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Efficient one-pot synthesis of 3-(polyfluoroalkyl)pyrazol-4-amines

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Supplementary Information

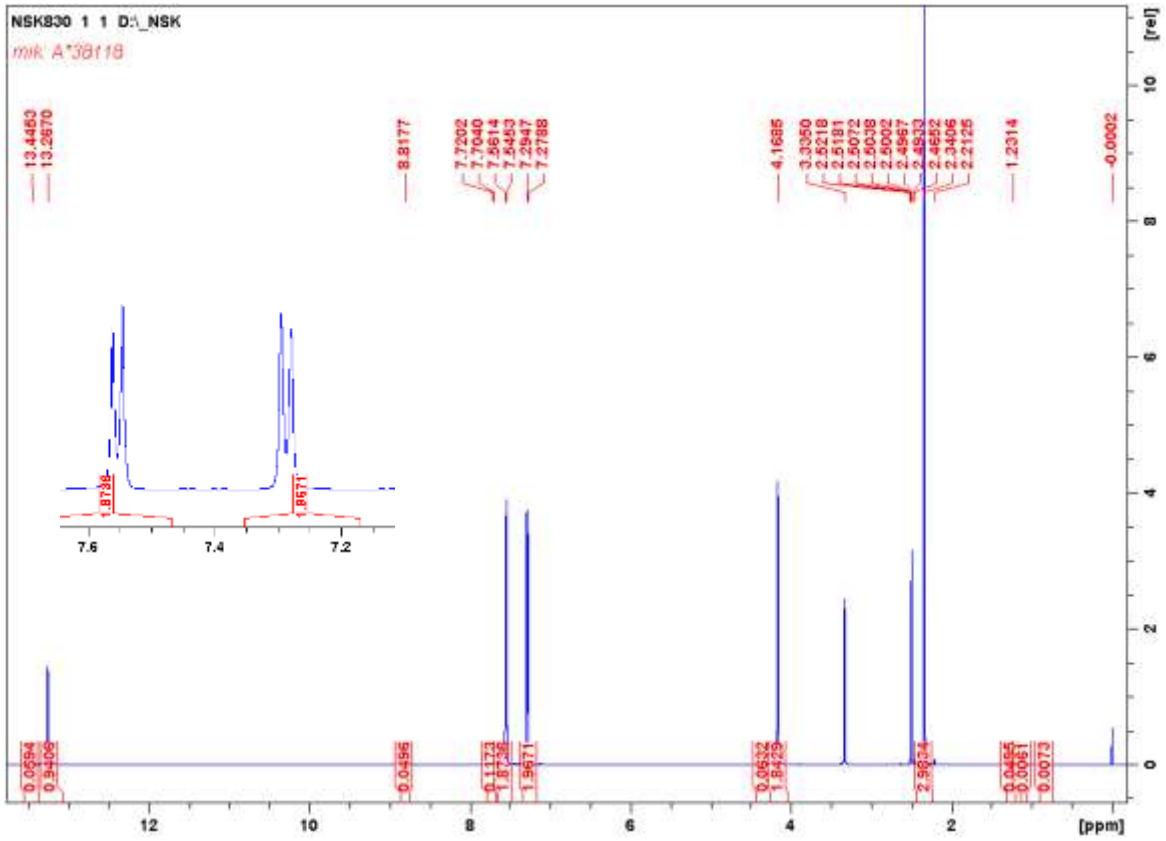

Fig. S1. ^{1}H NMR spectra of 5-(4-methylphenyl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4b** in $DMSOd_6$

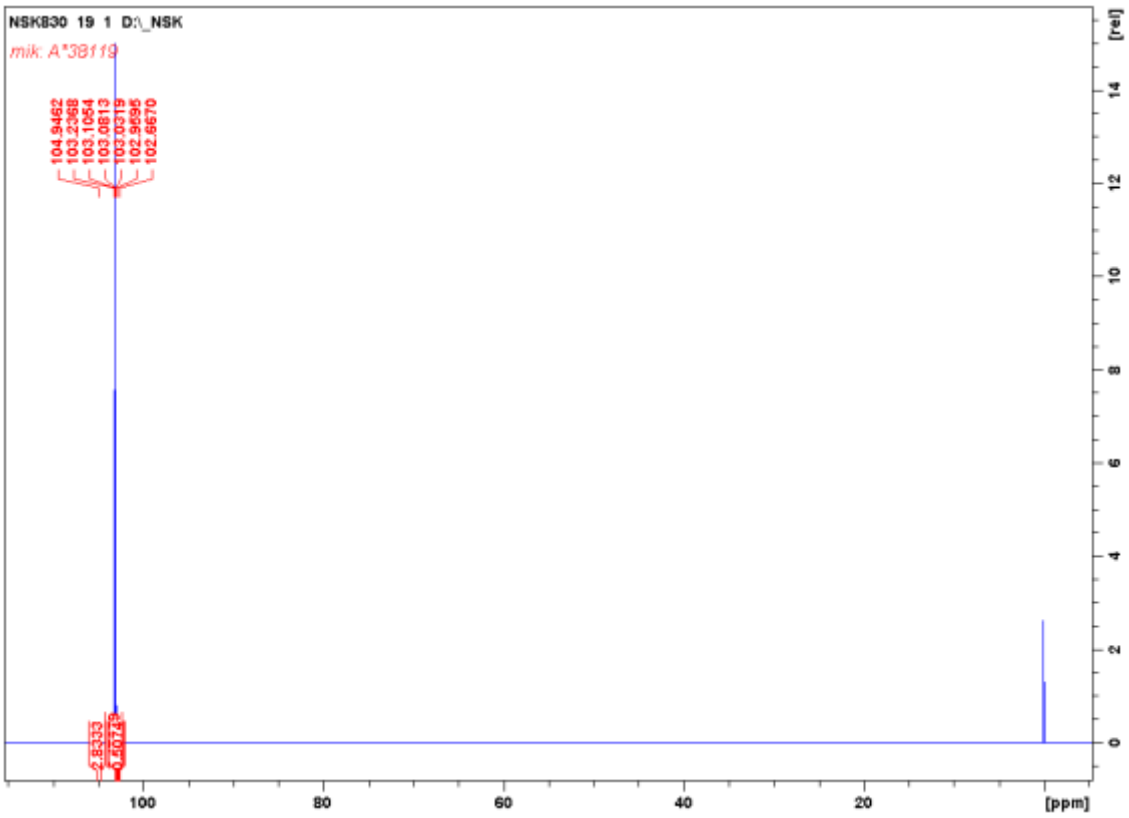

Fig. S2. ^{19}F NMR spectra of 5-(4-methylphenyl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4b** in DMSOd$_6$

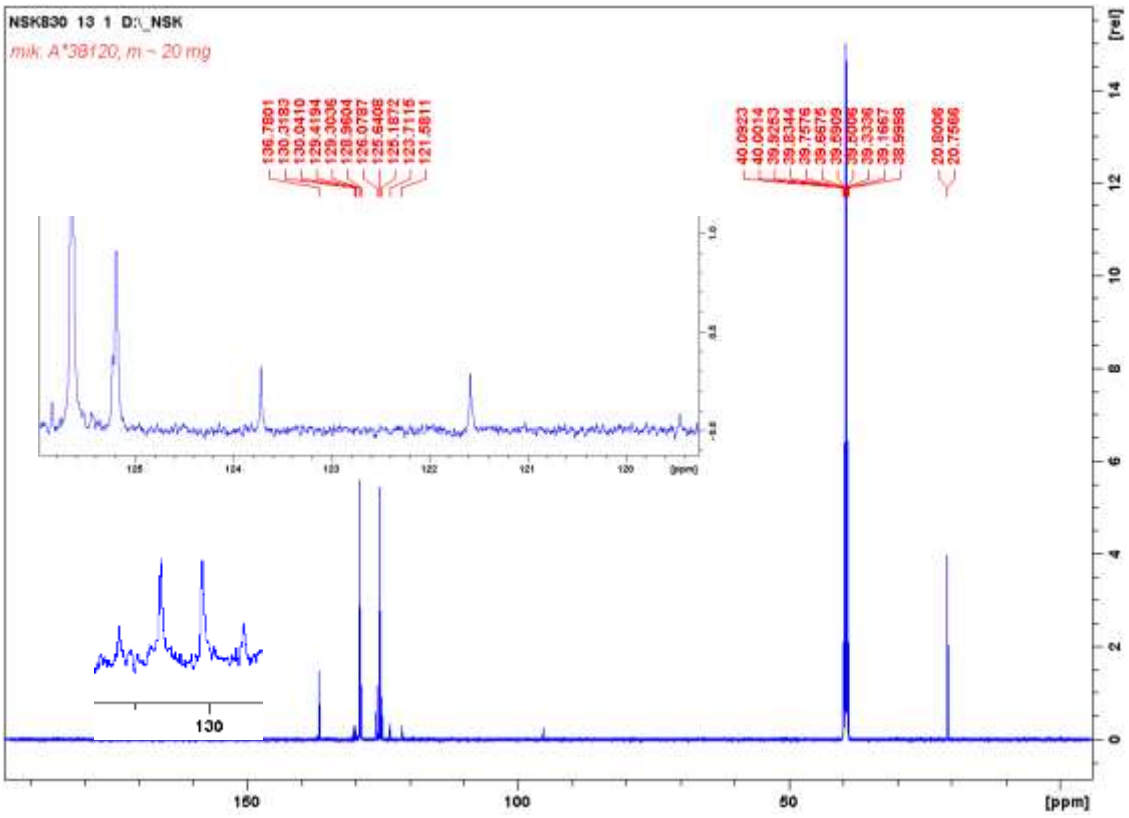

Fig. S3. ^{13}C NMR spectra of 5-(4-methylphenyl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4b** in DMSOd$_6$

