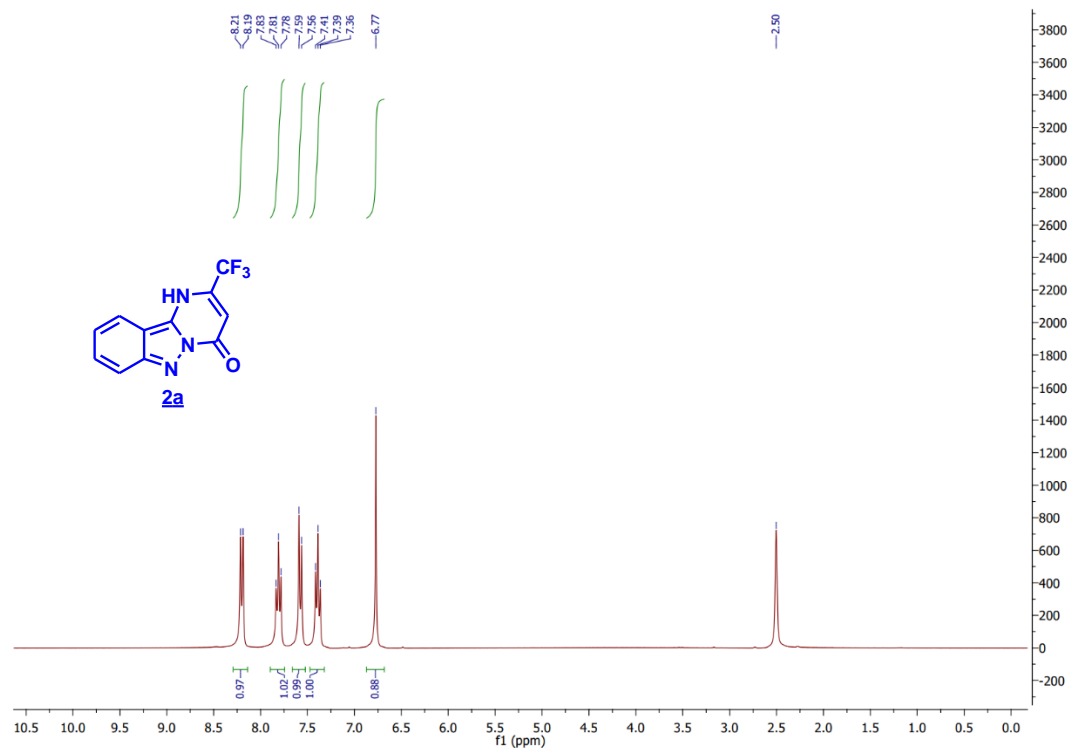


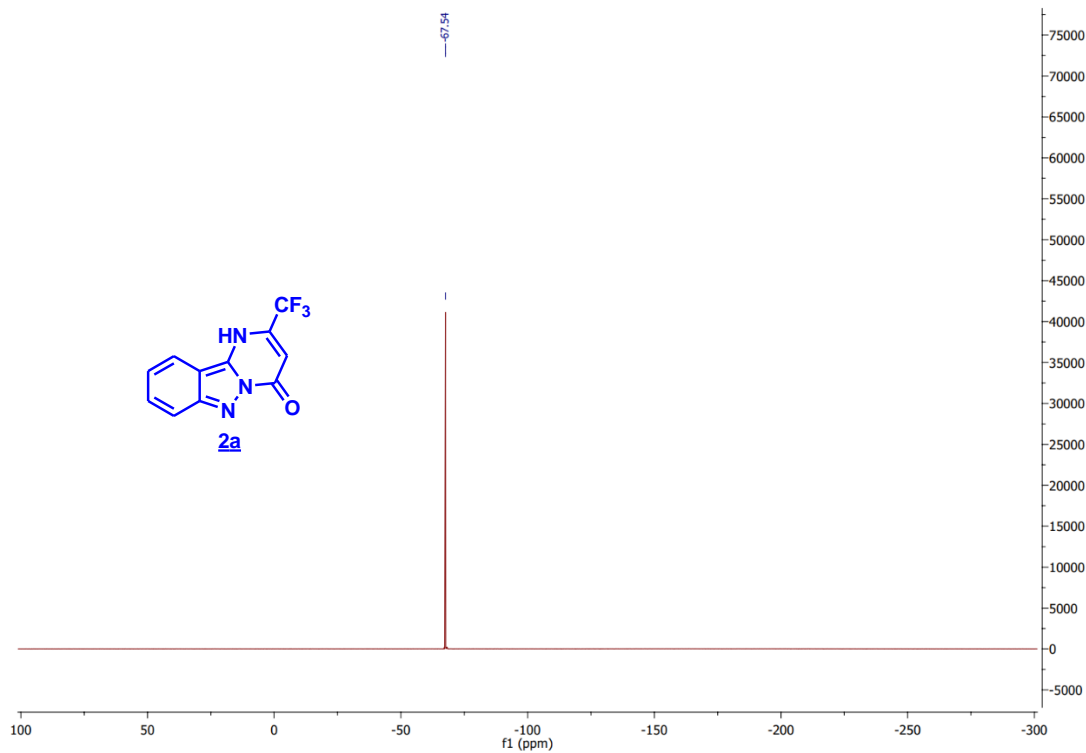
Copie of ^1H , ^{13}C and ^{19}F NMR of products **2a-h**, **3a-h**, **4a-h**, **5a-q**, **6a-g**, **7a-c**, **8a-c**

2-Trifluoromethyl-1*H*-pyrimido[1,2-*b*]indazol-4-one (2a)

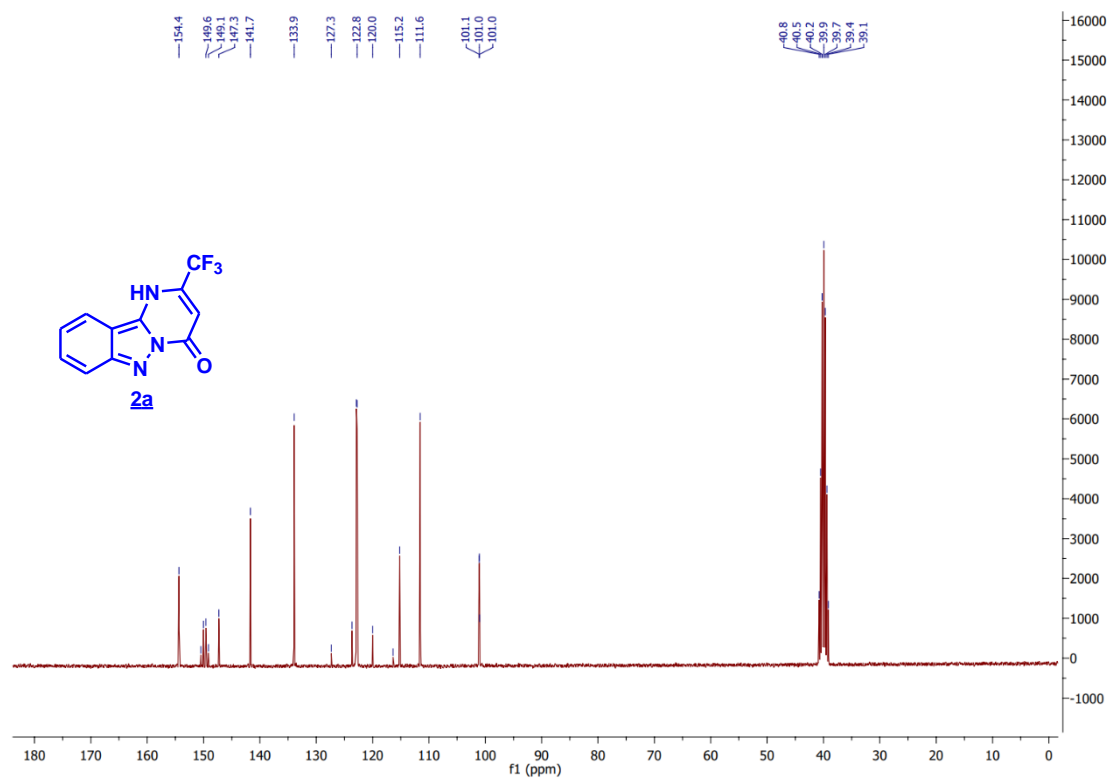
^1H NMR (300 MHz, DMSO- d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

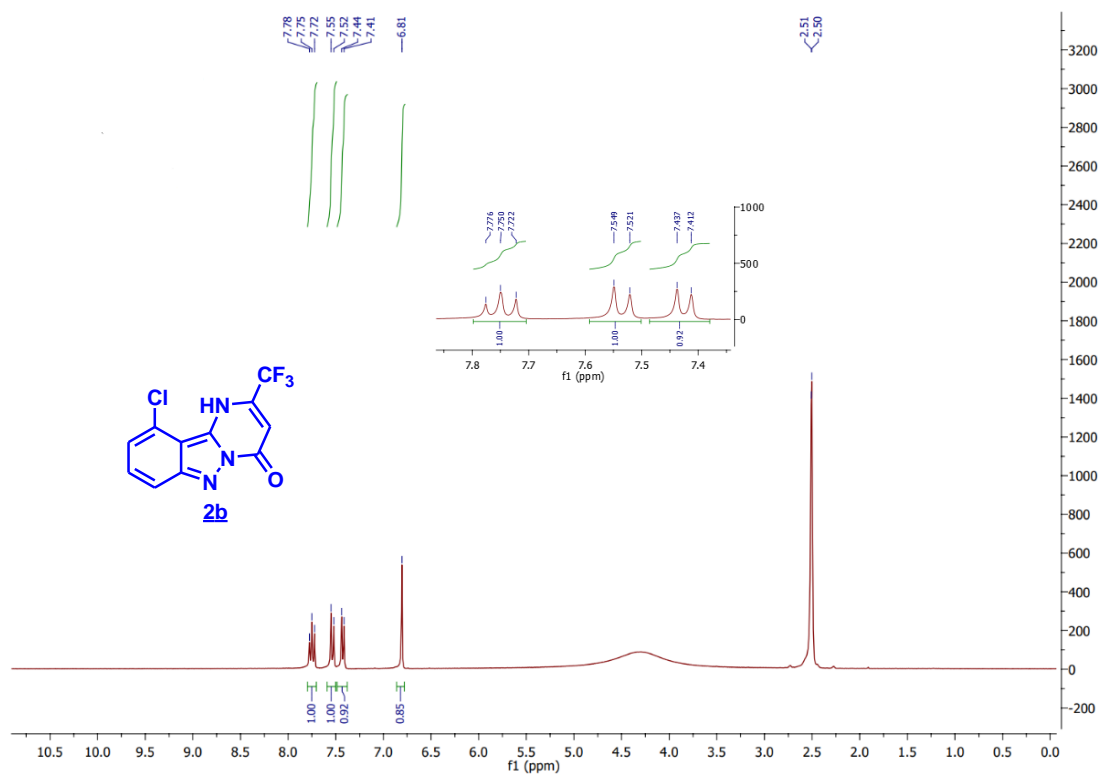


^{13}C NMR (75 MHz, DMSO- d_6)

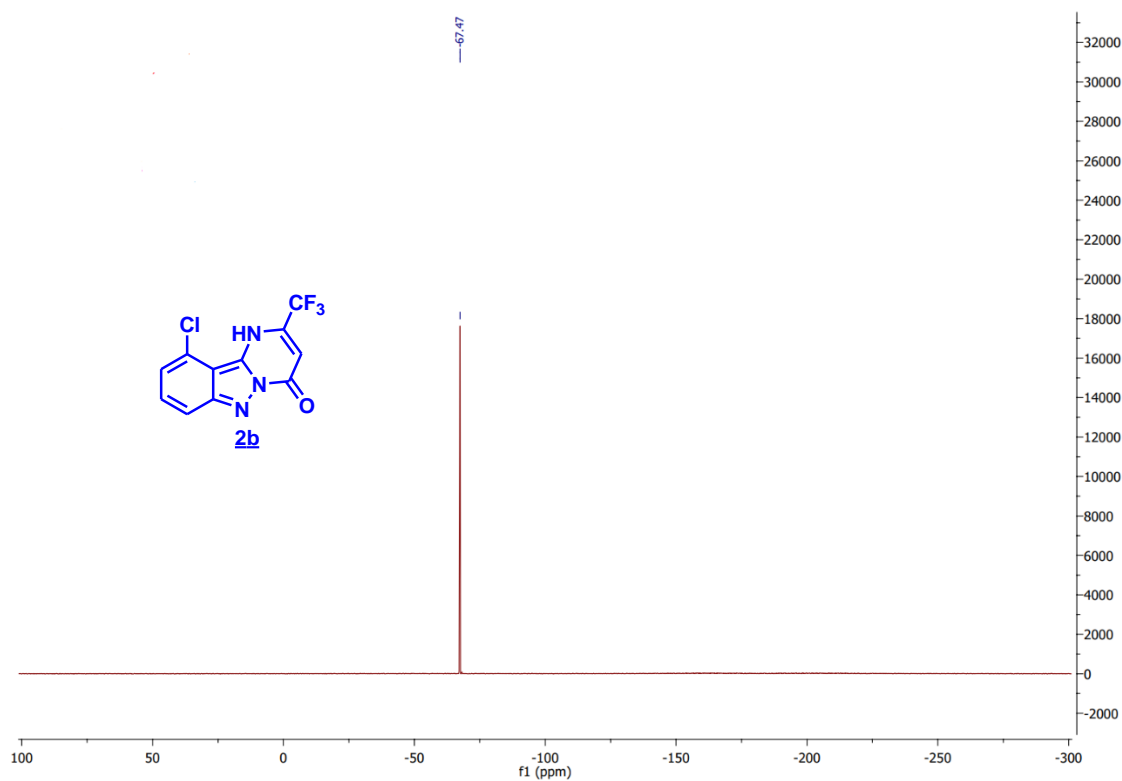


10-Chloro-2-trifluoromethyl-1*H*-pyrimido[1,2-*b*]indazol-4-one (2b)

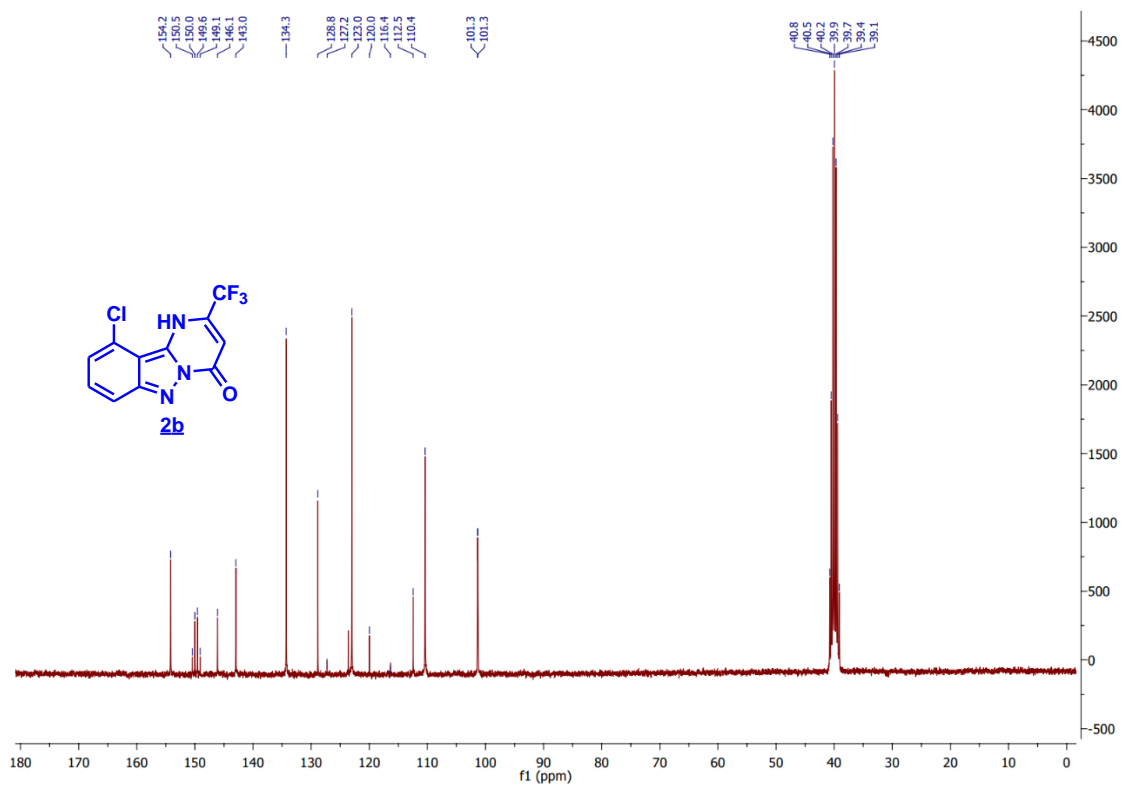
^1H NMR (300 MHz, DMSO- d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

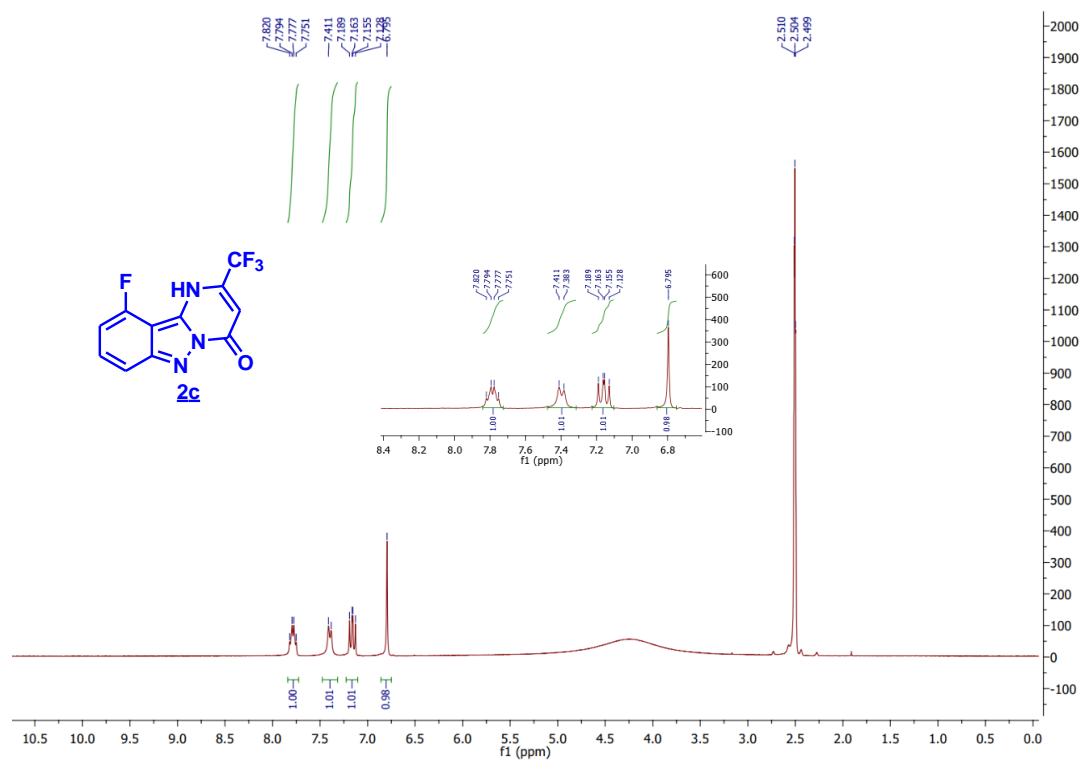


^{13}C NMR (75 MHz, DMSO- d_6)

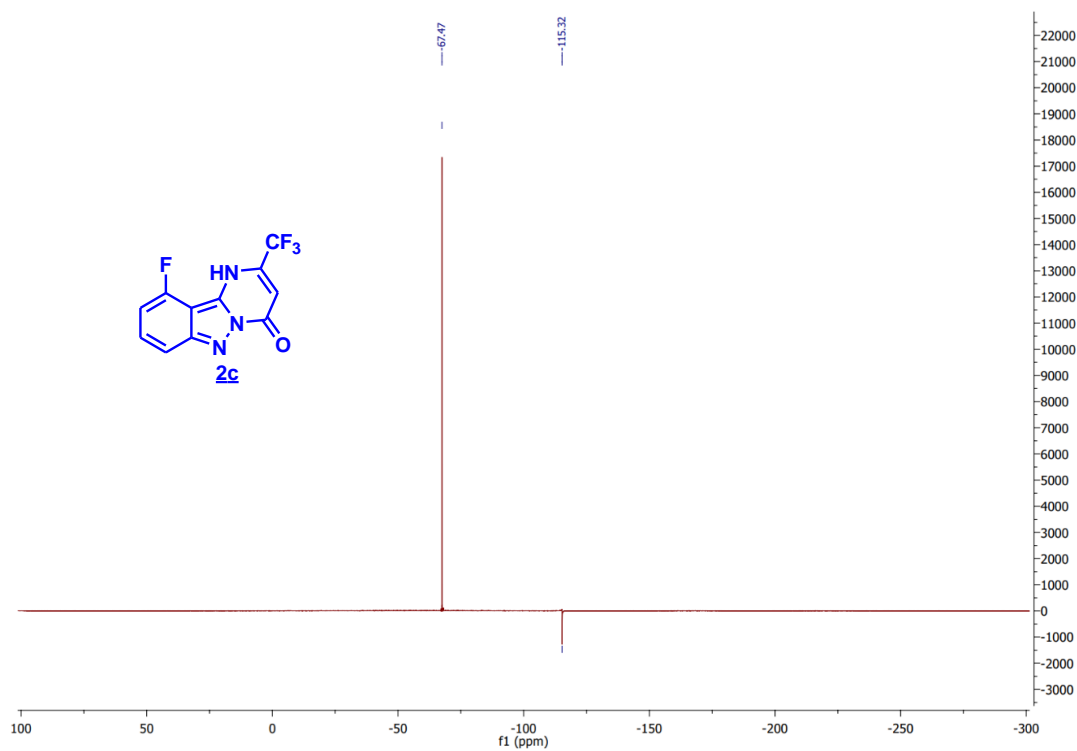


10-Fluoro-2-trifluoromethyl-1*H*-pyrimido[1,2-*b*]indazol-4-one (2c)

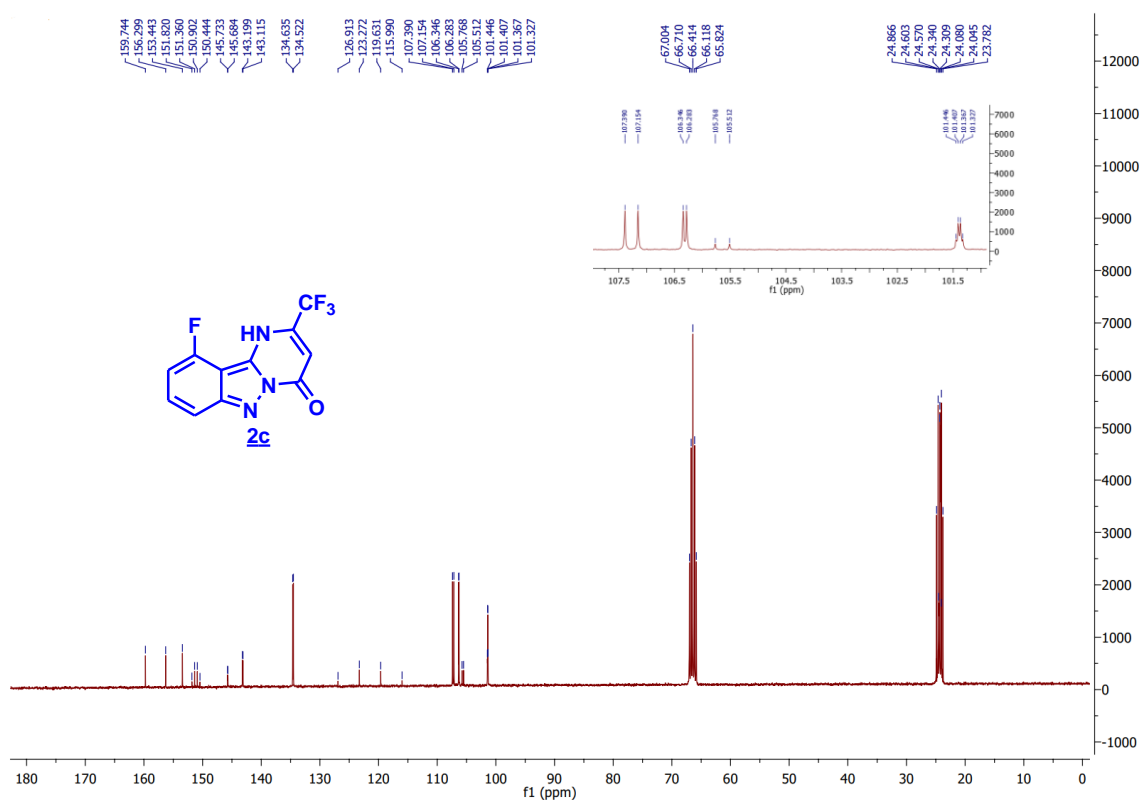
¹H NMR (300 MHz, DMSO-*d*₆)



¹⁹F NMR (282 MHz, DMSO-*d*₆)

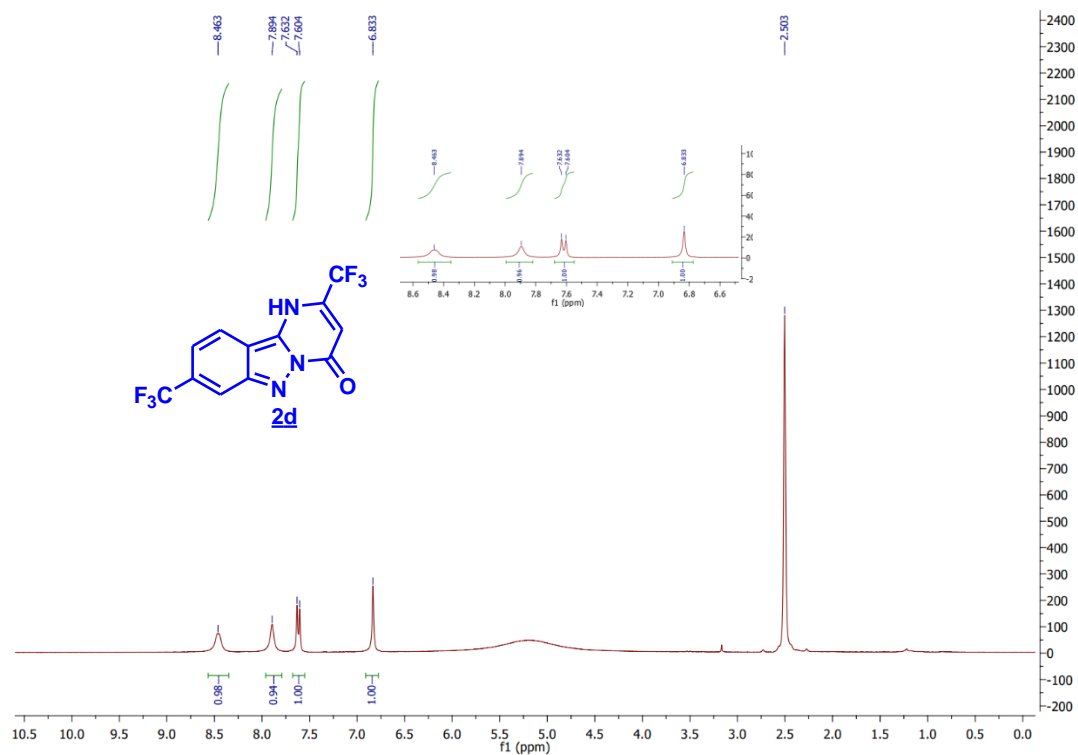


^{13}C NMR (75 MHz, THF-d_8)

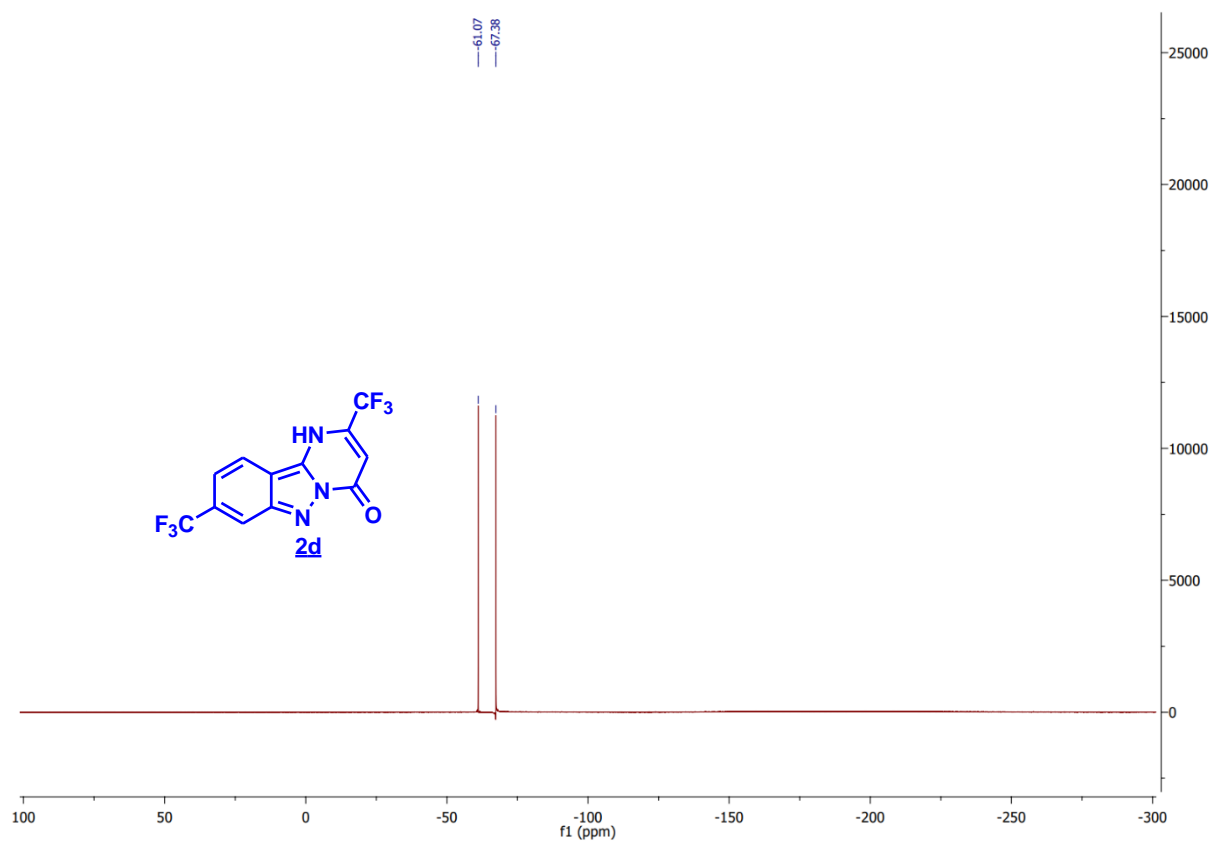


2,8-Bis-trifluoromethyl-1H-pyrimido[1,2-b]indazol-4-one (2d)

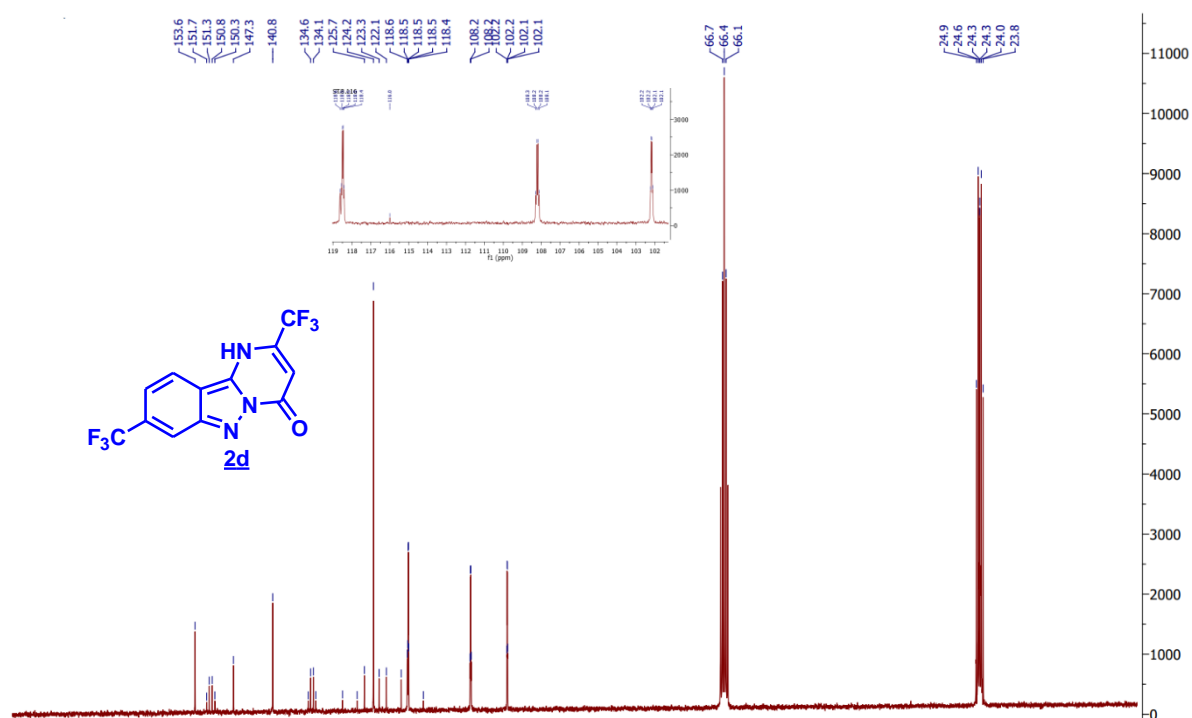
^1H NMR (300 MHz, DMSO-d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

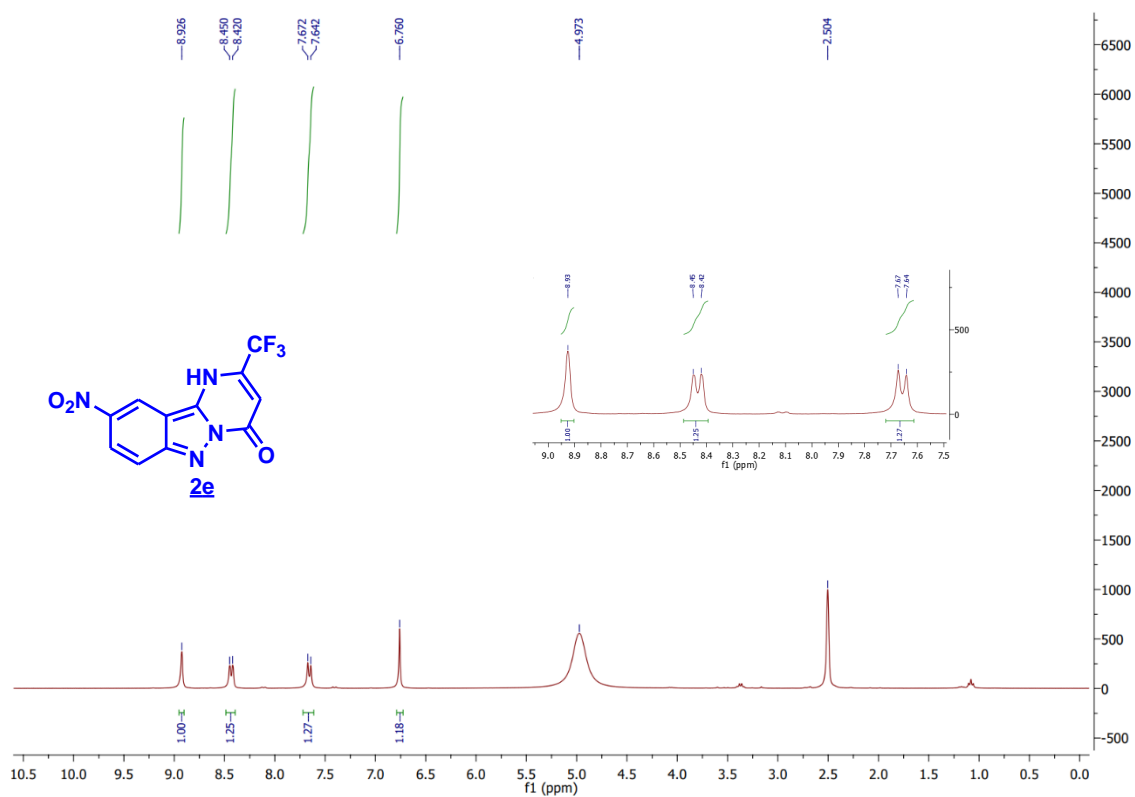


^{13}C NMR (75 MHz, THF- d_8)

