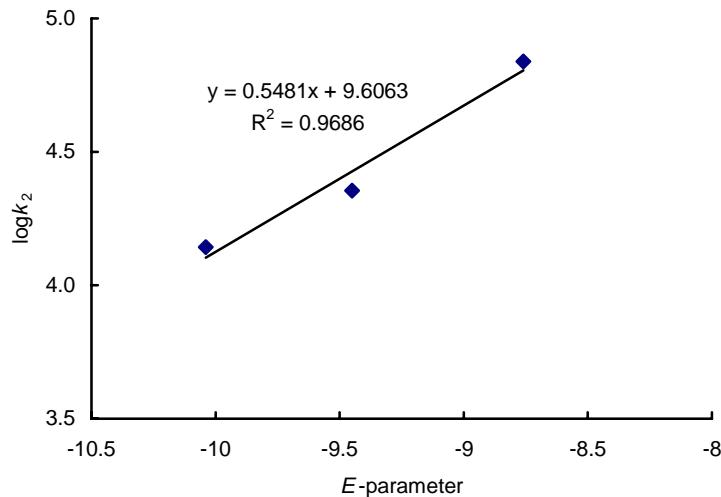
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
2.35 × 10 ⁻⁵	5.42 × 10 ⁻⁴	23.0	9.72
2.35 × 10 ⁻⁵	7.23 × 10 ⁻⁴	30.7	12.5
2.35 × 10 ⁻⁵	9.04 × 10 ⁻⁴	38.4	15.0
2.35 × 10 ⁻⁵	1.08 × 10 ⁻³	46.1	17.2



$$k_2 = 1.39 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 71: Determination of N - and s -parameters for **2k** at 20 °C in DMSO.

Electrophile	E -parameter	k_2 [L mol ⁻¹ s ⁻¹]	$\lg k_2$
1g	-8.76	6.90×10^4	4.84
1h	-9.45	2.26×10^4	4.35
1i	-10.04	1.39×10^4	4.14

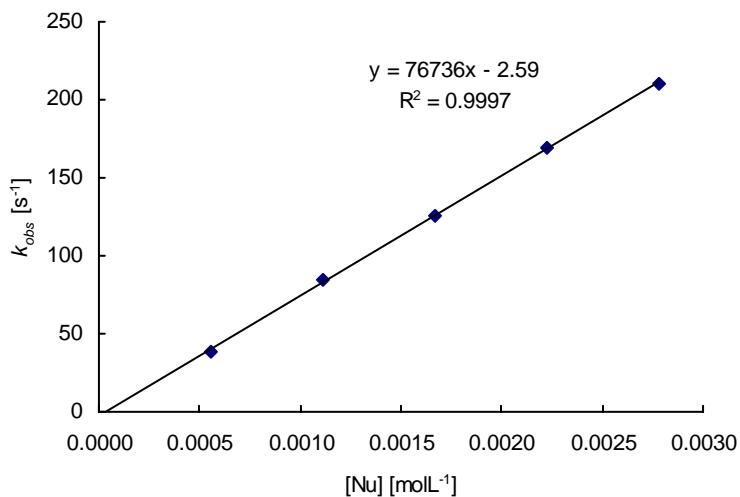


$$N = 17.52; s = 0.55$$

5.13 Potassium Salt of 2-Oxazolidinone (**2l-K⁺**)

Table 72: Kinetics of the reaction of **2l-K⁺** with **1k** (20 °C, additive: 1.21 eq. 18-crown-6, in DMSO, stopped-flow, at 533 nm)

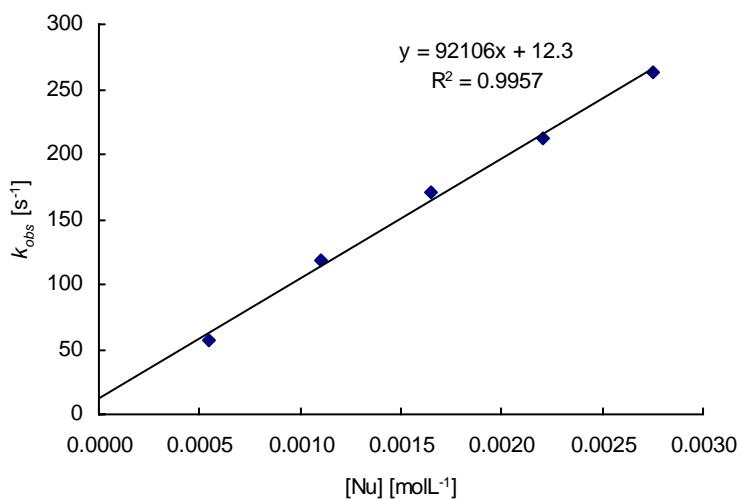
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.07×10^{-5}	5.57×10^{-4}	26.9	38.7
2.07×10^{-5}	1.11×10^{-3}	53.9	84.3
2.07×10^{-5}	1.67×10^{-3}	80.8	126
2.07×10^{-5}	2.23×10^{-3}	108	169
2.07×10^{-5}	2.78×10^{-3}	135	210



$$k_2 = 7.67 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 73: Kinetics of the reaction of **2l-K⁺** with **1l** (20 °C, additive: 1.24 eq. 18-crown-6, in DMSO, stopped-flow, at 374 nm)

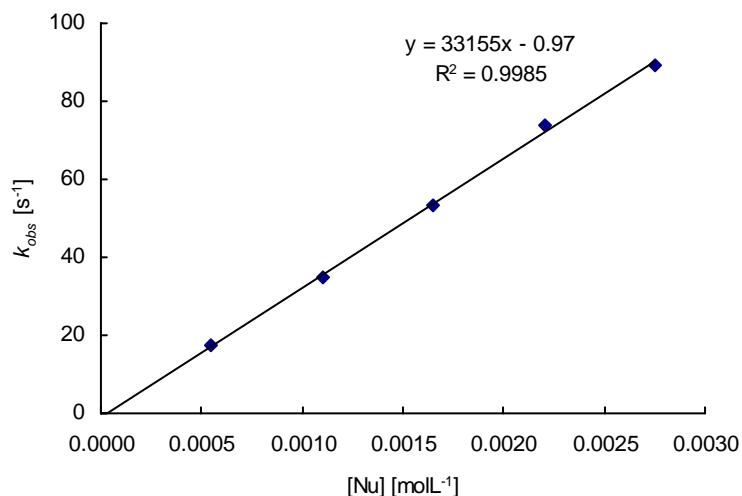
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.58×10^{-5}	5.50×10^{-4}	21.3	57.0
2.58×10^{-5}	1.10×10^{-3}	42.7	118
2.58×10^{-5}	1.65×10^{-3}	64.0	171
2.58×10^{-5}	2.20×10^{-3}	85.3	213
2.58×10^{-5}	2.75×10^{-3}	107	263



$$k_2 = 9.21 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 74: Kinetics of the reaction of **2l**-K⁺ with **1m** (20 °C, additive: 1.24 eq. 18-crown-6, in DMSO, stopped-flow, at 354 nm)

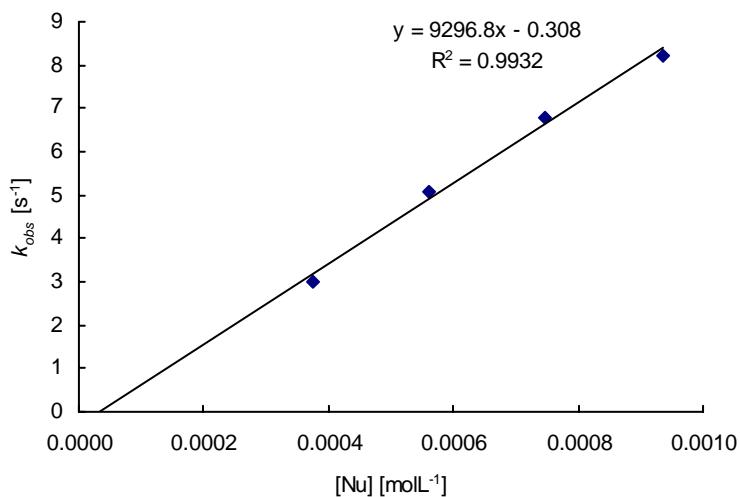
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.80 × 10 ⁻⁵	5.50 × 10 ⁻⁴	19.6	17.4
2.80 × 10 ⁻⁵	1.10 × 10 ⁻³	39.3	35.0
2.80 × 10 ⁻⁵	1.65 × 10 ⁻³	58.9	53.4
2.80 × 10 ⁻⁵	2.20 × 10 ⁻³	78.5	73.9
2.80 × 10 ⁻⁵	2.75 × 10 ⁻³	98.2	89.2



$$k_2 = 3.32 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 75: Kinetics of the reaction of **2l**-K⁺ with **1n** (20 °C, in DMSO, stopped-flow, at 371 nm)