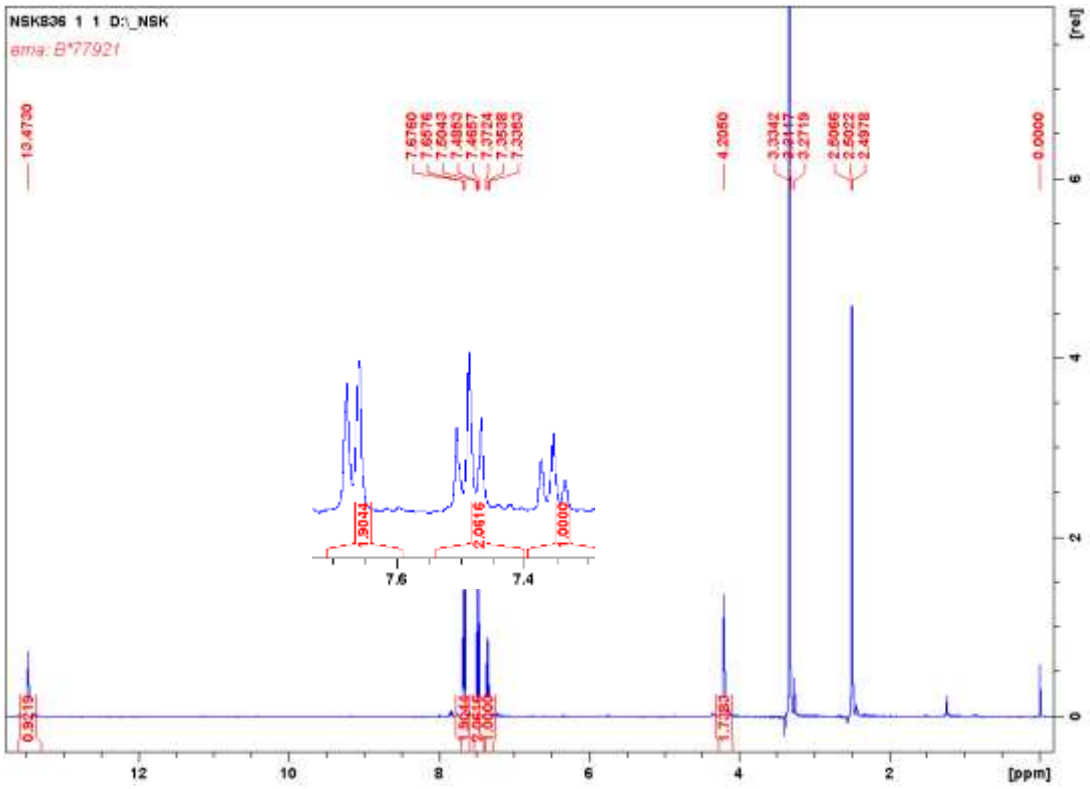

Fig. S4. ^{1}H NMR spectra of 3-(1,1,2,2,3,3,3-heptafluoropropyl)-5-phenyl-1H-pyrazol-4-amine **4c** in DMSOd_6

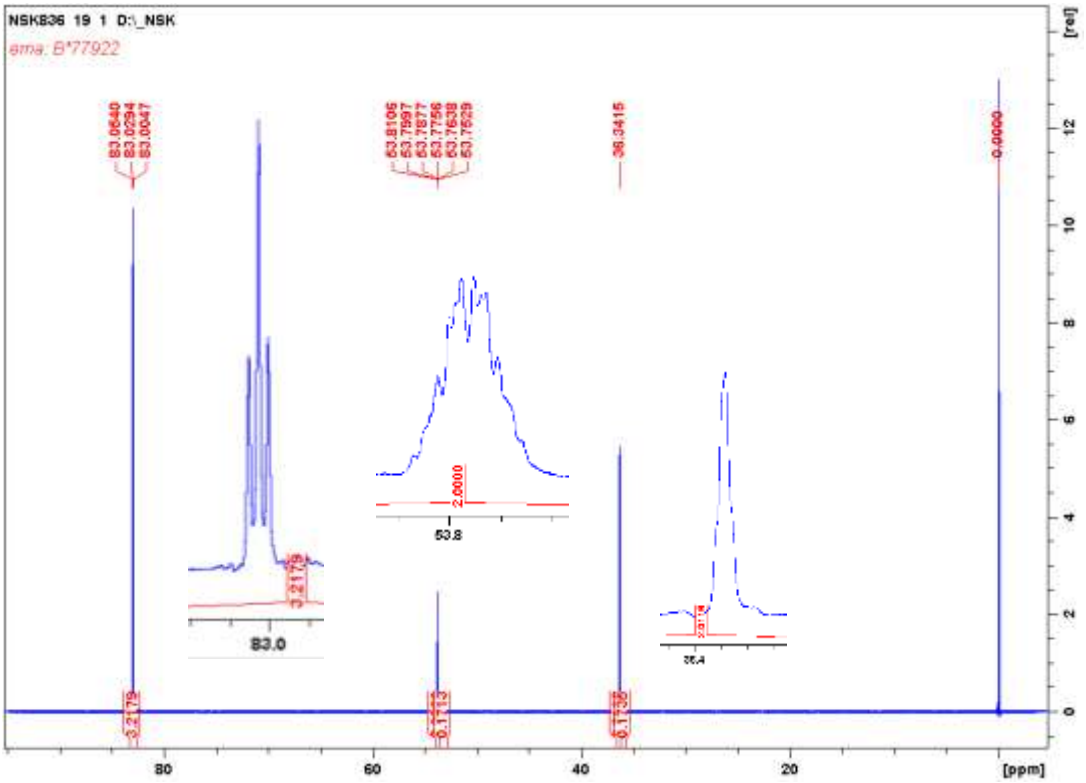

Fig. S5. ^{19}F NMR spectra of 3-(1,1,2,2,3,3,3-heptafluoropropyl)-5-phenyl-1H-pyrazol-4-amine **4c** in DMSOd_6

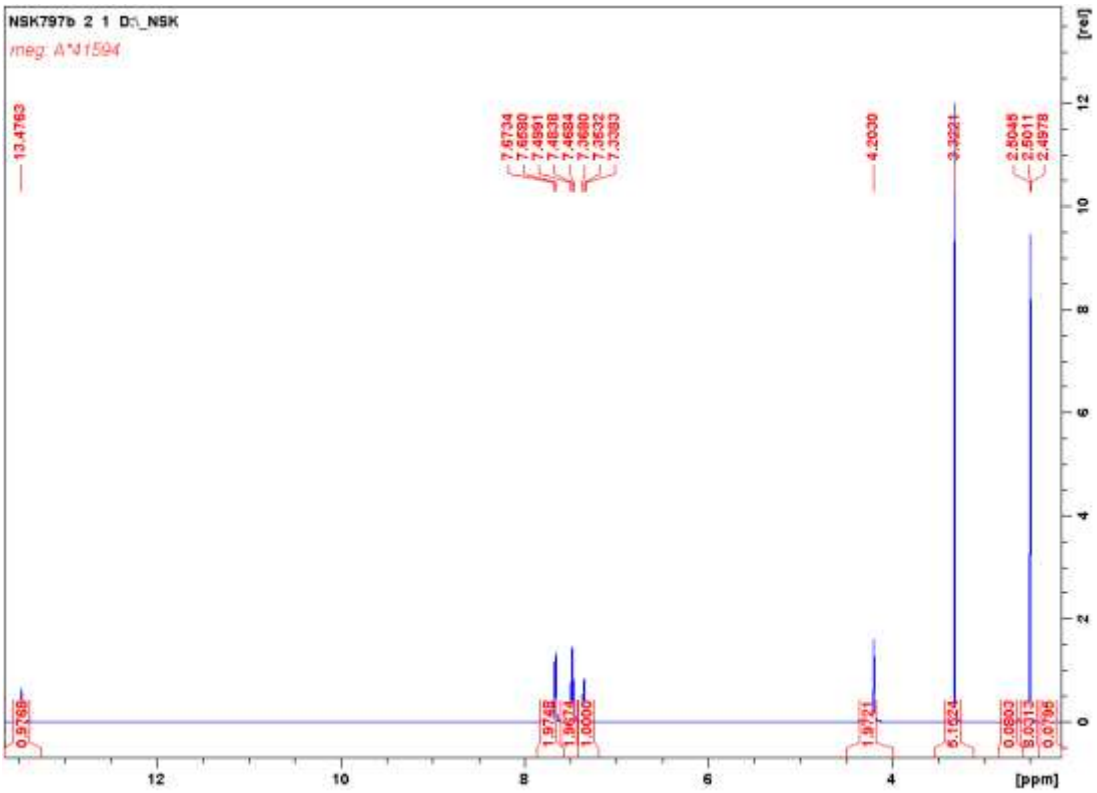

Fig. S6. ^{1}H NMR spectra of 3-(1,1,2,2,3,3,4,4,4-nonafluorobutyl)-5-phenyl-1*H*-pyrazol-4-amine **4d** in $DMSOd_6$