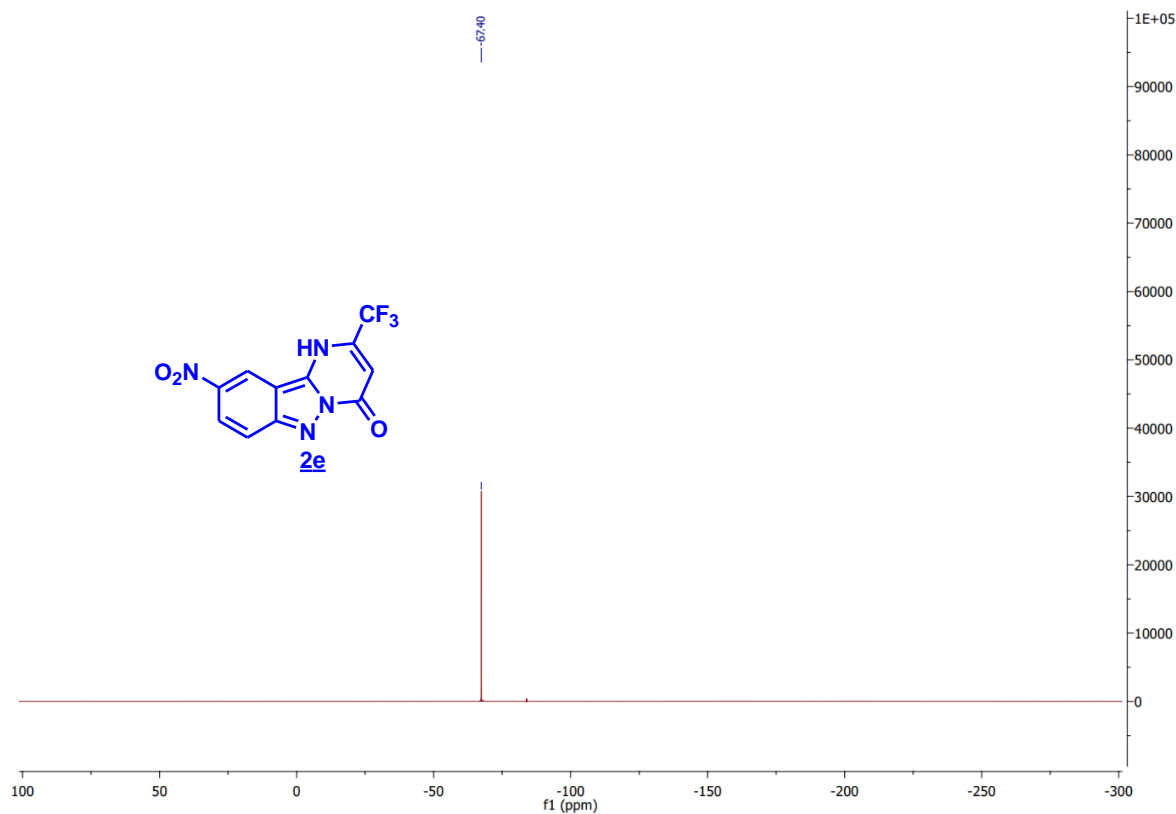


9-Nitro-2-trifluoromethyl-1H-pyrimido[1,2-b]indazol-4-one (2e)

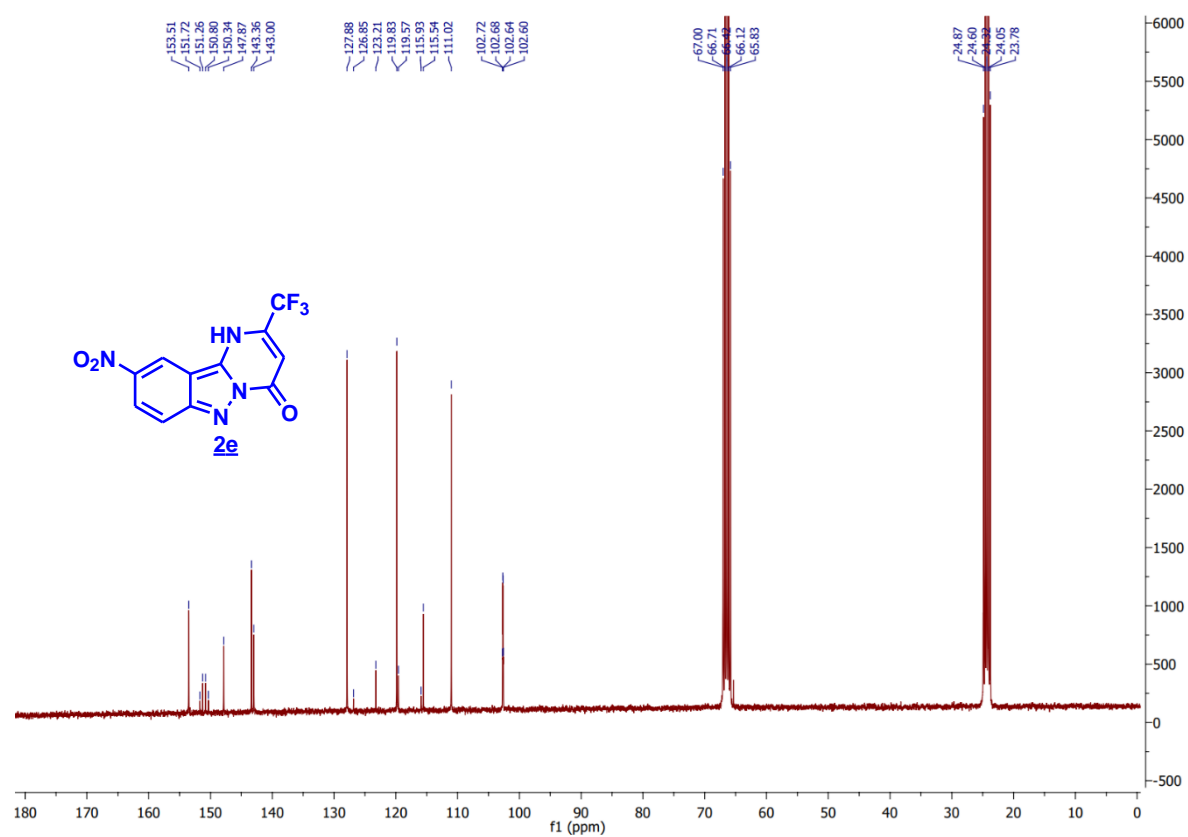
^1H NMR (300 MHz, DMSO- d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

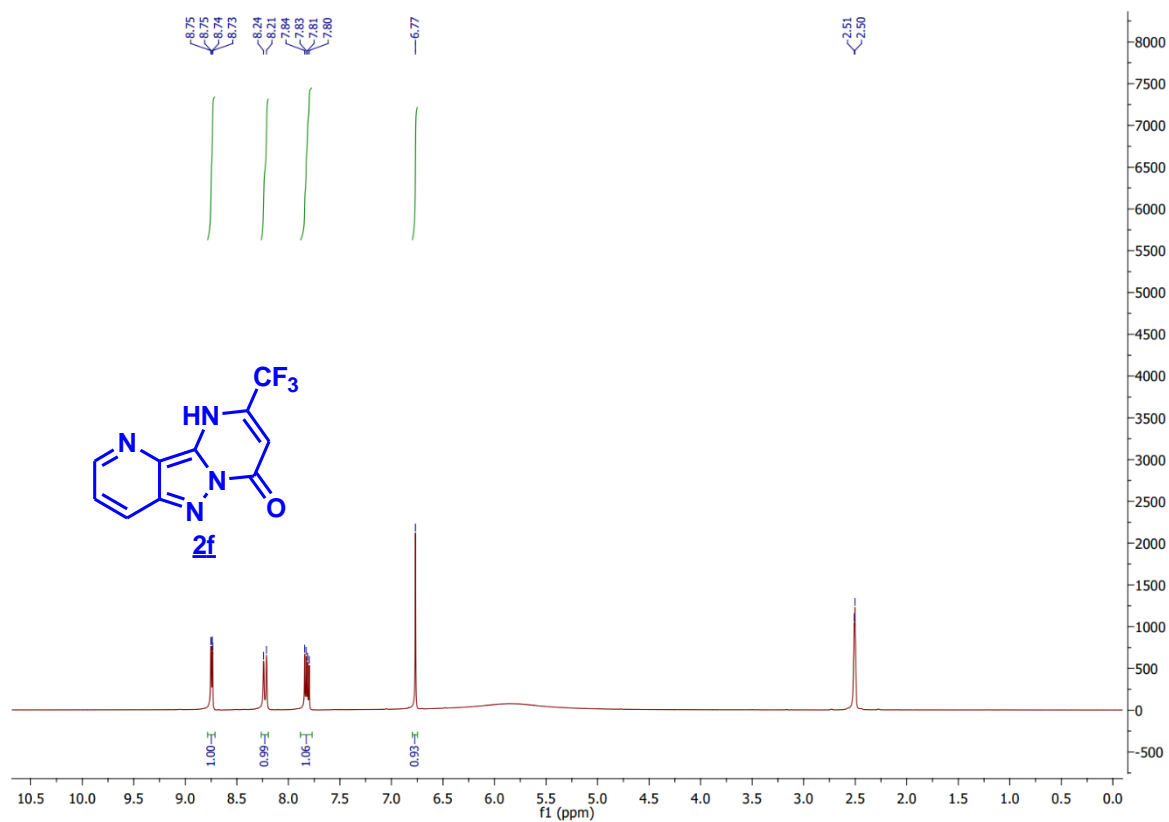


^{13}C NMR (75 MHz, THF- d_8)

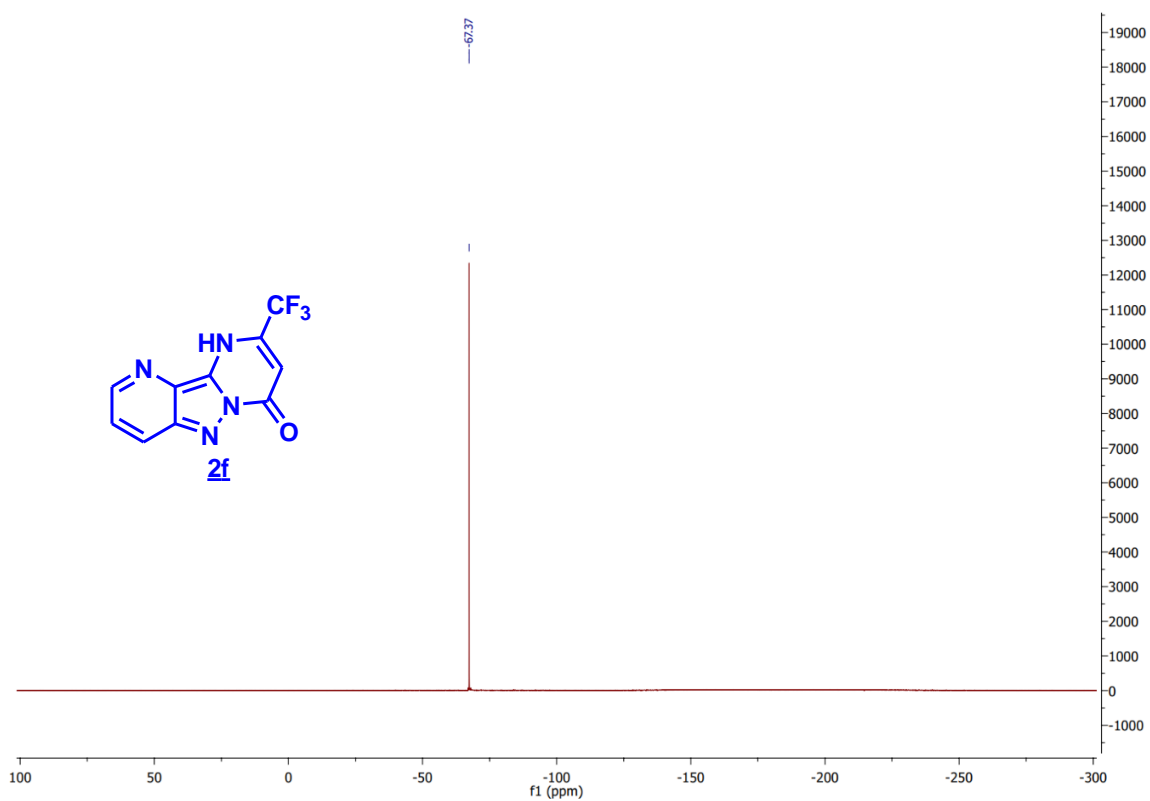


9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidin-7(10*H*)-one (2f)

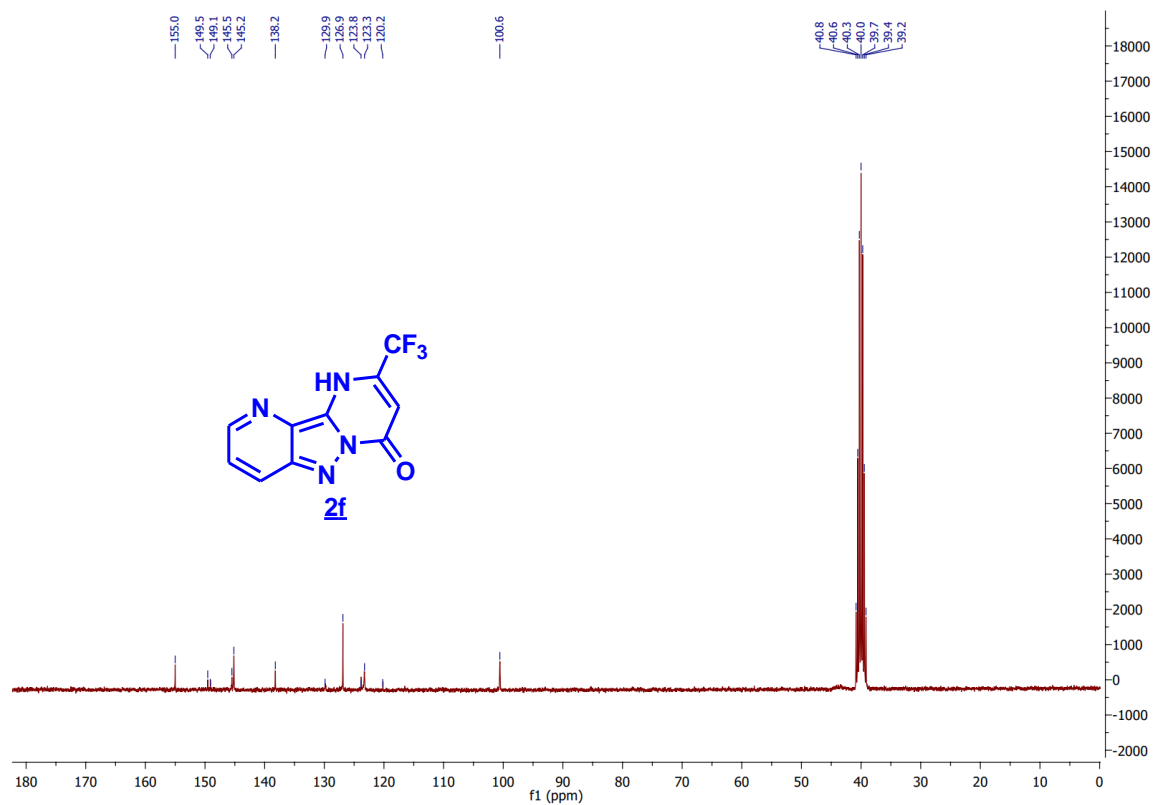
^1H NMR (300 MHz, DMSO- d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

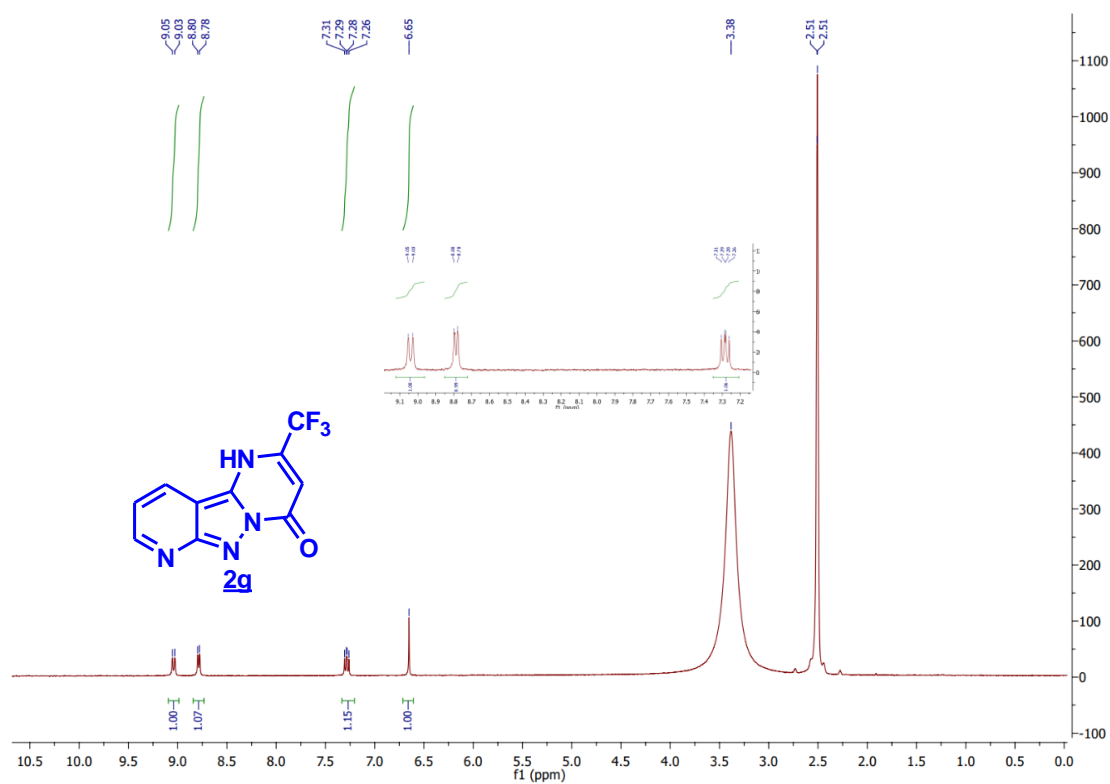


^{13}C NMR (75 MHz, DMSO- d_6)

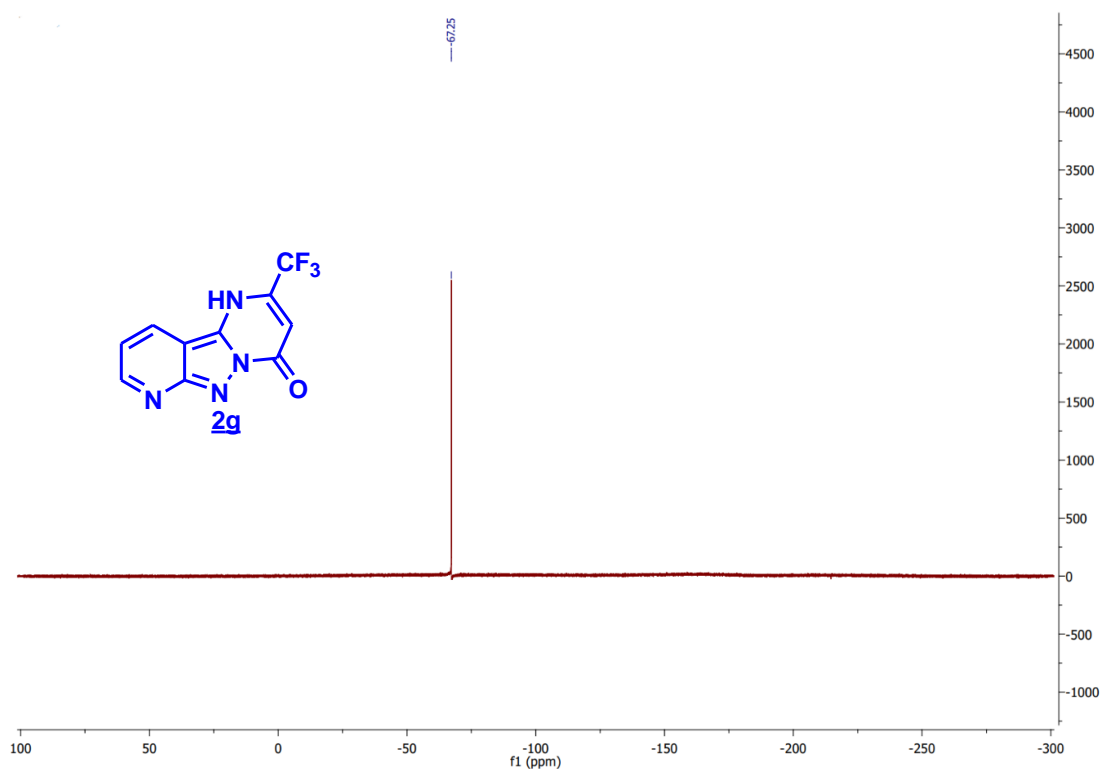


2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidin-4(1*H*)-one (2g)

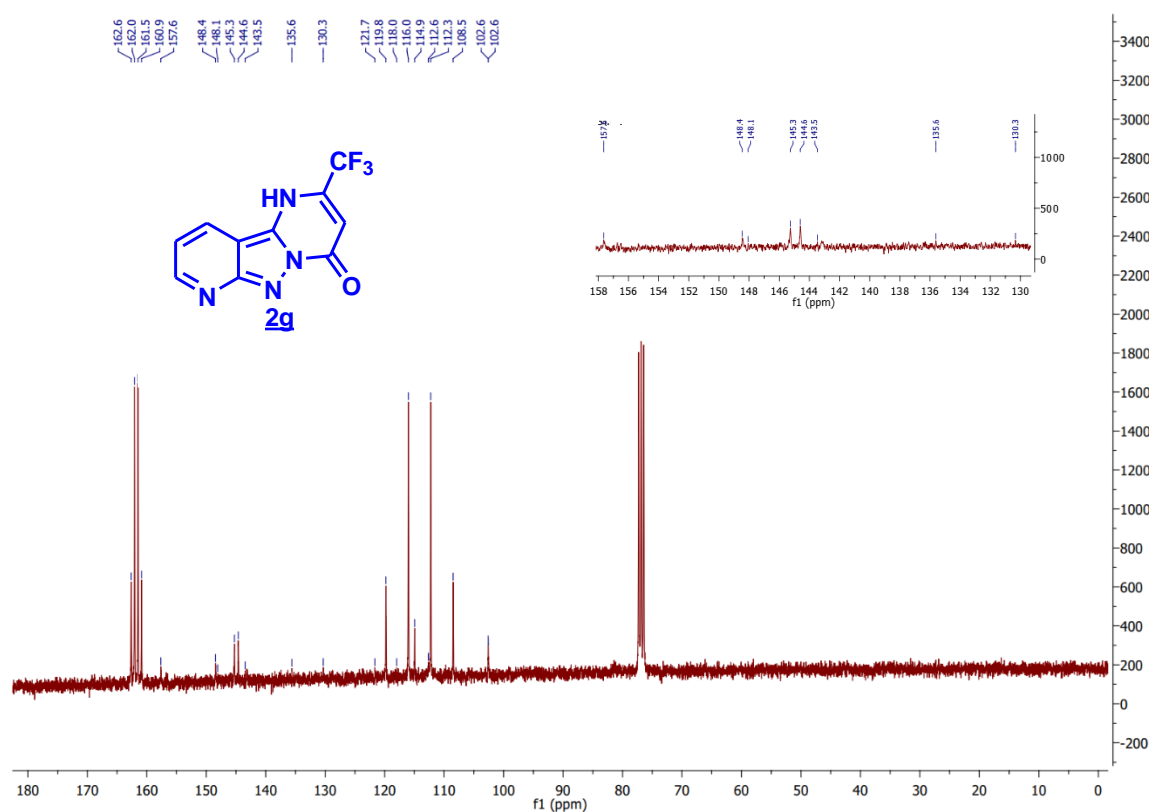
¹H NMR (300 MHz, DMSO-*d*₆)



¹⁹F NMR (282 MHz, DMSO-*d*₆)

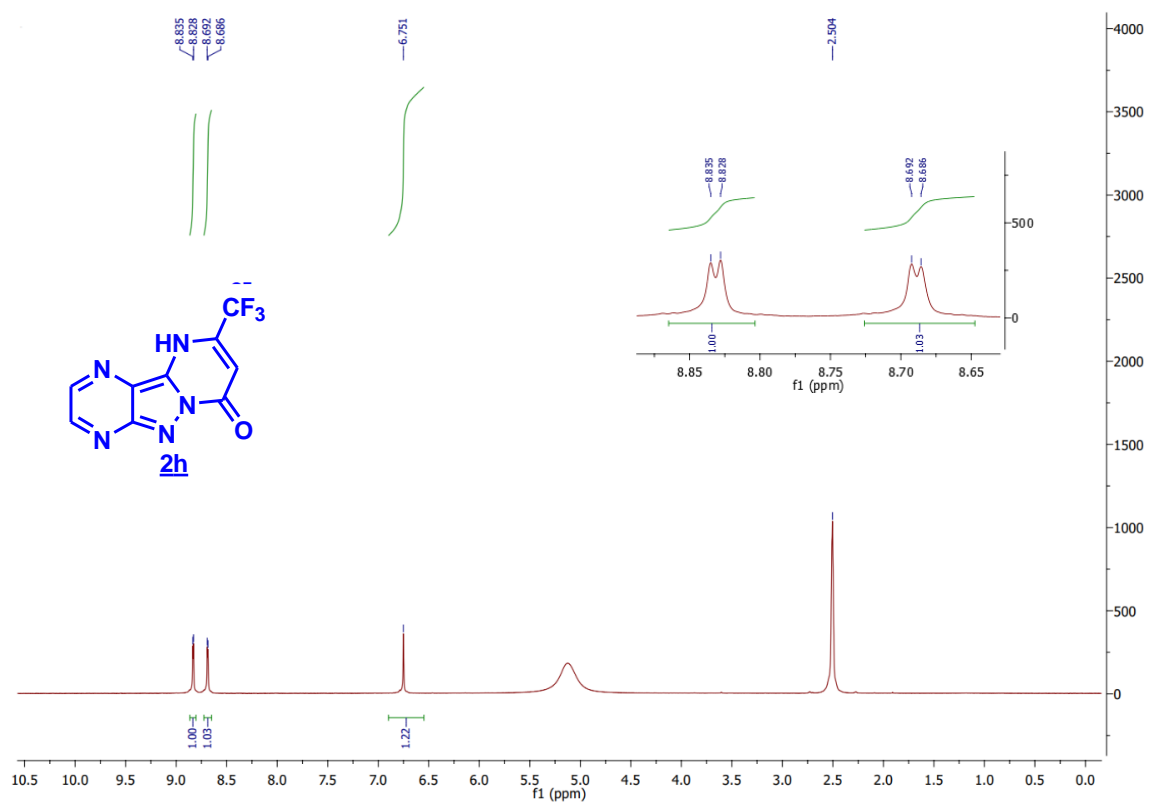


^{13}C NMR (75 MHz, CDCl_3 / TFA-d_1)

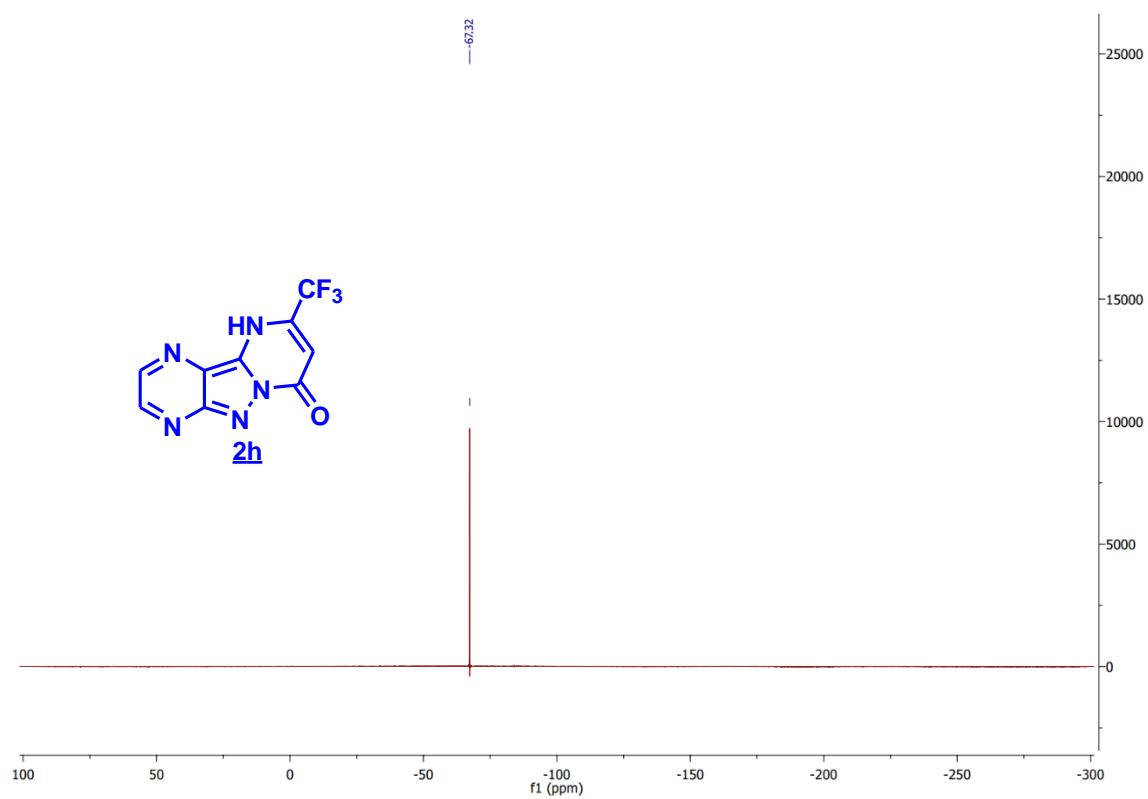


9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-*a*]pyrimidin-7(10*H*)-one (2h)

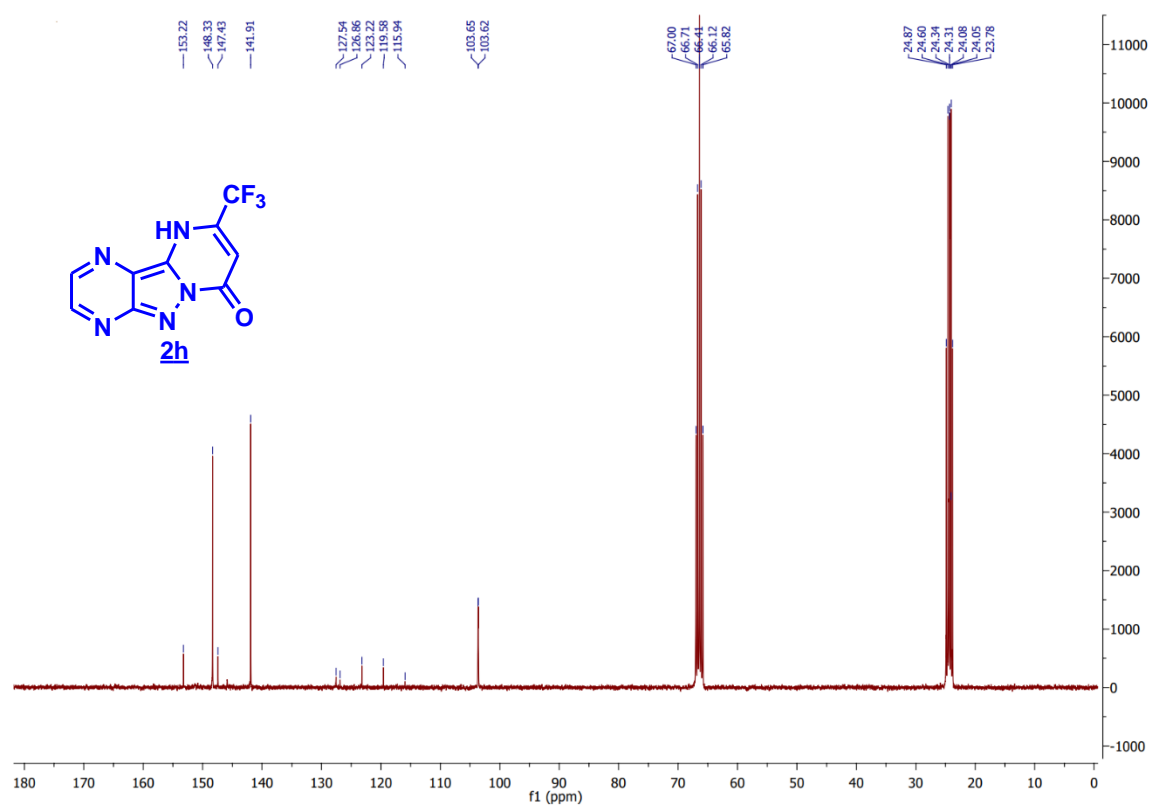
^1H NMR (300 MHz, DMSO-d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

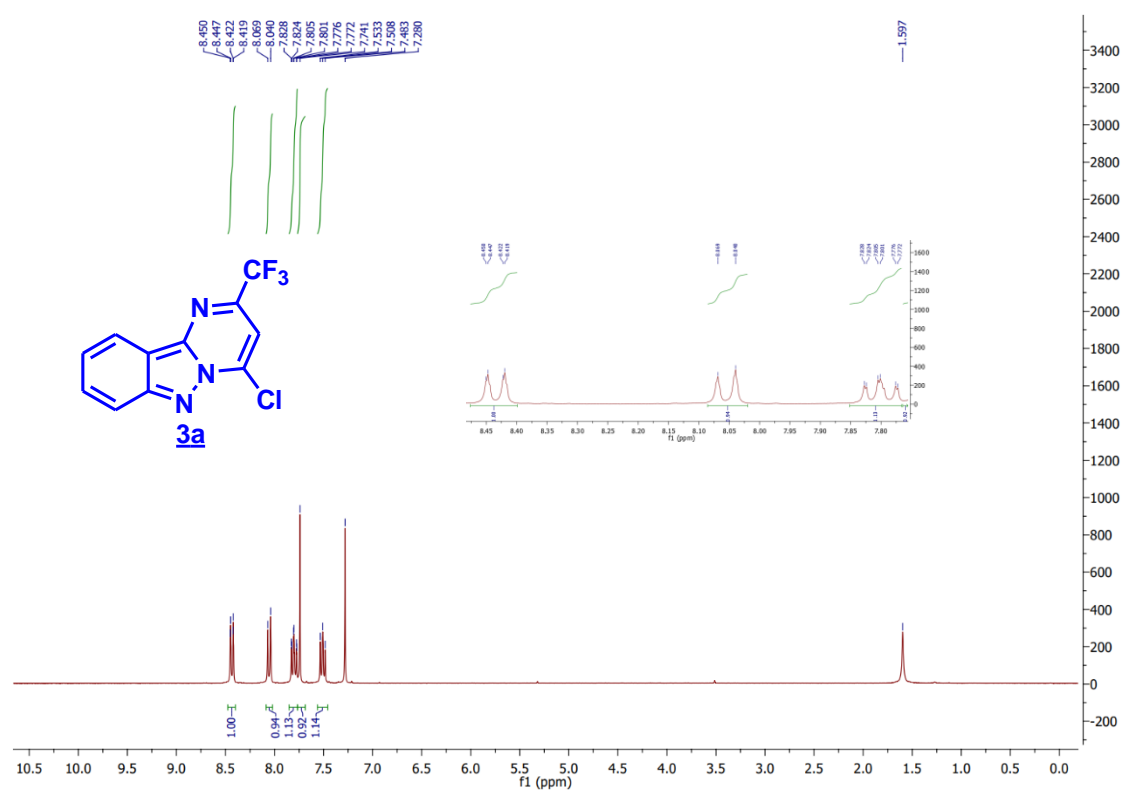


^{13}C NMR (75 MHz, THF- d_8)