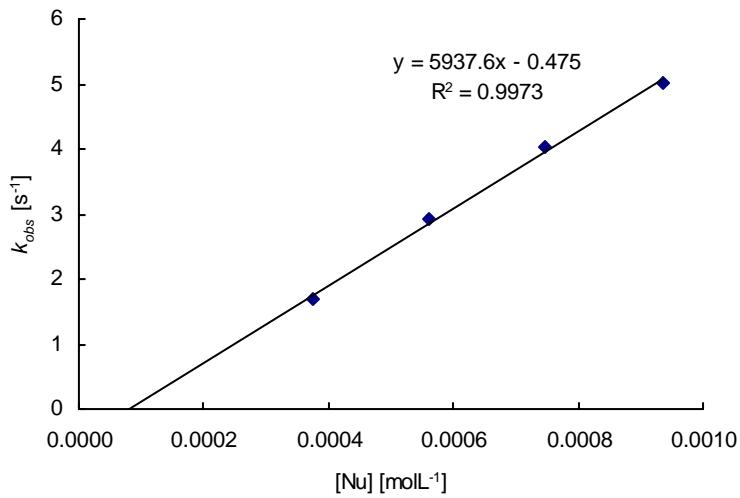
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
1.93 × 10 ⁻⁵	3.74 × 10 ⁻⁴	19.3	3.00
1.93 × 10 ⁻⁵	5.61 × 10 ⁻⁴	29.0	5.09
1.93 × 10 ⁻⁵	7.48 × 10 ⁻⁴	38.7	6.78
1.93 × 10 ⁻⁵	9.35 × 10 ⁻⁴	48.4	8.23



$$k_2 = 9.30 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 76: Kinetics of the reaction of **2l-K⁺** with **1o** (20 °C, in DMSO, stopped-flow, at 393 nm)

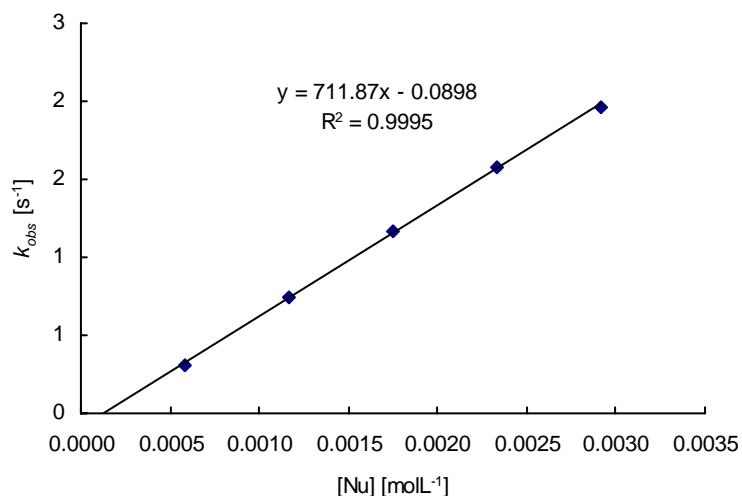
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
3.39×10^{-5}	3.74×10^{-4}	11.0	1.68
3.39×10^{-5}	5.61×10^{-4}	16.5	2.92
3.39×10^{-5}	7.48×10^{-4}	22.1	4.03
3.39×10^{-5}	9.35×10^{-4}	27.6	5.01



$$k_2 = 5.94 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 77: Kinetics of the reaction of **2l**-K⁺ with **1p** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 486 nm)

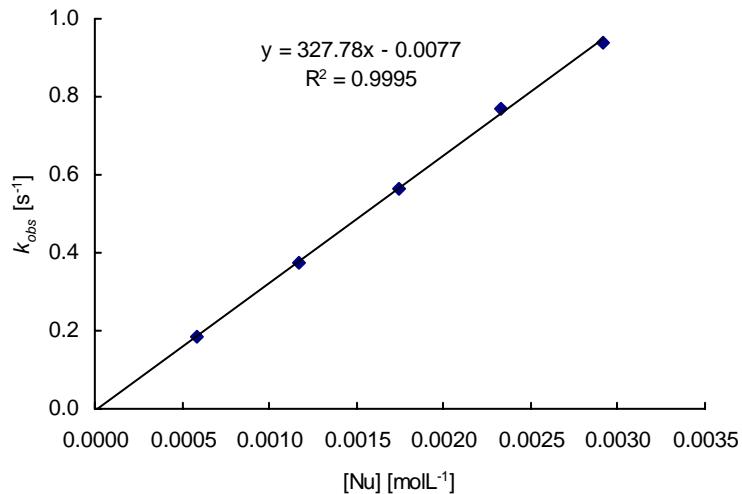
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.61 × 10 ⁻⁵	5.82 × 10 ⁻⁴	6.99 × 10 ⁻⁴	22.3	0.310
2.61 × 10 ⁻⁵	1.16 × 10 ⁻³	1.40 × 10 ⁻³	44.7	0.749
2.61 × 10 ⁻⁵	1.75 × 10 ⁻³	2.10 × 10 ⁻³	67.0	1.16
2.61 × 10 ⁻⁵	2.33 × 10 ⁻³	2.80 × 10 ⁻³	89.3	1.58
2.61 × 10 ⁻⁵	2.91 × 10 ⁻³	3.49 × 10 ⁻³	112	1.97



$$k_2 = 7.12 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 78: Kinetics of the reaction of **2l**-K⁺ with **1q** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 521 nm)

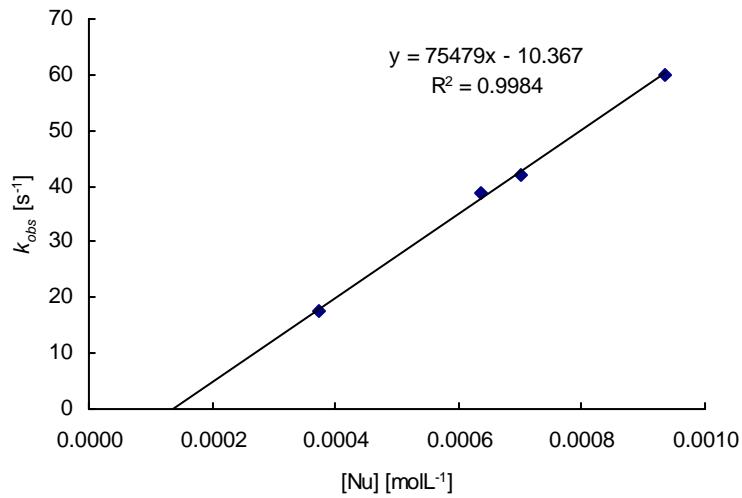
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.62 × 10 ⁻⁵	5.82 × 10 ⁻⁴	6.99 × 10 ⁻⁴	22.2	0.183
2.62 × 10 ⁻⁵	1.16 × 10 ⁻³	1.40 × 10 ⁻³	44.5	0.372
2.62 × 10 ⁻⁵	1.75 × 10 ⁻³	2.10 × 10 ⁻³	66.7	0.563
2.62 × 10 ⁻⁵	2.33 × 10 ⁻³	2.80 × 10 ⁻³	89.0	0.767
2.62 × 10 ⁻⁵	2.91 × 10 ⁻³	3.49 × 10 ⁻³	112	0.940



$$k_2 = 3.28 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 79: Kinetics of the reaction of **2l-K⁺** with **4b** (20 °C, in DMSO, stopped-flow, at 480 nm)

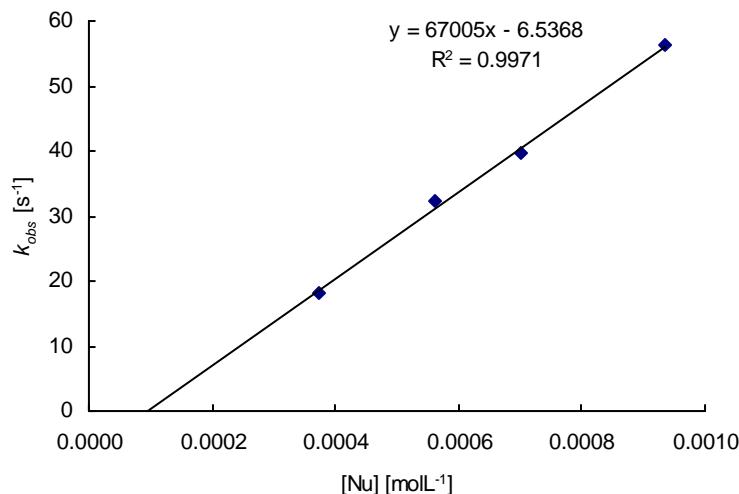
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
3.88 × 10 ⁻⁵	3.74 × 10 ⁻⁴	9.6	17.6
3.88 × 10 ⁻⁵	6.37 × 10 ⁻⁴	16.4	38.7
3.88 × 10 ⁻⁵	7.01 × 10 ⁻⁴	18.1	41.9
3.88 × 10 ⁻⁵	9.35 × 10 ⁻⁴	24.1	60.1



$$k_2 = 7.55 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 80: Kinetics of the reaction of **2l**-K⁺ with **4a** (20 °C, in DMSO, stopped-flow, at 500 nm)