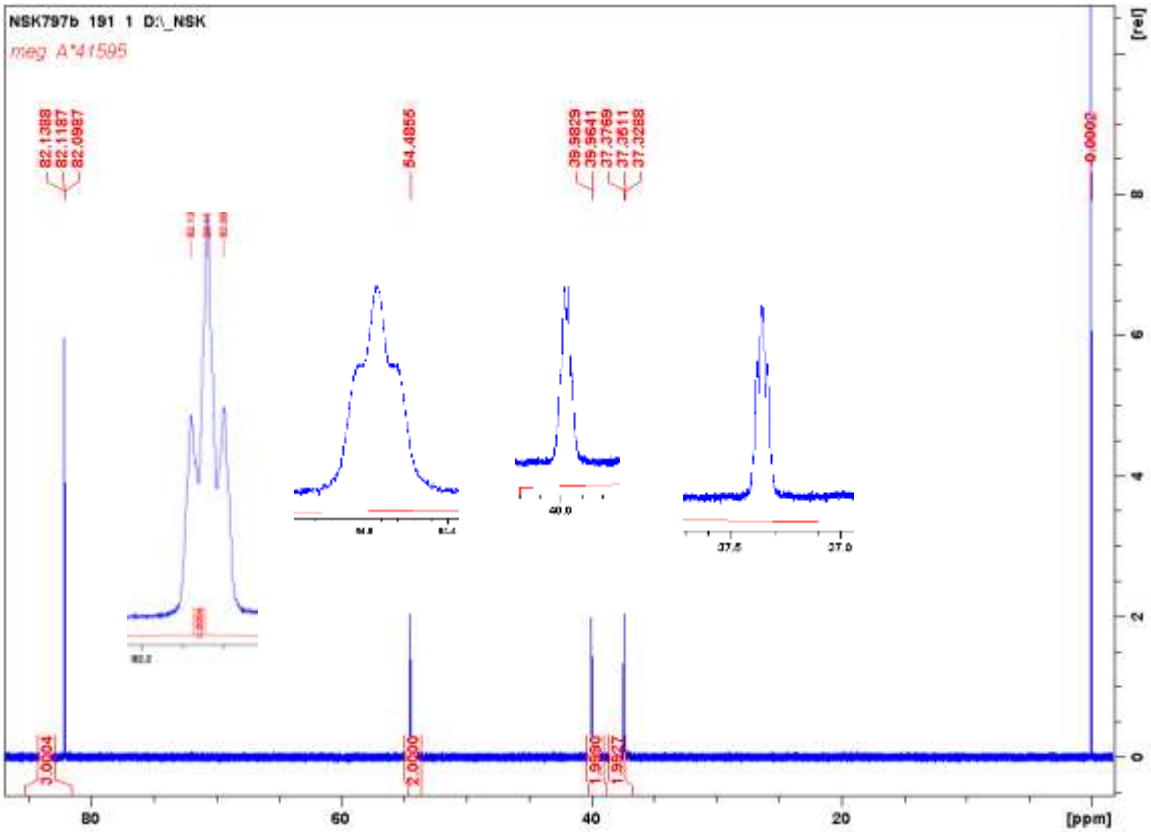

Fig. S7. ^{19}F NMR spectra of 3-(1,1,2,2,3,3,4,4,4-nonafluorobutyl)-5-phenyl-1*H*-pyrazol-4-amine **4d** in $DMSOd_6$

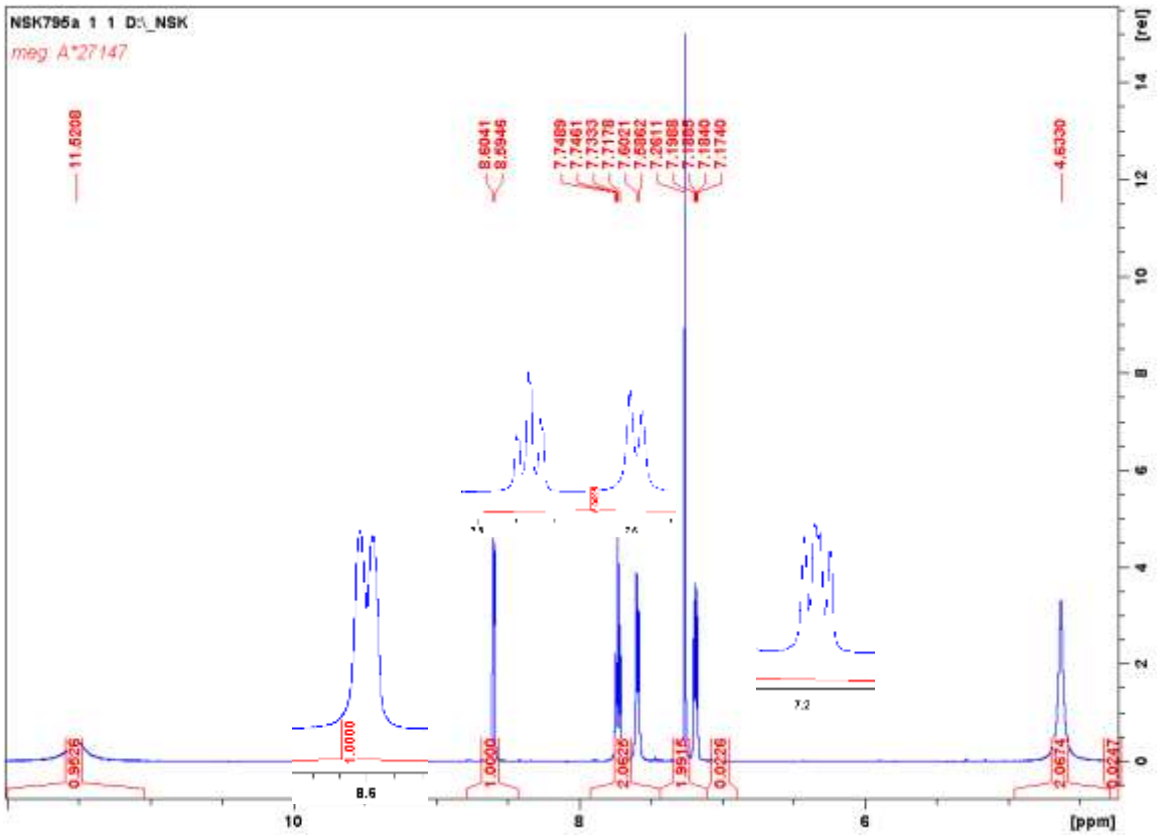

Fig. S8. ^{1}H NMR spectra of 5-(pyridin-2-yl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4e** in $CDCl_3$