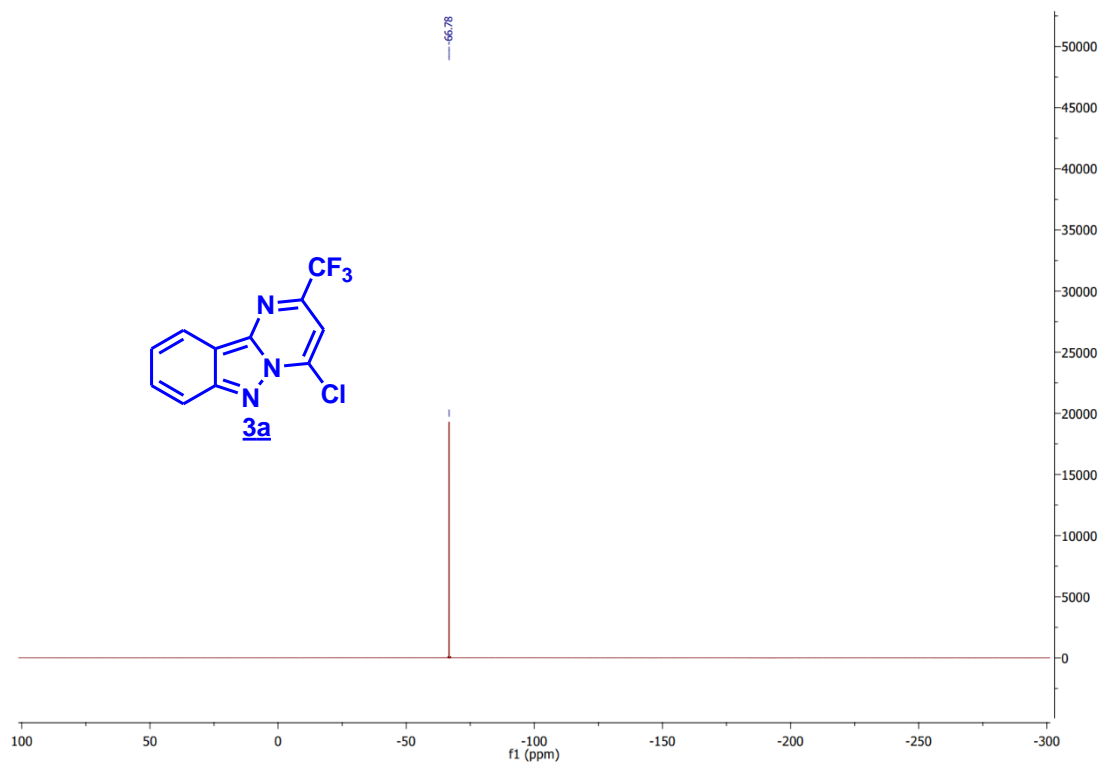


4-Chloro-2-trifluoromethyl-pyrimido[1,2-b]indazole (3a)

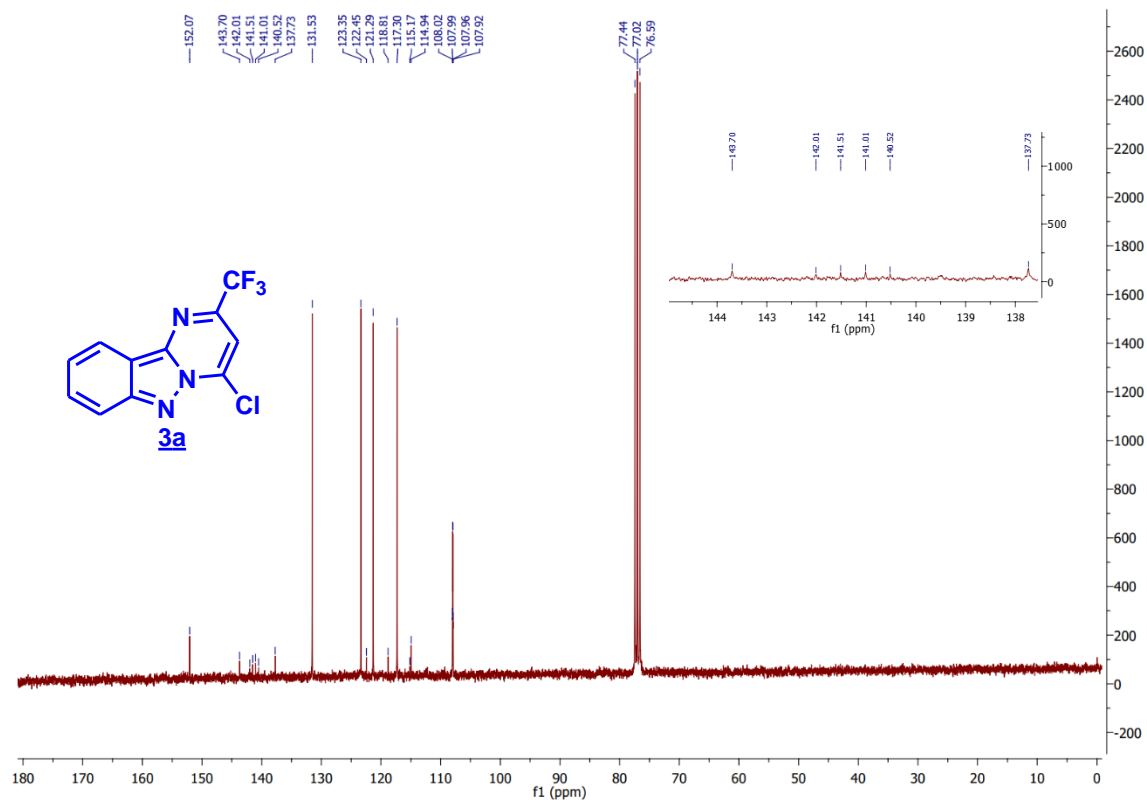
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

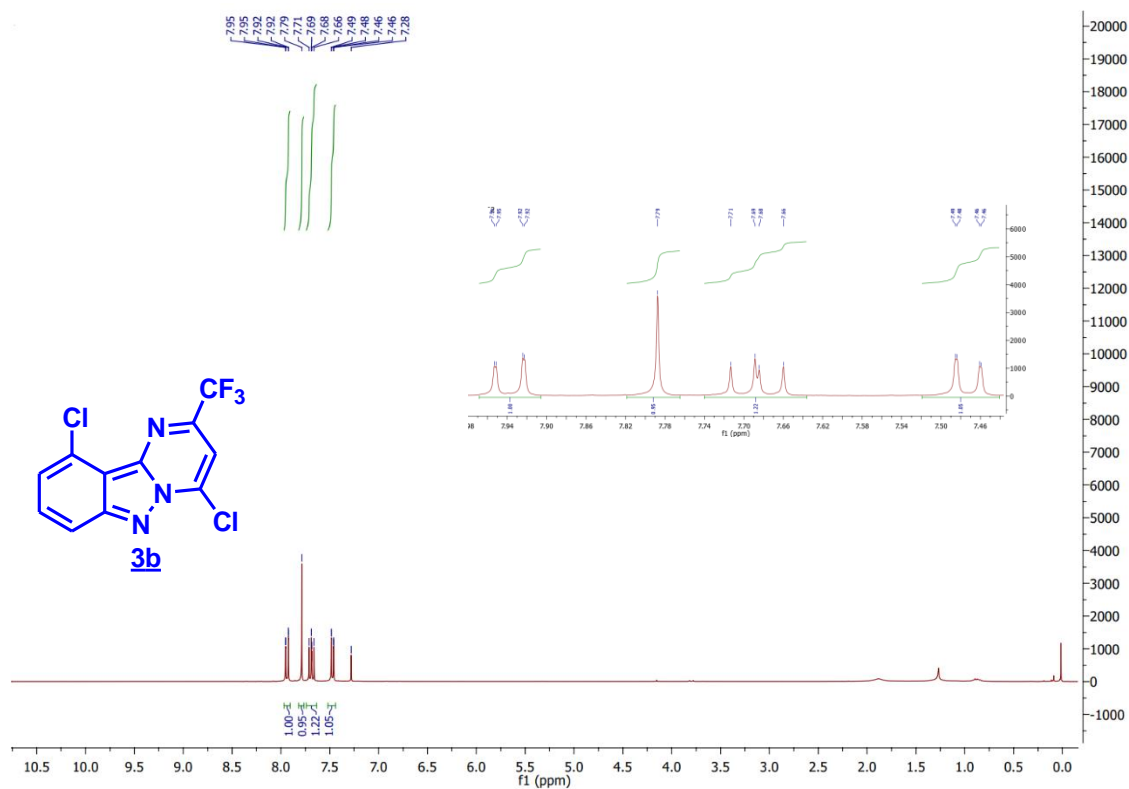


^{13}C NMR (75 MHz, CDCl_3)

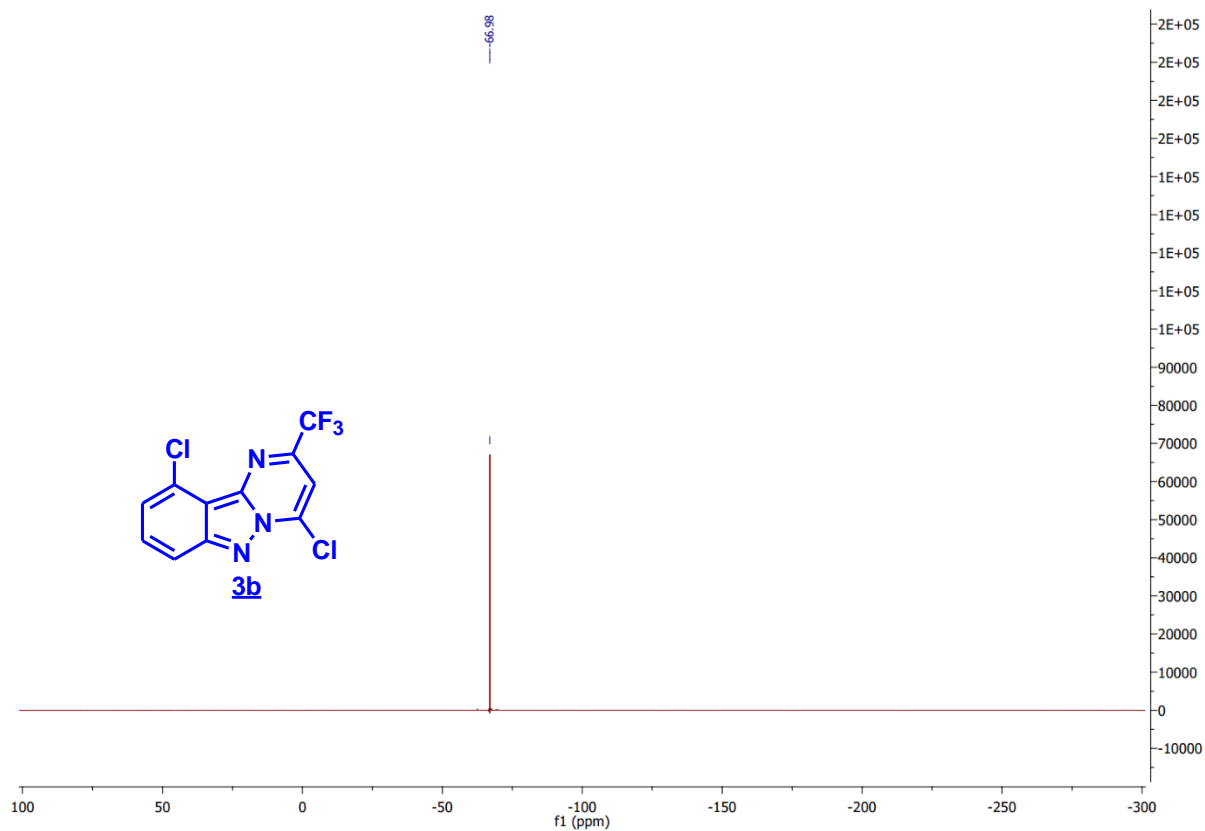


4,10-Dichloro-2-trifluoromethyl-pyrimido[1,2-b]indazole (3b)

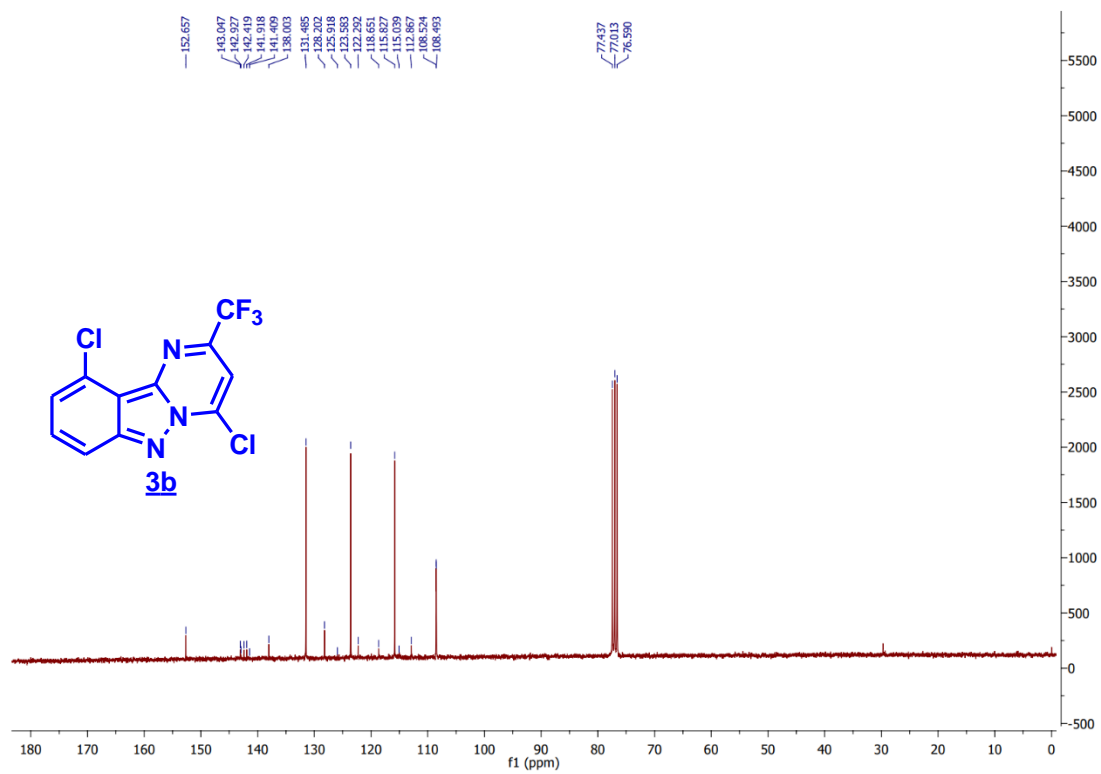
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

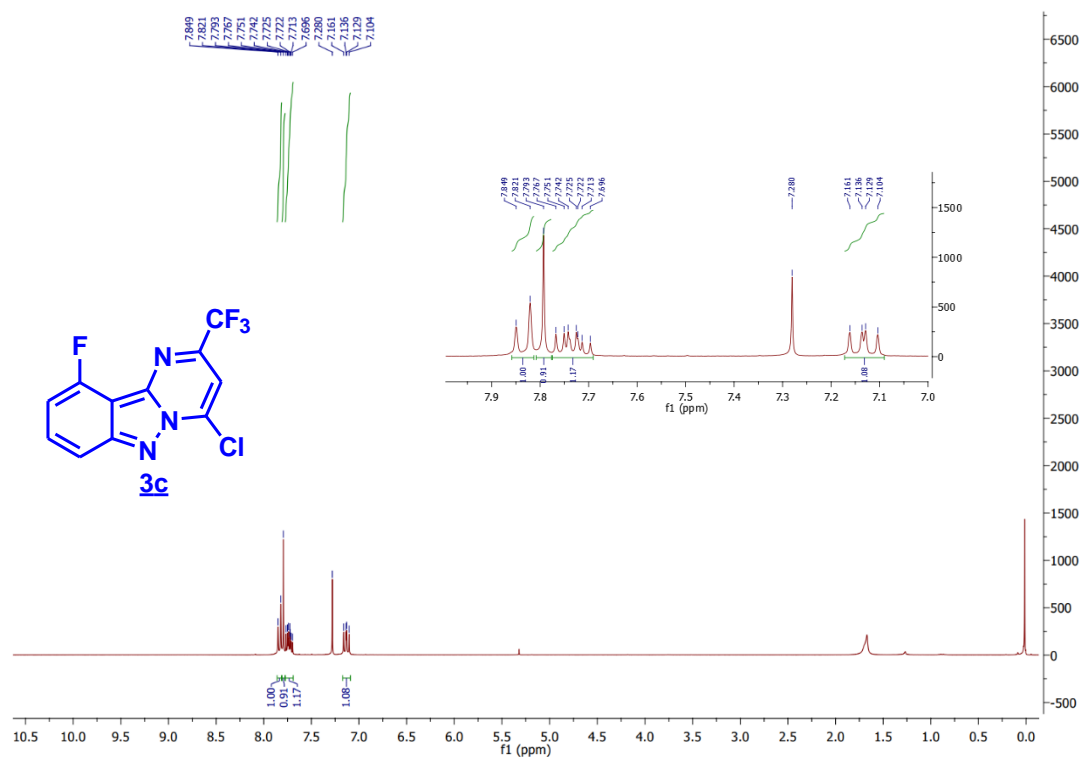


^{13}C NMR (75 MHz, CDCl_3)

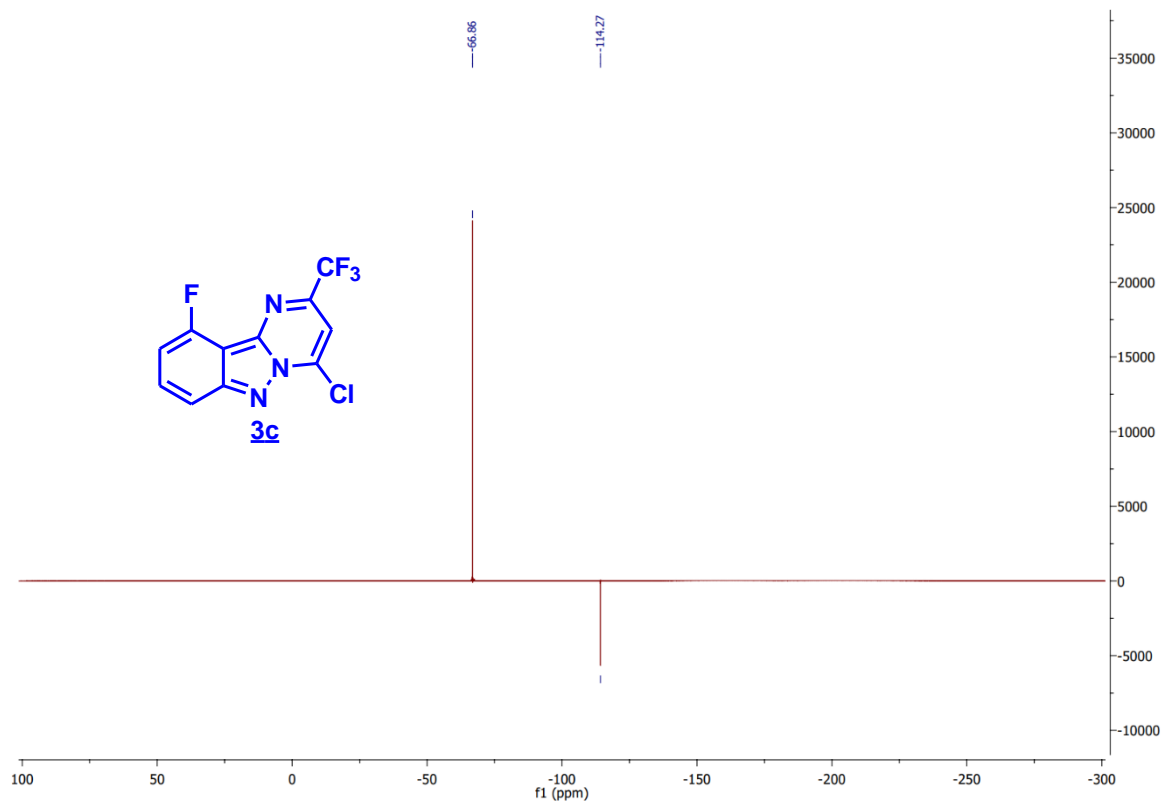


4-Chloro-10-fluoro-2-trifluoromethyl-pyrimido[1,2-b]indazole (3c)

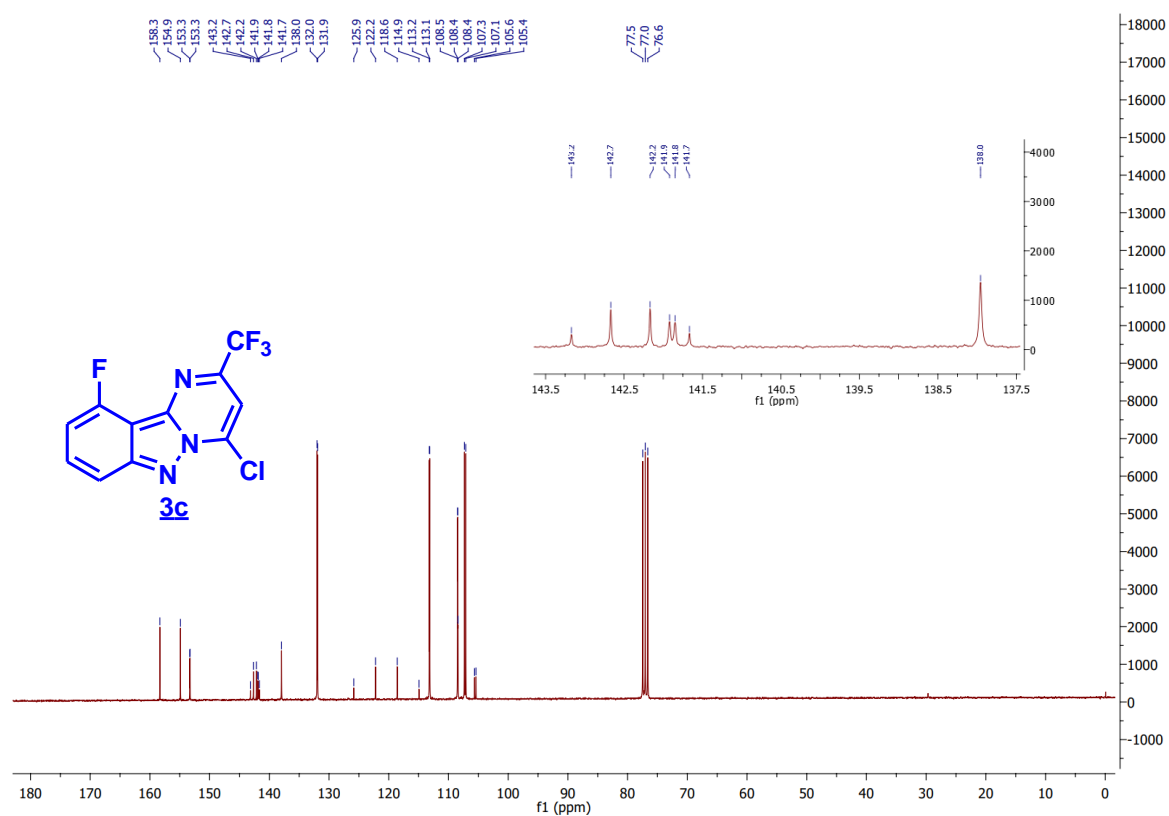
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

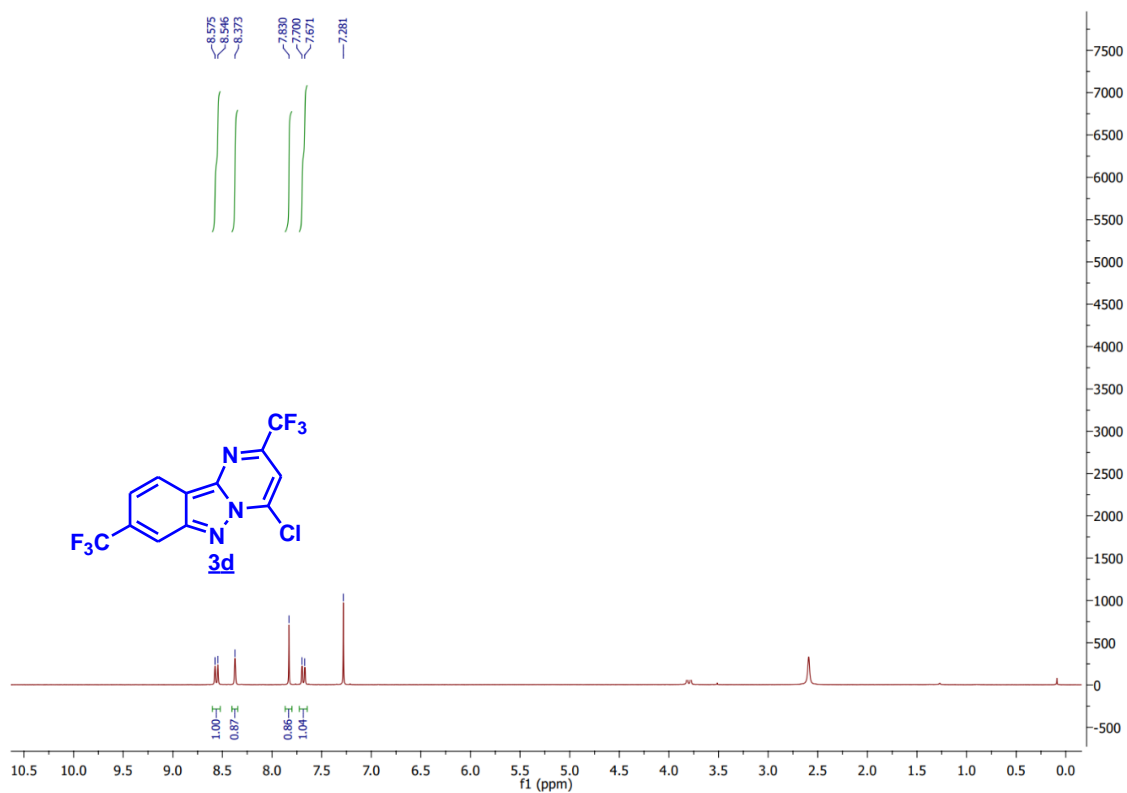


^{13}C NMR (75 MHz, CDCl_3)

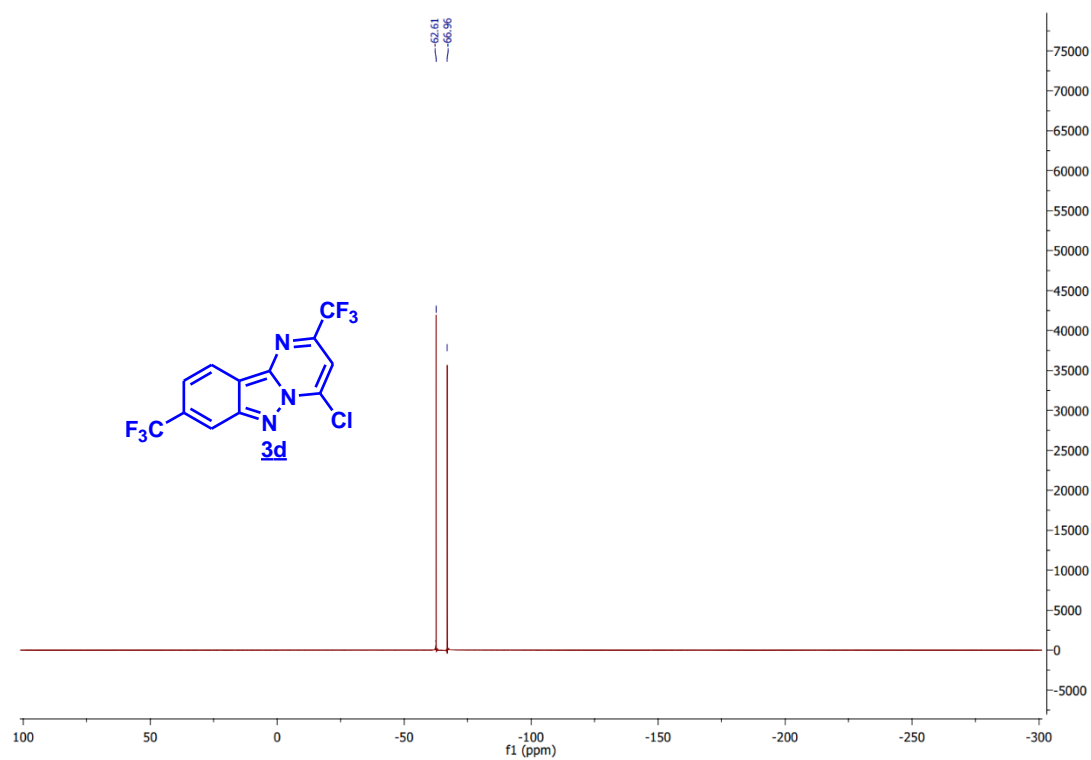


4.4-Chloro-2,8-bis-trifluoromethyl-pyrimido[1,2-b]indazole (**3d**)

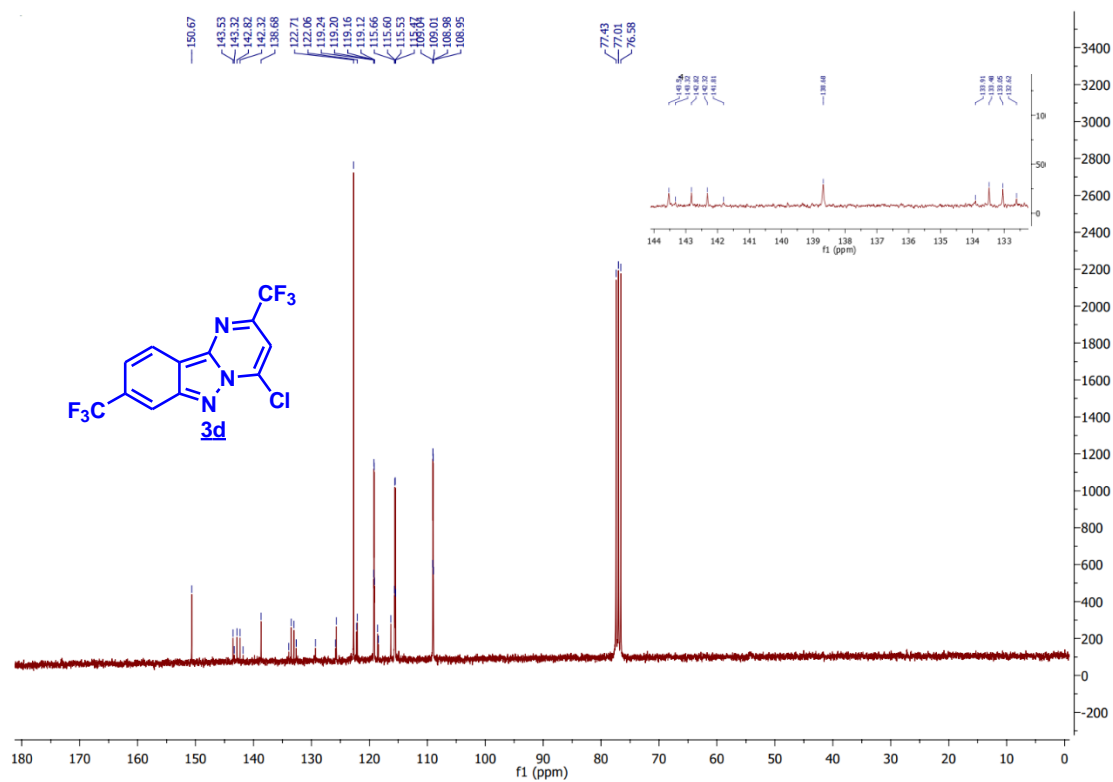
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

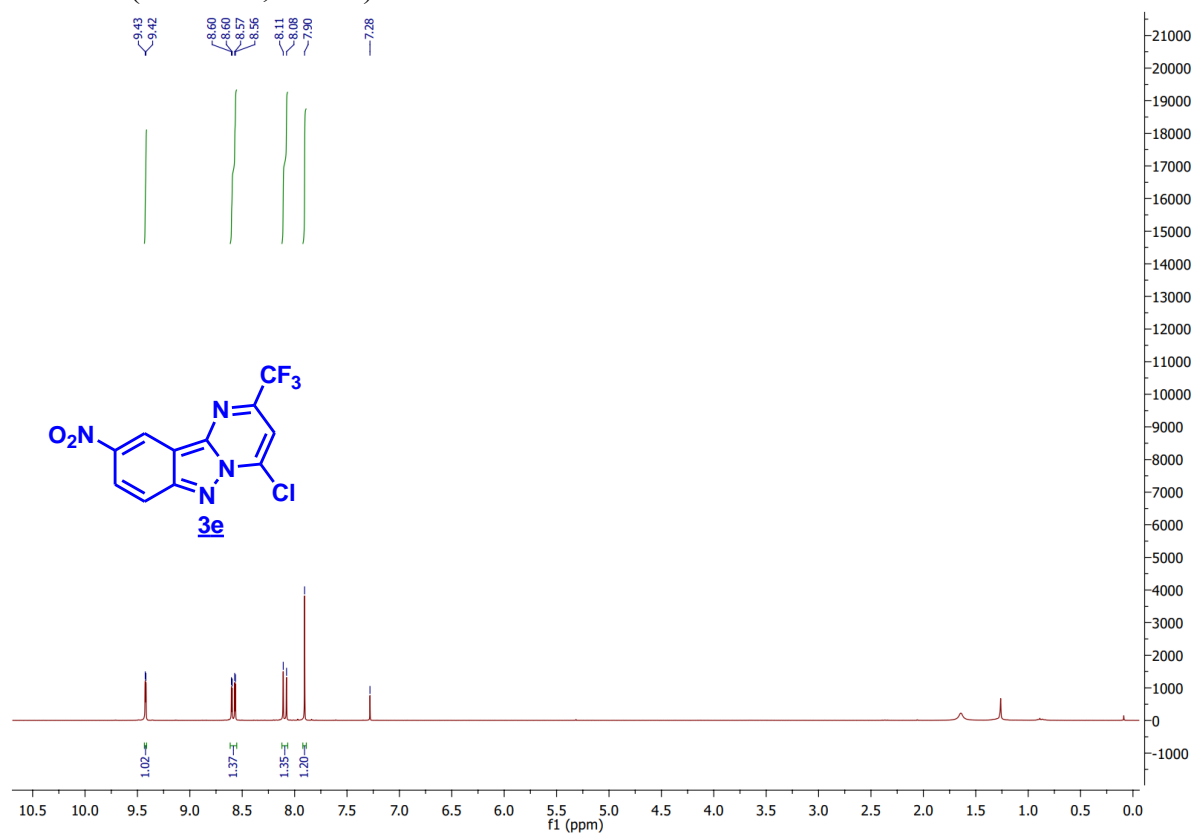


^{13}C NMR (75 MHz, CDCl_3)

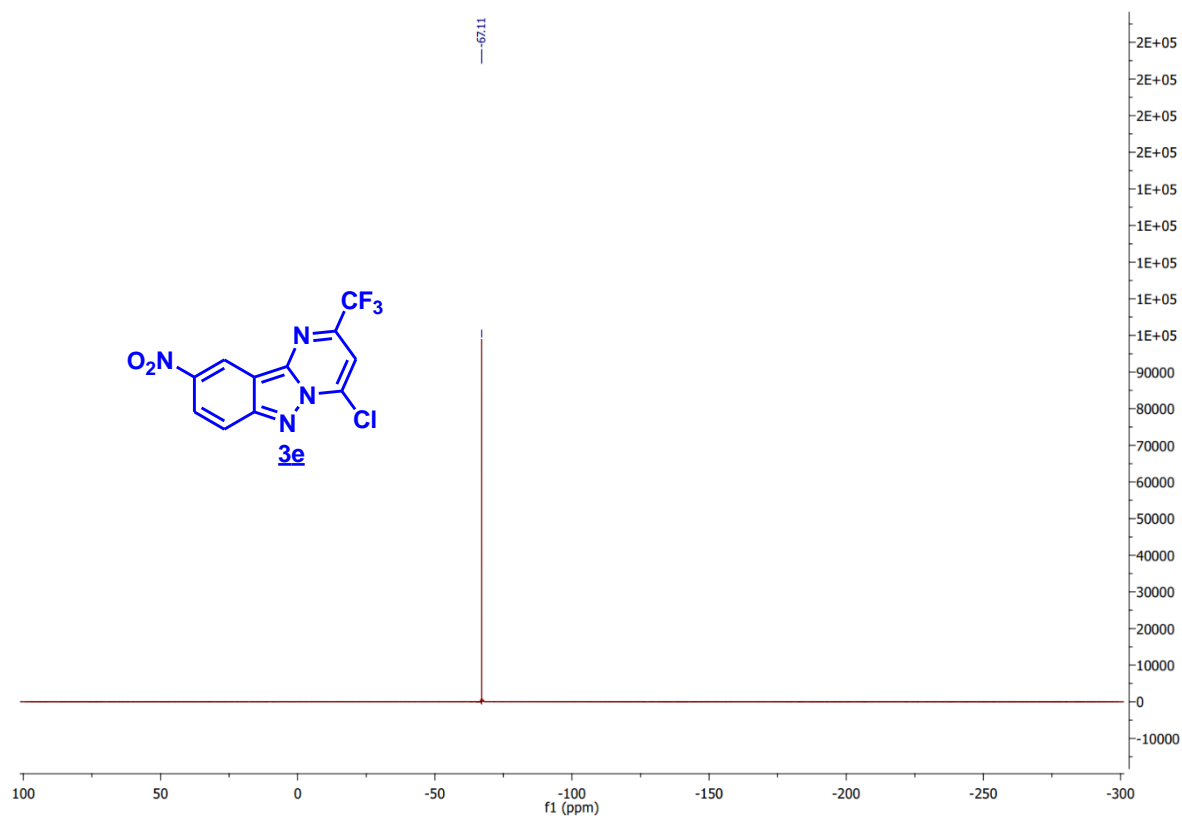


4-Chloro-9-nitro-2-trifluoromethyl-pyrimido[1,2-b]indazole (3e)