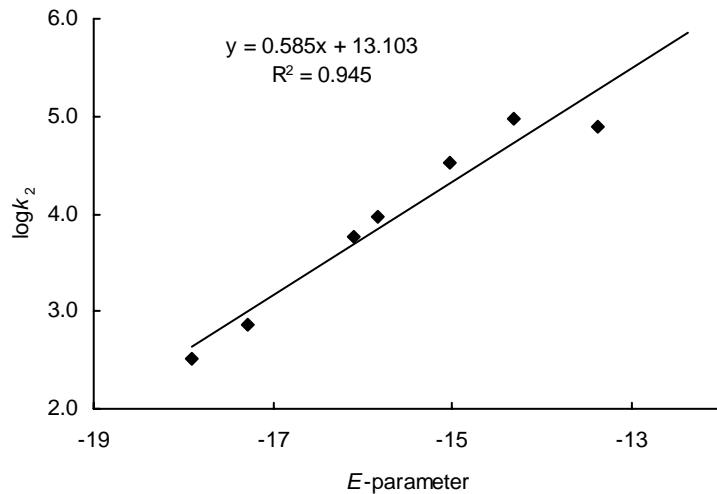
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.92×10^{-5}	3.74×10^{-4}	12.8	18.1
2.92×10^{-5}	5.61×10^{-4}	19.2	32.2
2.92×10^{-5}	7.01×10^{-4}	24.0	39.6
2.92×10^{-5}	9.35×10^{-4}	32.0	56.2



$$k_2 = 6.70 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 81: Determination of *N*- and *s*-parameters for **2l** at 20 °C in DMSO.

Electrophile	<i>E</i> -parameter	<i>k</i> ₂ [L mol ⁻¹ s ⁻¹]	lg <i>k</i> ₂
1k	-13.39	7.67×10^4	4.88
1l	-14.32	9.21×10^4	4.96
1m	-15.03	3.32×10^4	4.52
1n	-15.83	9.30×10^3	3.97
1o	-16.11	5.94×10^3	3.77
1p	-17.29	7.12×10^2	2.85
1q	-17.90	3.28×10^2	2.52

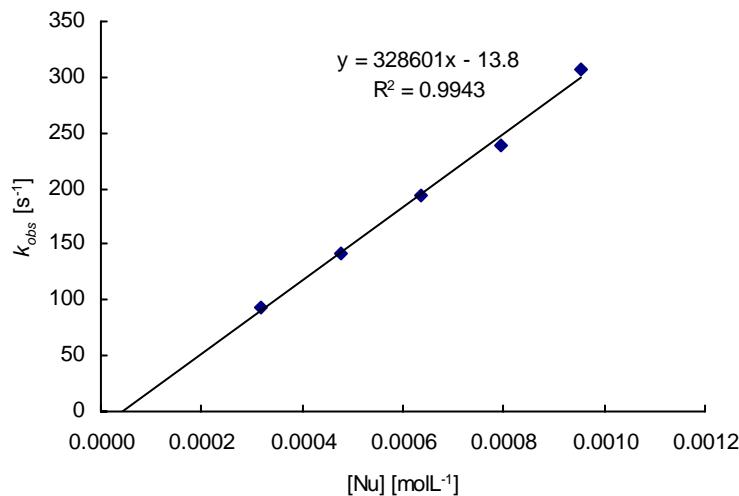


$$N = 22.40; s = 0.59$$

5.14 Potassium Salt of (S)-4-Benzylloxazolidin-2-one (2m-K⁺)

Table 82: Kinetics of the reaction of **2m-K⁺** with **1j** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 422 nm)

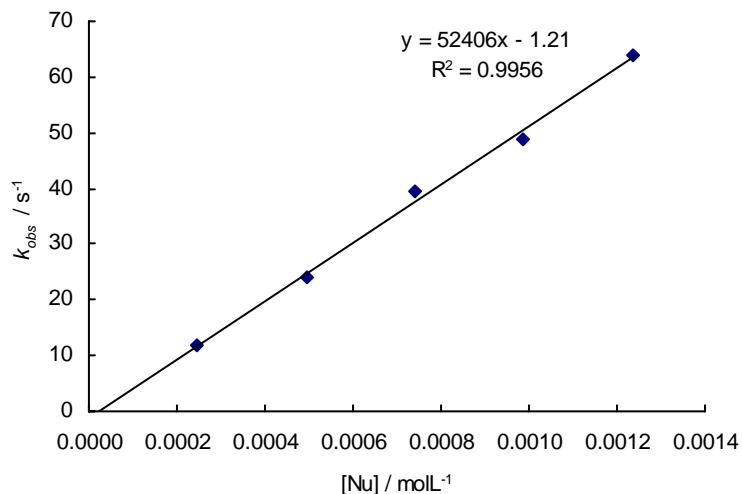
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
3.13×10^{-5}	3.18×10^{-4}	-	10.2	94.0
3.13×10^{-5}	4.77×10^{-4}	7.44×10^{-4}	15.2	142
3.13×10^{-5}	6.35×10^{-4}	-	20.3	194
3.13×10^{-5}	7.94×10^{-4}	9.56×10^{-4}	25.4	238
3.13×10^{-5}	9.53×10^{-4}	-	30.5	307



$$k_2 = 3.29 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 83: Kinetics of the reaction of **2m**-K⁺ with **1k** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 533 nm)

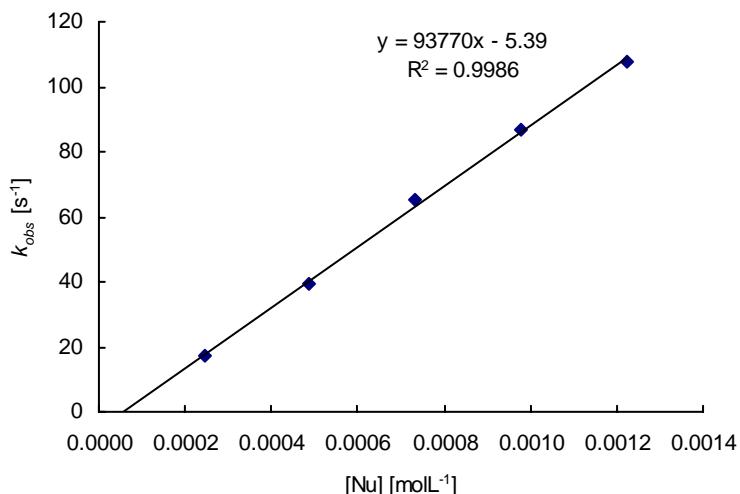
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.07 × 10 ⁻⁵	2.47 × 10 ⁻⁴	-	12.0	11.7
2.07 × 10 ⁻⁵	4.94 × 10 ⁻⁴	6.41 × 10 ⁻⁴	23.9	24.0
2.07 × 10 ⁻⁵	7.41 × 10 ⁻⁴	-	35.9	39.6
2.07 × 10 ⁻⁵	9.88 × 10 ⁻⁴	1.28 × 10 ⁻³	47.8	48.9
2.07 × 10 ⁻⁵	1.24 × 10 ⁻³	-	59.8	64.0



$$k_2 = 5.24 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 84: Kinetics of the reaction of **2m**-K⁺ with **1l** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 374 nm)