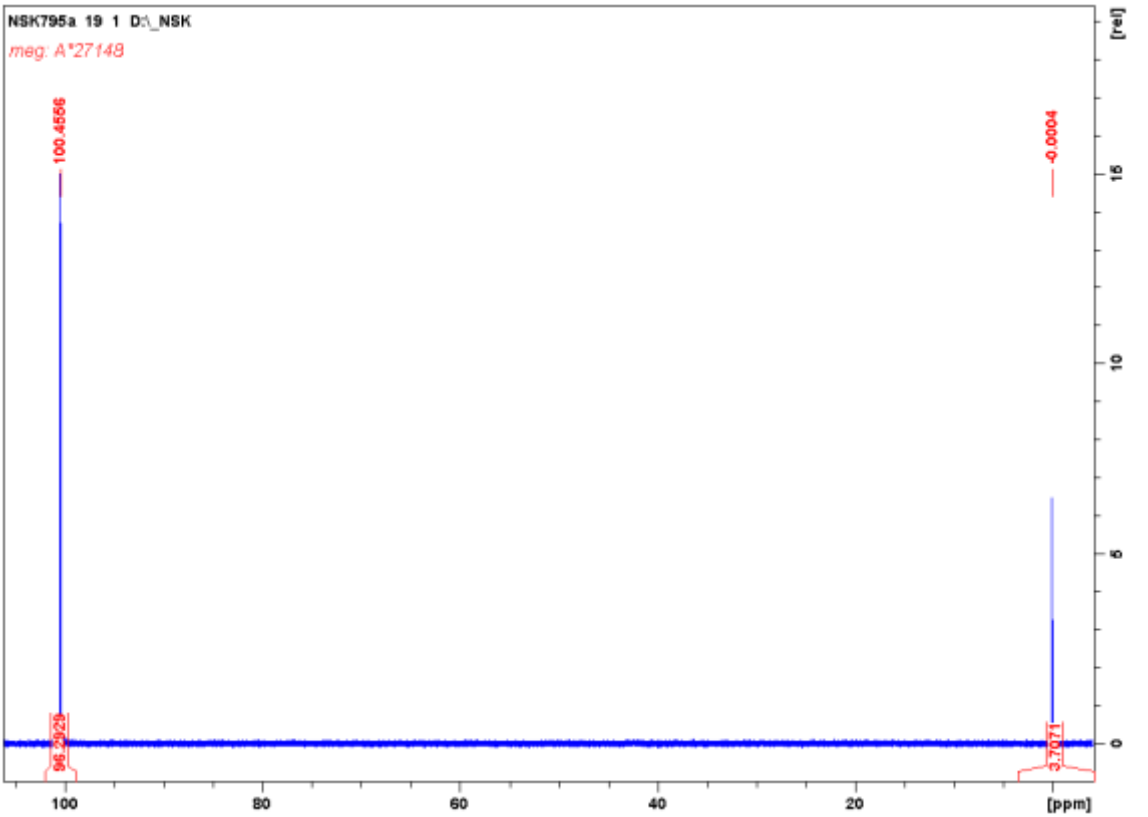

Fig. S9. ^{19}F NMR spectra of 5-(pyridin-2-yl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4e** in $CDCl_3$

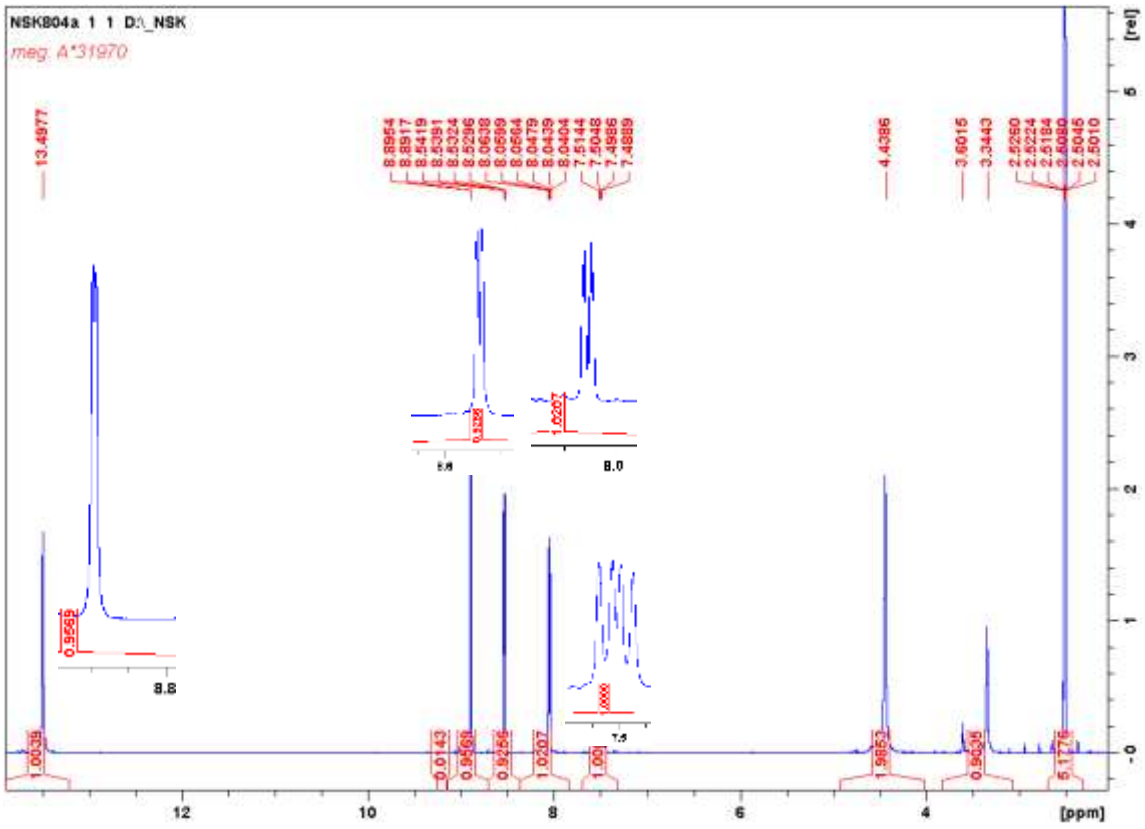

Fig. S10. ^{1}H NMR spectra of 5-(pyridin-3-yl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4f** in $DMSOd_6$

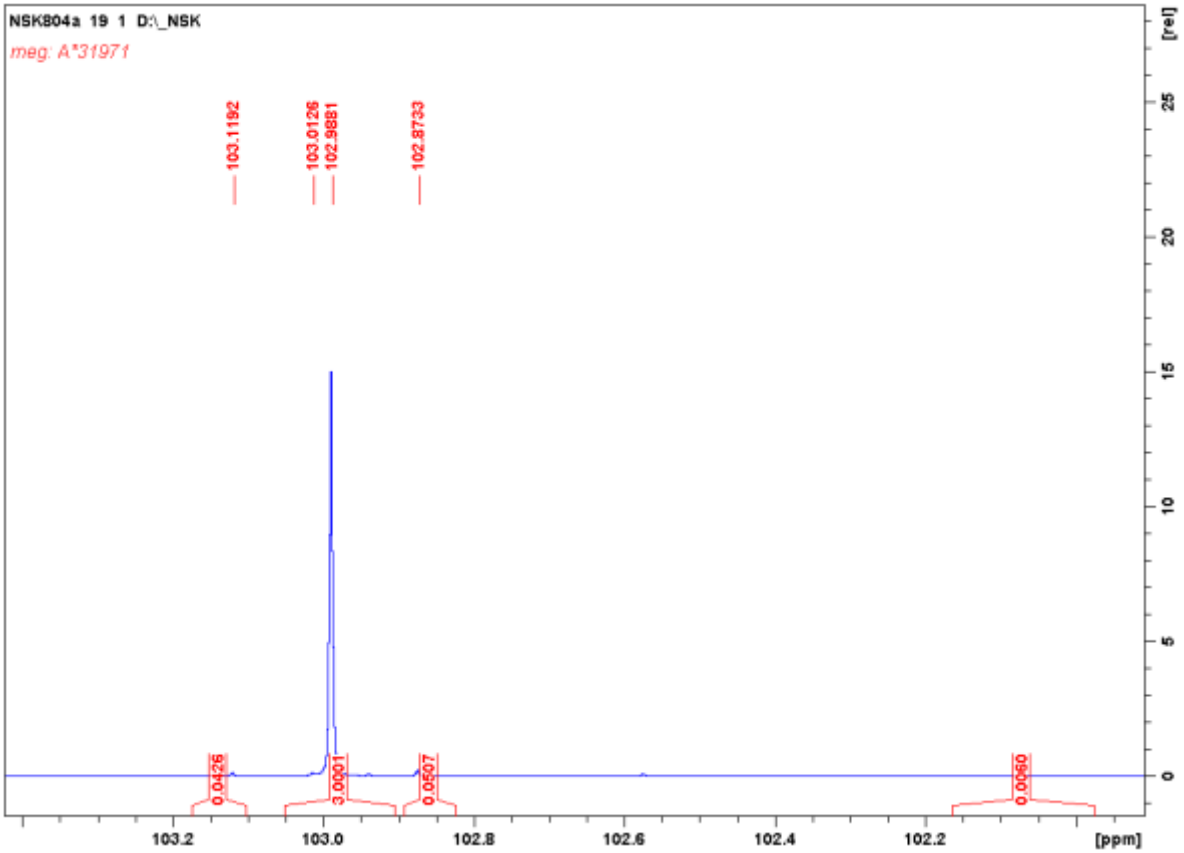

Fig. S11. ^{19}F NMR spectra of 5-(pyridin-3-yl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4f** in $DMSOd_6$