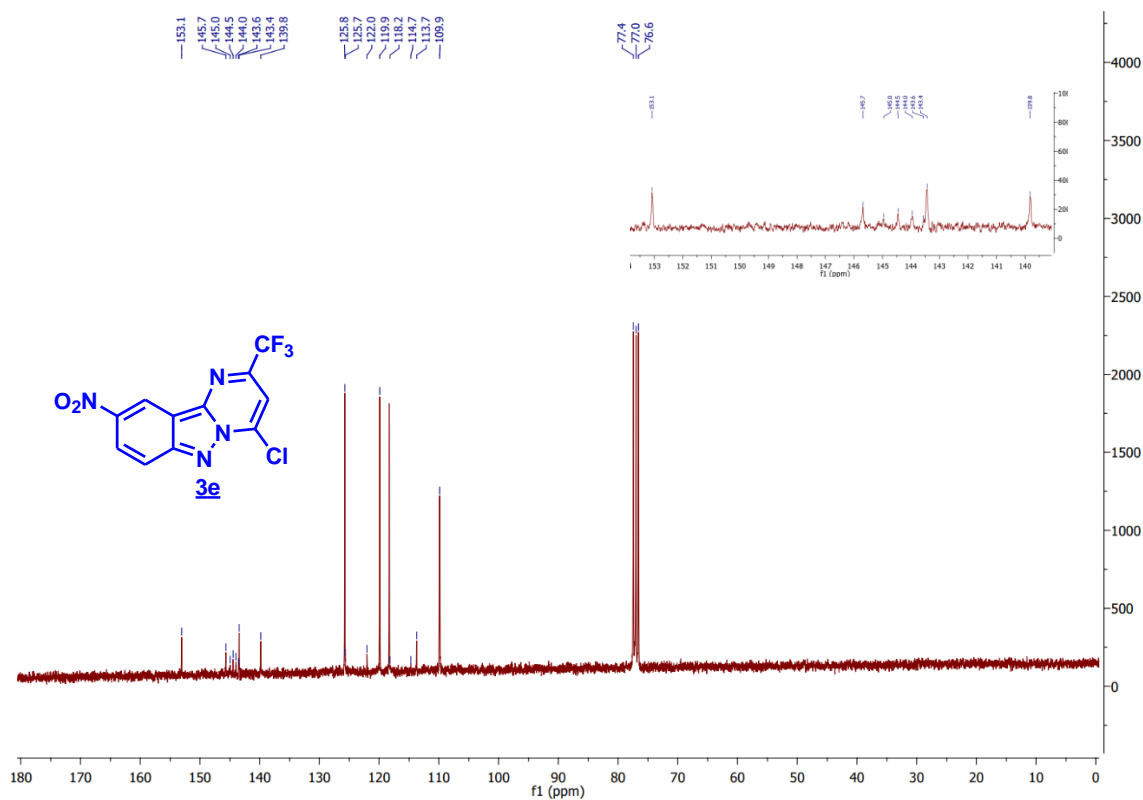
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

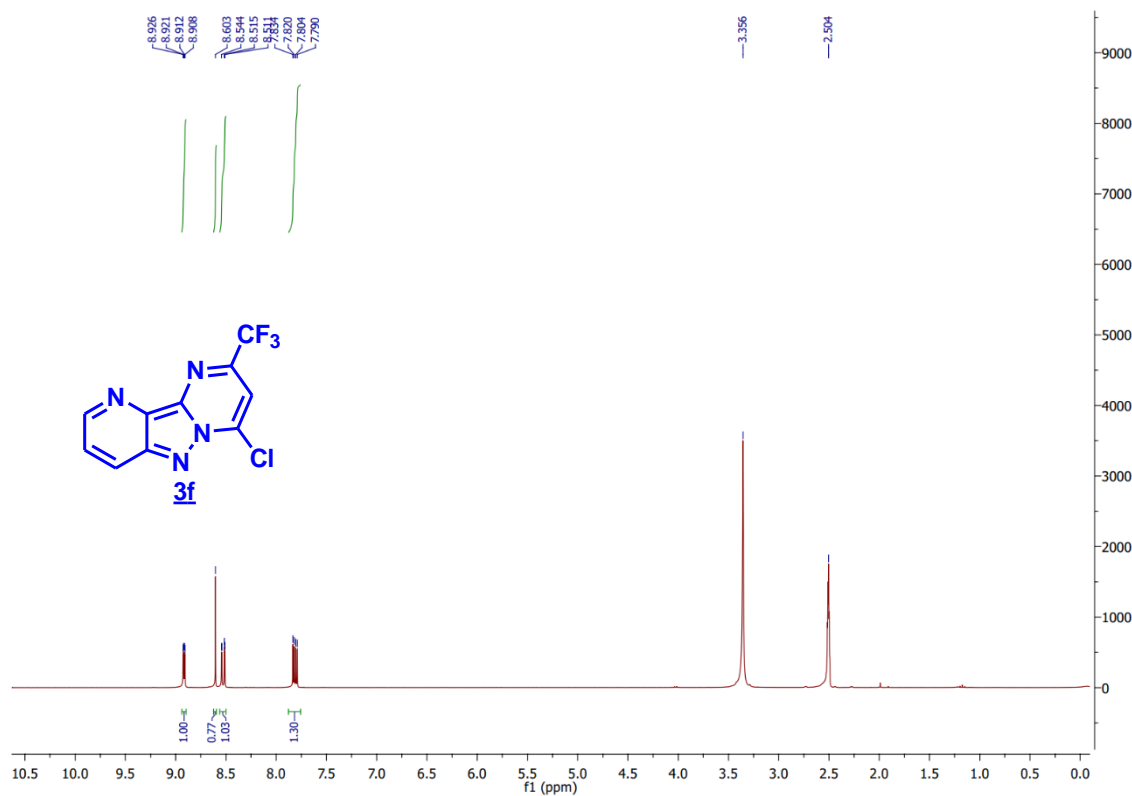


^{13}C NMR (75 MHz, CDCl_3)

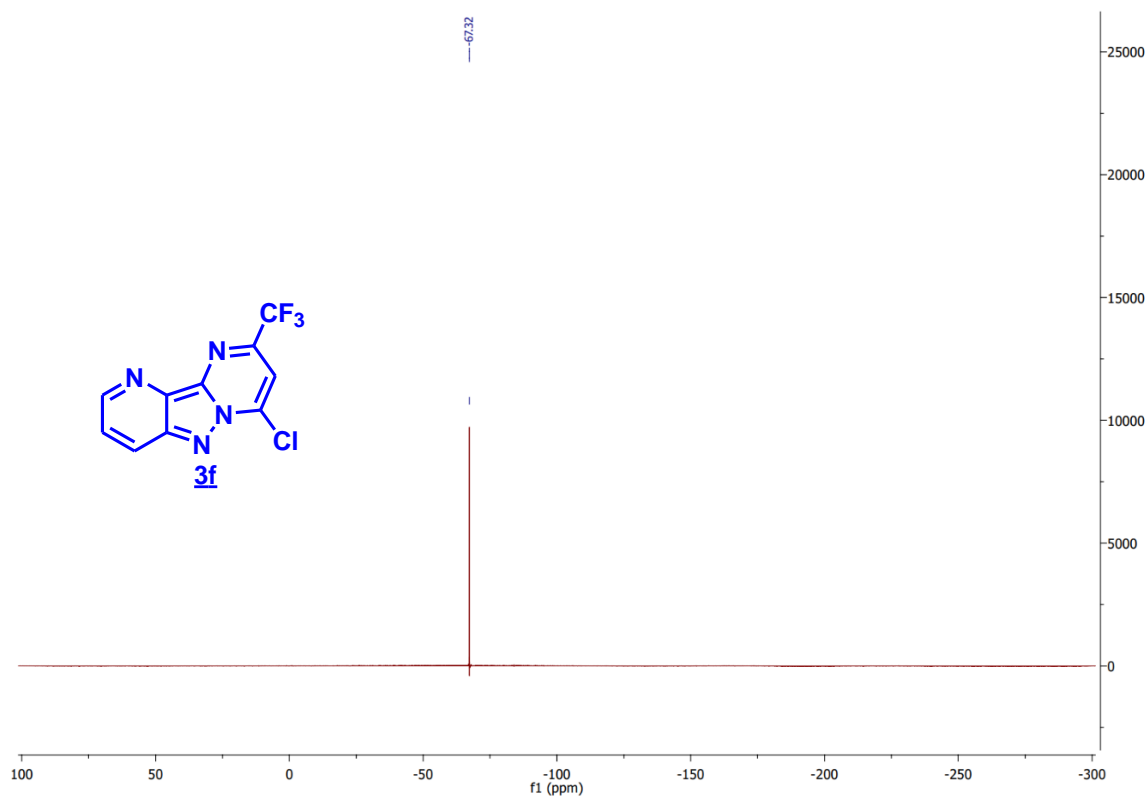


7-chloro-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (3f)

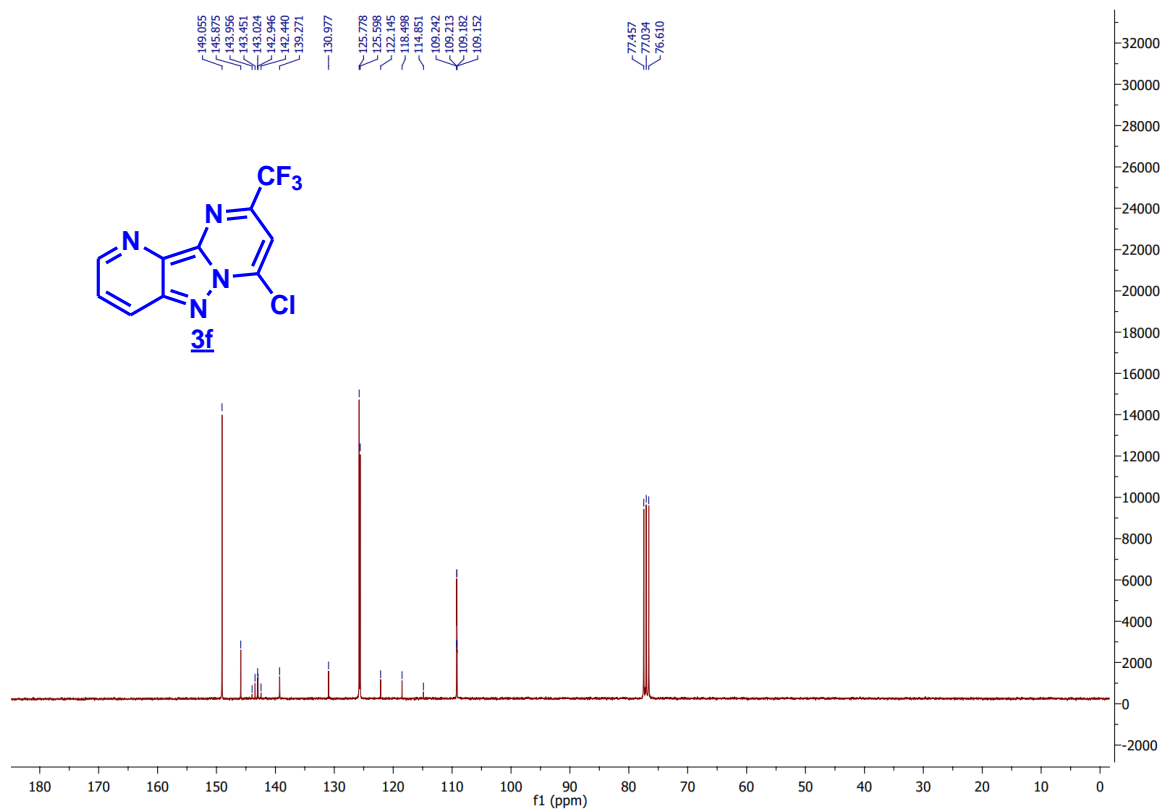
^1H NMR (300 MHz, DMSO-d_6)



^{19}F NMR (282 MHz, DMSO- d_6)

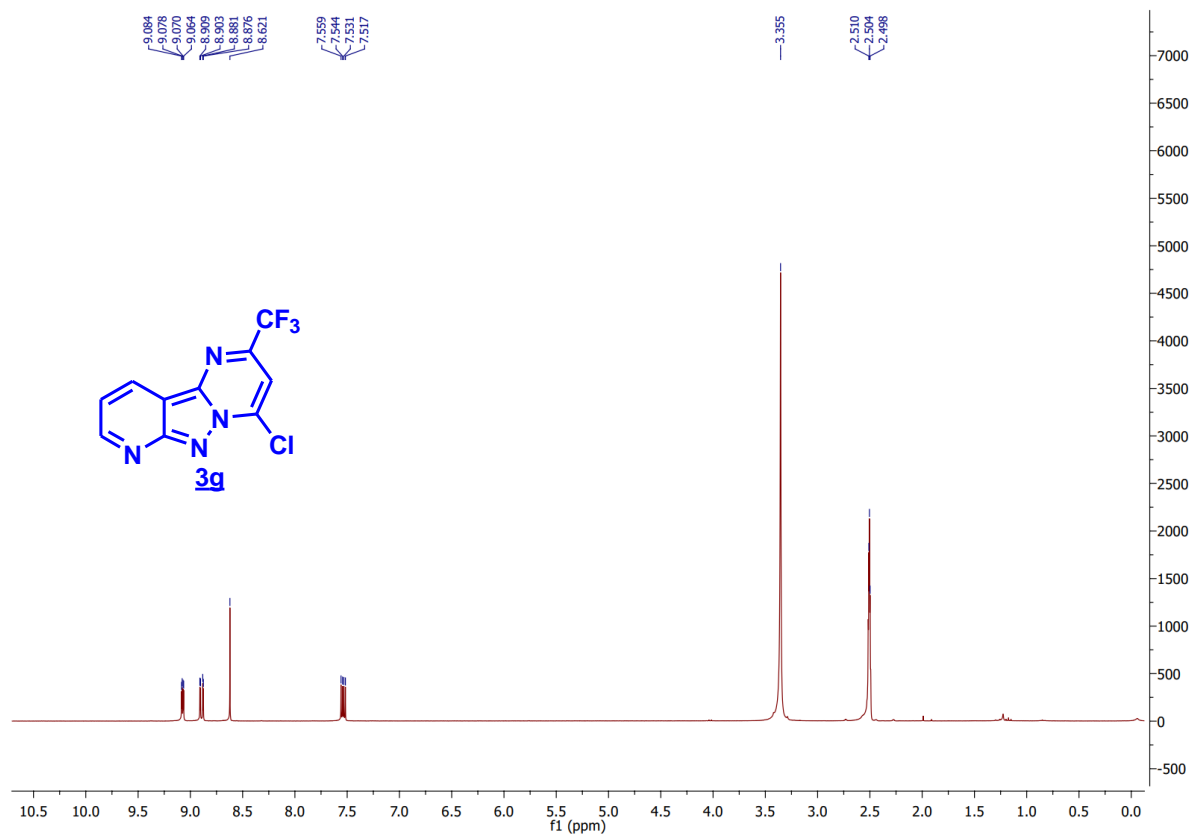


^{13}C NMR (75 MHz, CDCl_3)

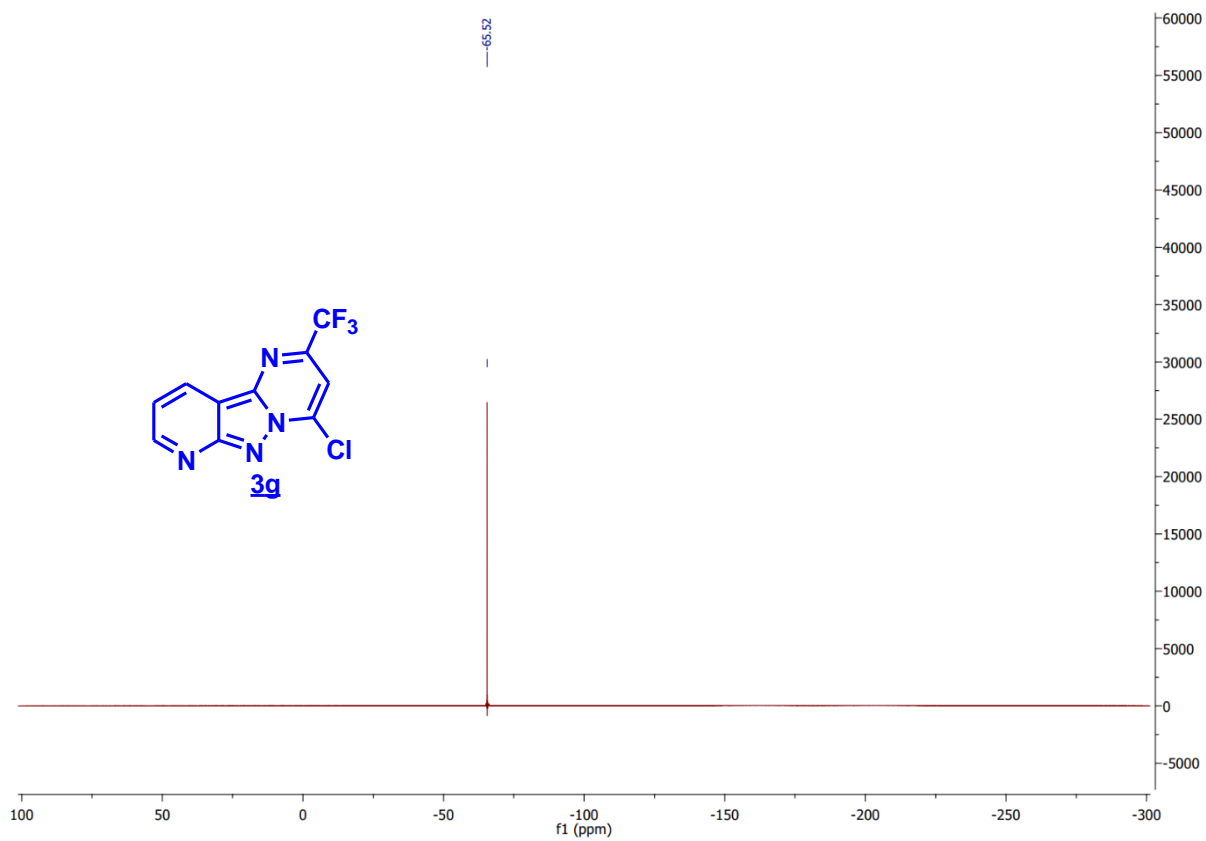


4-chloro-2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (3g)

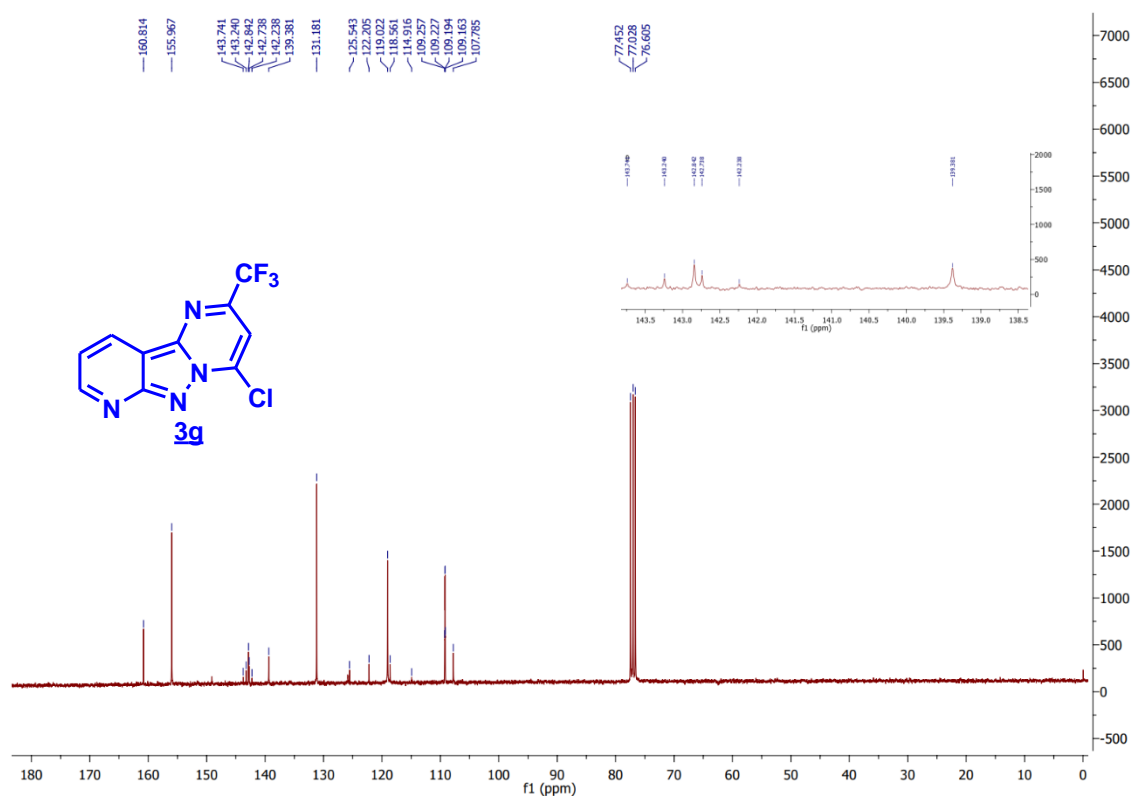
¹H NMR (300 MHz, DMSO-*d*₆)



¹⁹F NMR (282 MHz, DMSO-*d*₆)

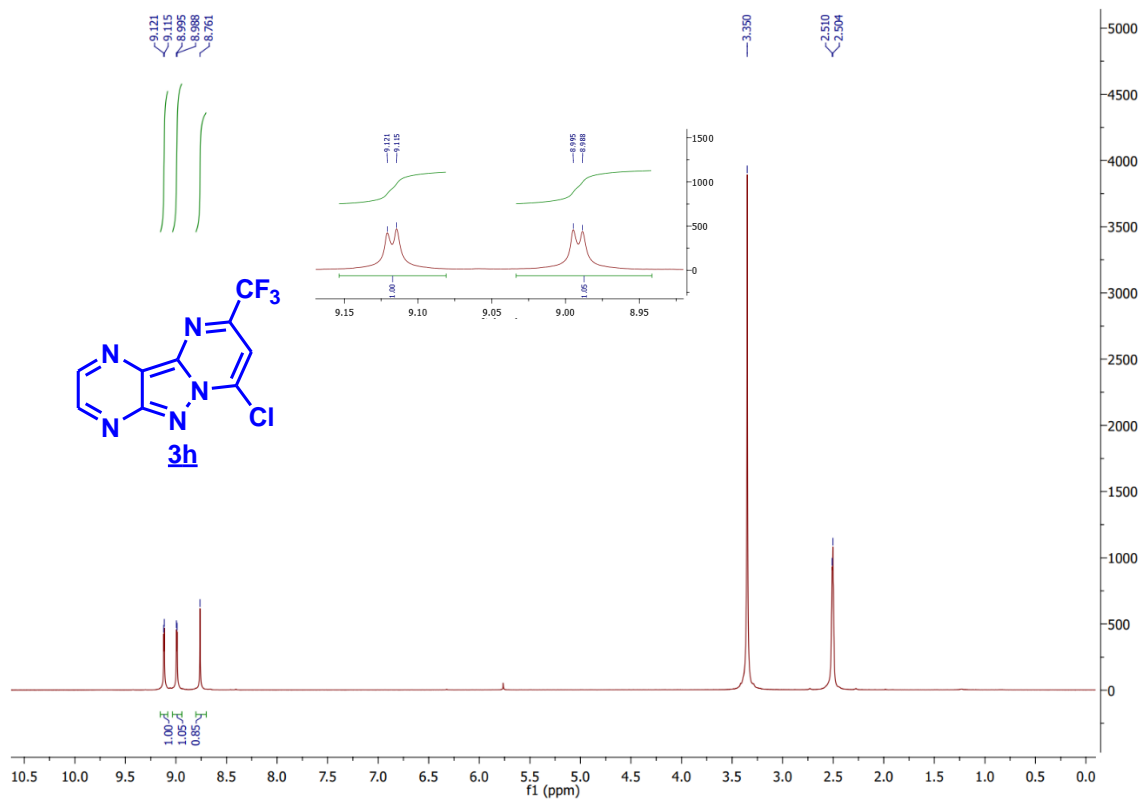


^{13}C NMR (75 MHz, CDCl_3)

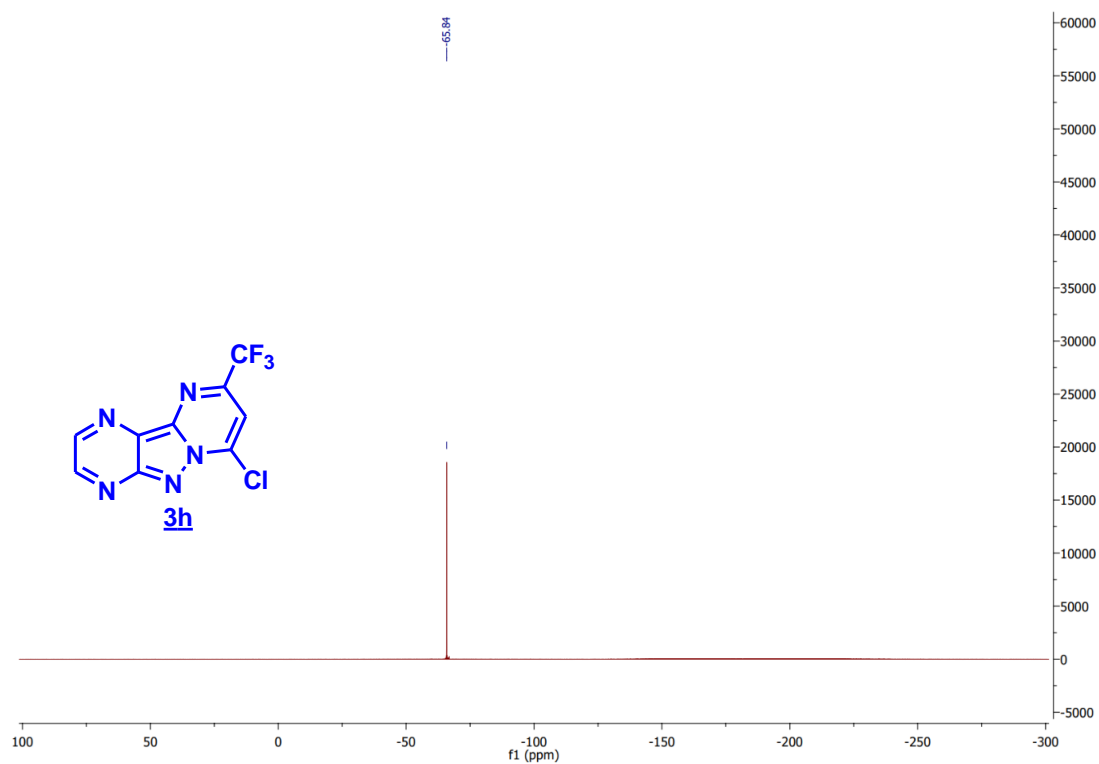


7-chloro-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-a]pyrimidine (3h)

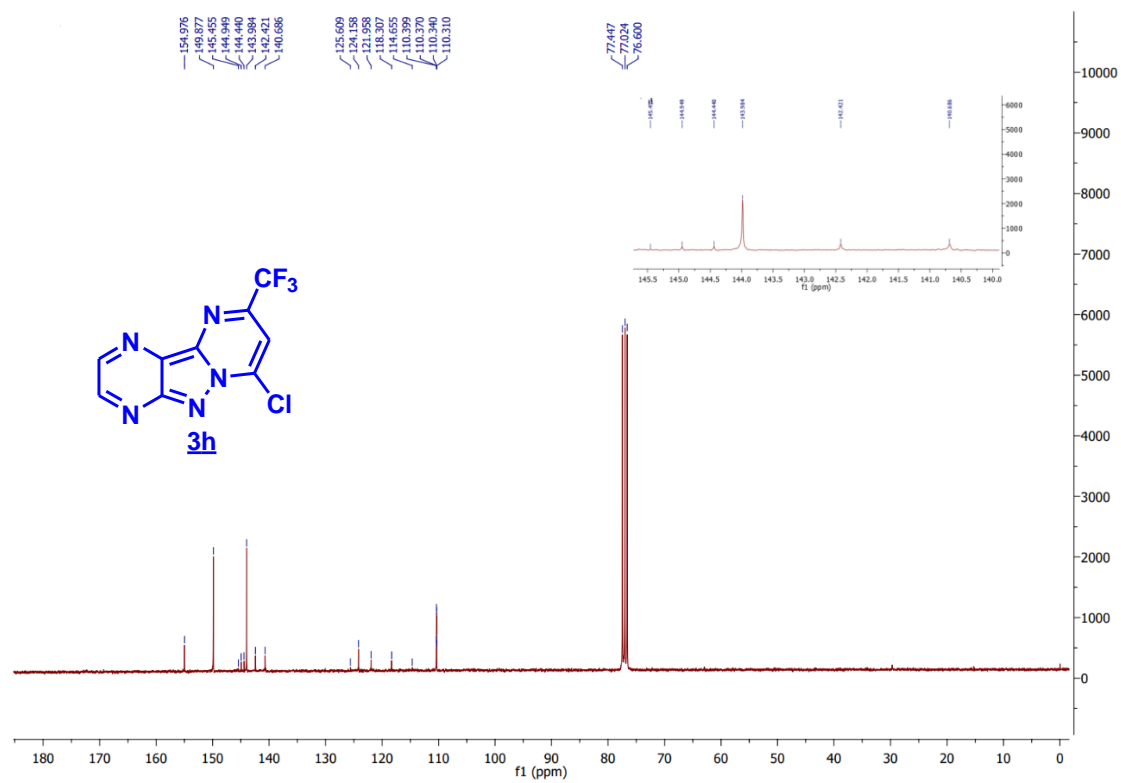
^1H NMR (300 MHz, $\text{DMSO}-d_6$)



^{19}F NMR (282 MHz, DMSO-d_6)

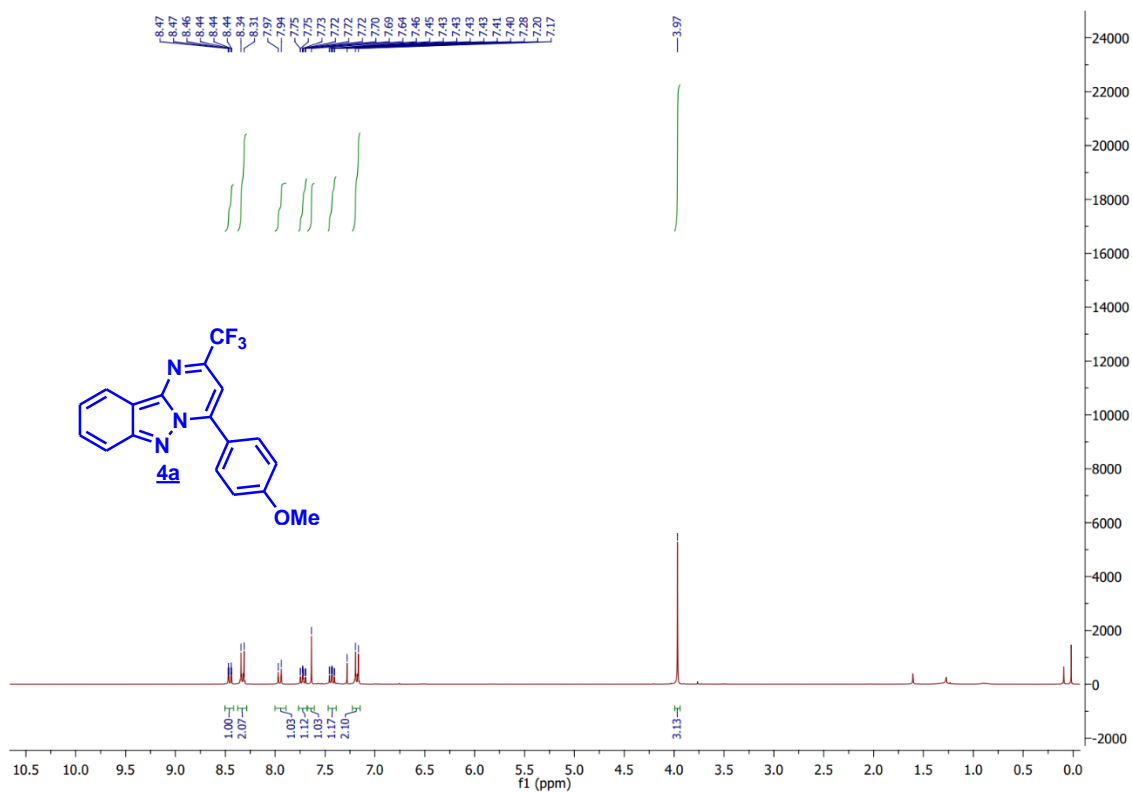


^{13}C NMR (75 MHz, CDCl_3)

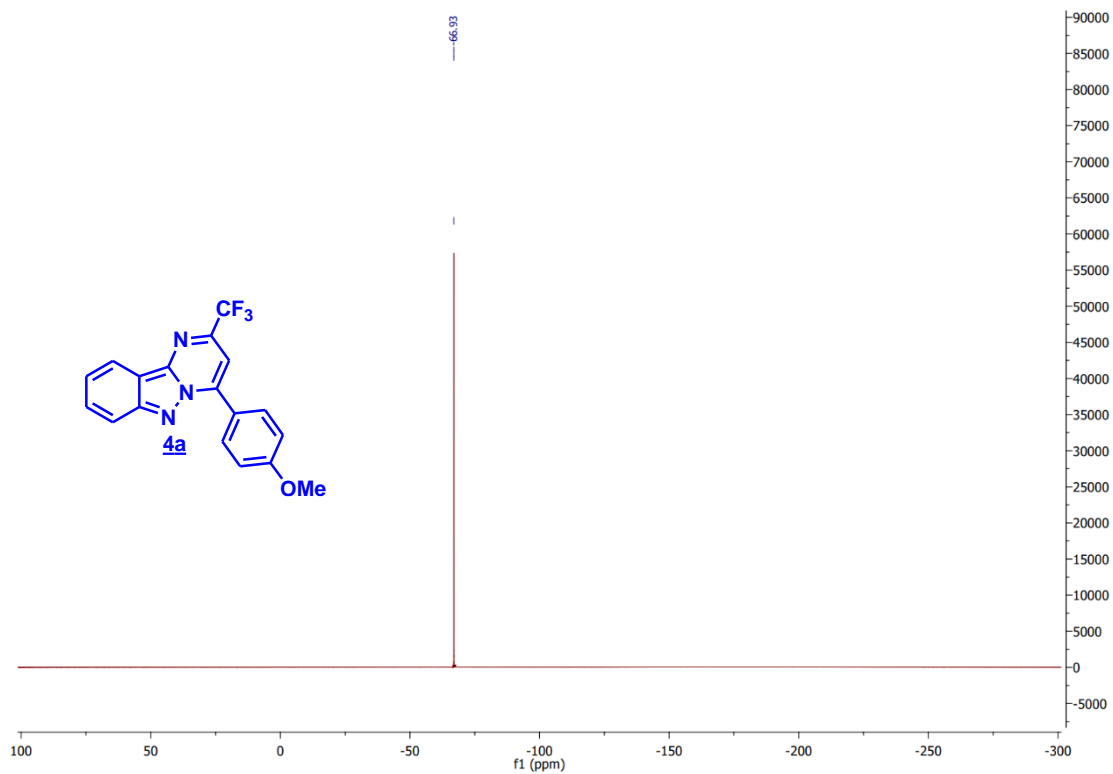


4-(4-Methoxy-phenyl)-2-trifluoromethyl-pyrimido[1,2-b]indazole (4a)