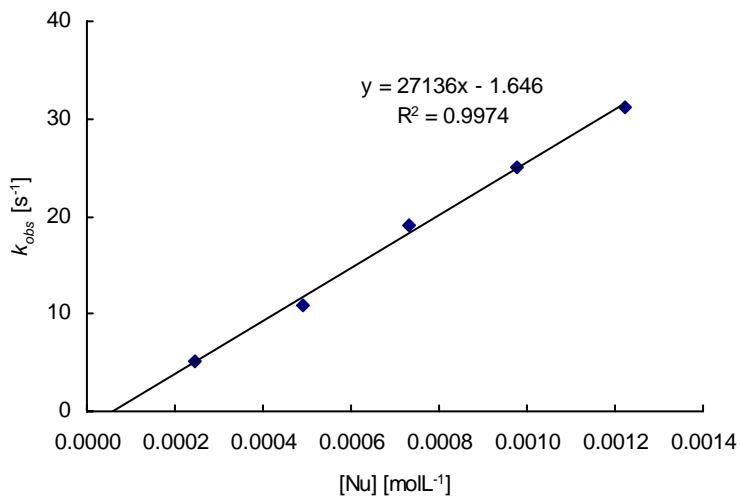
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.62 × 10 ⁻⁵	2.44 × 10 ⁻⁴	-	9.3	17.2
2.62 × 10 ⁻⁵	4.89 × 10 ⁻⁴	6.43 × 10 ⁻⁴	18.7	39.3
2.62 × 10 ⁻⁵	7.33 × 10 ⁻⁴	-	28.0	65.4
2.62 × 10 ⁻⁵	9.77 × 10 ⁻³	1.29 × 10 ⁻³	37.4	86.8
2.62 × 10 ⁻⁵	1.22 × 10 ⁻³	-	46.7	108



$$k_2 = 9.38 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 85: Kinetics of the reaction of **2m-K⁺** with **1m** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 354 nm)

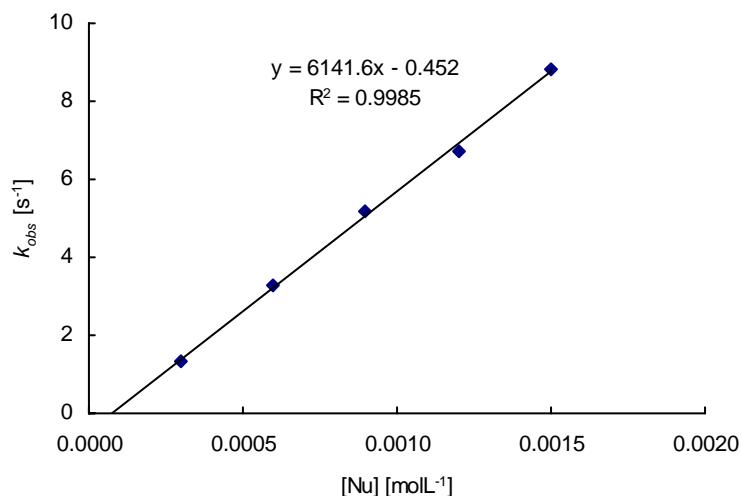
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.80×10^{-5}	2.44×10^{-4}	-	8.7	5.08
2.80×10^{-5}	4.89×10^{-4}	6.43×10^{-4}	17.4	10.9
2.80×10^{-5}	7.33×10^{-4}	-	26.1	19.0
2.80×10^{-5}	9.77×10^{-4}	1.29×10^{-3}	34.9	25.0
2.80×10^{-5}	1.22×10^{-3}	-	43.6	31.2



$$k_2 = 2.71 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 86: Kinetics of the reaction of **2m**-K⁺ with **1n** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 371 nm)

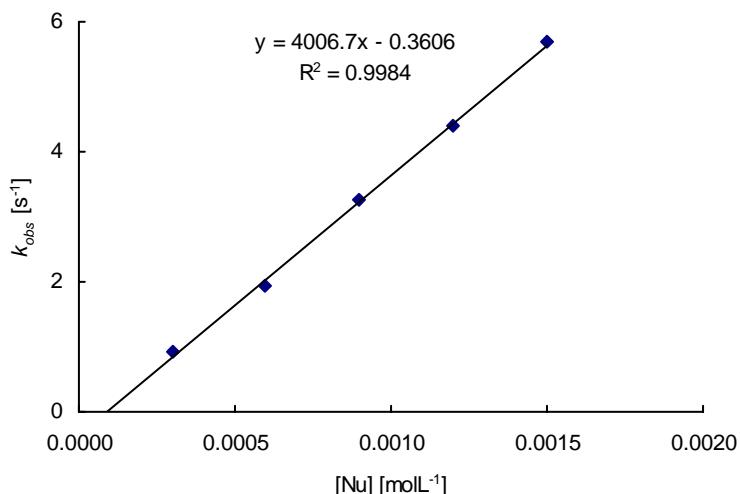
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.43 × 10 ⁻⁵	3.00 × 10 ⁻⁴	-	12.3	1.34
2.43 × 10 ⁻⁵	5.99 × 10 ⁻⁴	7.44 × 10 ⁻⁴	24.6	3.29
2.43 × 10 ⁻⁵	8.99 × 10 ⁻⁴	-	37.0	5.16
2.43 × 10 ⁻⁵	1.20 × 10 ⁻³	1.49 × 10 ⁻³	49.3	6.73
2.43 × 10 ⁻⁵	1.50 × 10 ⁻³	-	61.6	8.82



$$k_2 = 6.14 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 87: Kinetics of the reaction of **2m**-K⁺ with **1o** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 393 nm)

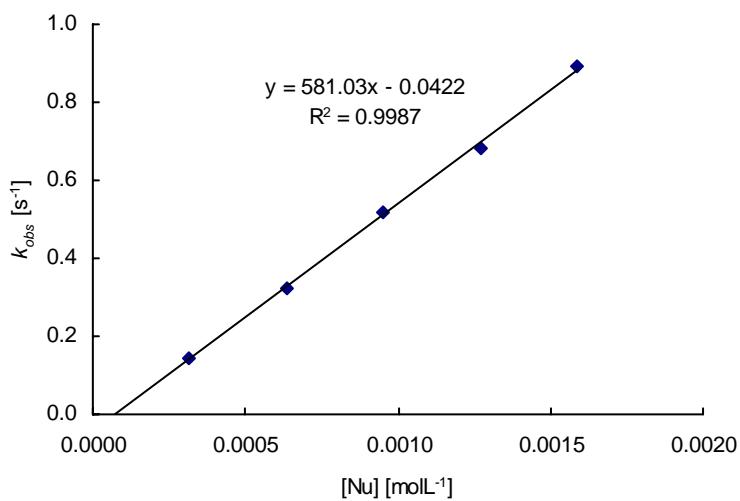
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.98 × 10 ⁻⁵	3.00 × 10 ⁻⁴	-	10.1	0.923
2.98 × 10 ⁻⁵	5.99 × 10 ⁻⁴	7.44 × 10 ⁻⁴	20.1	1.93
2.98 × 10 ⁻⁵	8.99 × 10 ⁻⁴	-	30.2	3.26
2.98 × 10 ⁻⁵	1.20 × 10 ⁻³	1.49 × 10 ⁻³	40.3	4.40
2.98 × 10 ⁻⁵	1.50 × 10 ⁻³	-	50.3	5.69



$$k_2 = 4.01 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 88: Kinetics of the reaction of **2m-K⁺** with **1p** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 486 nm)

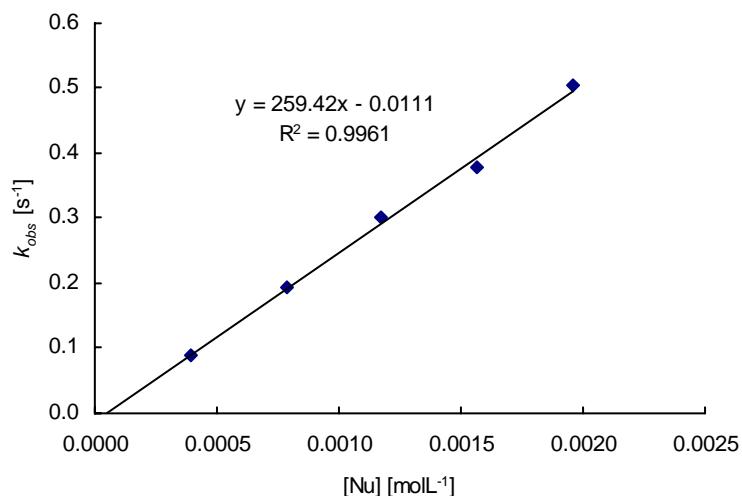
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.73×10^{-5}	3.18×10^{-4}	-	11.7	0.146
2.73×10^{-5}	6.35×10^{-4}	7.44×10^{-4}	23.3	0.322
2.73×10^{-5}	9.53×10^{-4}	-	35.0	0.520
2.73×10^{-5}	1.27×10^{-3}	1.49×10^{-3}	46.6	0.680
2.73×10^{-5}	1.59×10^{-3}	-	58.3	0.890



$$k_2 = 5.81 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 89: Kinetics of the reaction of **2m**-K⁺ with **1q** (20 °C, additive: 18-crown-6, in DMSO, stopped-flow, at 521 nm)