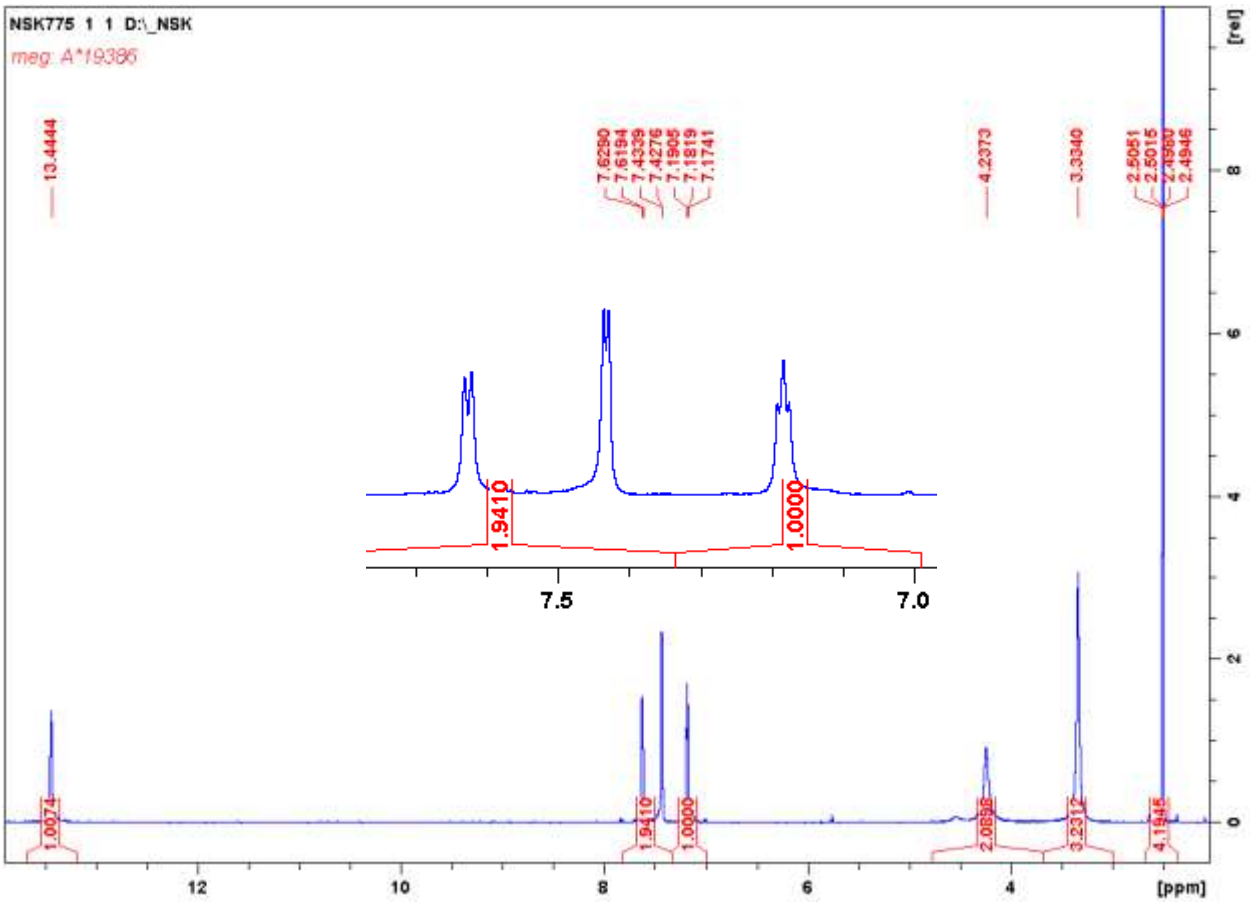

Fig. S12. ^{1}H NMR spectra of 5-(Thiophen-2-yl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4g** in $DMSOd_6$

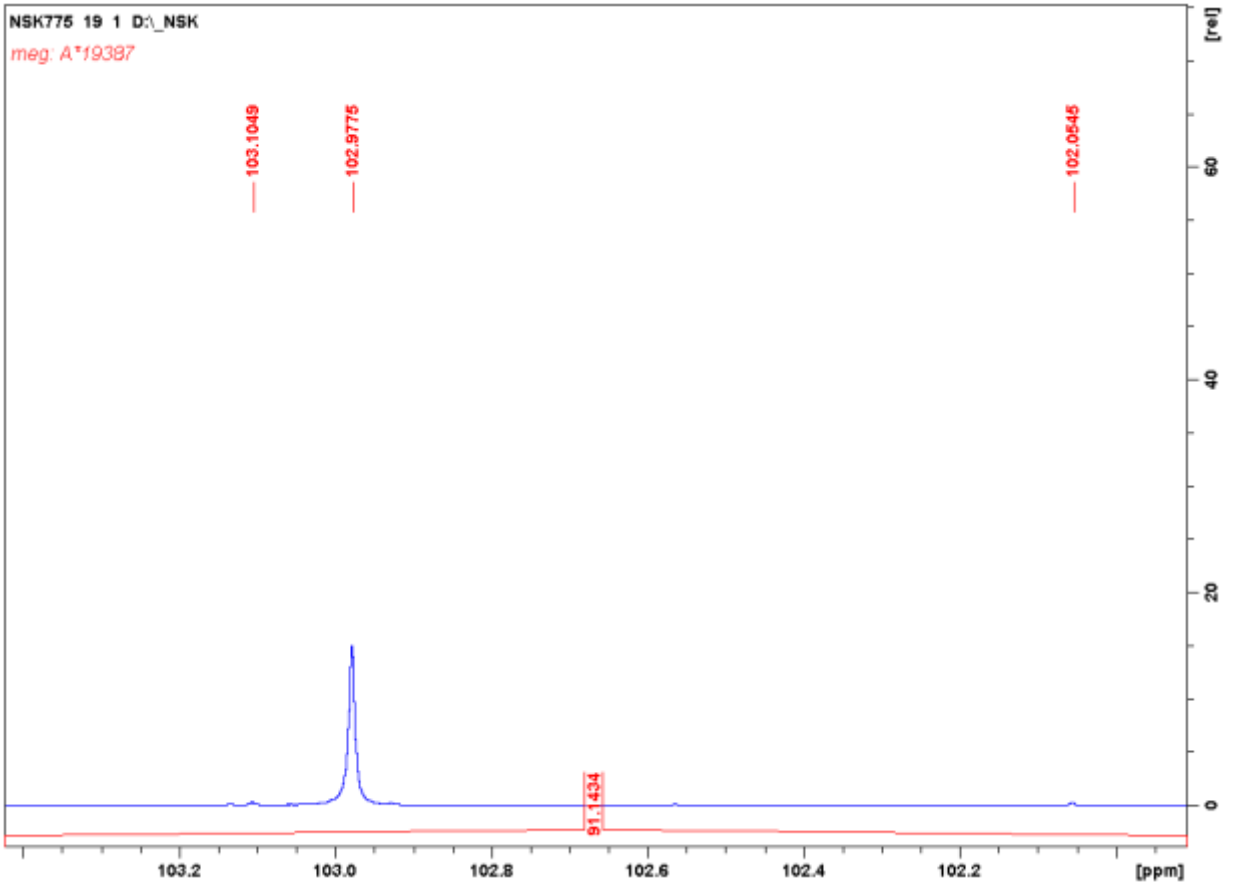

Fig. S13. ^{19}F NMR spectra of 5-(Thiophen-2-yl)-3-(trifluoromethyl)-1*H*-pyrazol-4-amine **4g** in $DMSOd_6$