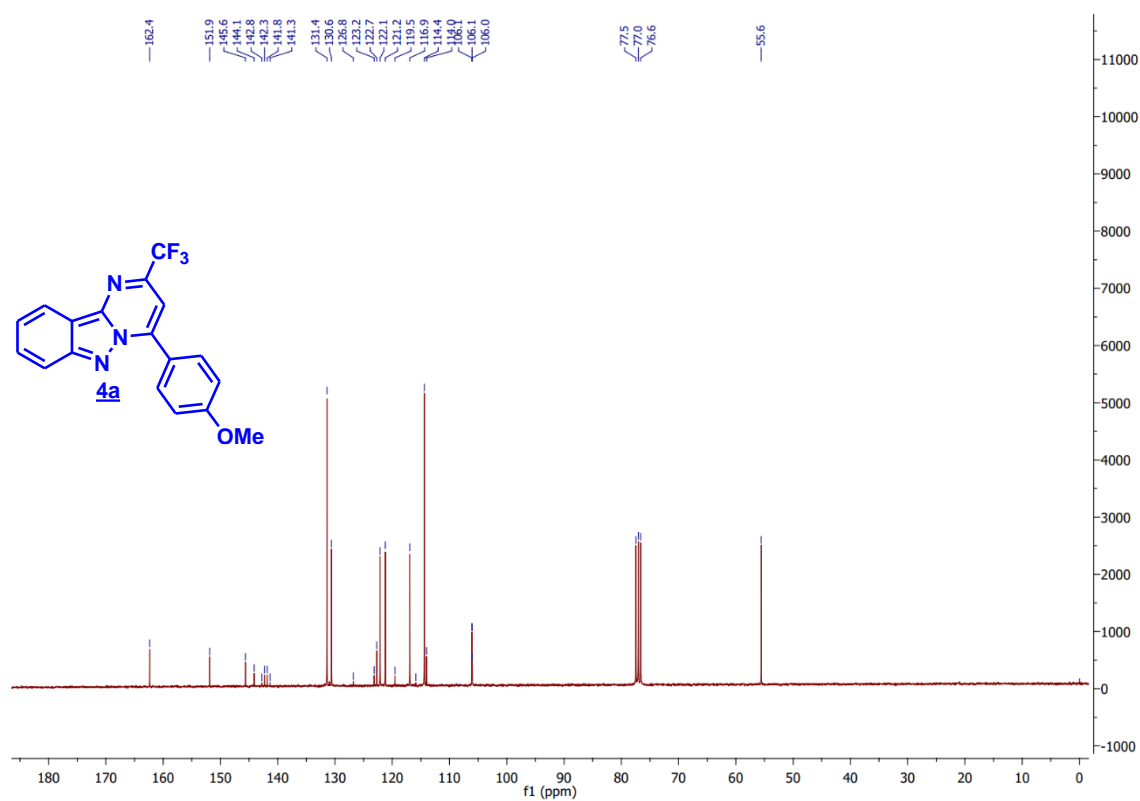
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

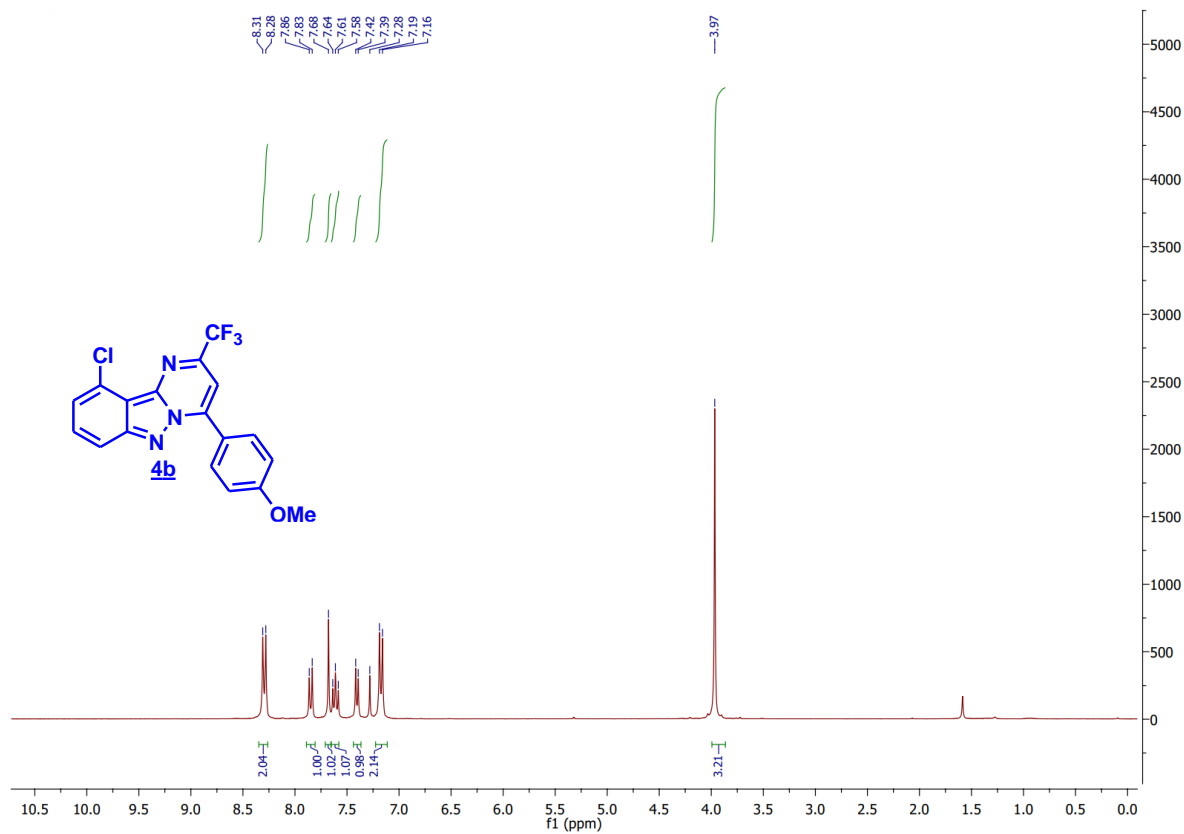


^{13}C NMR (75 MHz, CDCl_3)

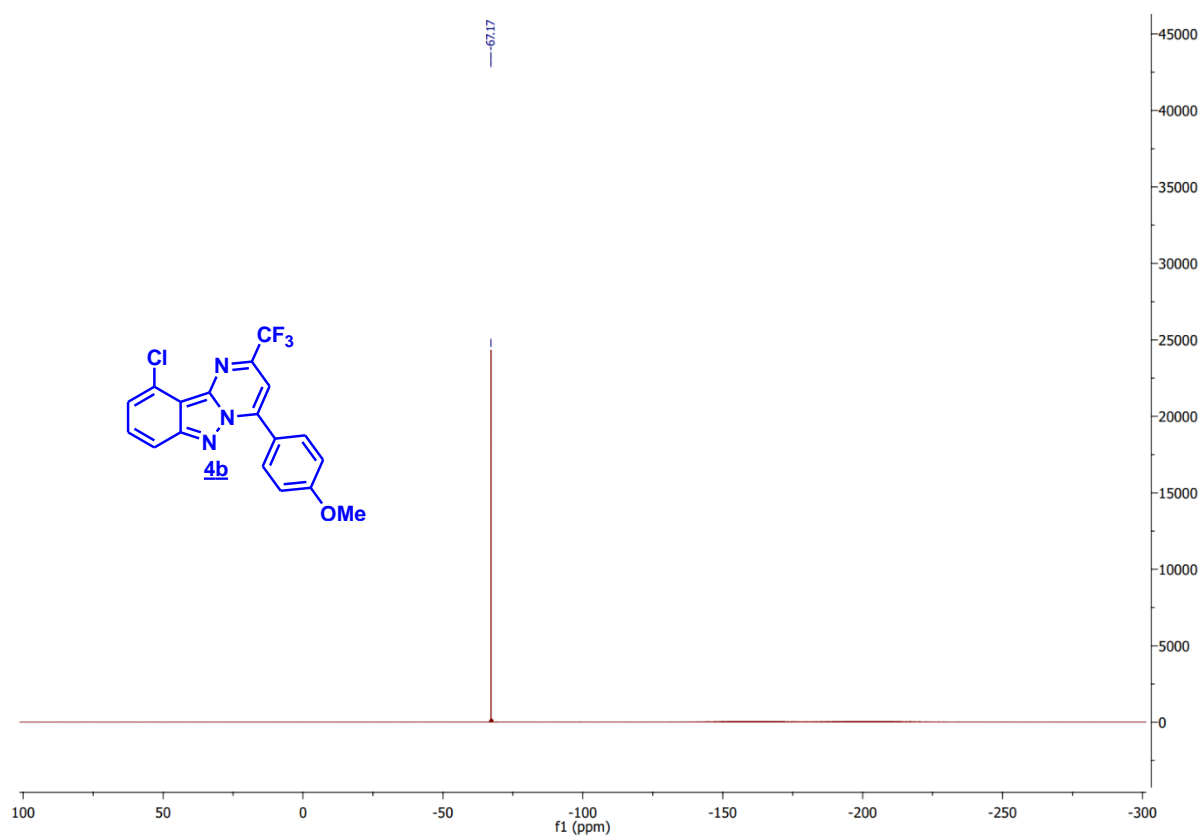


10-Chloro-4-(4-methoxy-phenyl)-2-trifluoromethyl-pyrimido[1,2-b]indazole (4b)

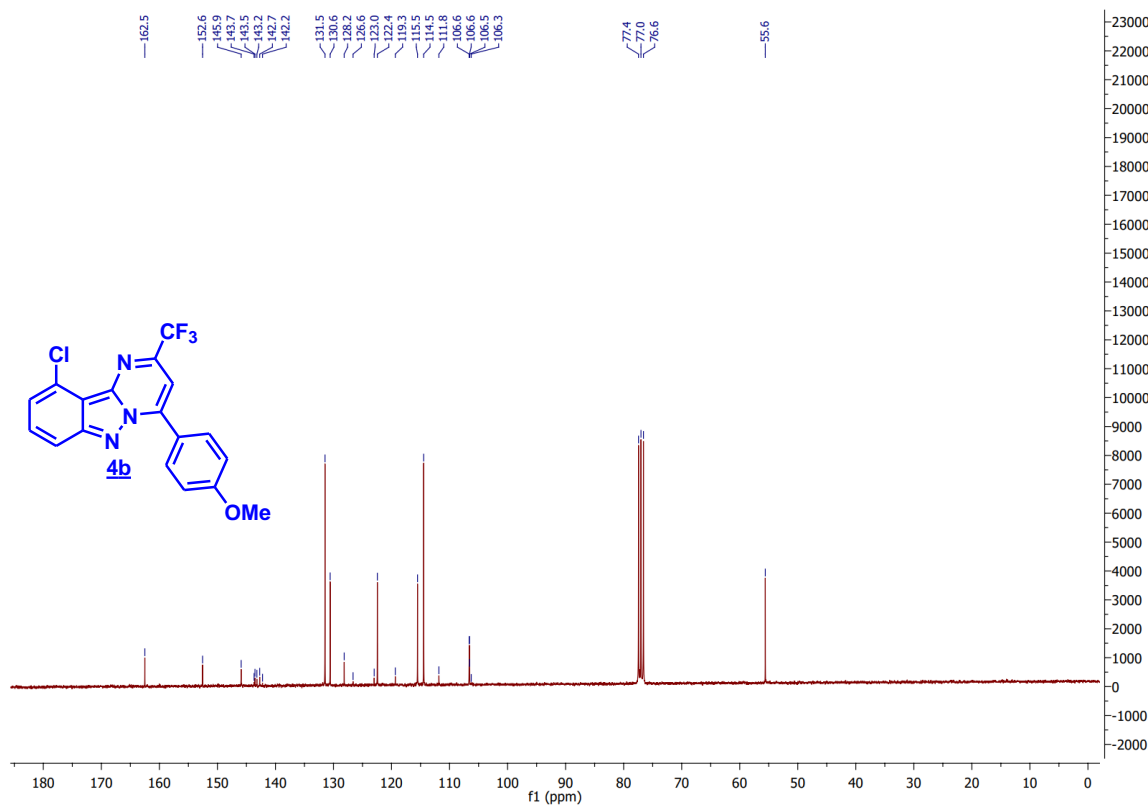
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

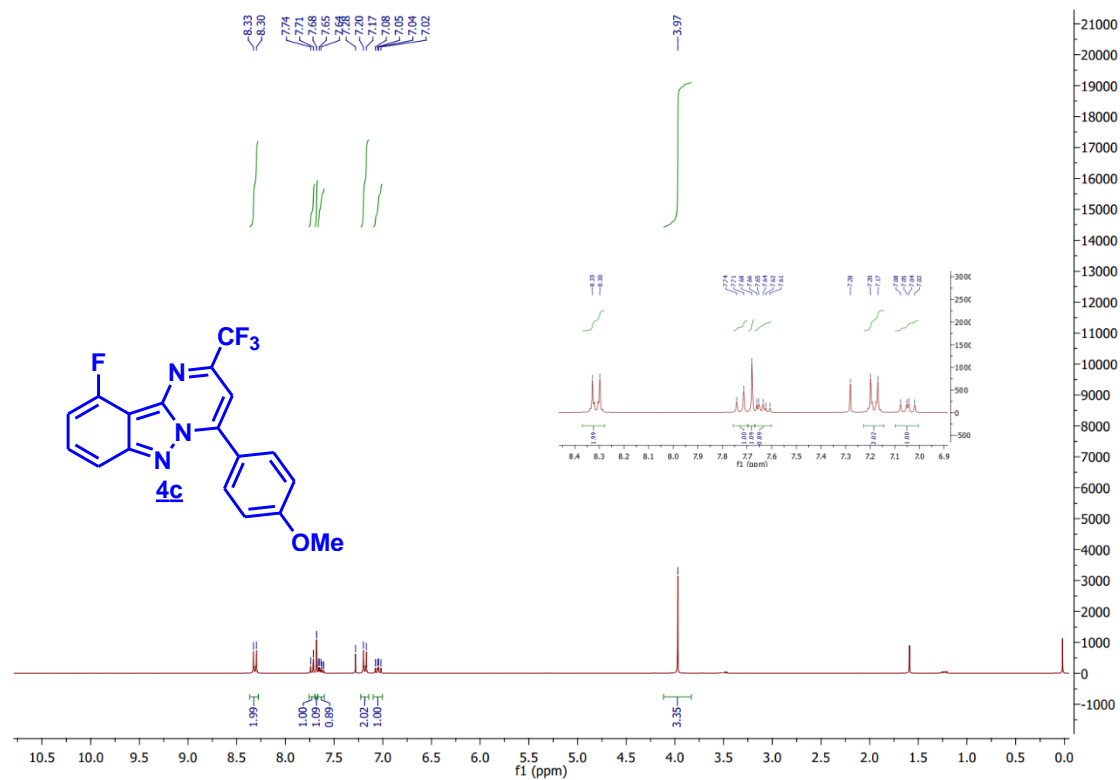


^{13}C NMR (75 MHz, CDCl_3)

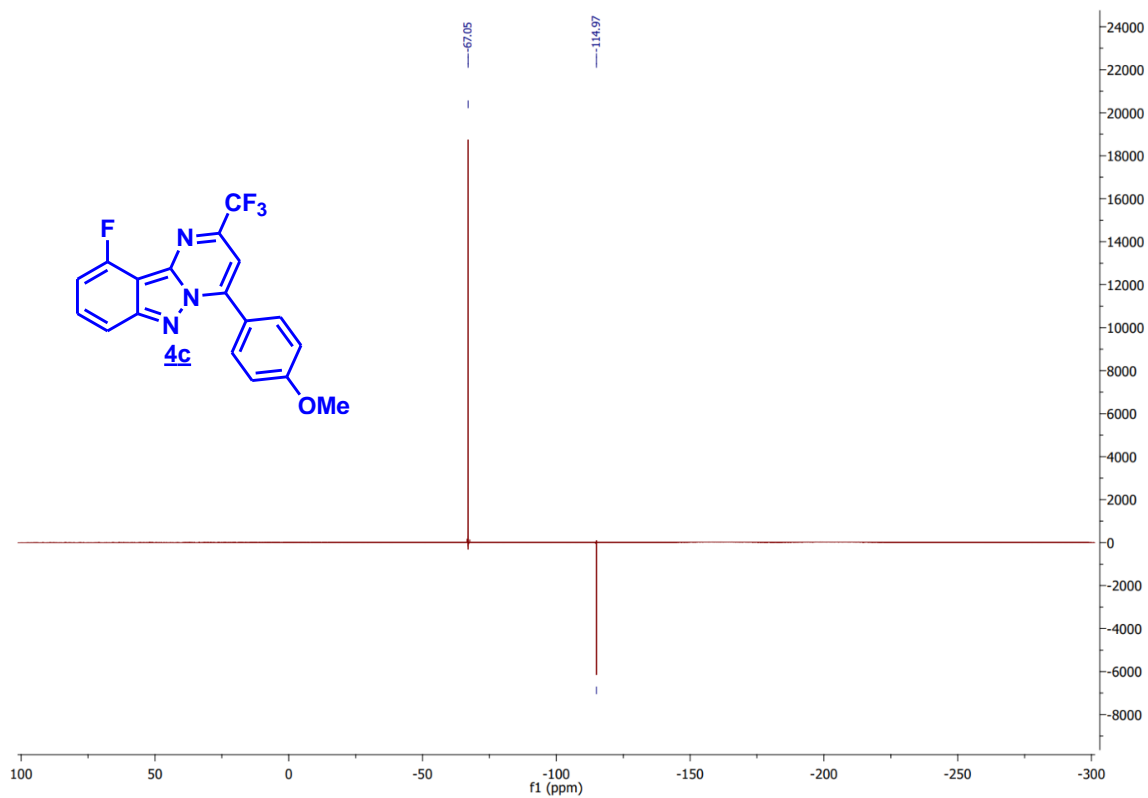


10-Fluoro-4-(4-methoxy-phenyl)-2-trifluoromethyl-pyrimido[1,2-b]indazole (4c)

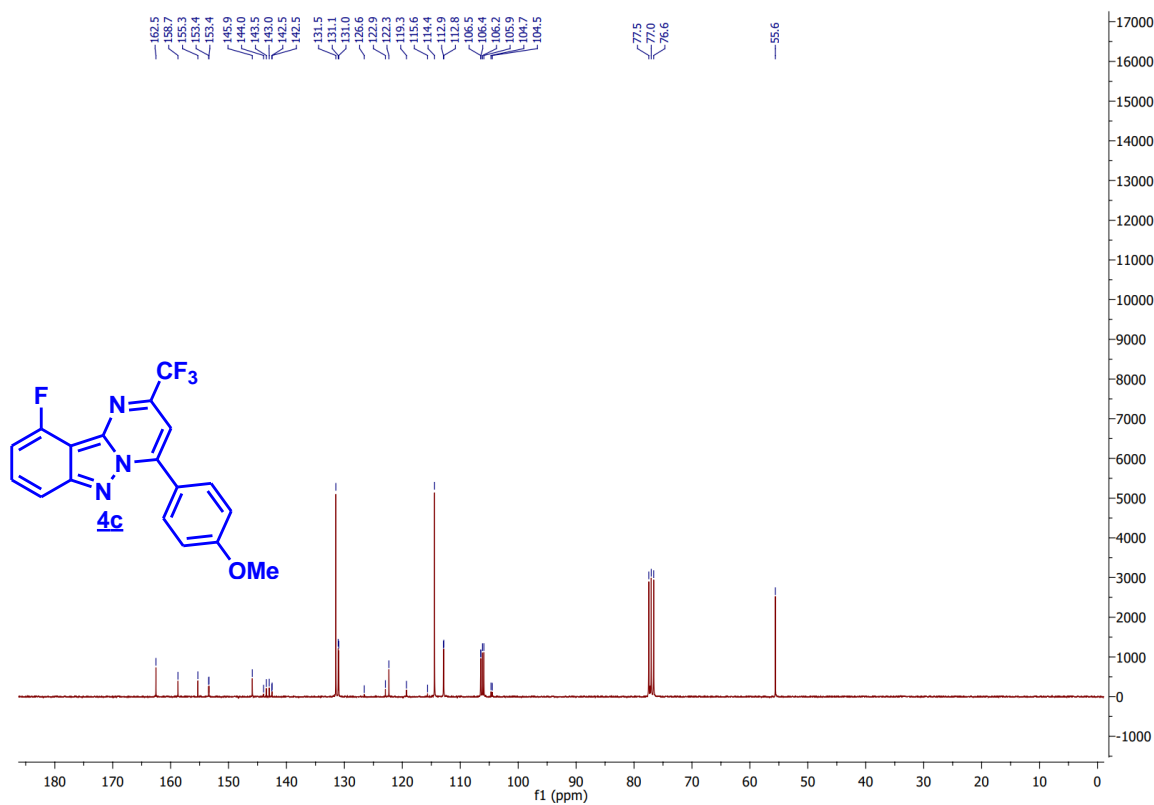
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

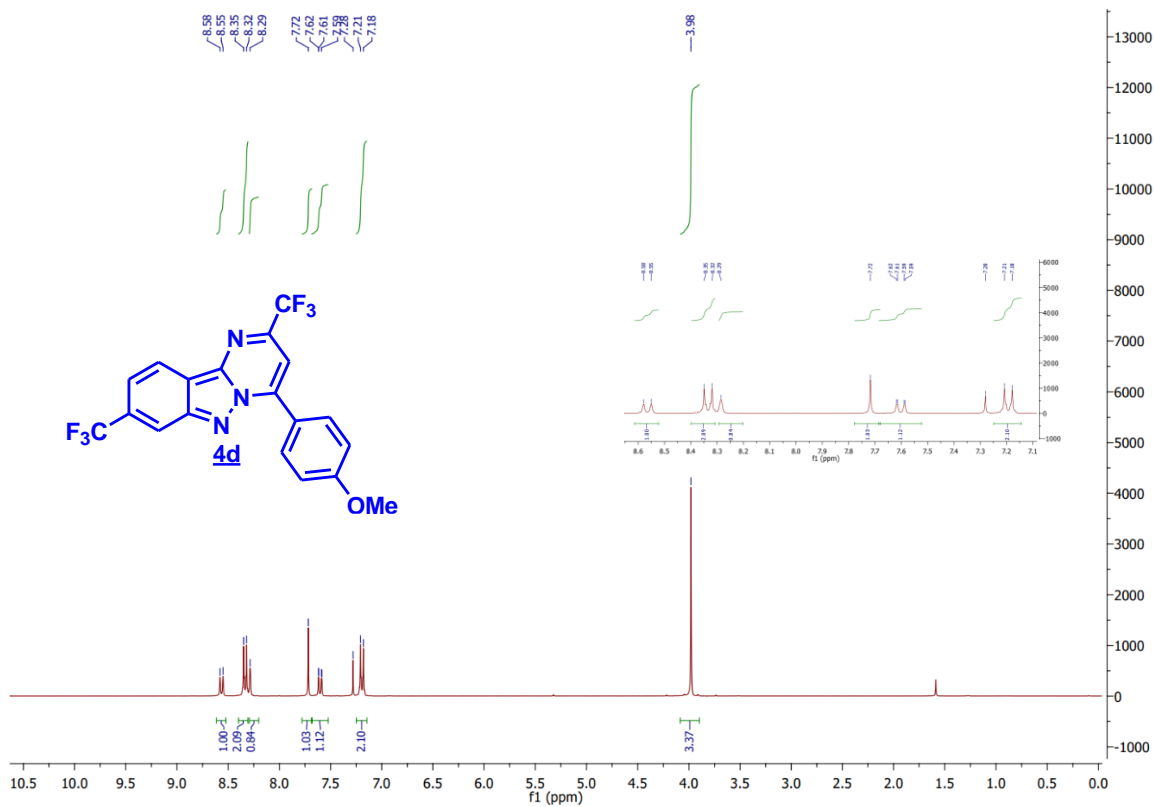


^{13}C NMR (75 MHz, CDCl_3)

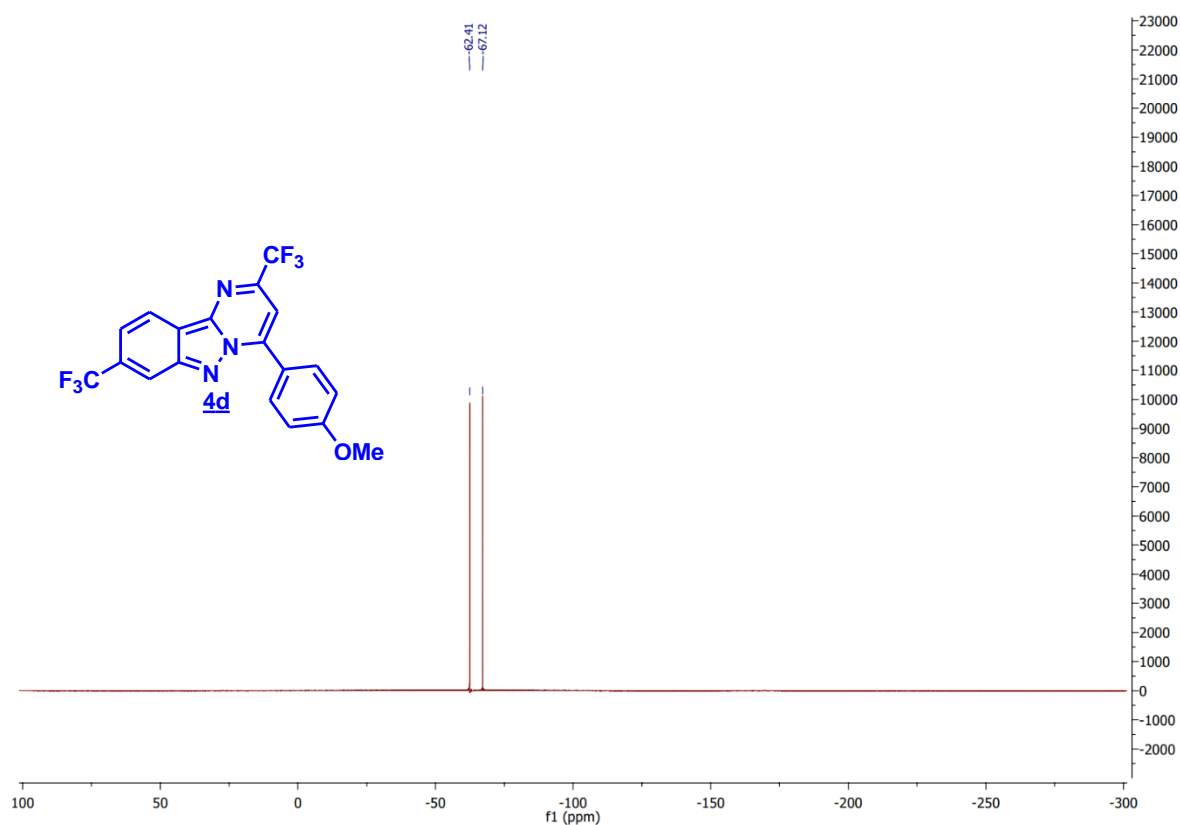


4.4-(4-Methoxy-phenyl)-2,8-bis-trifluoromethyl-pyrimido[1,2-b]indazole (**4d**)

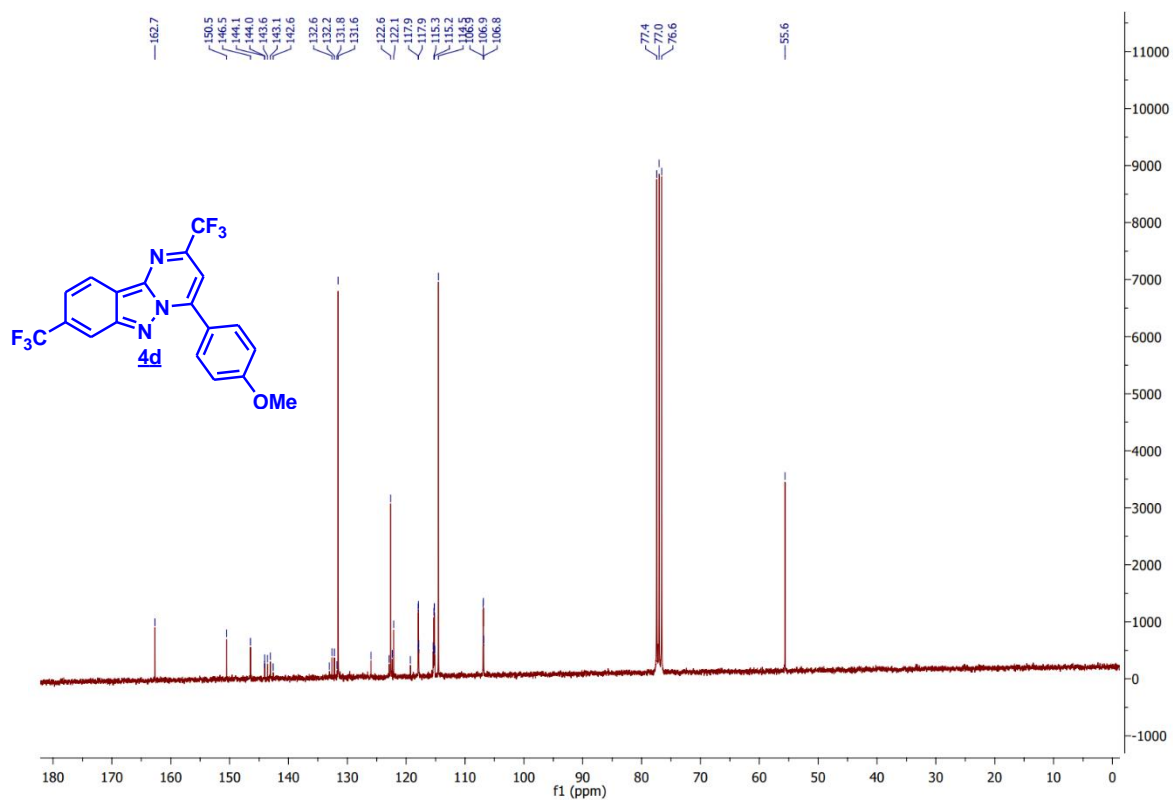
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

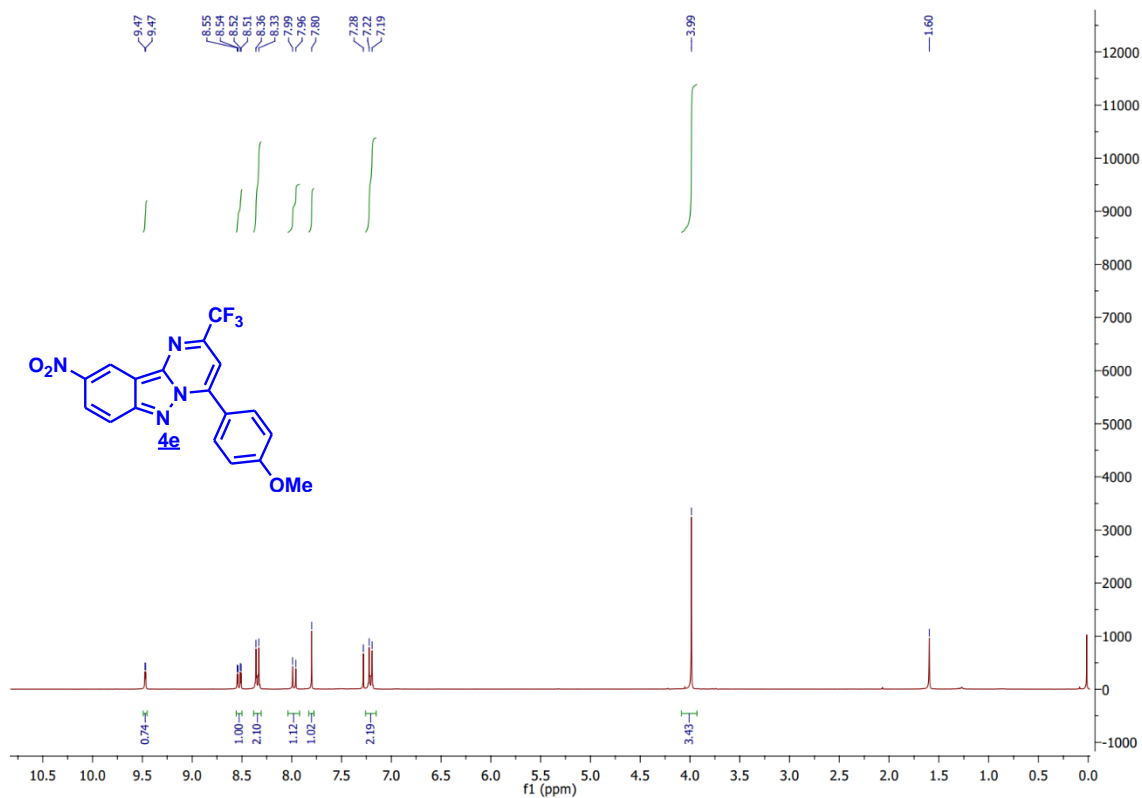


^{13}C NMR (75 MHz, CDCl_3)

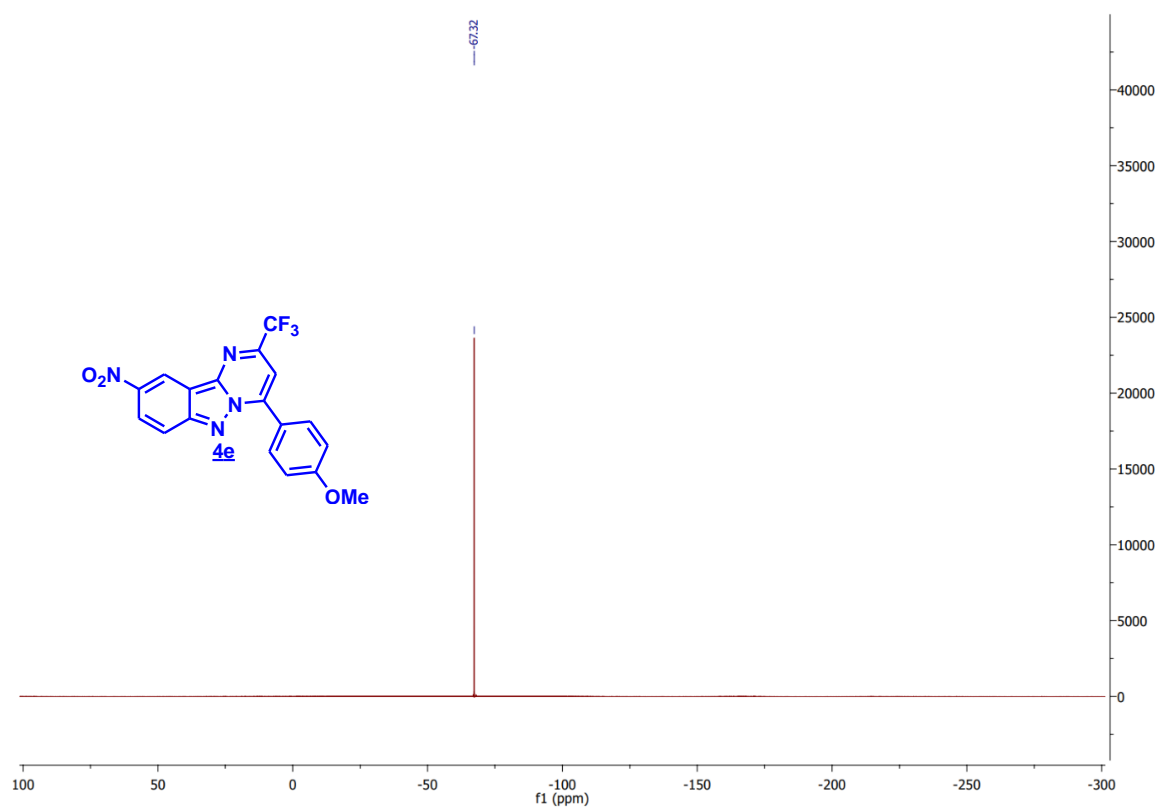


4-(4-Methoxy-phenyl)-9-nitro-2-trifluoromethyl-pyrimido[1,2-b]indazole (4e)