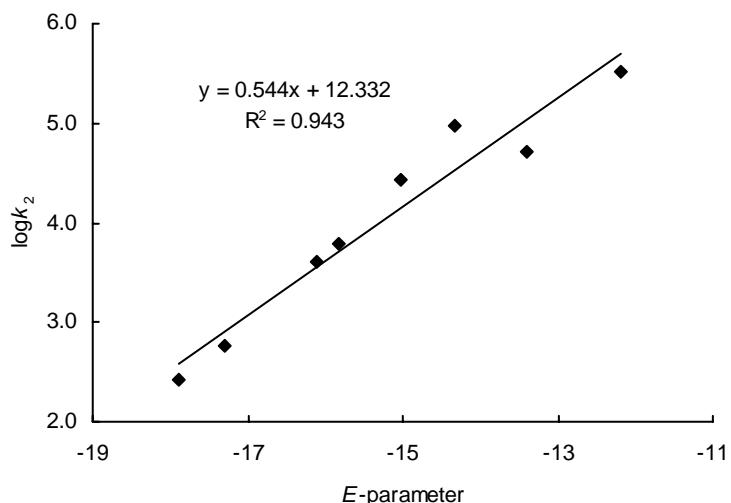
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[18-crown-6] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.67 × 10 ⁻⁵	3.92 × 10 ⁻⁴	5.21 × 10 ⁻⁴	14.7	0.0881
2.67 × 10 ⁻⁵	7.83 × 10 ⁻⁴	1.04 × 10 ⁻³	29.3	0.195
2.67 × 10 ⁻⁵	1.17 × 10 ⁻³	1.56 × 10 ⁻³	44.0	0.302
2.67 × 10 ⁻⁵	1.57 × 10 ⁻³	2.08 × 10 ⁻³	58.7	0.379
2.67 × 10 ⁻⁵	1.96 × 10 ⁻³	2.60 × 10 ⁻³	73.3	0.504



$$k_2 = 2.59 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 90: Determination of *N*- and *s*-parameters for **2m** at 20 °C in DMSO.

Electrophile	<i>E</i> -parameter	<i>k</i> ₂ [L mol ⁻¹ s ⁻¹]	lg <i>k</i> ₂
1j	-12.18	3.29 × 10 ⁵	5.52
1k	-13.39	5.24 × 10 ⁴	4.72
1l	-14.32	9.38 × 10 ⁴	4.97
1m	-15.03	2.71 × 10 ⁴	4.43
1n	-15.83	6.14 × 10 ³	3.79
1o	-16.11	4.01 × 10 ³	3.60
1p	-17.29	5.81 × 10 ²	2.76
1q	-17.90	2.59 × 10 ²	2.41

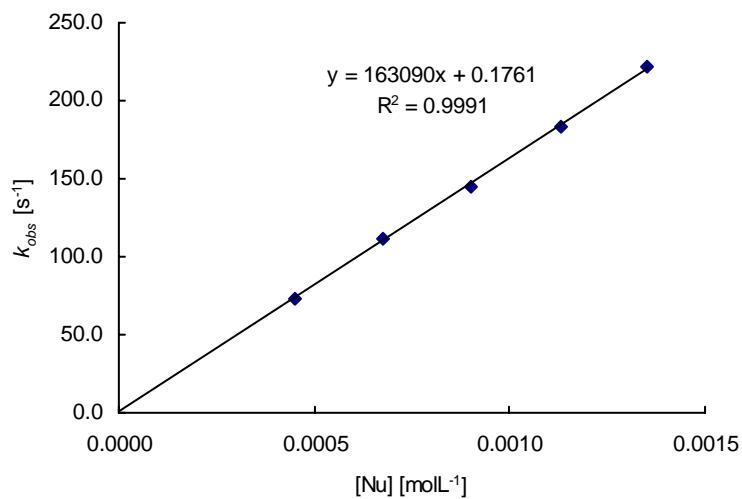


$$N = 22.67; s = 0.54$$

5.15 Potassium Salt of Cyanamide (**2n-K⁺**)

Table 91: Kinetics of the reaction of **2n-K⁺** with **1j** (20 °C, in DMSO, stopped-flow, at 422 nm)

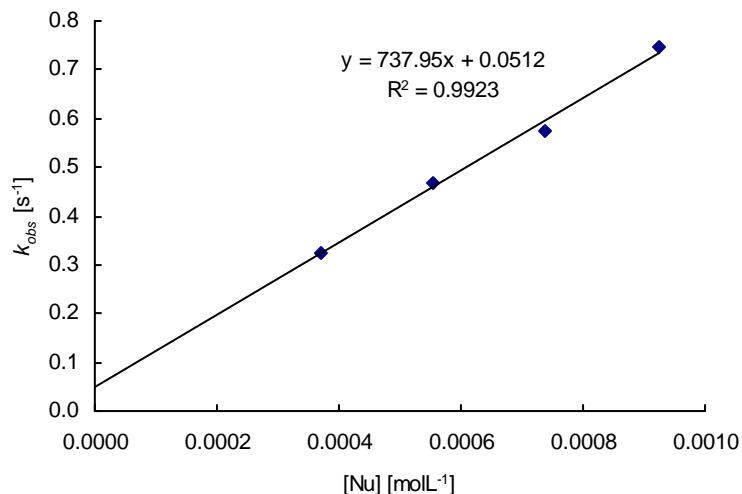
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
5.10×10^{-5}	4.50×10^{-4}	8.8	73.6
5.10×10^{-5}	6.75×10^{-4}	13.2	112
5.10×10^{-5}	9.00×10^{-4}	17.6	145
5.10×10^{-5}	1.13×10^{-3}	22.2	183
5.10×10^{-5}	1.35×10^{-3}	26.5	222



$$k_2 = 1.63 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 92: Kinetics of the reaction of **2n**-K⁺ with **1n** (20 °C, in DMSO, stopped-flow, at 371 nm)

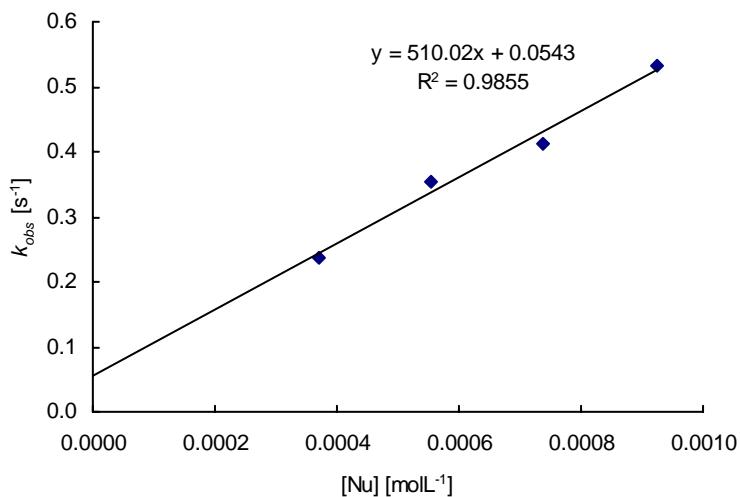
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
2.54×10^{-5}	3.69×10^{-4}	14.5	0.326
2.54×10^{-5}	5.54×10^{-4}	21.8	0.468
2.54×10^{-5}	7.39×10^{-4}	29.0	0.574
2.54×10^{-5}	9.23×10^{-4}	36.3	0.745



$$k_2 = 7.38 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 93: Kinetics of the reaction of **2n**-K⁺ with **1o** (20 °C, in DMSO, stopped-flow, at 393 nm)

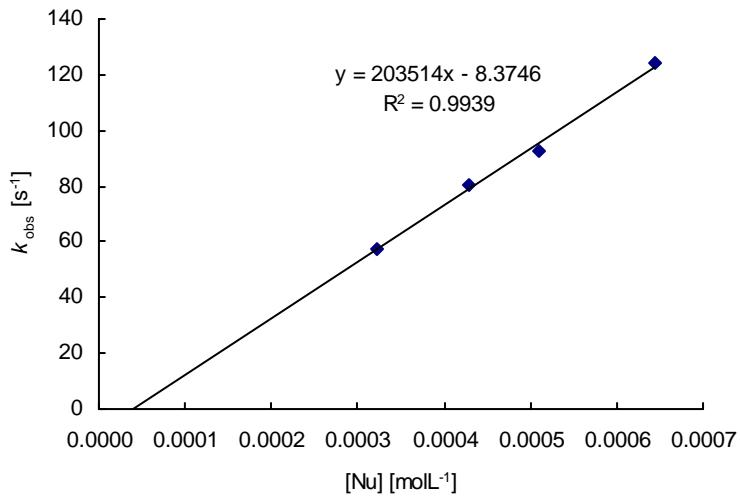
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
1.66×10^{-5}	3.69×10^{-4}	22.2	0.238
1.66×10^{-5}	5.54×10^{-4}	33.3	0.353
1.66×10^{-5}	7.39×10^{-4}	44.4	0.413
1.66×10^{-5}	9.23×10^{-4}	55.5	0.532



$$k_2 = 5.10 \times 10^2 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 94: Kinetics of the reaction of **2n-K⁺** with **4b** (20 °C, in DMSO, stopped-flow, at 480 nm)