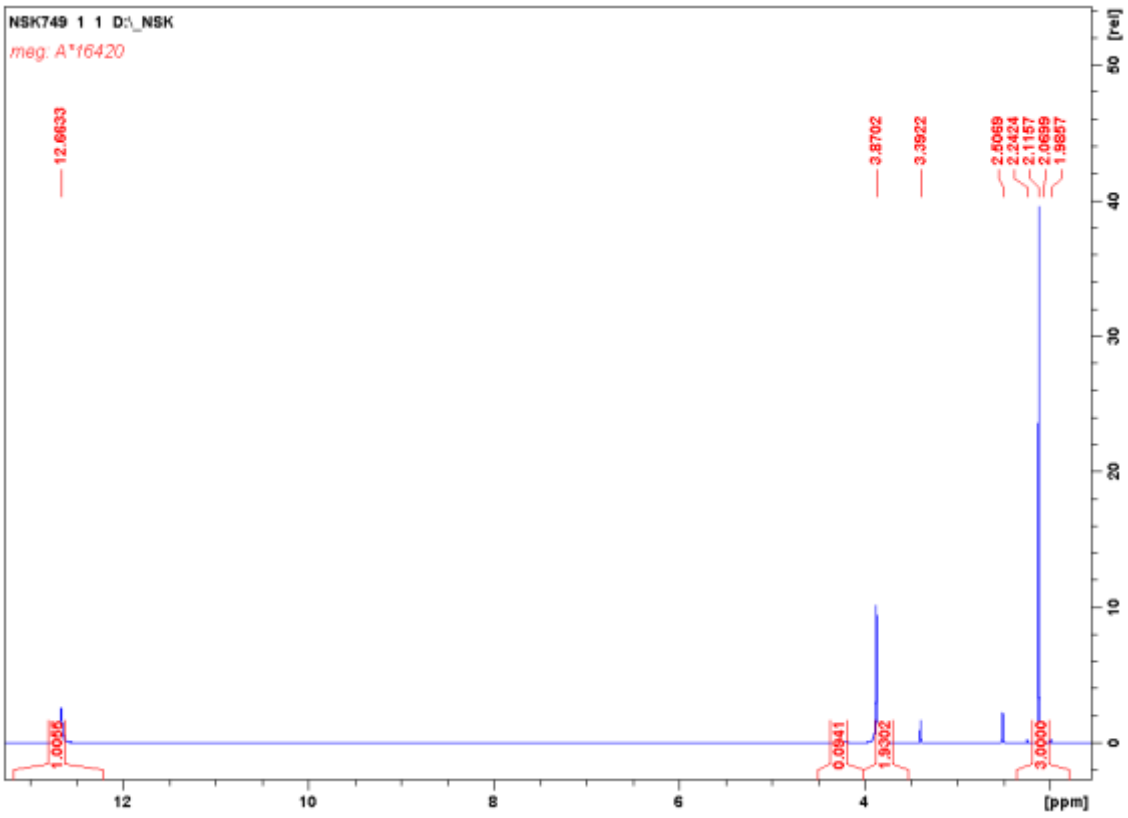

Fig. S14. ^{1}H NMR spectra of 5-methyl-3-(trifluoromethyl)-*1H*-pyrazol-4-yl amine **4h** in DMSOd_6

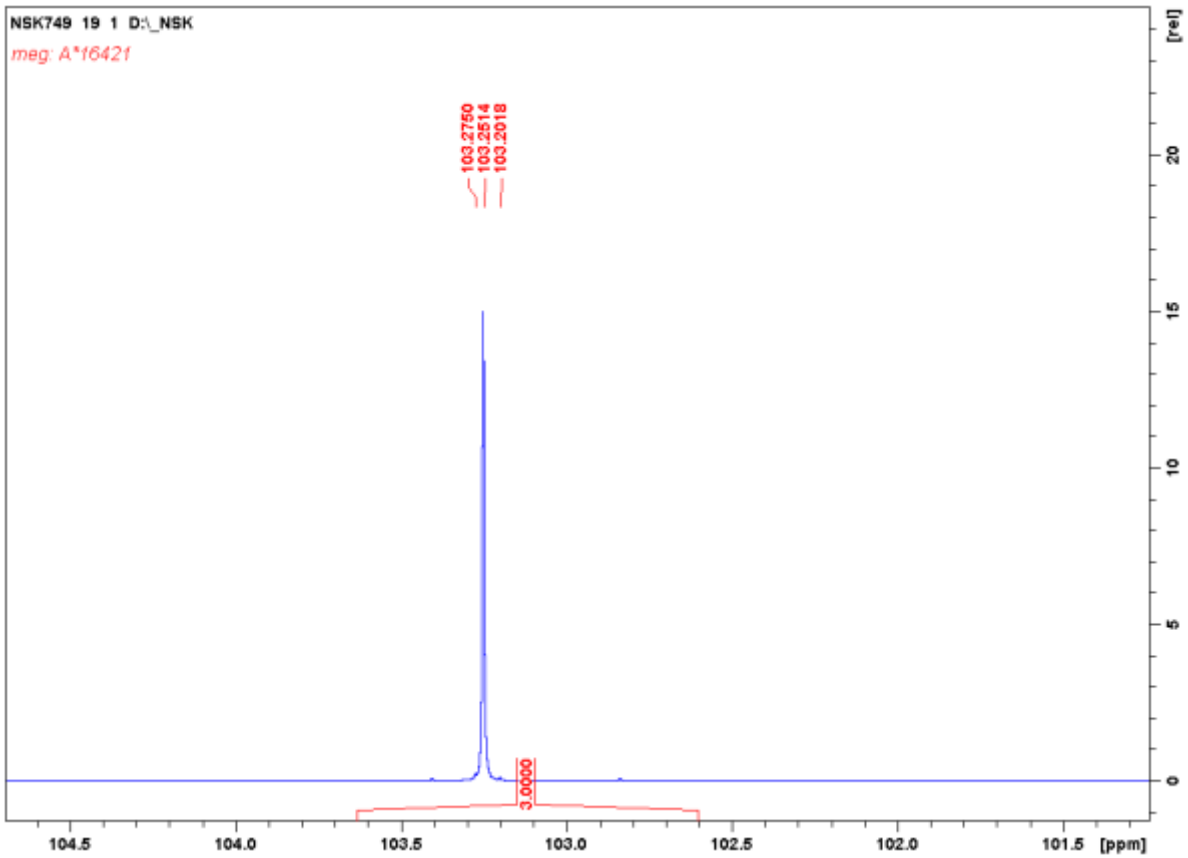

Fig. S15. ^{19}F NMR spectra of 5-methyl-3-(trifluoromethyl)-*1H*-pyrazol-4-yl amine **4h** in DMSOd_6

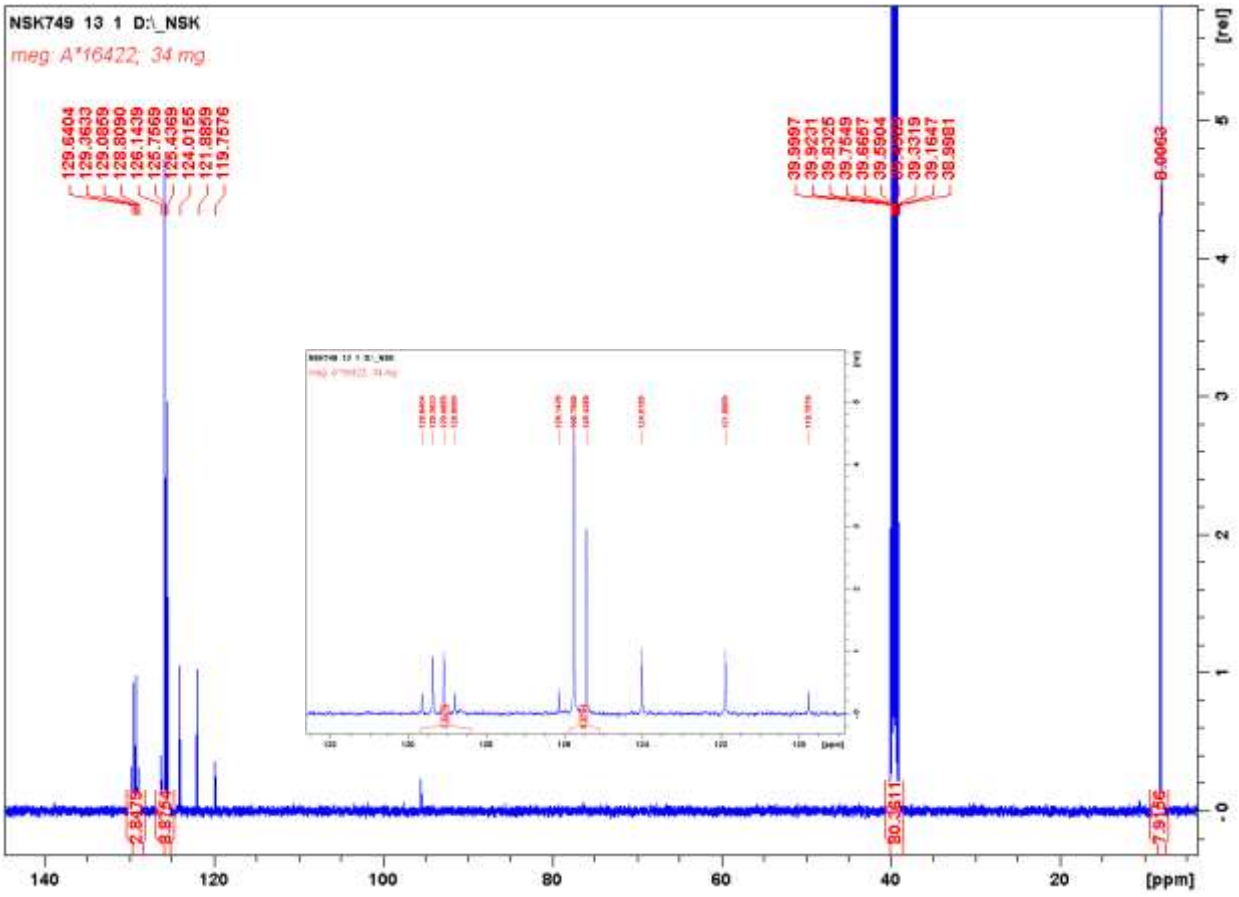

Fig. S16. ^{13}C NMR spectra of 5-methyl-3-(trifluoromethyl)-*1H*-pyrazol-4-yl amine **4h** in $DMSOd_6$