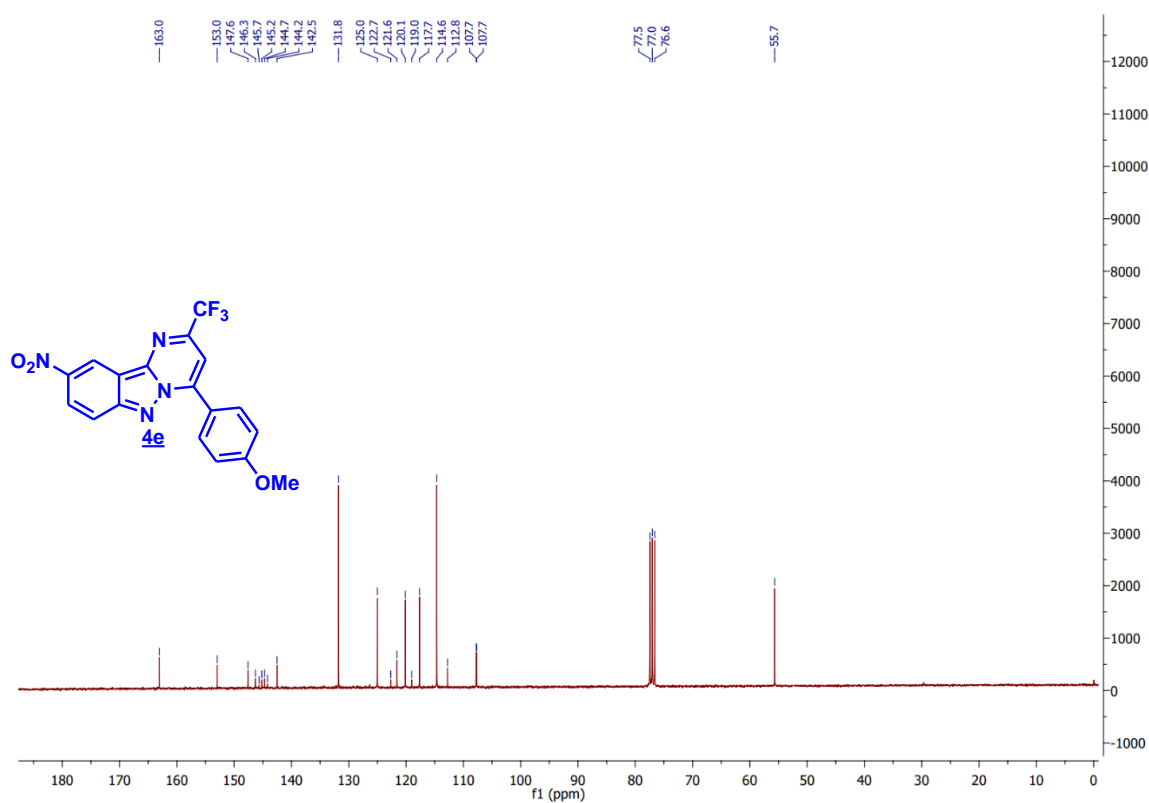
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

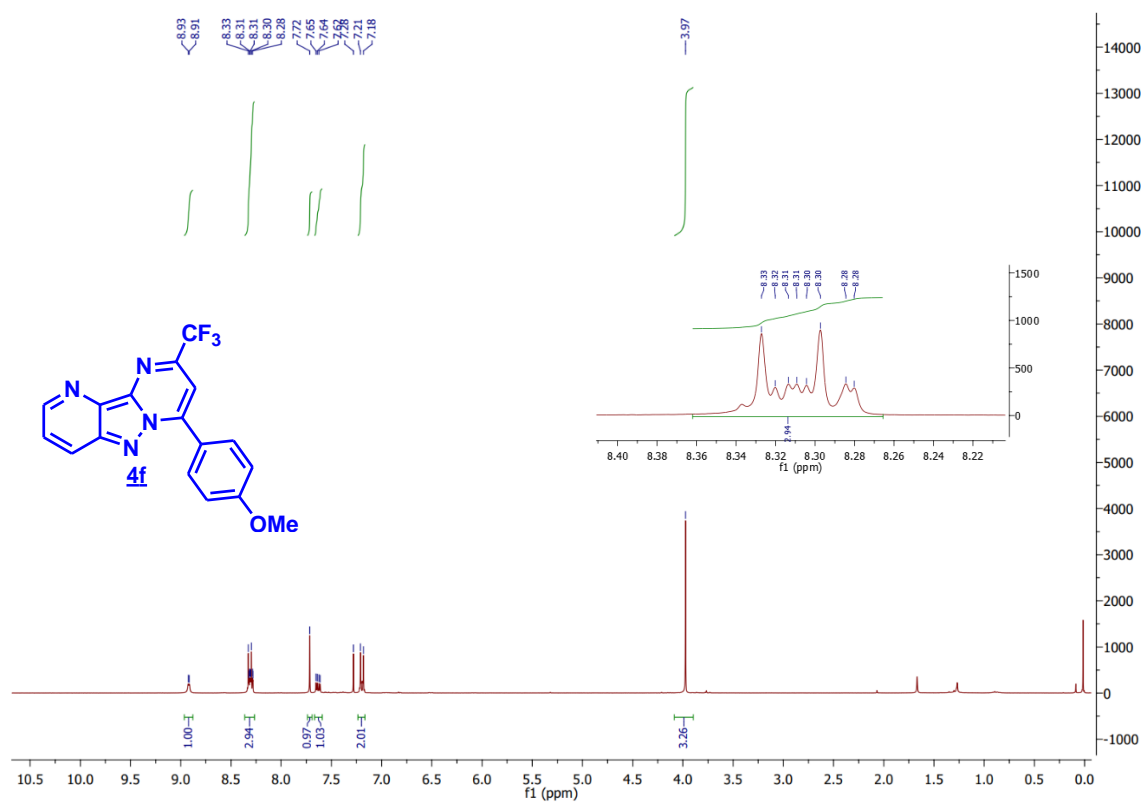


^{13}C NMR (75 MHz, CDCl_3)

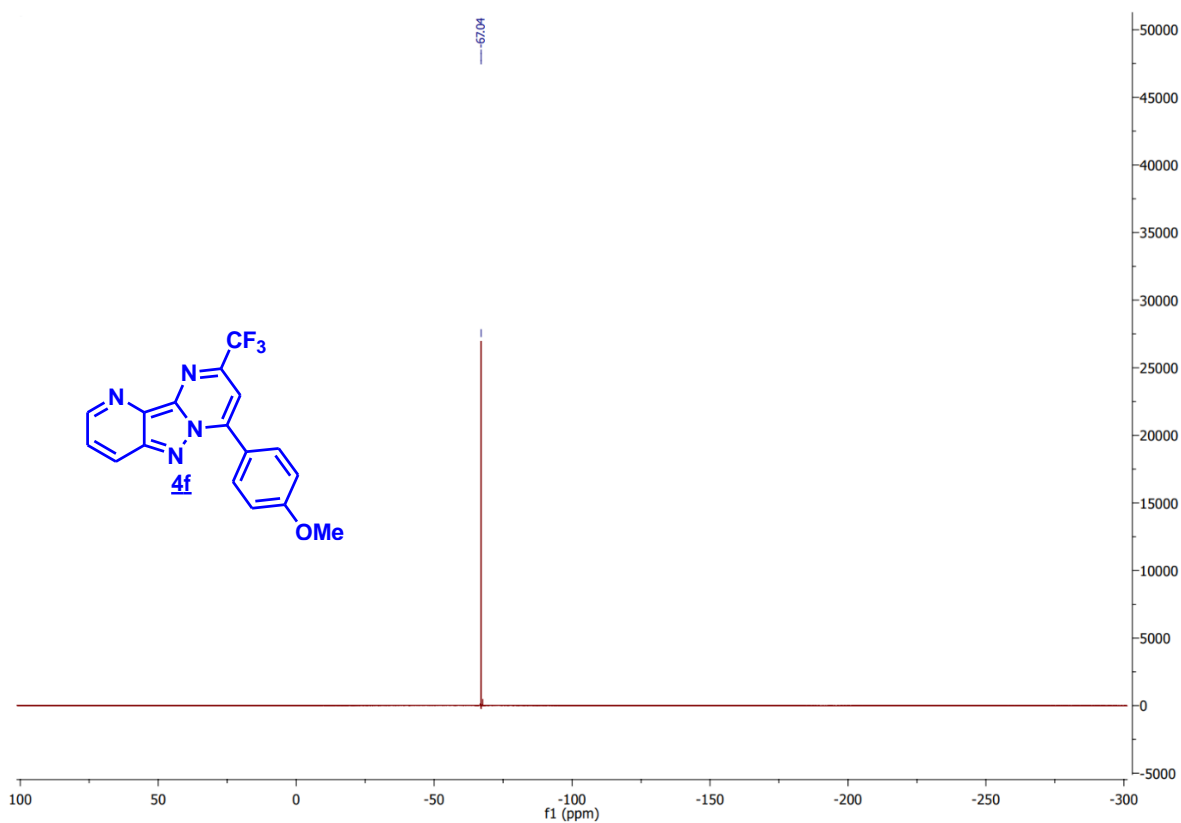


7-(4-methoxyphenyl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (4f)

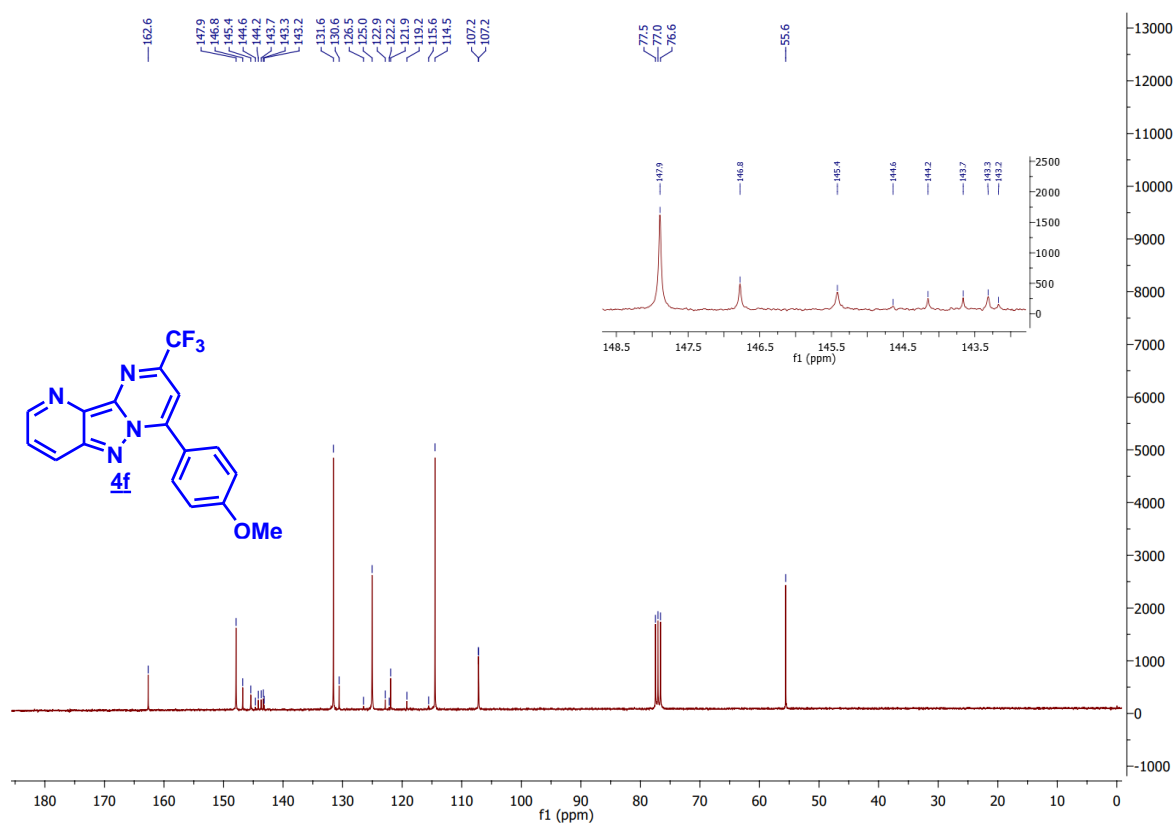
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

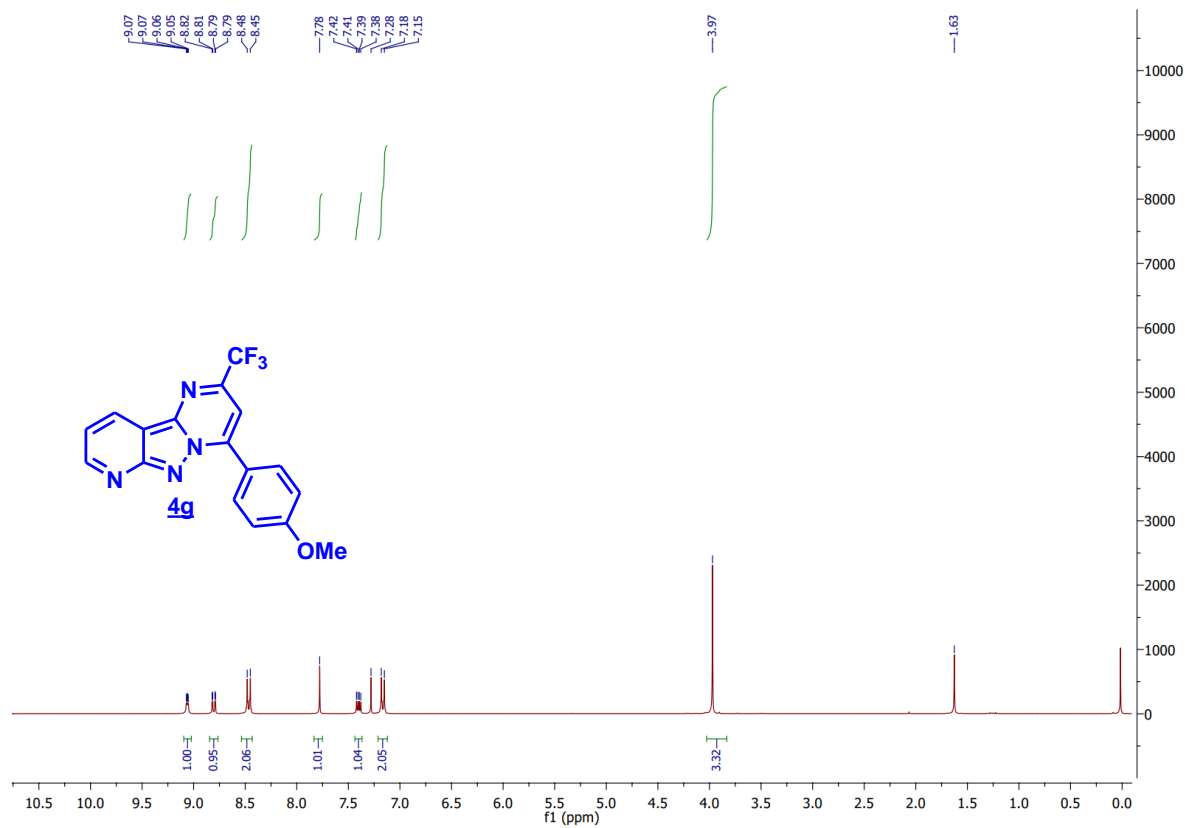


^{13}C NMR (75 MHz, CDCl_3)

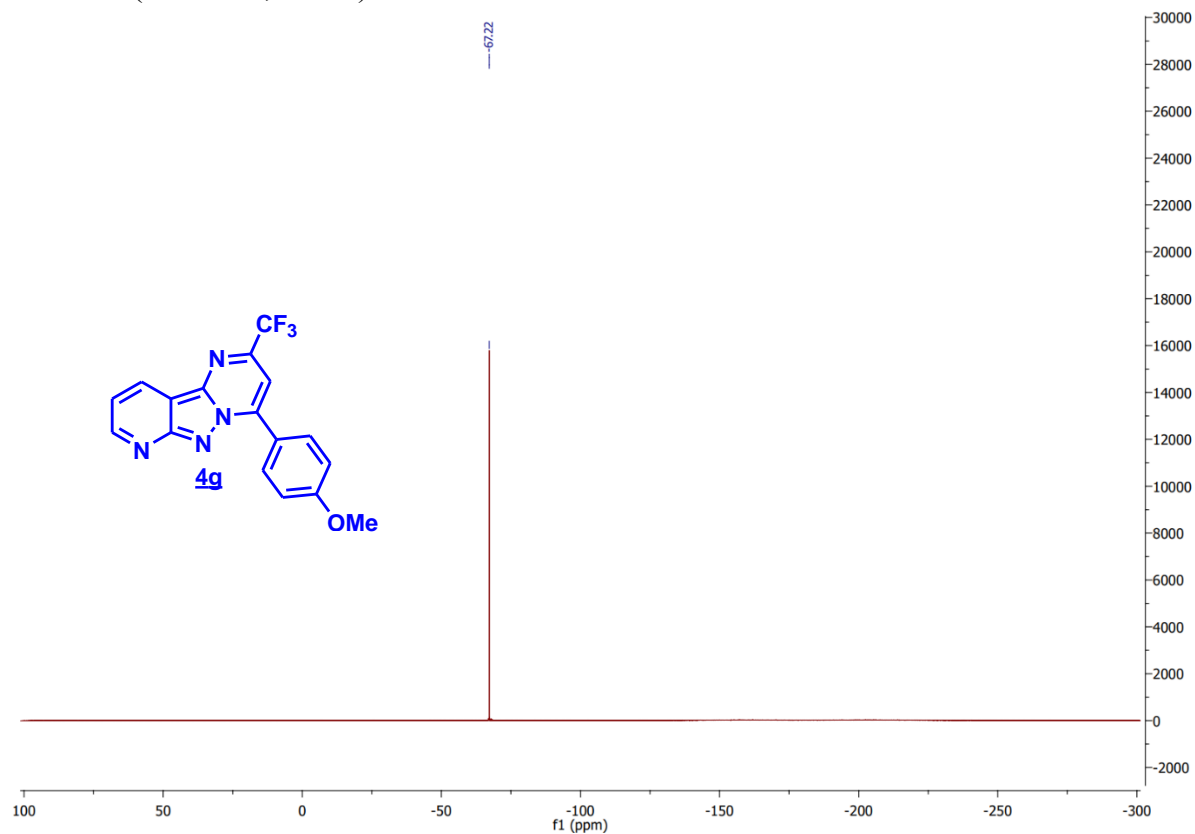


4-(4-methoxyphenyl)-2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (4g)

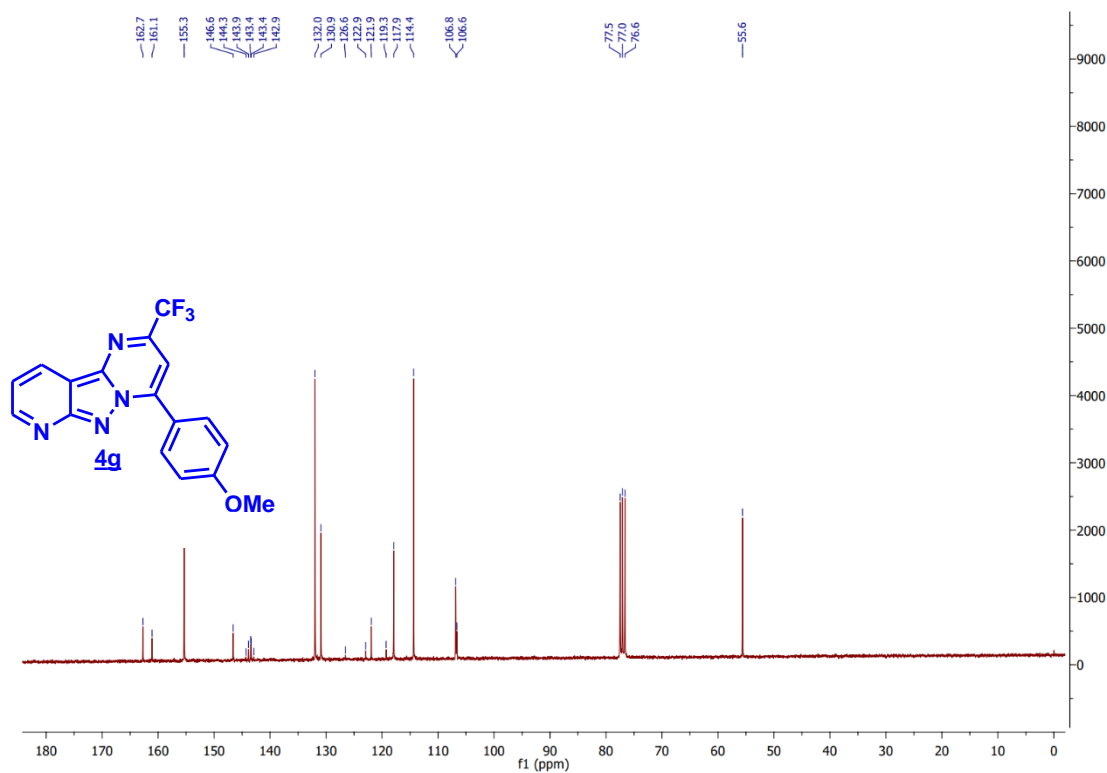
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

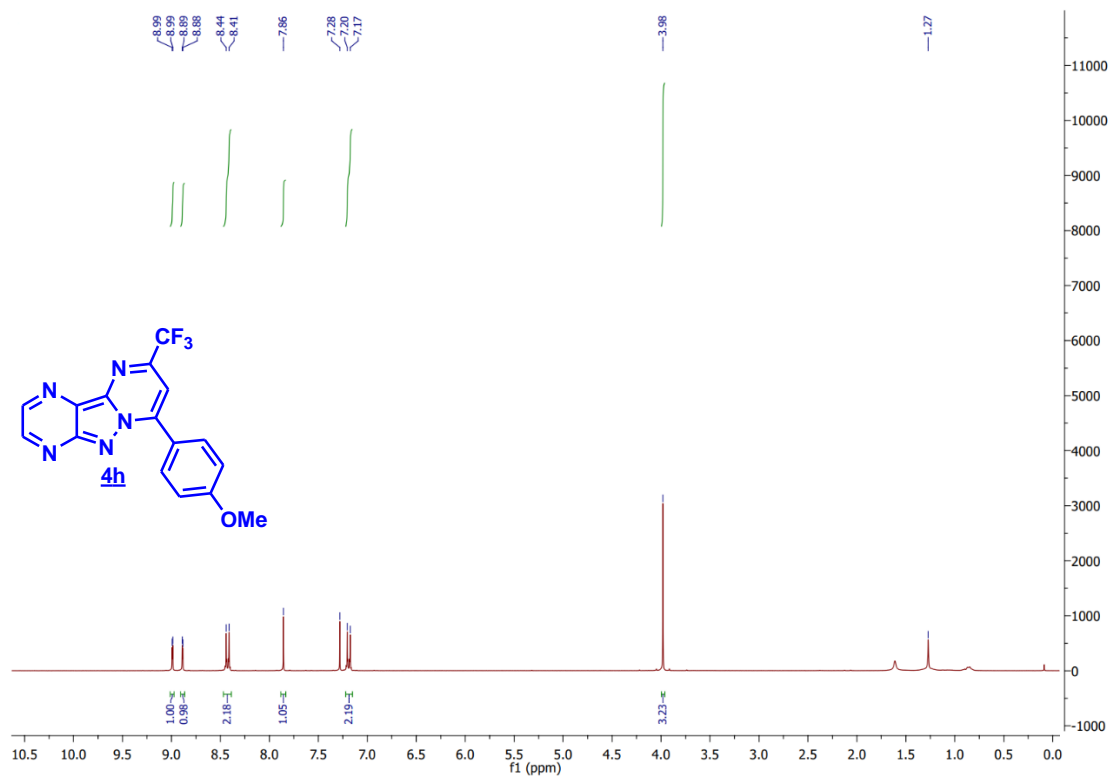


^{13}C NMR (75 MHz, CDCl_3)

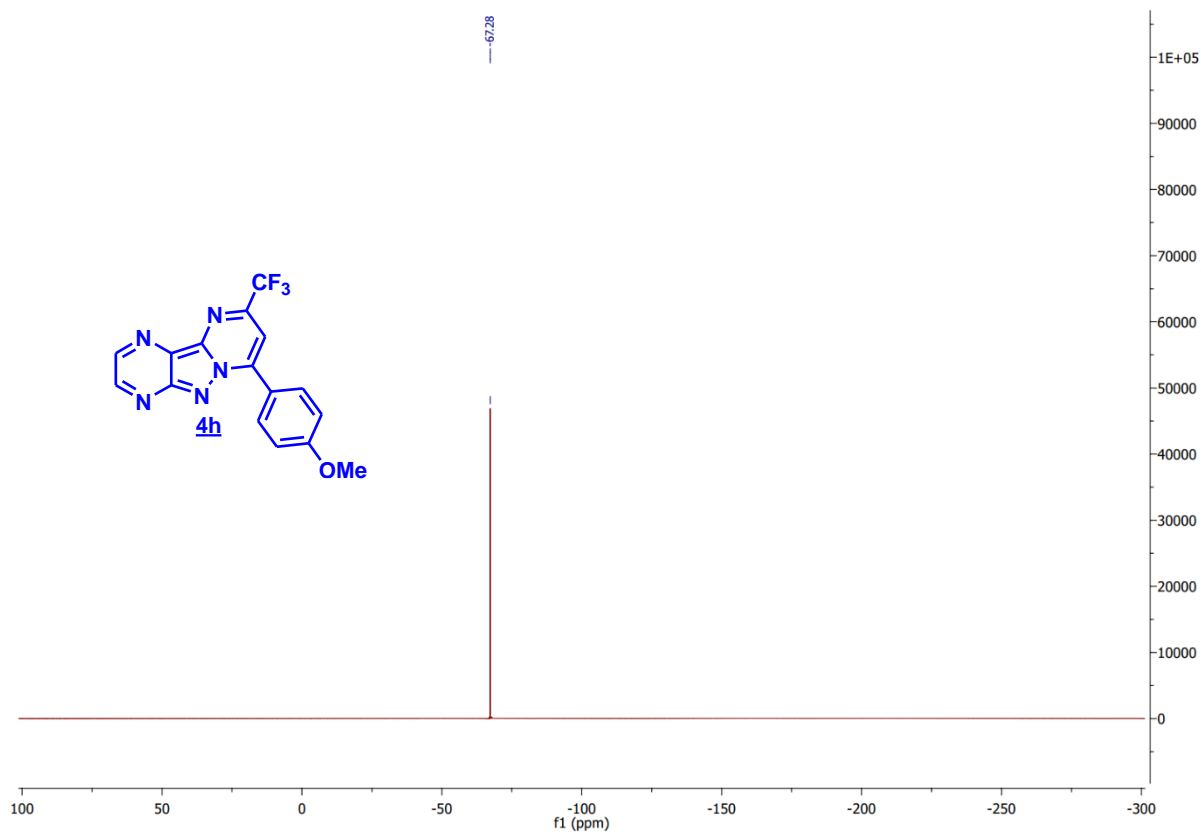


7-(4-methoxyphenyl)-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-a]pyrimidine (4h)

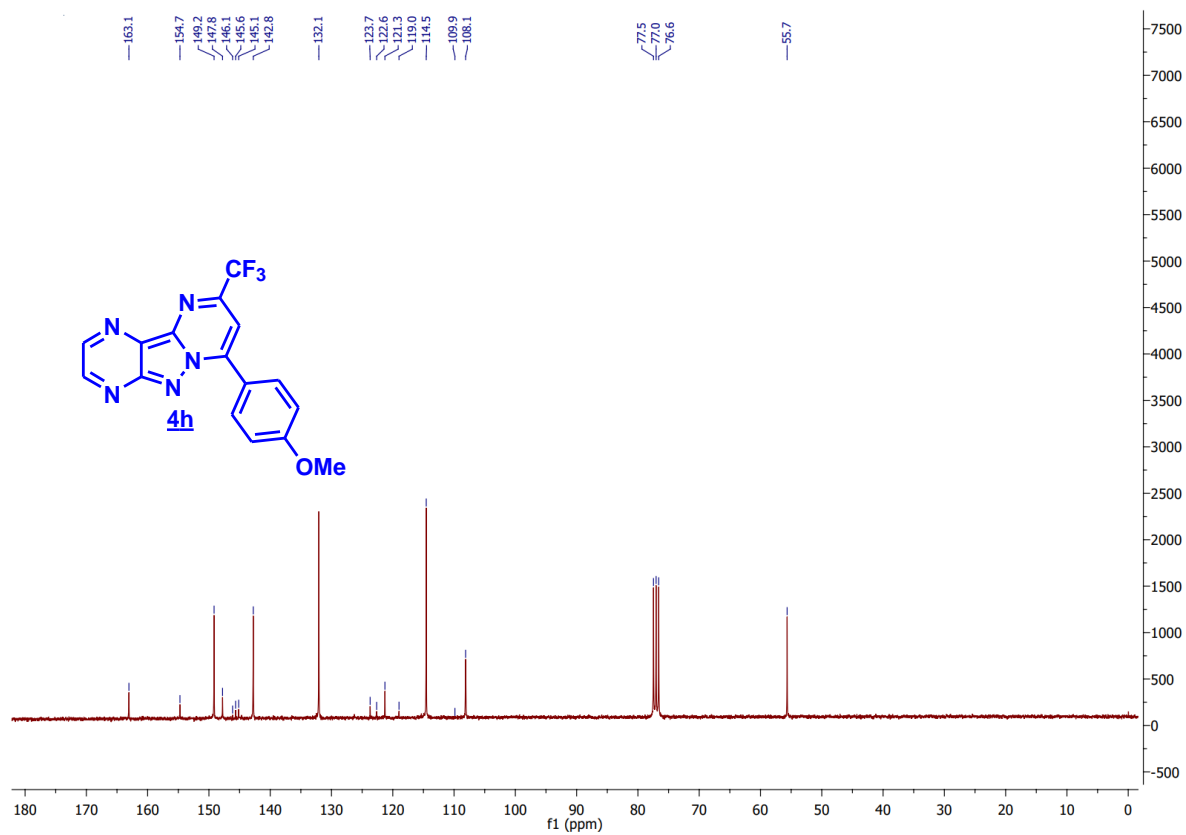
^1H NMR (300 MHz, CDCl_3)



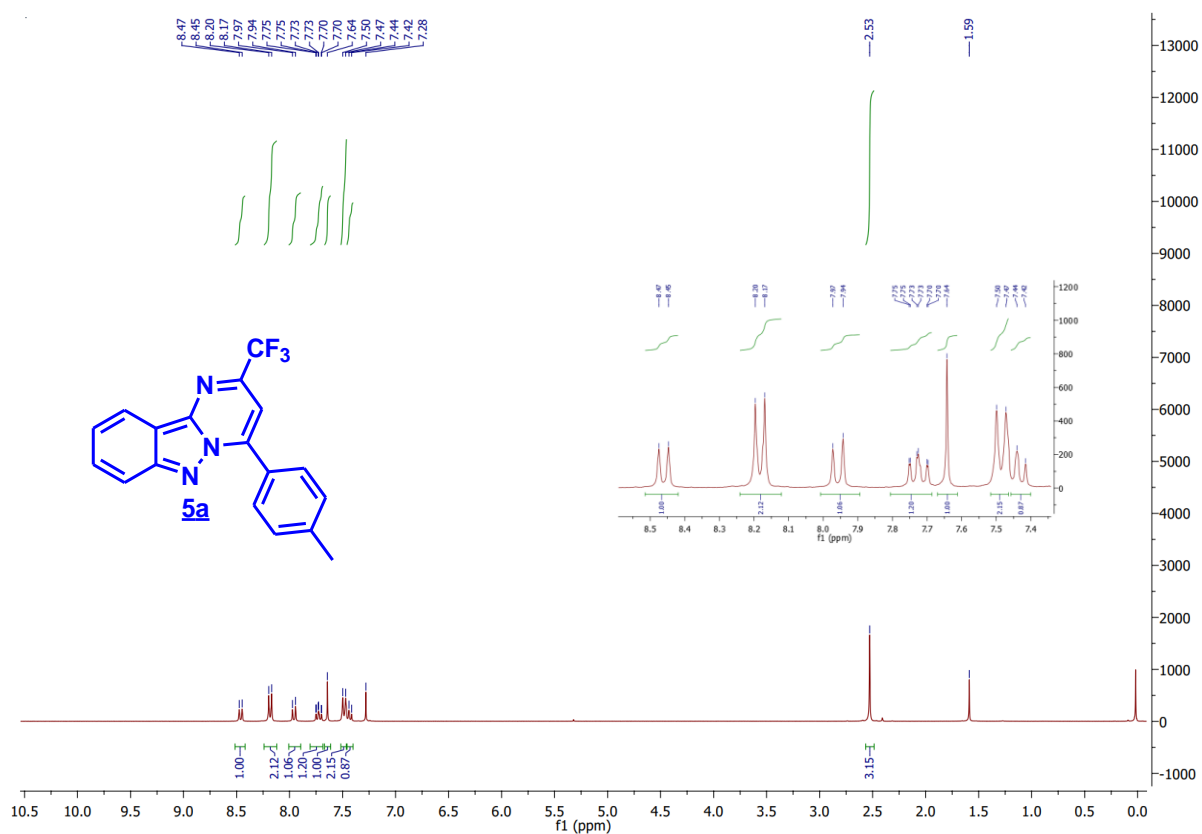
^{19}F NMR (282 MHz, CDCl_3)



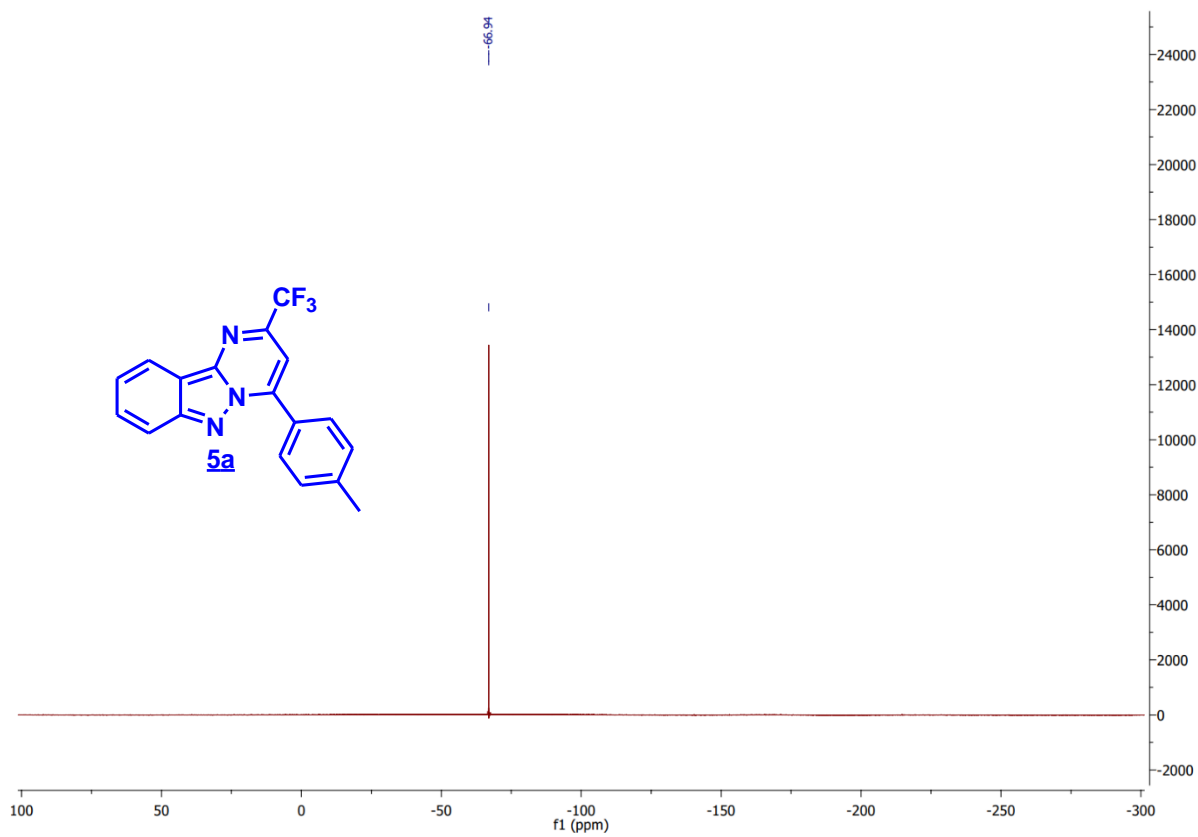
^{13}C NMR (75 MHz, CDCl_3)