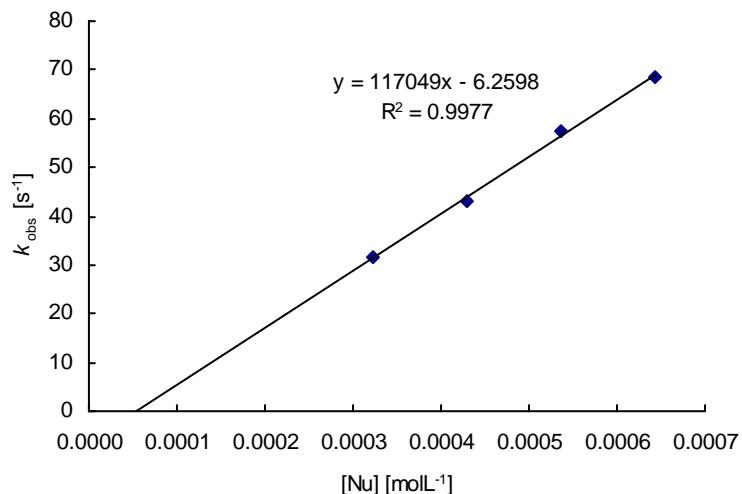
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
2.92×10^{-5}	3.22×10^{-4}	11.0	57.4
2.92×10^{-5}	4.29×10^{-4}	14.7	80.5
2.92×10^{-5}	5.11×10^{-4}	17.5	92.5
2.92×10^{-5}	6.44×10^{-4}	22.1	124



$$k_2 = 2.04 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 95: Kinetics of the reaction of **2n**-K⁺ with **4a** (20 °C, in DMSO, stopped-flow, at 500 nm)

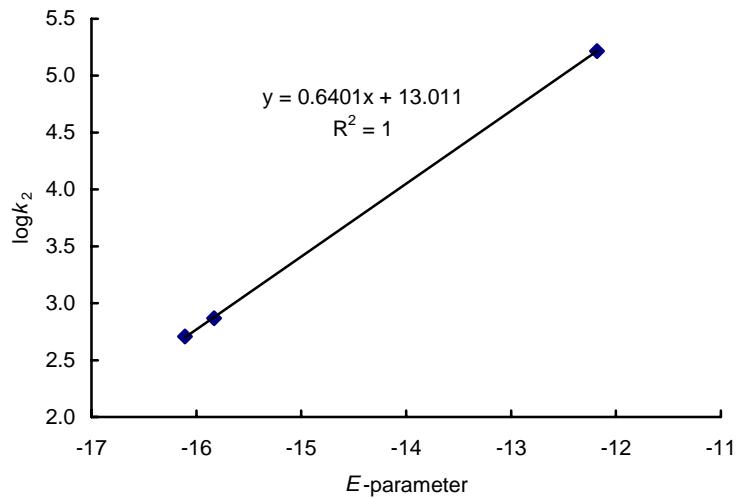
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	<i>k</i> _{obs} [s ⁻¹]
3.88×10^{-5}	3.22×10^{-4}	8.3	31.6
3.88×10^{-5}	4.29×10^{-4}	11.1	43.2
3.88×10^{-5}	5.37×10^{-4}	13.8	57.6
3.88×10^{-5}	6.44×10^{-4}	16.6	68.7



$$k_2 = 1.17 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 96: Determination of *N*- and *s*-parameters for **2n** at 20 °C in DMSO.

Electrophile	<i>E</i> -parameter	<i>k</i> ₂ [L mol ⁻¹ s ⁻¹]	lg <i>k</i> ₂
1j	-12.18	1.64×10^5	5.21
1n	-15.83	7.38×10^2	2.87
1o	-16.11	5.10×10^2	2.71

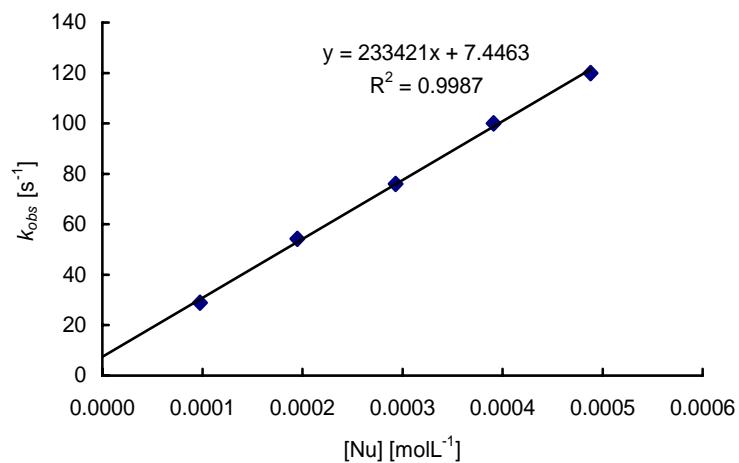


$$N = 20.33; s = 0.64$$

5.16 Tetramethylammonium Salt of Saccharin (**2o-NMe₄⁺**)

Table 97: Kinetics of the reaction of **2o-NMe₄⁺** with **1a** (20 °C, in CH₃CN, stopped-flow, at 644 nm)

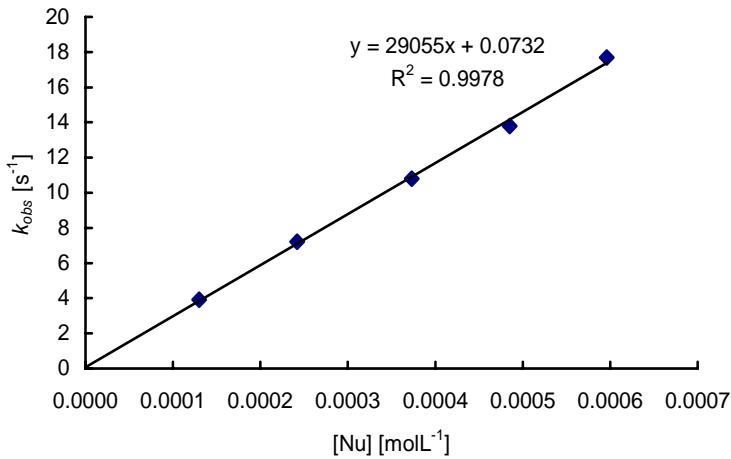
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
8.11 × 10 ⁻⁶	9.76 × 10 ⁻⁵	12.0	28.9
8.11 × 10 ⁻⁶	1.95 × 10 ⁻⁴	24.0	54.2
8.11 × 10 ⁻⁶	2.93 × 10 ⁻⁴	36.1	76.0
8.11 × 10 ⁻⁶	3.91 × 10 ⁻⁴	48.2	100
8.11 × 10 ⁻⁶	4.88 × 10 ⁻⁴	60.2	120



$$k_2 = 2.33 \times 10^5 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 98: Kinetics of the reaction of **2o-NMe₄⁺** with **1c** (20 °C, in CH₃CN, stopped-flow, at 613 nm)

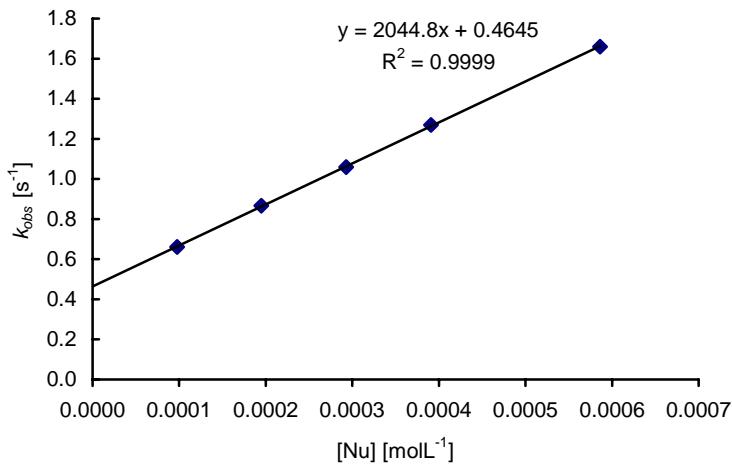
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k _{obs} [s ⁻¹]
8.95 × 10 ⁻⁶	1.30 × 10 ⁻⁴	14.5	3.91
8.95 × 10 ⁻⁶	2.42 × 10 ⁻⁴	27.0	7.21
8.95 × 10 ⁻⁶	3.73 × 10 ⁻⁴	41.7	10.8
8.95 × 10 ⁻⁶	4.85 × 10 ⁻⁴	54.2	13.8
8.95 × 10 ⁻⁶	5.96 × 10 ⁻⁴	66.6	17.7



$$k_2 = 2.91 \times 10^4 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 99: Kinetics of the reaction of **2o-NMe₄**⁺ saccharin with **1d** (20 °C, in CH₃CN, stopped-flow, at 606 nm)