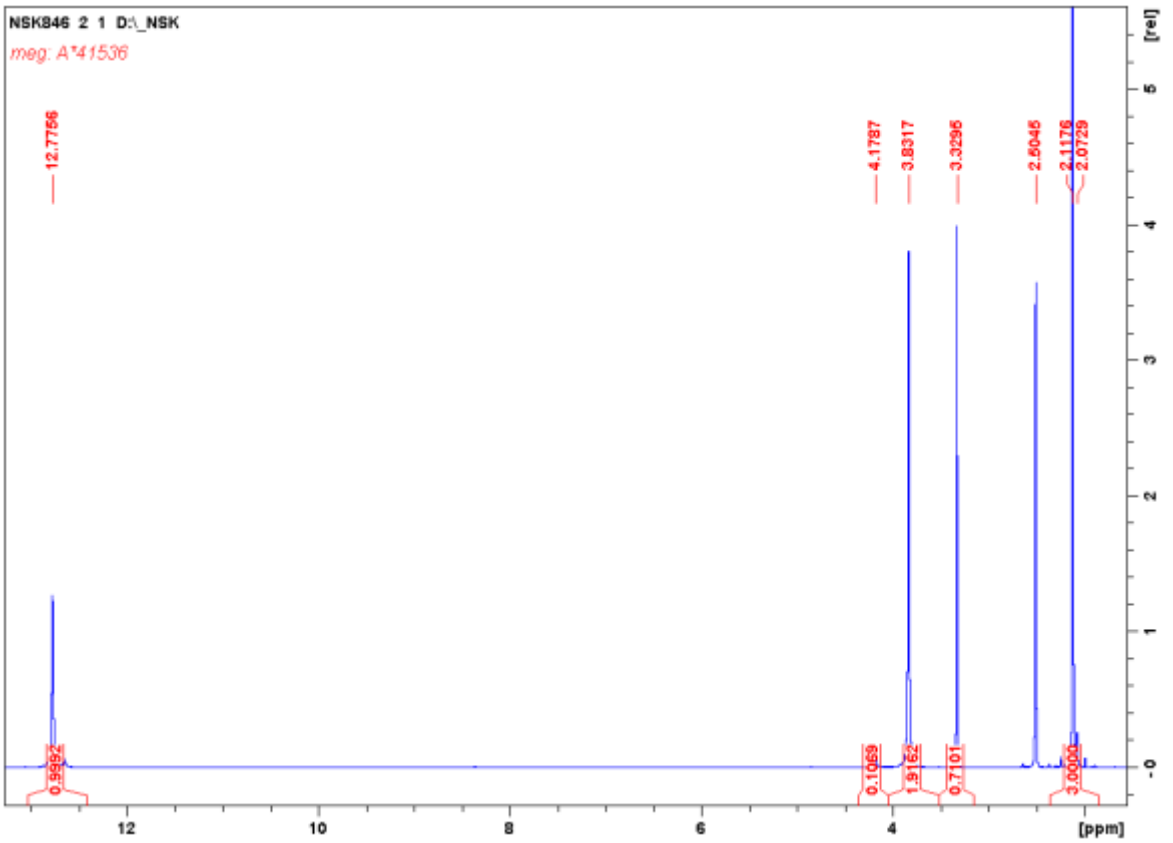

Fig. S17. ^{1}H NMR spectra of 3-(1,1,2,2,3,3,4,4,4-nonafluorobutyl)-5-methyl-1*H*-pyrazol-4-amine **4i** in $DMSOd_6$

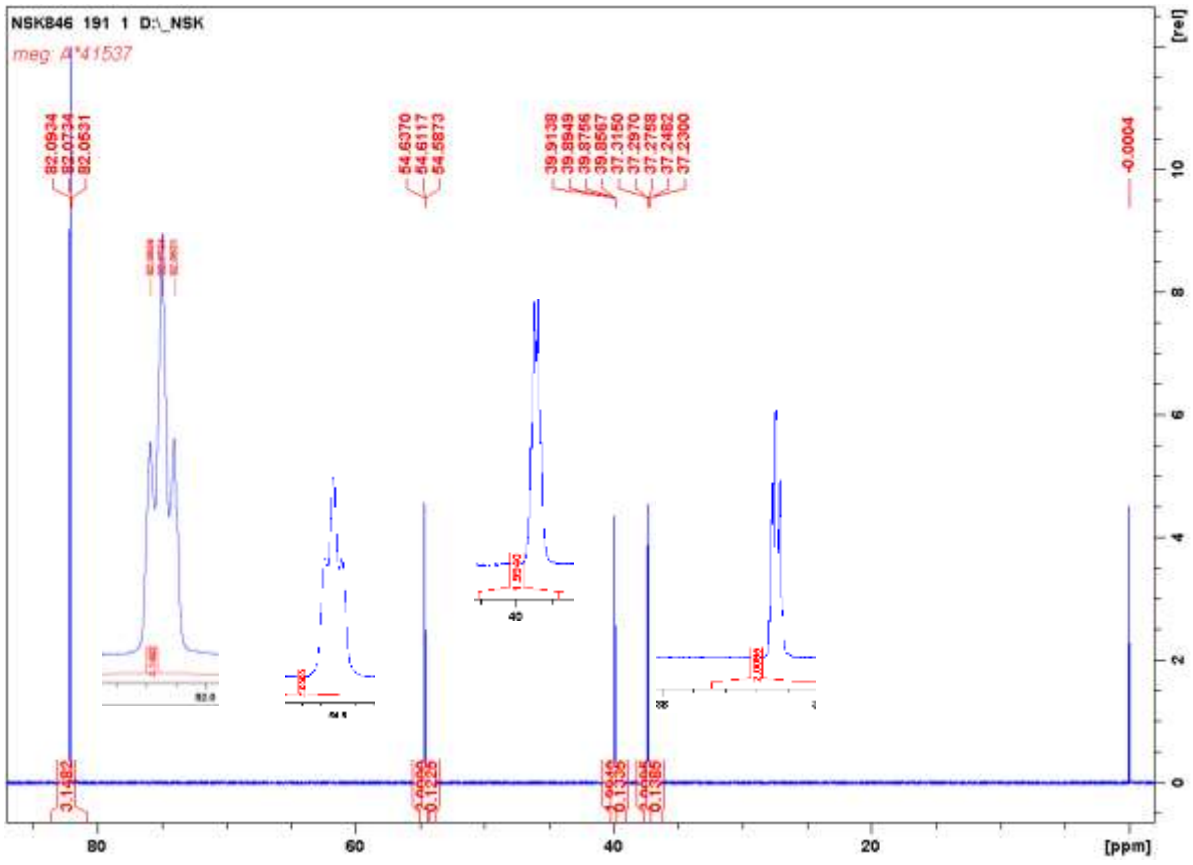

Fig. S18. ^{19}F NMR spectra of 3-(1,1,2,2,3,3,4,4,4-nonafluorobutyl)-5-methyl-1*H*-pyrazol-4-amine **4i** in $DMSOd_6$