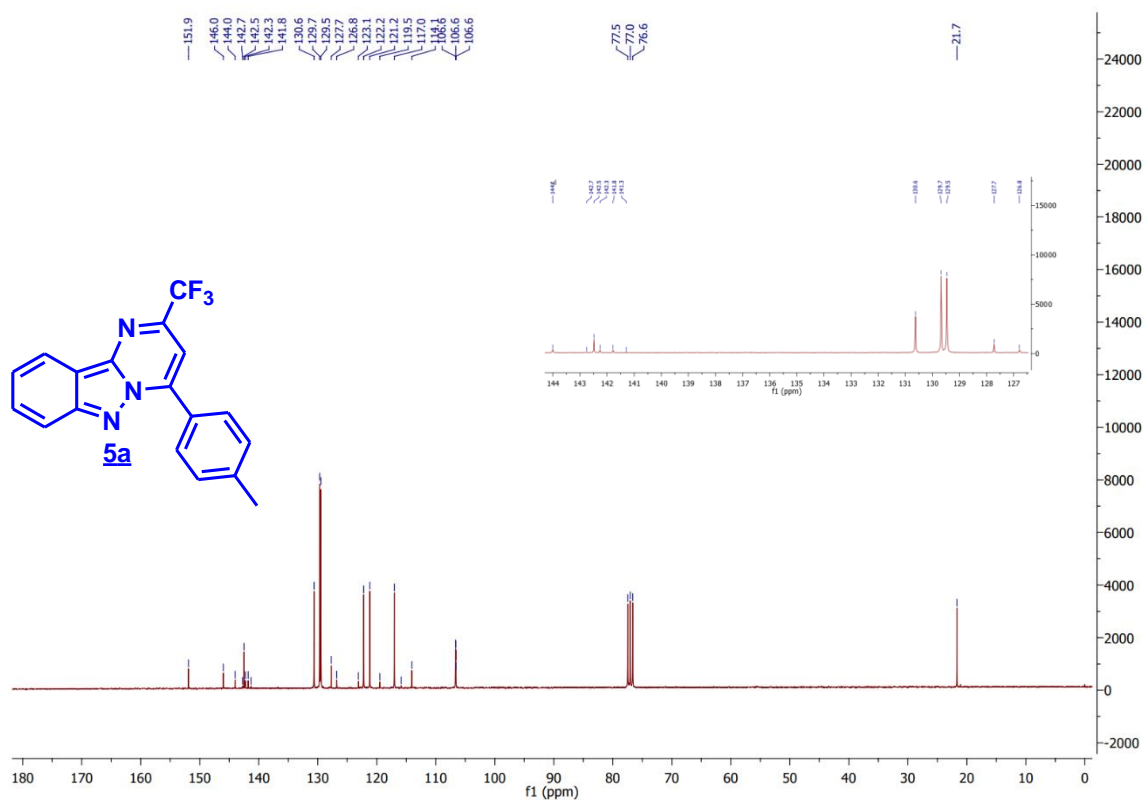
4-*p*-Tolyl-2-trifluoromethyl-pyrimido[1,2-*b*]indazole (5a)



¹⁹F NMR (282 MHz, CDCl₃)

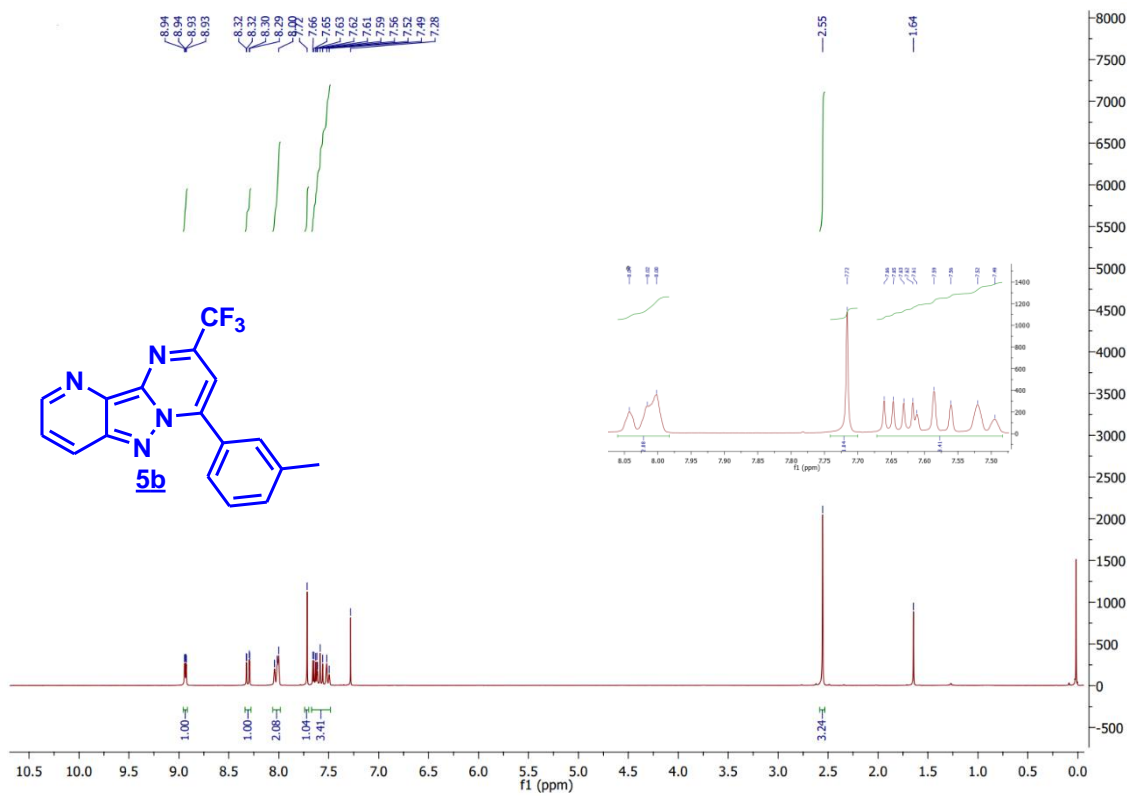


^{13}C NMR (75 MHz, CDCl_3)

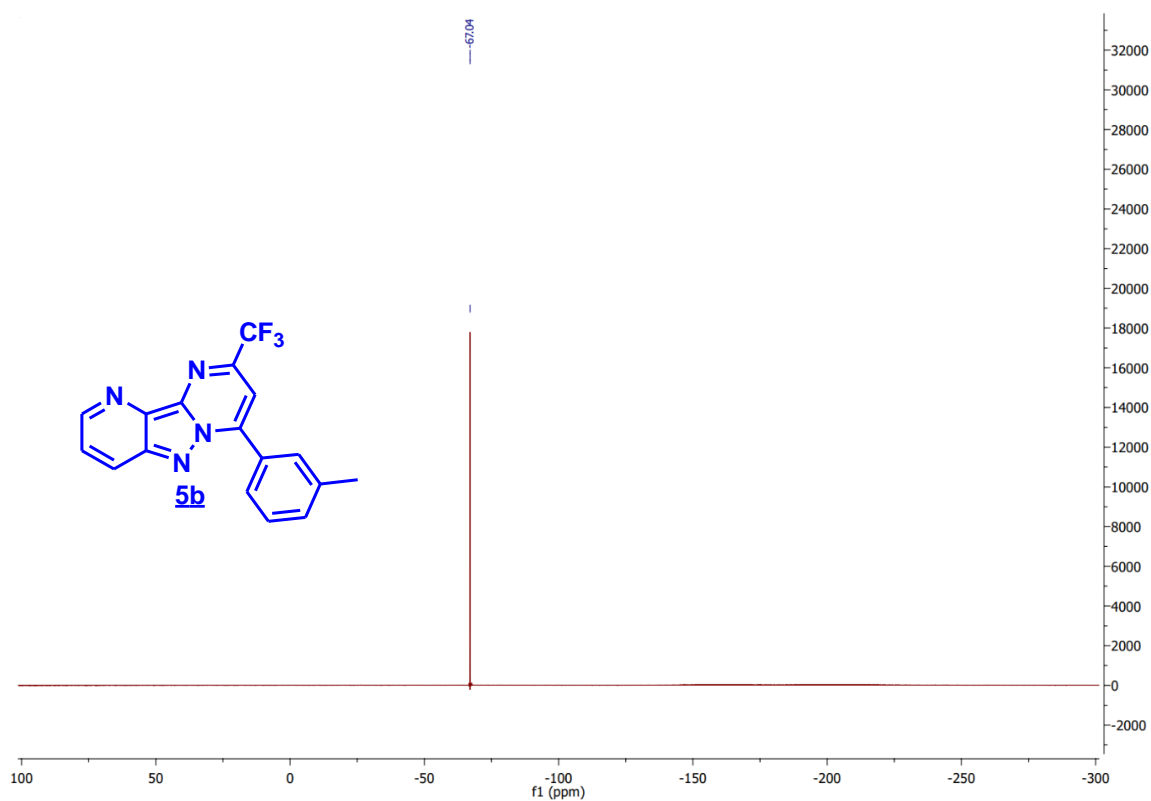


7-(3-methylphenyl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (**5b**)

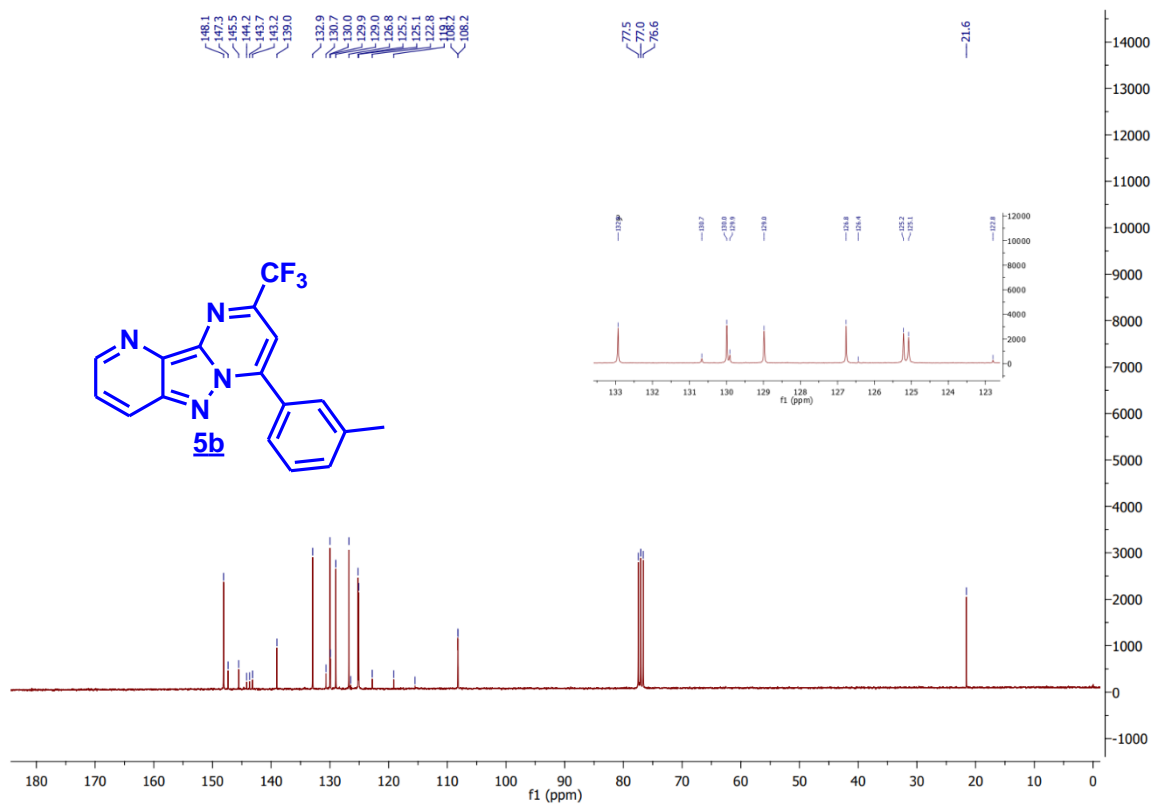
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

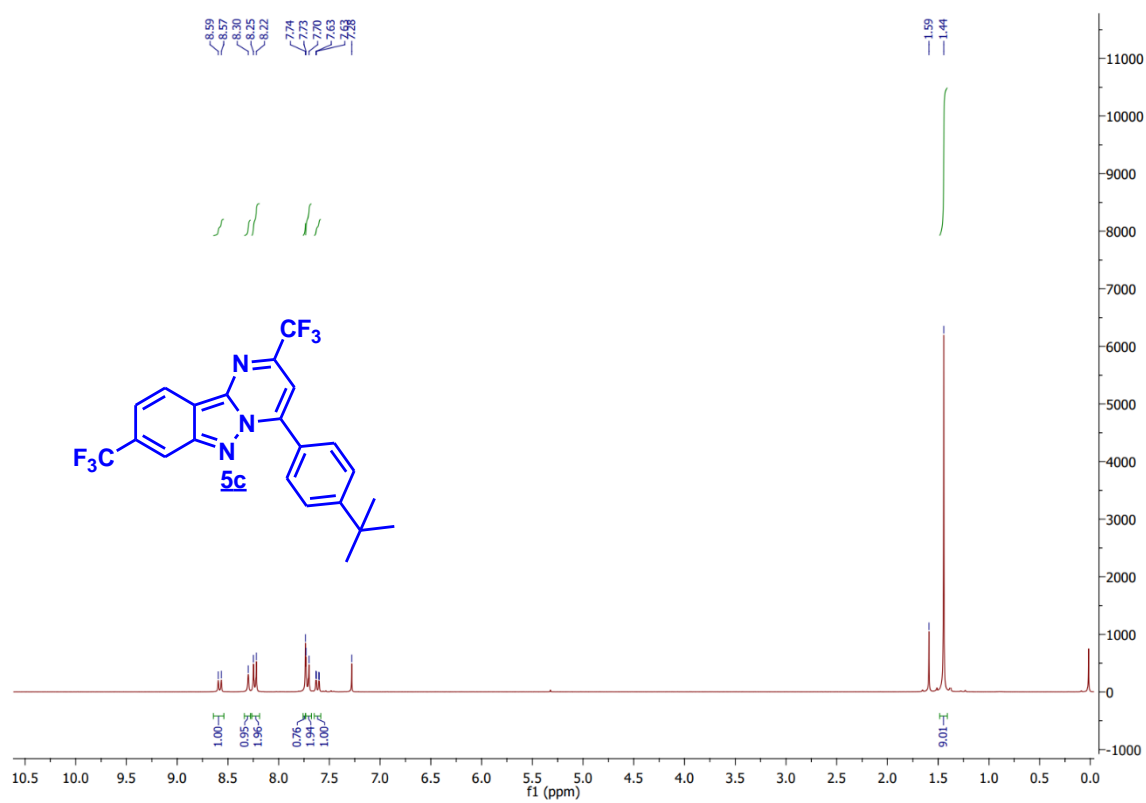


^{13}C NMR (75 MHz, CDCl_3)

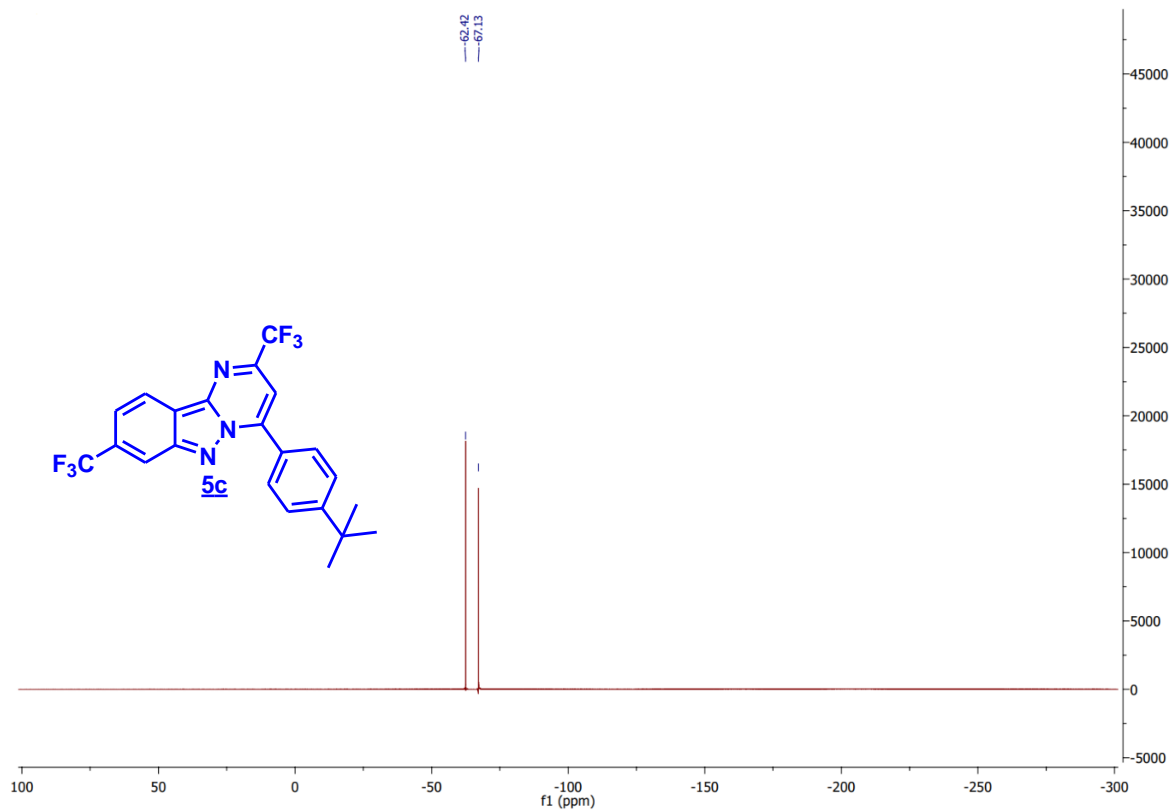


(4-*tert*-Butyl-phenyl)-2,8-bis-trifluoromethyl-pyrimido[1,2-*b*]indazole (**5c**)

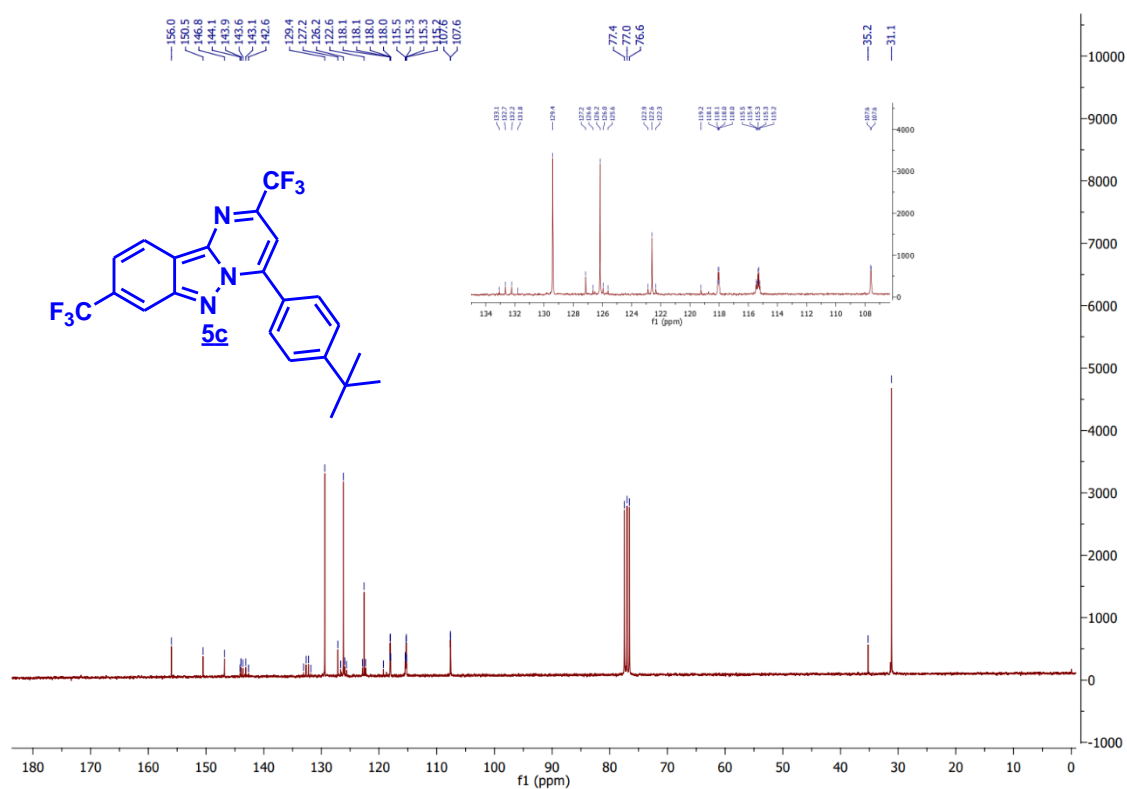
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

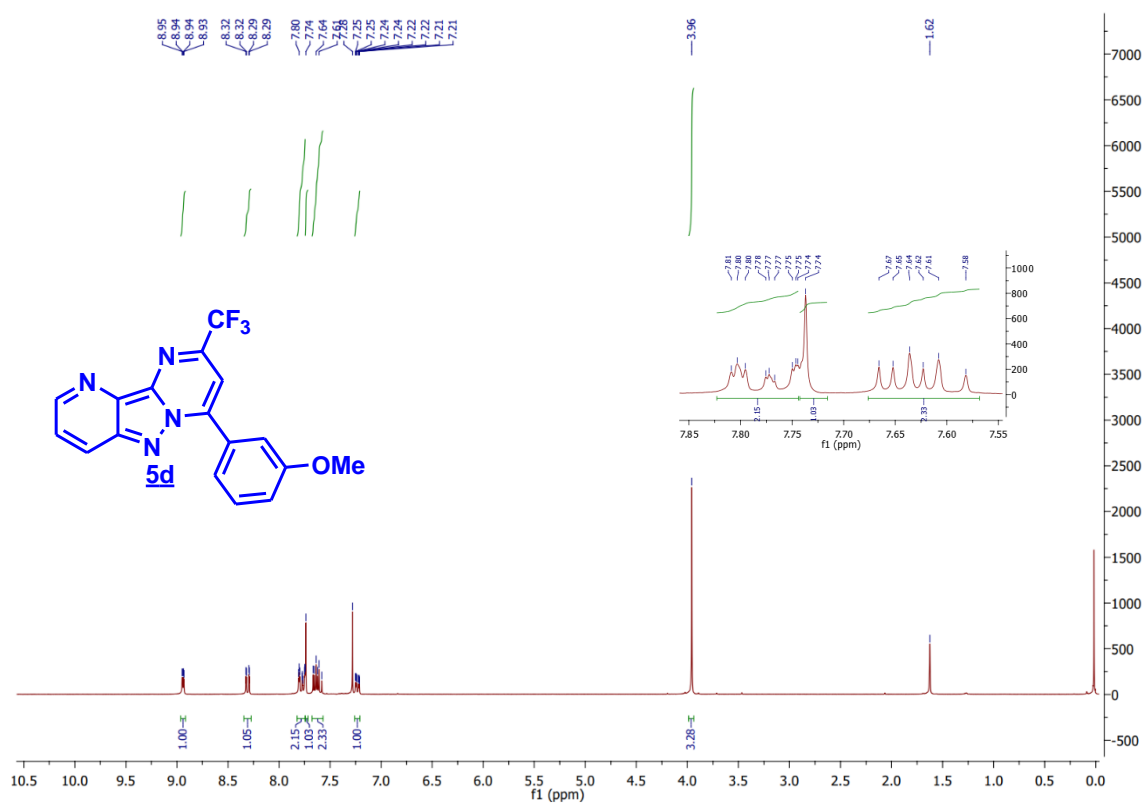


^{13}C NMR (75 MHz, CDCl_3)

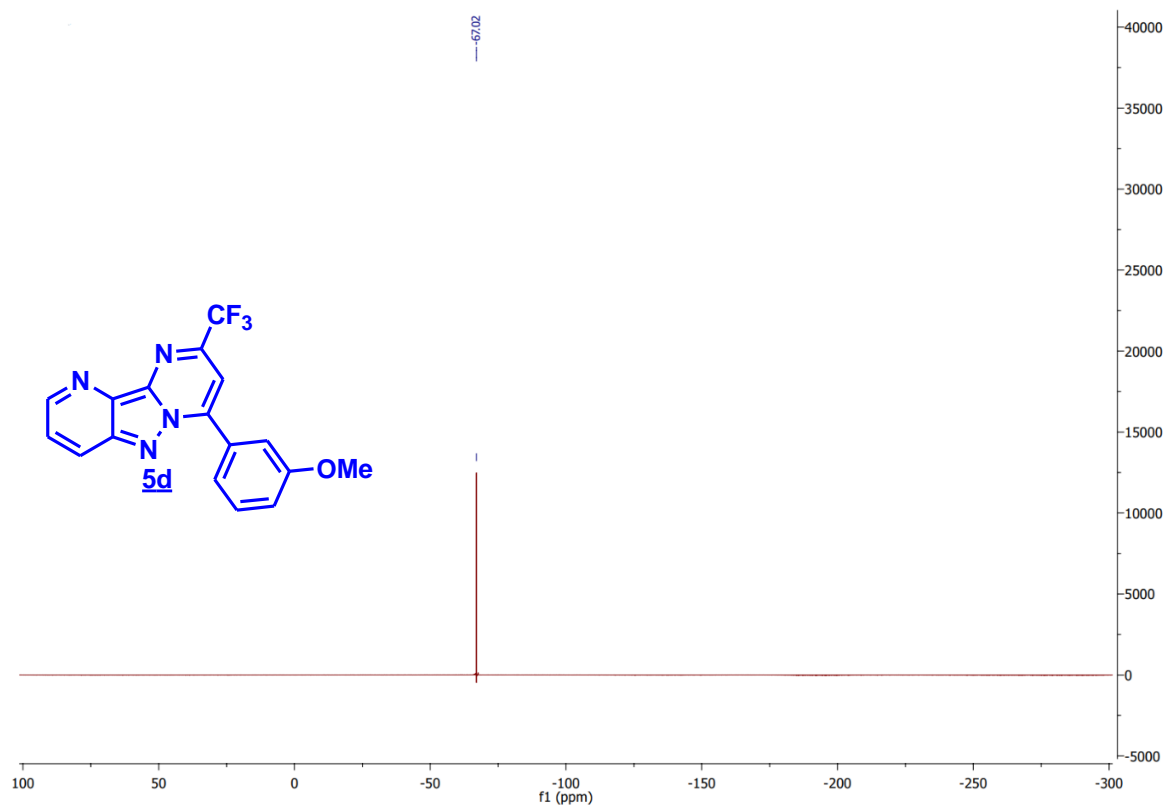


7-(3-methoxyphenyl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (5d)

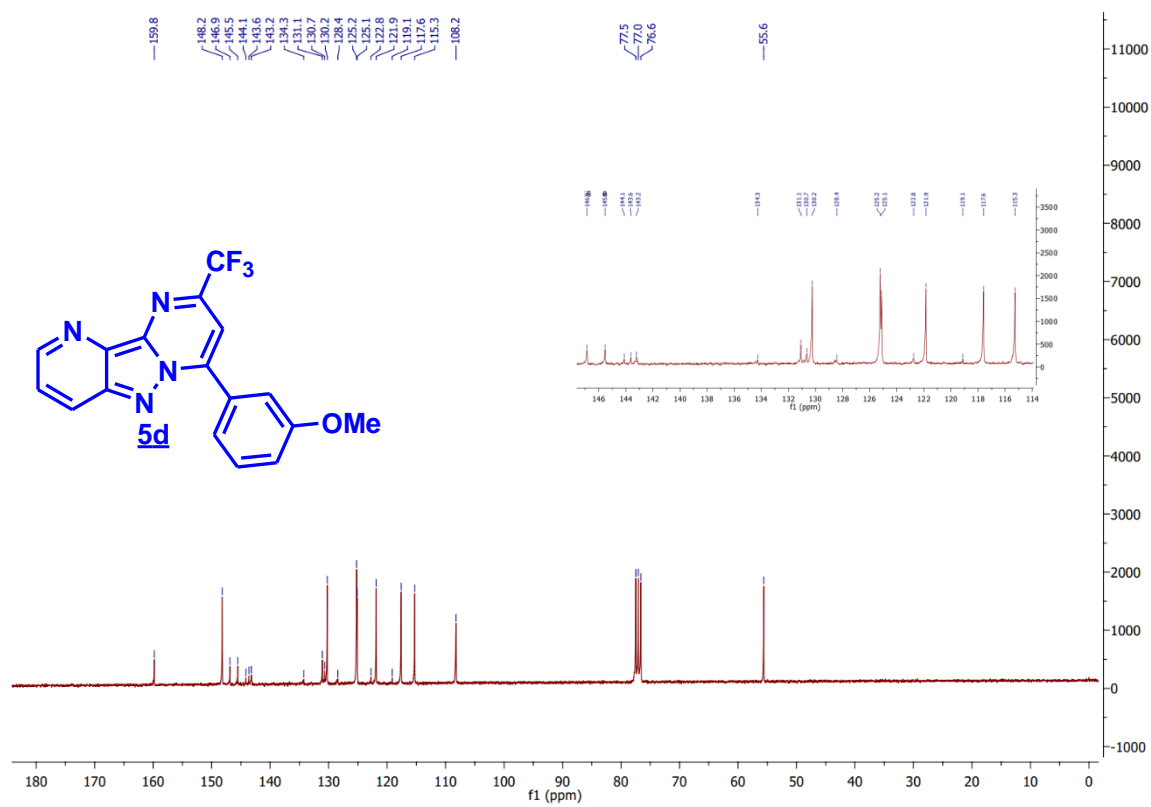
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

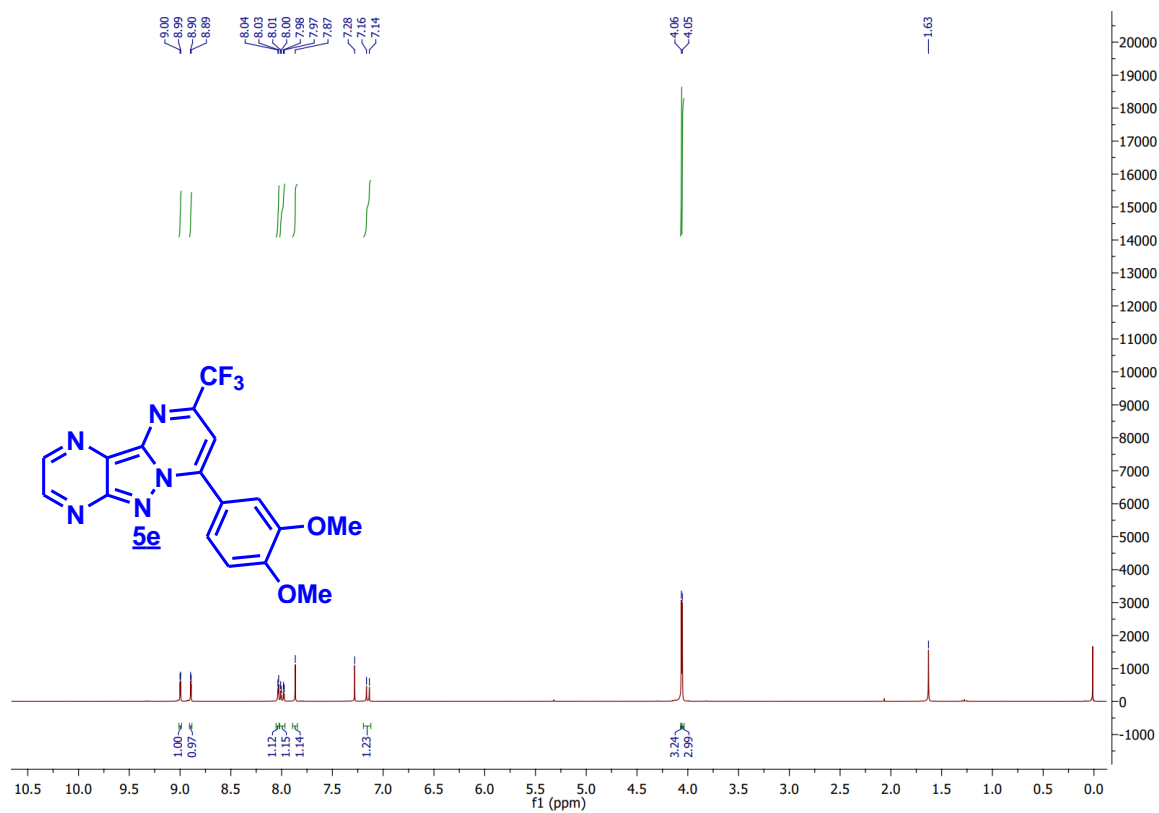


^{13}C NMR (75 MHz, CDCl_3)

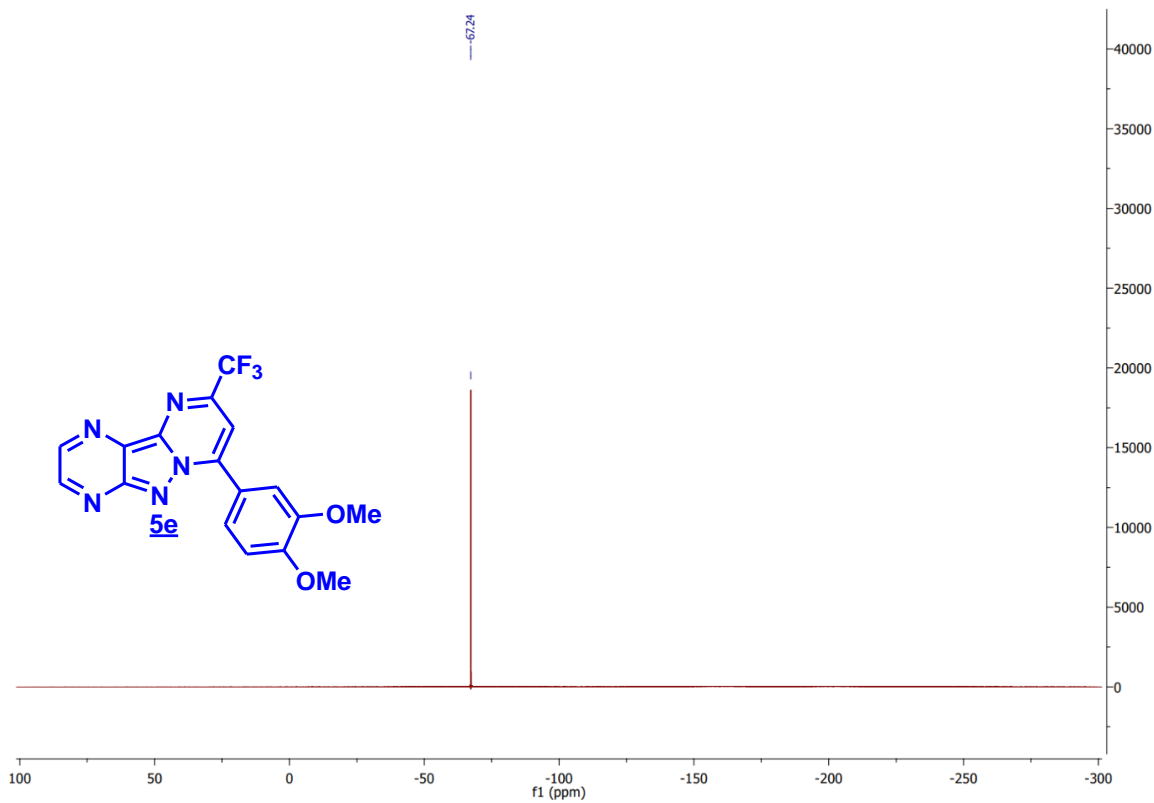


7-(3,4-dimethoxyphenyl)-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (5e)

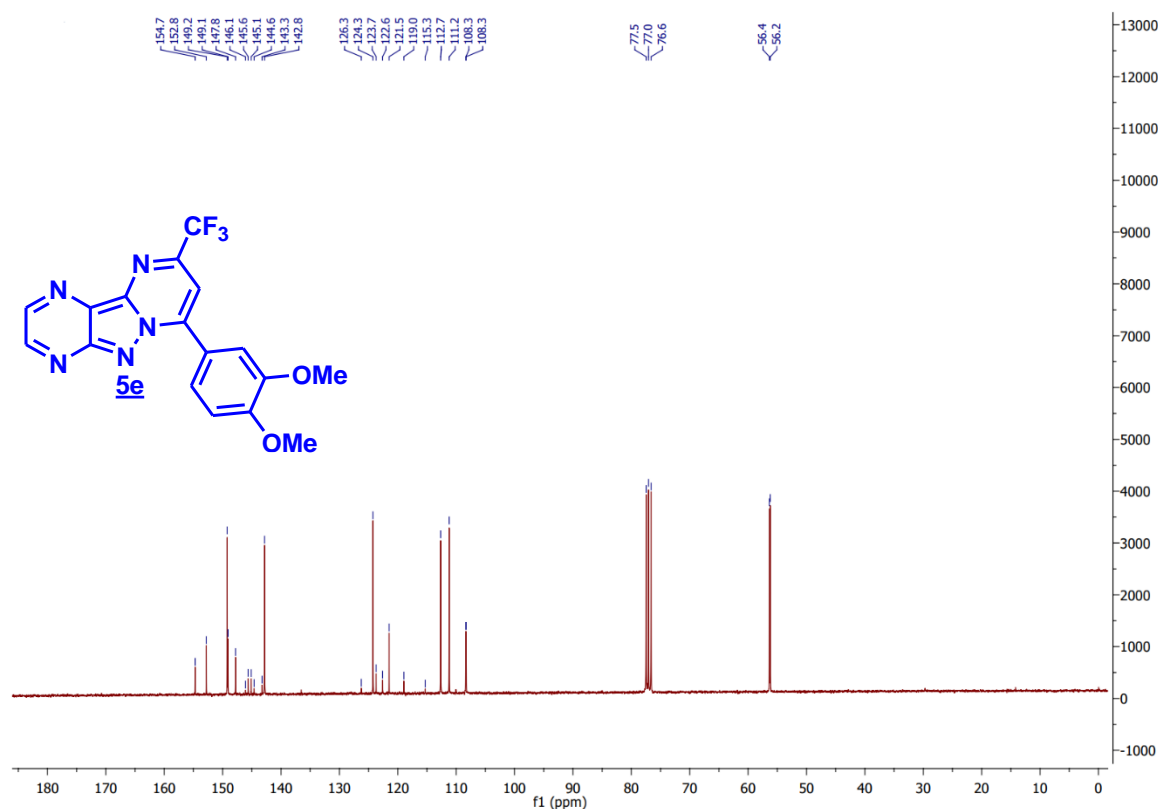
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