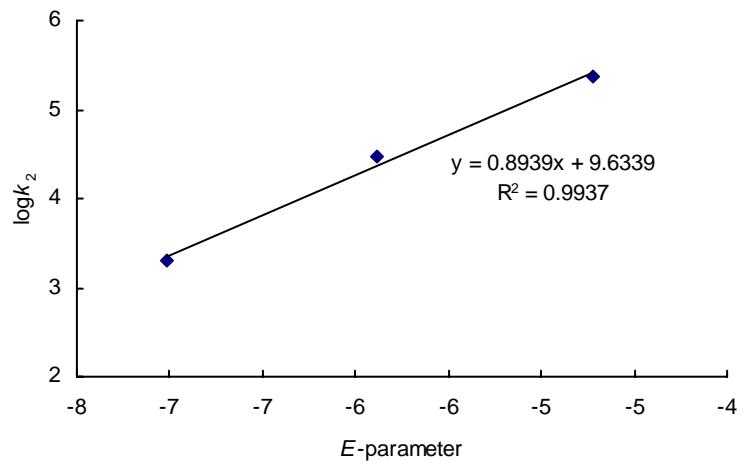
[E] [mol L ⁻¹]	[Nu] [mol L ⁻¹]	[Nu]/[E]	k_{obs} [s ⁻¹]
7.92×10^{-6}	9.76×10^{-5}	12.3	0.661
7.92×10^{-6}	1.95×10^{-4}	24.6	0.867
7.92×10^{-6}	2.93×10^{-4}	37.0	1.06
7.92×10^{-6}	3.91×10^{-4}	49.4	1.27
7.92×10^{-6}	5.86×10^{-4}	74.0	1.66



$$k_2 = 2.04 \times 10^3 \text{ L mol}^{-1} \text{ s}^{-1}$$

Table 100: Determination of N - and s -parameters for **2o** at 20 °C in CH₃CN.

Electrophile	E -parameter	k_2 [L mol ⁻¹ s ⁻¹]	lg k_2
1a	-4.72	2.33×10^5	5.37
1c	-5.89	2.91×10^4	4.46
1d	-7.02	2.04×10^3	3.31



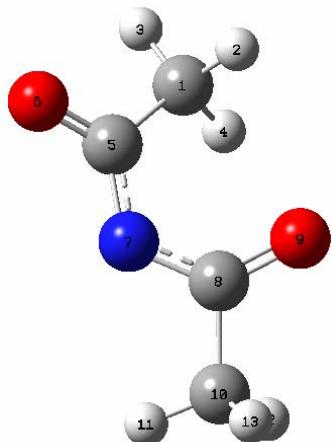
$$N = 10.78; s = 0.89$$

6 Quantum Chemical Calculations

All quantum chemical calculations were carried out using Gaussian 03.¹⁴ Density functional calculations used the B3LYP (Becke-Lee-Yang-Parr) functional.¹⁵ Free energies were calculated at B3LYP/6-31+G** level.

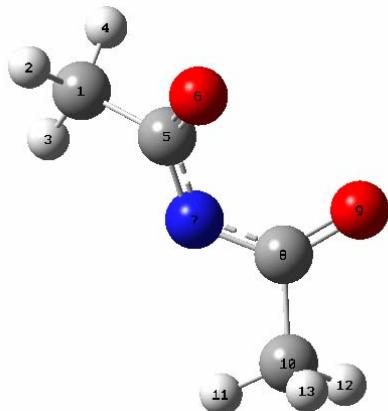
6.1 Structures

Sickle-Conformation of the Anion of Diacetamide (**2g-I**)



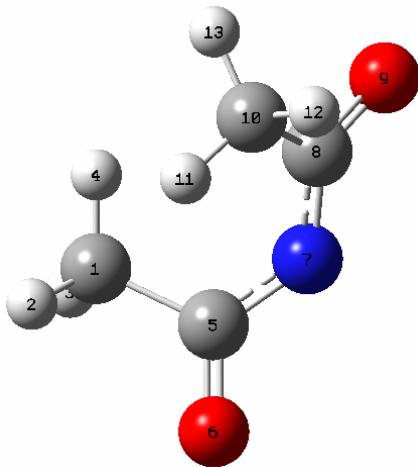
```
1|1|UNPC-UNK|FOpt|RB3LYP|6-31+G(d, p)|C4H6N1O2(1-) |PCUSER|14-Apr-2010|0
||#p b3lyp/6-31+g(d, p) opt freq||Di acetamid-Anion - Si chel-Konformatio
n||-1, 1|C, 1. 5643402476, 1. 1294243429, 0. 4345342081|H, 1. 5722154699, 1. 7676
261172, -0. 4551849633|H, 2. 5622802896, 1. 1350282078, 0. 8854139439|H, 0. 8238
822957, 1. 5544482197, 1. 1172306951|C, 1. 2326106484, -0. 3118967917, 0. 011913
1946|O, 2. 1905781439, -1. 0492478235, -0. 2882755398|N, -0. 0511020698, -0. 764
5892125, 0. 0507064151|C, -1. 1092887859, 0. 0529341744, -0. 0935137428|O, -1. 1
441298822, 1. 2256867924, -0. 5424986491|C, -2. 4510771738, -0. 5909077284, 0. 2
872682205|H, -2. 3153777871, -1. 577480022, 0. 7379559412|H, -2. 9838585107, 0.
0701940611, 0. 9816177459|H, -3. 0760918856, -0. 6856753375, -0. 6098094692||V
ersi on=IA32W-G03RevE.01|State=1-A|HF=-361. 335027|RMSD=8. 871e-009|RMSF=
1. 595e-005|Thermal =0.|Dipole=-0. 810657, 0. 5689176, 0. 7017554|PG=C01 [X(C
4H6N1O2)]||@
```

W-Conformation of the Anion of Diacetamide (**2g-III**)



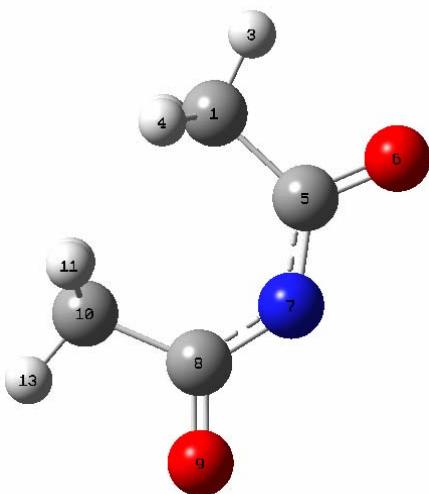
1|1|UNPC-UNK|FOpt|RB3LYP|6-31+G(d, p)|C4H6N1O2(1-)|PCUSER|14-Apr-2010|0
||#p b3lyp/6-31+g(d, p) opt freq||Di acetamide-Anion - W-Form||-1, 1|C, -2.
3924068932, -0. 7708521166, -0. 3517355296|H, -3. 195998607, -0. 7402186738, 0.
3931794652|H, -2. 1190250111, -1. 8065586048, -0. 5719996023|H, -2. 7781800264
, -0. 3040382624, -1. 2677142848|C, -1. 1875276239, 0. 0499740284, 0. 1409415229
|0, -1. 4189469958, 1. 1528607853, 0. 6727816459|N, -0. 0011156822, -0. 58367700
36, -0. 0022668|C, 1. 1866730714, 0. 049057671, -0. 1393849167|0, 1. 4207076263,
1. 1542804365, -0. 6649922107|C, 2. 3885454532, -0. 7756220293, 0. 3540932083|H
, 2. 1183556983, -1. 8183318369, 0. 5431828104|H, 3. 2058693553, -0. 7199380247,
-0. 3740620672|H, 2. 7526016352, -0. 330797369, 1. 2898087586||Version=1 A32W-
G03RevE.01|State=1-A|HF=-361. 3304457|RMSD=8. 447e-009|RMSF=8. 943e-006|T
hermal=0.|Di pol e=-0. 0002311, -1. 478403, -0. 0010304|PG=C01 [X(C4H6N1O2)]|
|@

U-Conformation of the Anion of Diacetamide (**2g-VII**)