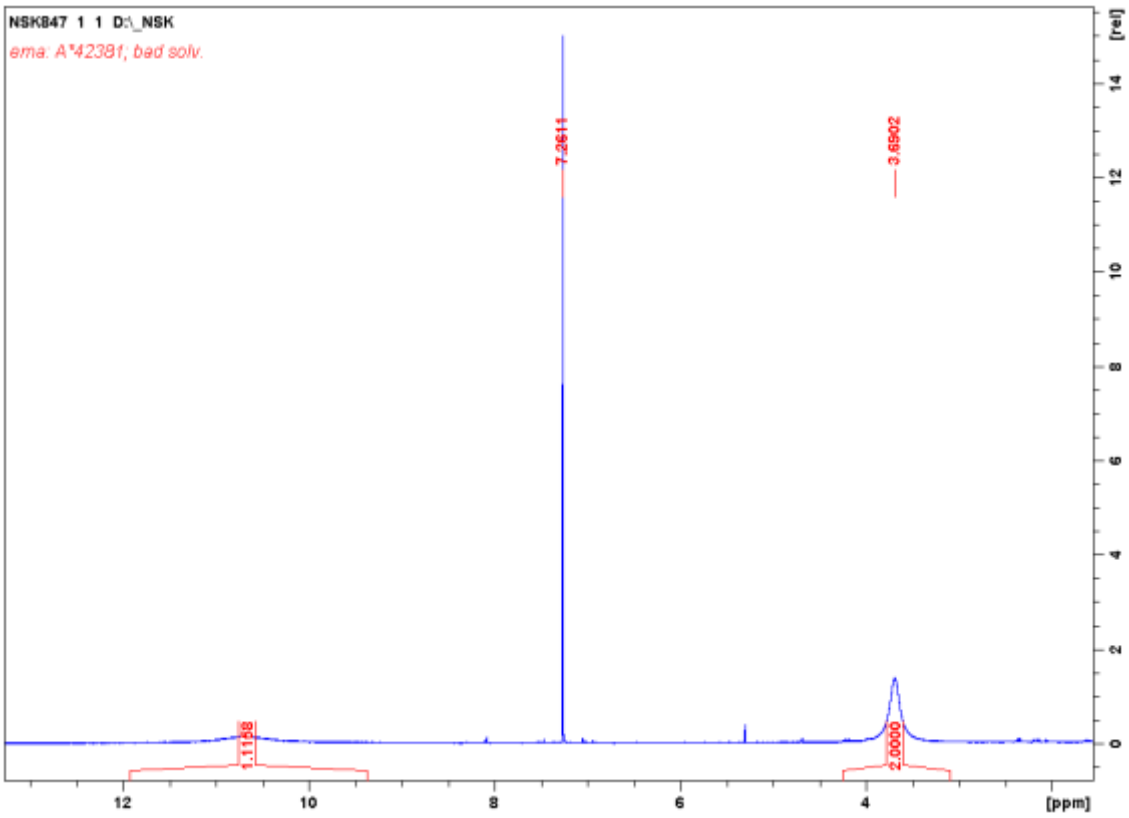

Fig. S19. ^{1}H NMR spectra of 4-amino-3,5-bis(trifluoromethyl)-1*H*-pyrazole **4j** in $CDCl_3$

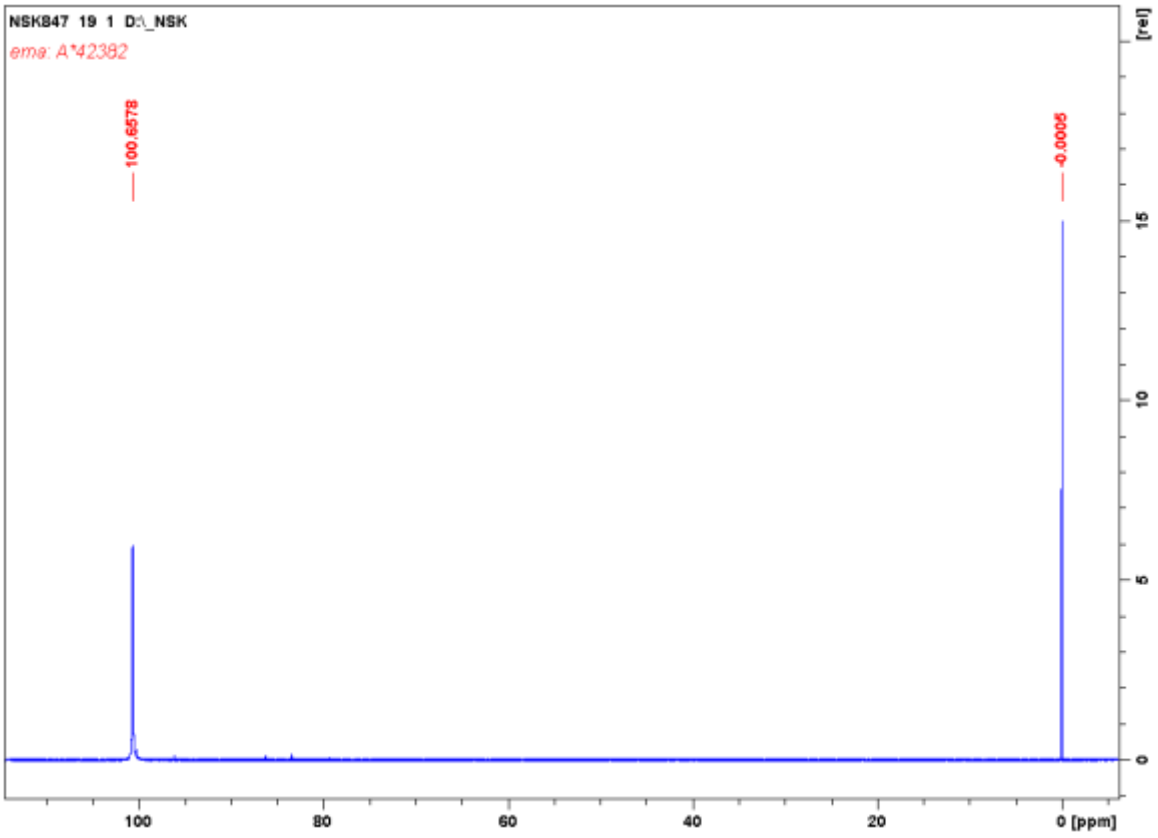

Fig. S20. ^{19}F NMR spectra of 4-amino-3,5-bis(trifluoromethyl)-1*H*-pyrazole **4j** in $CDCl_3$

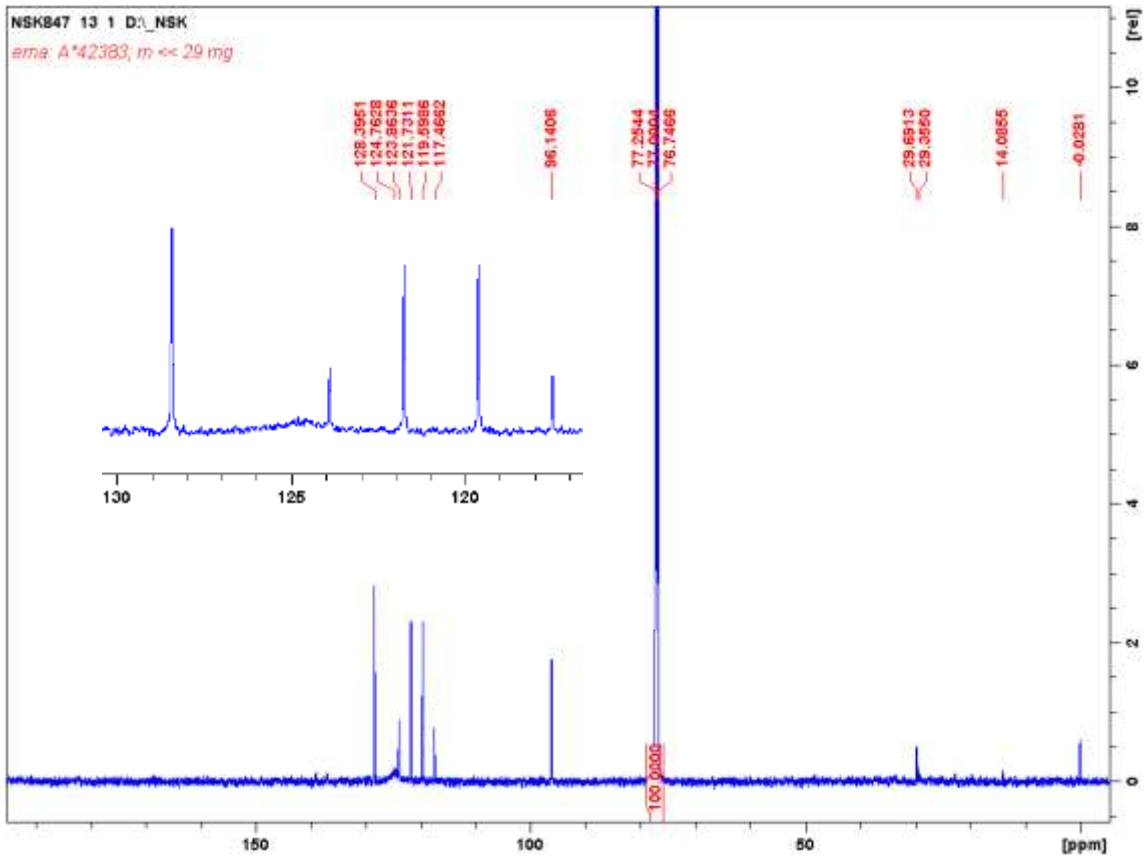

Fig. S21. ^{13}C NMR spectra of 4-amino-3,5-bis(trifluoromethyl)-1*H*-pyrazole **4j** in $CDCl_3$. Signal at 96.14 ppm belongs to C_6F_6 (for the ^{13}C NMR spectra, the solution after obtaining the ^{19}F NMR spectrum was used).