1|1|UNPC-UNK|FOpt|RB3LYP|6-31+G(d, p)|C4H6N1O2(1-) |PCUSER|14-Apr-2010|0
||#p opt freq B3LYP/6-31+G(d, p) ||Di acetamid-Anion - U-Form|| -1, 1 |C, -1.
1950760537, -3. 1082267644, 0. 2419196711 |H, -1. 679706353, -3. 6448039501, 1. 0
651528316 |H, -0. 5769917245, -3. 8341437475, -0. 3000294629 |H, -1. 9514859816,
-2. 7216593593, -0. 4474226567 |C, -0. 2523969932, -2. 0216993955, 0. 8160242491
|0, 0. 526914795, -2. 3963685923, 1. 7177388861 |N, -0. 2214313695, -0. 812675349
6, 0. 2347923087 |C, -1. 2580362977, -0. 1342362124, -0. 2806084314 |0, -1. 177760
6051, 0. 6680656812, -1. 2349104618 |C, -2. 6298151459, -0. 1985537887, 0. 435560
119 |H, -2. 7075042036, -0. 9995169038, 1. 1766463256 |H, -2. 784046538, 0. 758517
0868, 0. 9483099576 |H, -3. 4272176161, -0. 3003046293, -0. 3089530187 ||Version
=IA32W-G03RevE. 01 |State=1-A |HF=-361. 3268364 |RMSD=9. 428e-009 |RMSF=6. 305
e-006 |Thermal =0. |Dipole=-1. 8679588, -0. 9291437, 0. 1147585 |PG=C01 [X(C4H6
N1O2)] ||@

Planar W-Conformation of the Anion of Diacetamide (**2g-VII**)



1|1|UNPC-UNK|F0pt|RB3LYP|6-31+G(d, p)|C4H6N1O2(1-)|PCUSER|18-May-2010|0
||#P B3LYP/6-31+G(d, p) opt=modredundant freq||W-Form Planar||-1, 1|C, -1
.4865468727, 1.2456546487, 0.000083176|H, -1.0651707645, 1.737838889, 0.883
0497969|H, -2.569321757, 1.3878289818, 0.0000453052|H, -1.065082049, 1.7379
776615, -0.8827605153|C, -1.2233534531, -0.2853206293, -0.0000287916|O, -2.
26254982, -0.9803295673, 0.0001339858|N, -0.0000183528, -0.8615447456, 0.00
00074344|C, 1.2233640275, -0.285423728, -0.0001447142|O, 2.2625018655, -0.9
805219453, -0.0000805249|C, 1.4866862144, 1.2455295346, -0.0000331918|H, 1.
0653497526, 1.7378451233, -0.8829455987|H, 1.0652609164, 1.7377915255, 0.88
286367|H, 2.5694722928, 1.3876142512, 0.0000169683||Version=IA32W-G03RevE
.01|State=1-A|HF=-361.3186267|RMSD=4.191e-009|RMSF=6.992e-005|Thermal =
0.|Dipole=0.0001056, 2.6346899, -0.0000884|PG=C01 [X(C4H6N1O2)]||@

6.2 Relaxed Potential Energy Surface Scan (ϕ -Scan)

ϕ	Energy / Hartree	ΔE / kJ mol ⁻¹	ϕ	Energy / Hartree	ΔE / kJ mol ⁻¹
-180.0	-361.3338126	3.18	5.0	-361.3288419	16.23
-175.0	-361.3340623	2.52	10.0	-361.3294142	14.72
-170.0	-361.3344607	1.48	15.0	-361.3298857	13.49
-165.0	-361.3347857	0.62	20.0	-361.3302078	12.64
-160.0	-361.3349807	0.11	25.0	-361.3303836	12.18
-155.0	-361.3350226	0.00	30.0	-361.3304449	12.02
-150.0	-361.3349034	0.31	35.0	-361.3304097	12.11
-145.0	-361.3346242	1.05	40.0	-361.3302993	12.40
-140.0	-361.3342766	1.96	45.0	-361.3301088	12.90
-135.0	-361.3339312	2.87	50.0	-361.3298611	13.55
-130.0	-361.3334755	4.06	55.0	-361.3295807	14.29
-125.0	-361.3329287	5.50	60.0	-361.3292976	15.03
-120.0	-361.3323143	7.11	65.0	-361.329044	15.70
-115.0	-361.3316602	8.83	70.0	-361.3288439	16.22
-110.0	-361.3309977	10.57	75.0	-361.3287115	16.57
-105.0	-361.3303609	12.24	80.0	-361.3286721	16.67
-100.0	-361.3297937	13.73	85.0	-361.3287664	16.43
-95.0	-361.3293285	14.95	90.0	-361.3289786	15.87
-90.0	-361.3289777	15.87	95.0	-361.3293285	14.95
-85.0	-361.3287664	16.43	100.0	-361.3297937	13.73
-80.0	-361.3286721	16.67	105.0	-361.3303609	12.24
-75.0	-361.3287114	16.57	110.0	-361.3309977	10.57
-70.0	-361.3288439	16.22	115.0	-361.3316602	8.83
-65.0	-361.329044	15.70	120.0	-361.3323143	7.11
-60.0	-361.3292976	15.03	125.0	-361.3329287	5.50
-55.0	-361.3295806	14.29	130.0	-361.3334755	4.06
-50.0	-361.3298611	13.55	135.0	-361.3339312	2.87
-45.0	-361.3301086	12.90	140.0	-361.3342765	1.96
-40.0	-361.3302992	12.40	145.0	-361.3346242	1.05
-35.0	-361.3304092	12.11	150.0	-361.3349034	0.31
-30.0	-361.3304449	12.02	155.0	-361.3350226	0.00
-25.0	-361.3303835	12.18	160.0	-361.3349806	0.11
-20.0	-361.3302078	12.64	165.0	-361.3347856	0.62
-15.0	-361.3298857	13.49	170.0	-361.3344607	1.48
-10.0	-361.3294142	14.72	175.0	-361.3340623	2.52
-5.0	-361.328842	16.23	180.0	-361.3338126	3.18
0.0	-361.3284696	17.20			

6.3 Relaxed Potential Energy Surface Scan (ϕ -Scan)

ϕ	Energy / Hartree	ΔE / kJ mol ⁻¹	ϕ	Energy / Hartree	ΔE / kJ mol ⁻¹
-175.0	-361.324708	27.08	5.0	-361.334509	1.35
-170.0	-361.325501	25.00	10.0	-361.334869	0.40
-165.0	-361.326108	23.40	15.0	-361.335022	0.00
-160.0	-361.326525	22.31	20.0	-361.334961	0.16
-155.0	-361.326761	21.69	25.0	-361.334682	0.89
-150.0	-361.326836	21.49	30.0	-361.334199	2.16
-145.0	-361.326771	21.66	35.0	-361.33354	3.89
-140.0	-361.326584	22.15	40.0	-361.332734	6.01
-135.0	-361.326299	22.90	45.0	-361.331832	8.38
-130.0	-361.325953	23.81	50.0	-361.330879	10.88
-125.0	-361.325579	24.79	55.0	-361.329907	13.43
-120.0	-361.325209	25.76	60.0	-361.328922	16.02
-115.0	-361.324873	26.65	65.0	-361.327972	18.51
-110.0	-361.324561	27.47	70.0	-361.327082	20.85
-105.0	-361.32439	27.91	75.0	-361.326282	22.95
-100.0	-361.324302	28.15	80.0	-361.325597	24.75
-95.0	-361.324369	27.97	85.0	-361.325044	26.20
-90.0	-361.324581	27.41	90.0	-361.324642	27.25
-85.0	-361.325044	26.20	95.0	-361.3244	27.89
-80.0	-361.325597	24.75	100.0	-361.324336	28.06
-75.0	-361.326282	22.95	105.0	-361.324379	27.94
-70.0	-361.327082	20.85	110.0	-361.324586	27.40
-65.0	-361.327972	18.51	115.0	-361.324873	26.65
-60.0	-361.328923	16.01	120.0	-361.325209	25.76
-55.0	-361.329907	13.43	125.0	-361.325579	24.79
-50.0	-361.33088	10.87	130.0	-361.325953	23.81
-45.0	-361.331831	8.38	135.0	-361.326299	22.90
-40.0	-361.332734	6.01	140.0	-361.326584	22.15
-35.0	-361.33354	3.89	145.0	-361.326771	21.66
-30.0	-361.334199	2.16	150.0	-361.326836	21.49
-25.0	-361.334682	0.89	155.0	-361.326761	21.69
-20.0	-361.33496	0.16	160.0	-361.326525	22.31
-15.0	-361.335022	0.00	165.0	-361.326108	23.40
-10.0	-361.334869	0.40	170.0	-361.325501	25.00
-5.0	-361.334509	1.35	175.0	-361.324708	27.08
0.0	-361.333981	2.73			

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