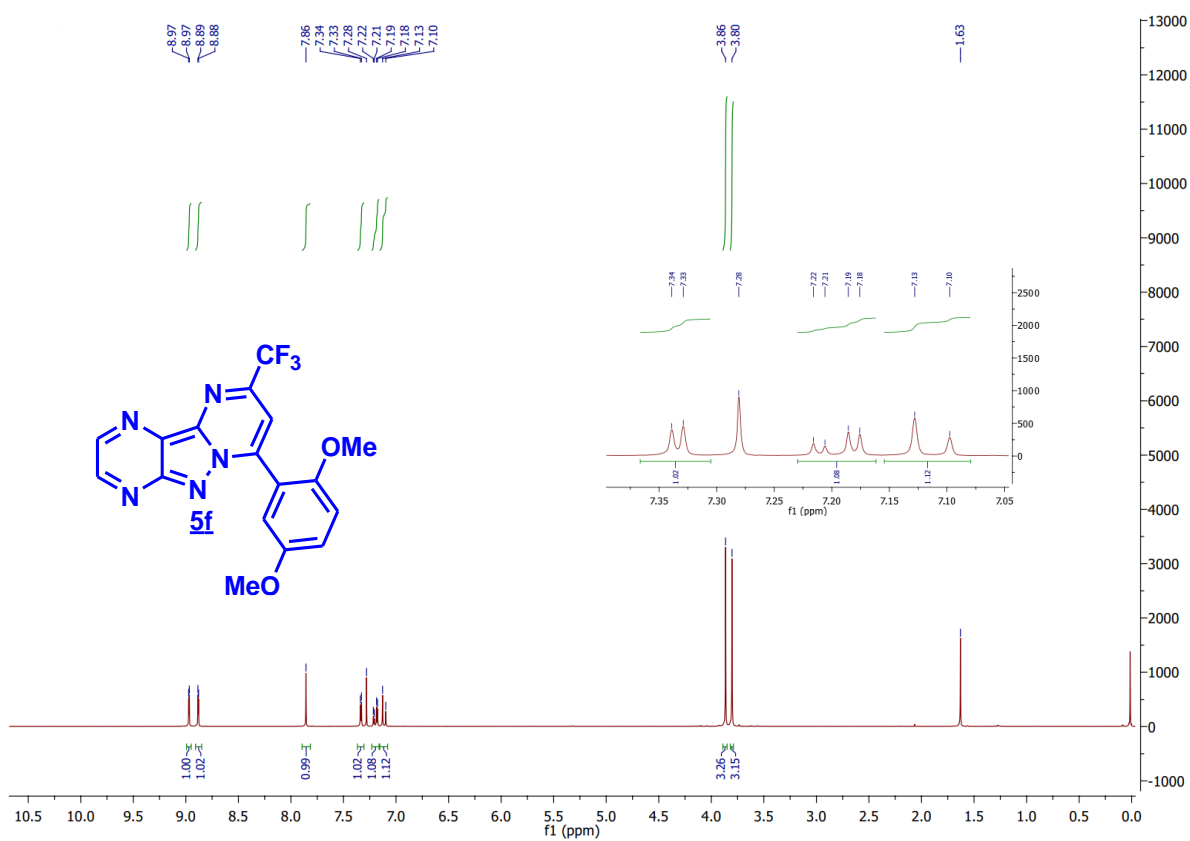


^{13}C NMR (75 MHz, CDCl_3)

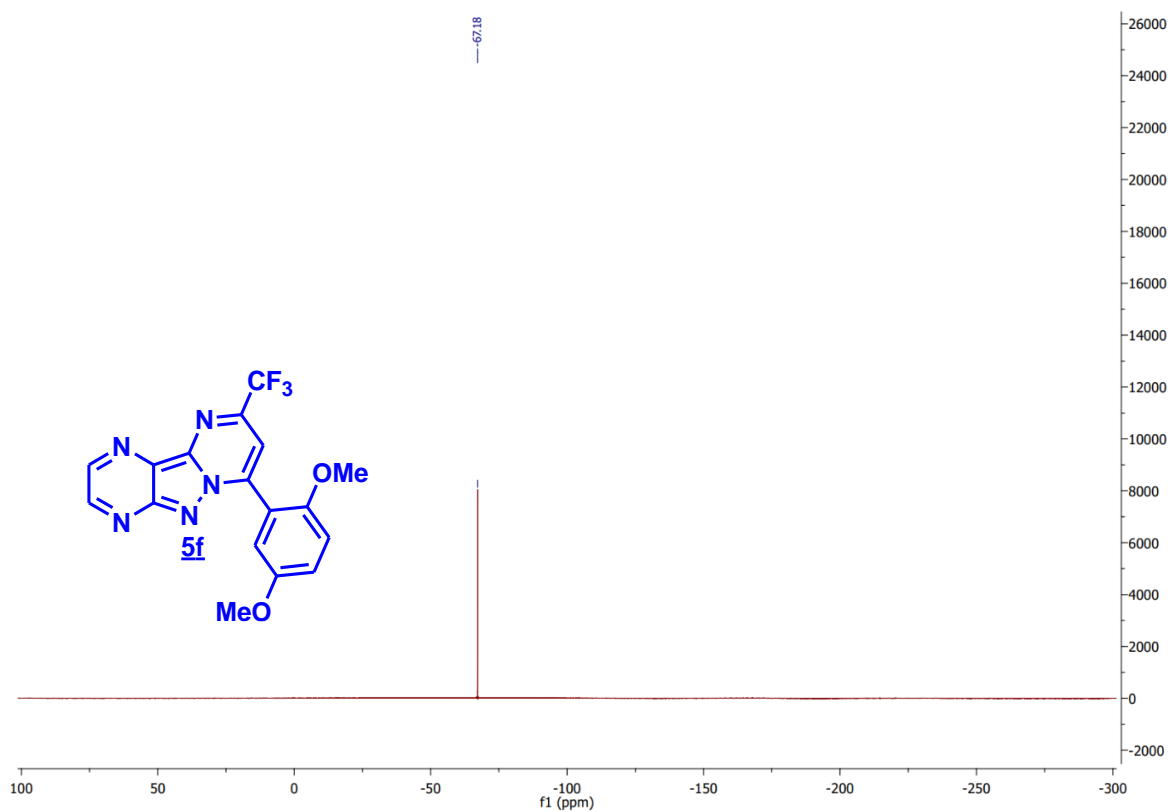


7-(2,5-dimethoxyphenyl)-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-a]pyrimidine (5f)

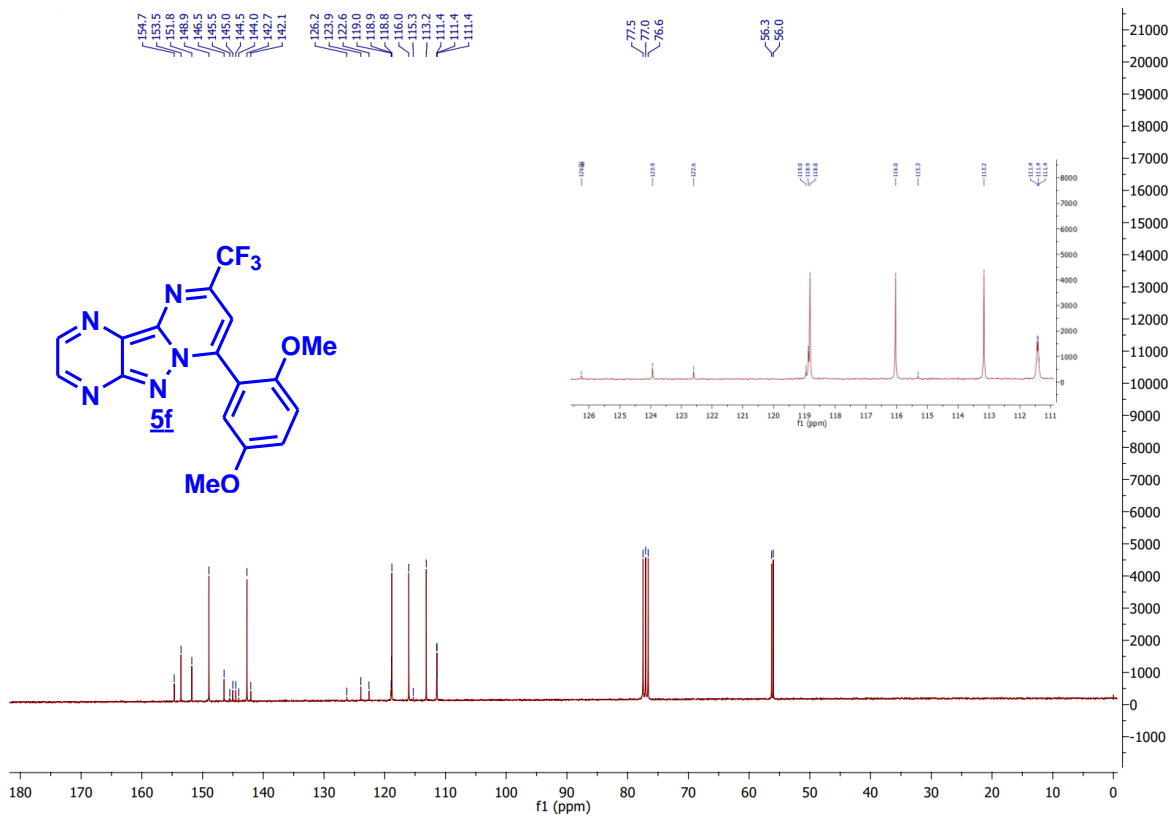
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

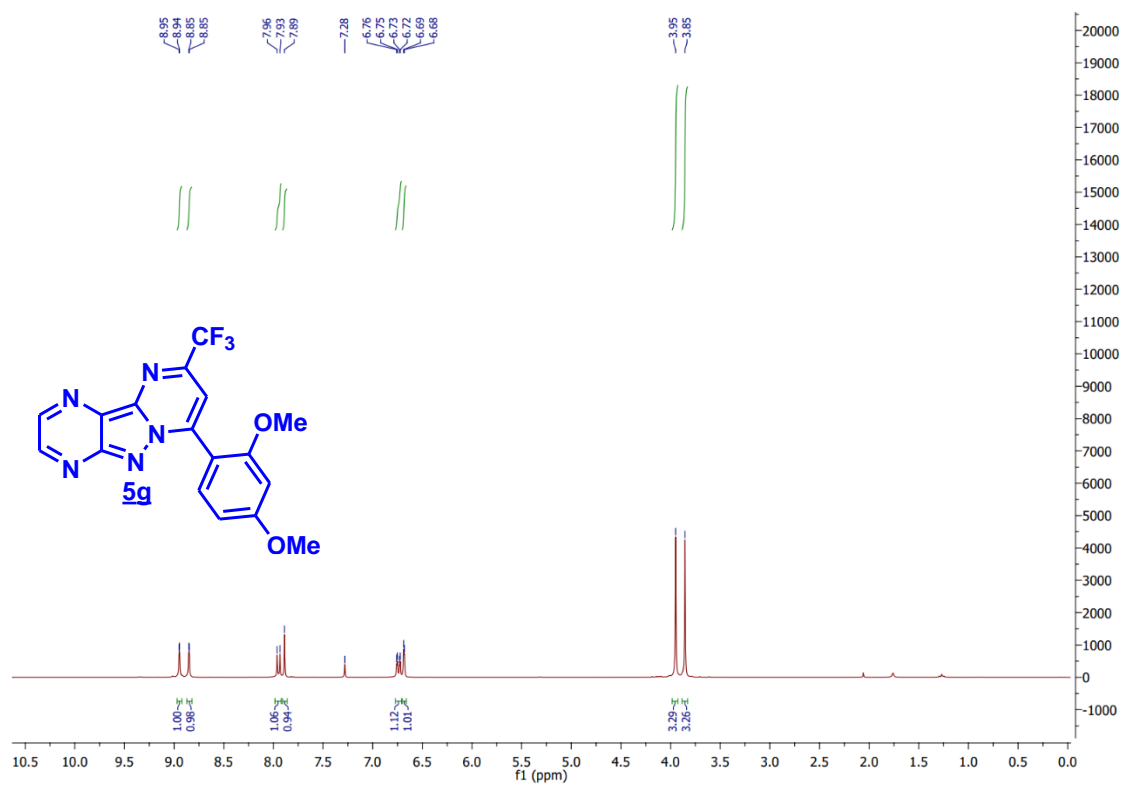


^{13}C NMR (75 MHz, CDCl_3)

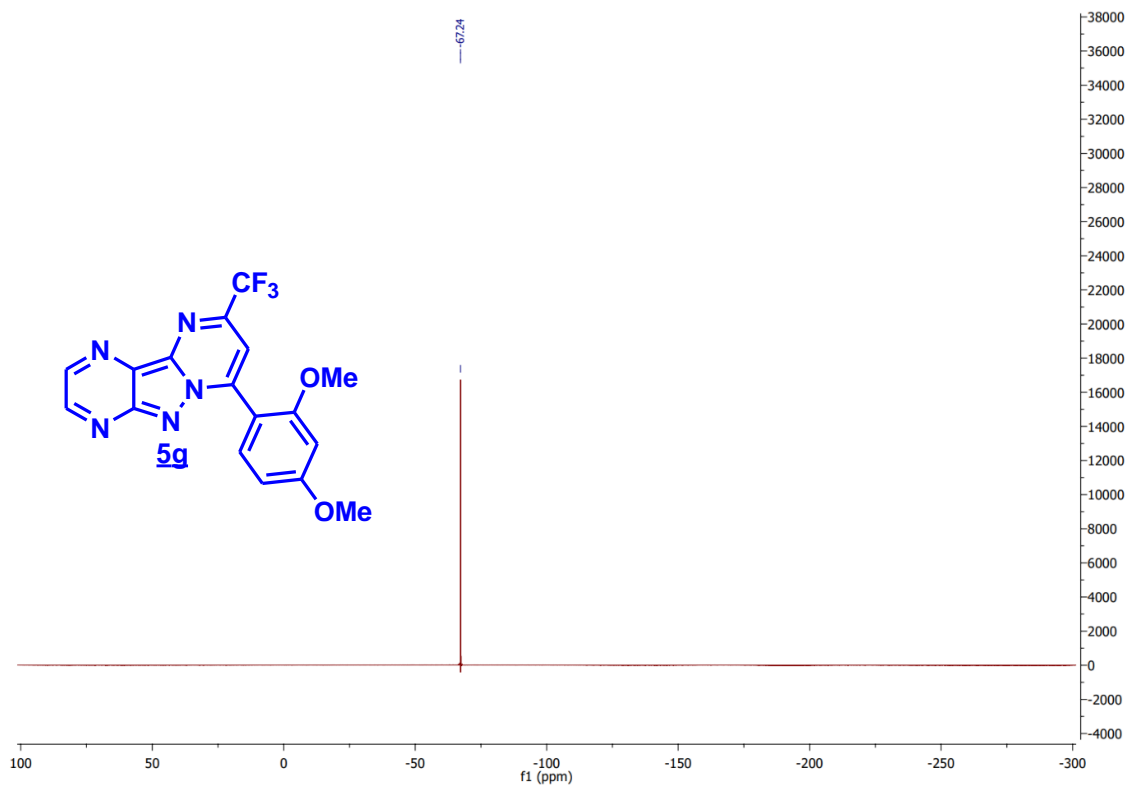


7-(2,4-dimethoxyphenyl)-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (5g)

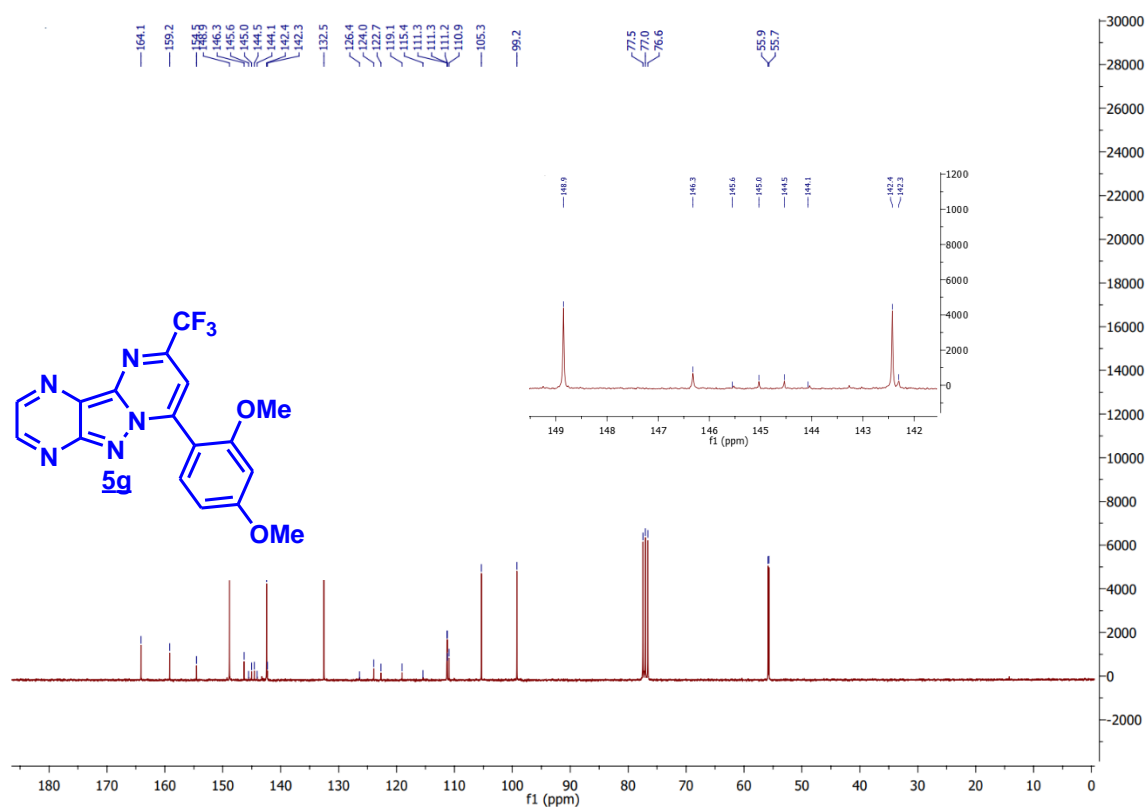
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

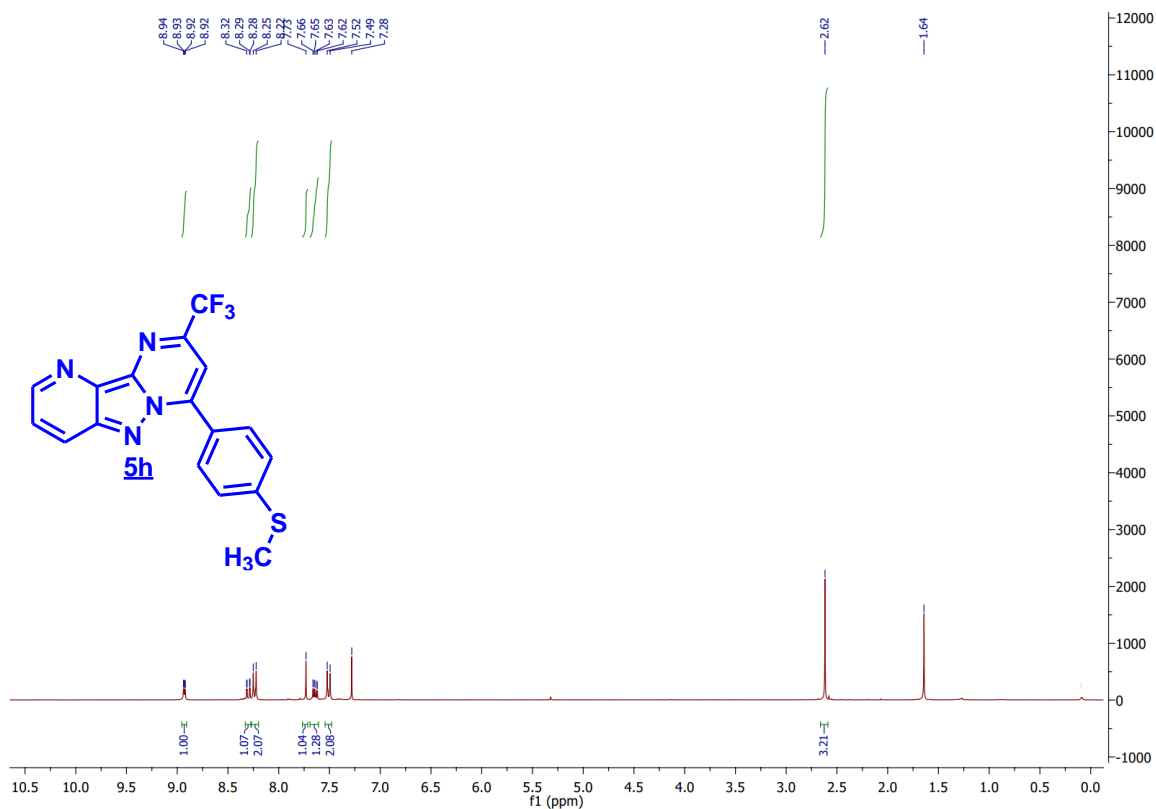


^{13}C NMR (75 MHz, CDCl_3)

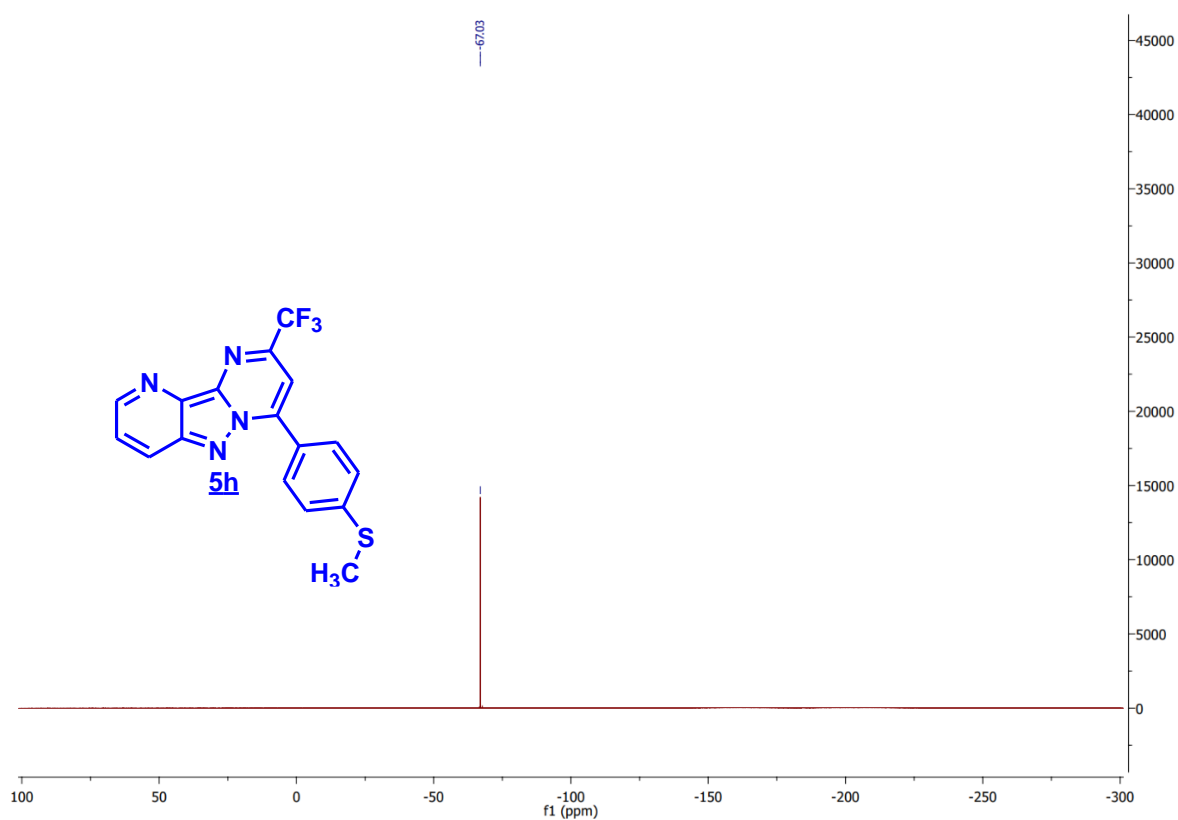


7-[4-(methoxymethyl)phenyl]-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (**5h**)

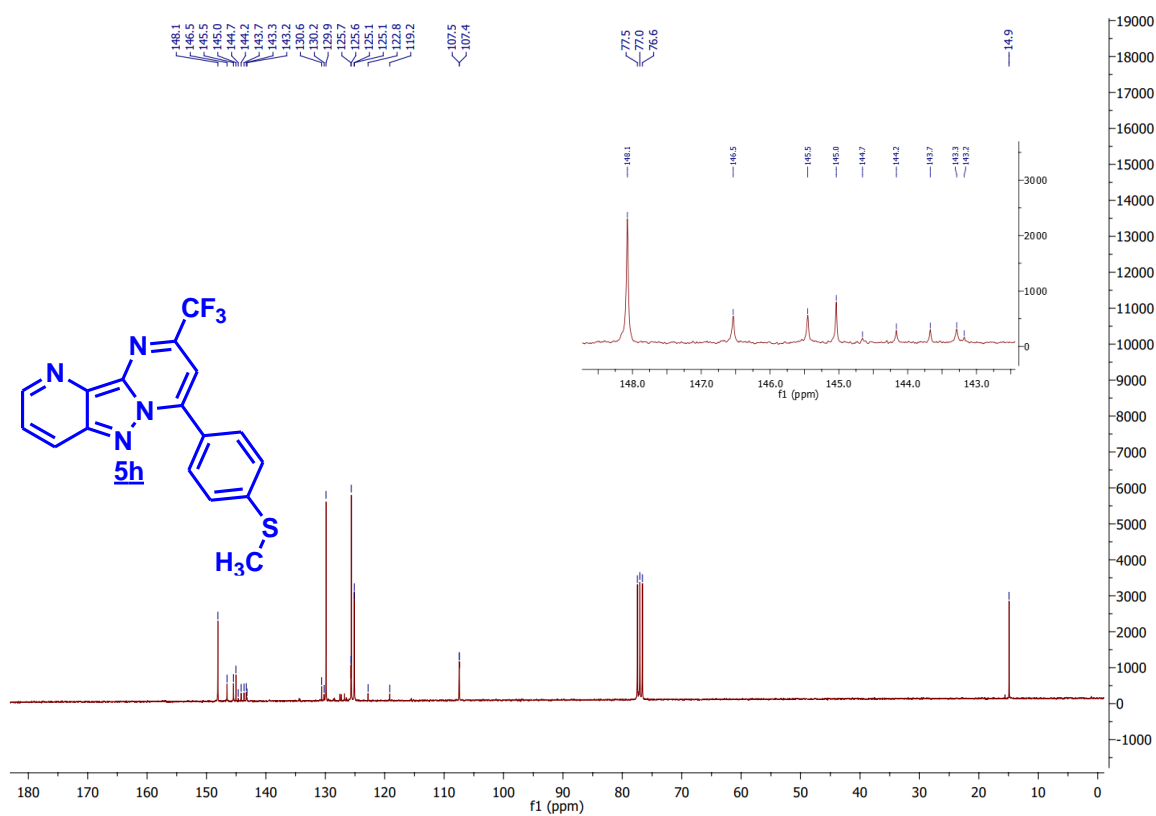
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

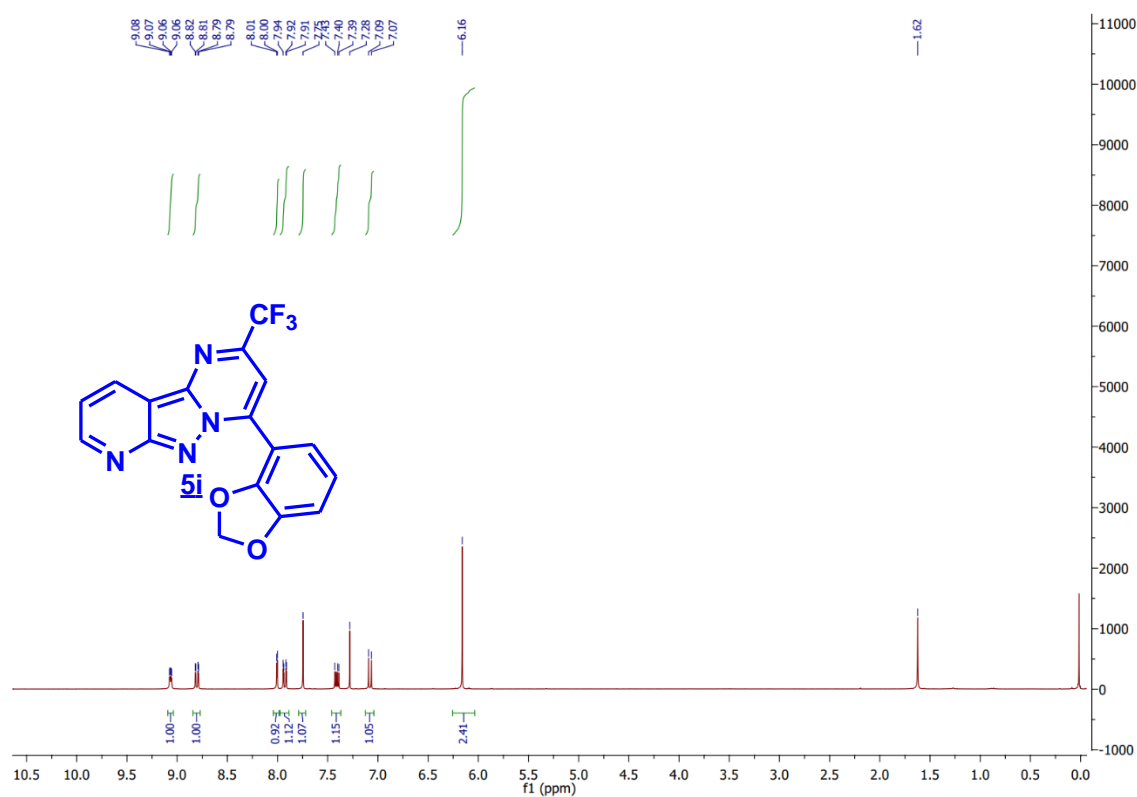


^{13}C NMR (75 MHz, CDCl_3)

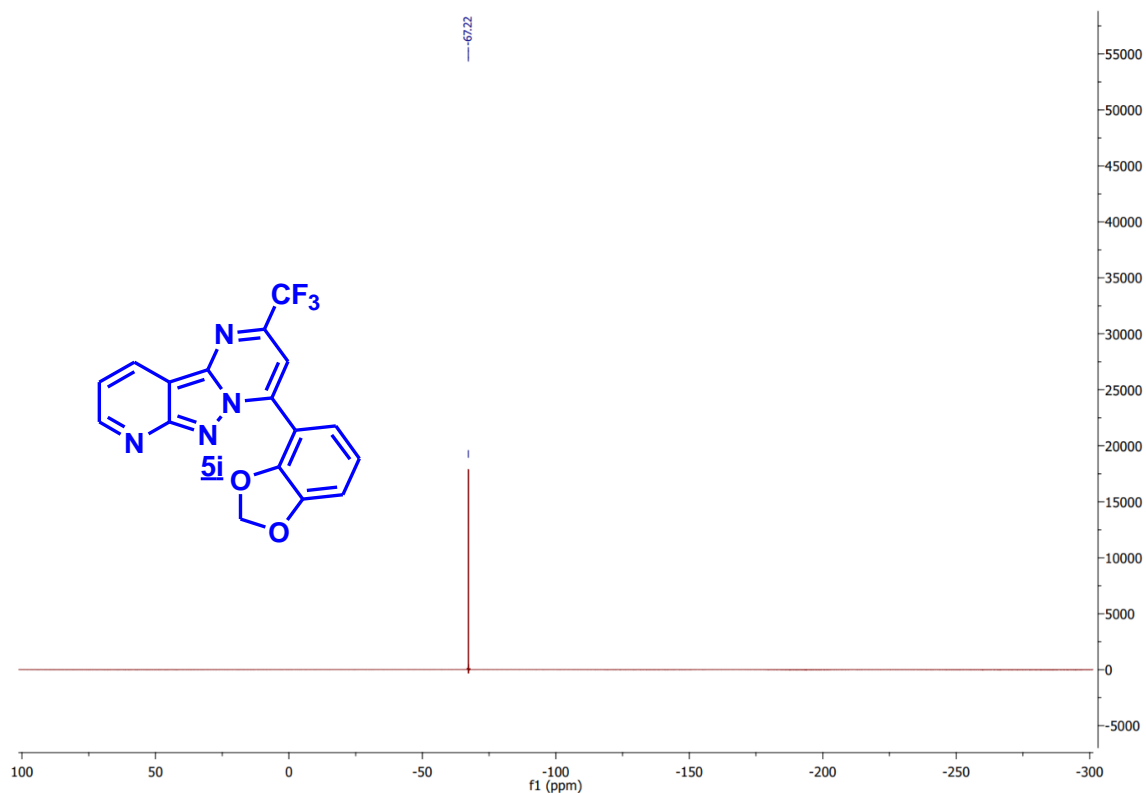


4-(2*H*-1,3-benzodioxol-4-yl)-2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (11p)

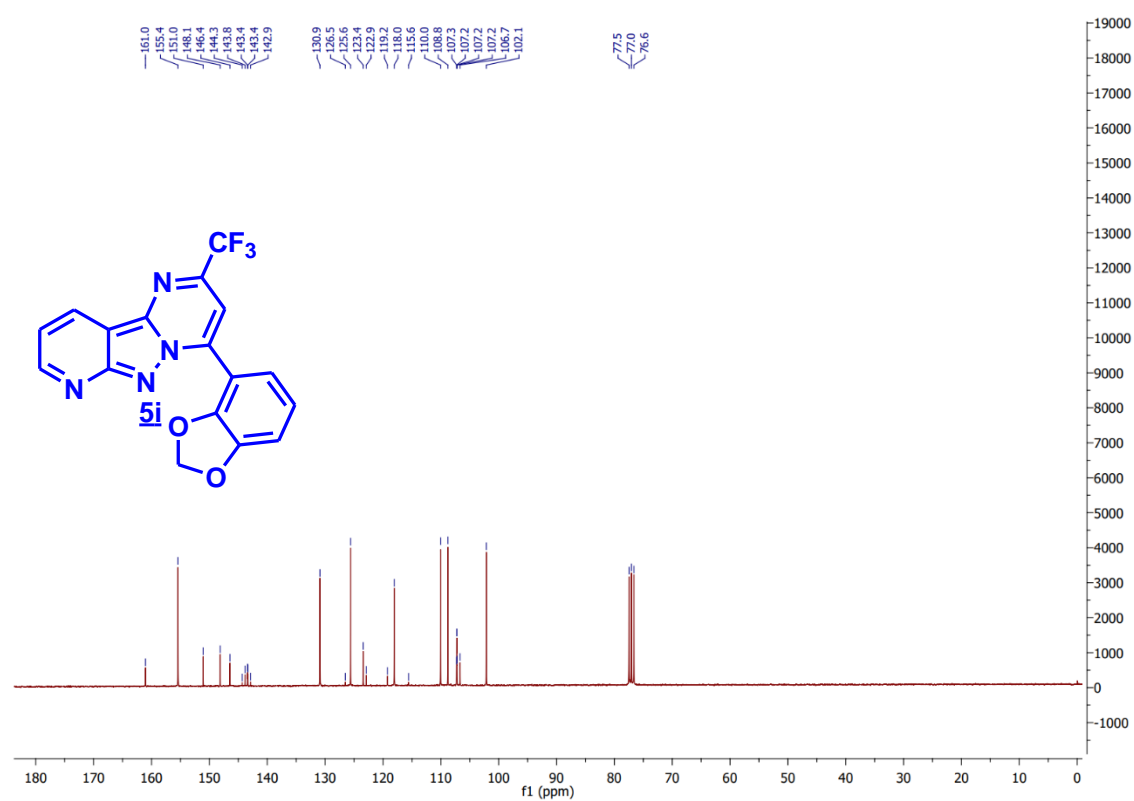
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

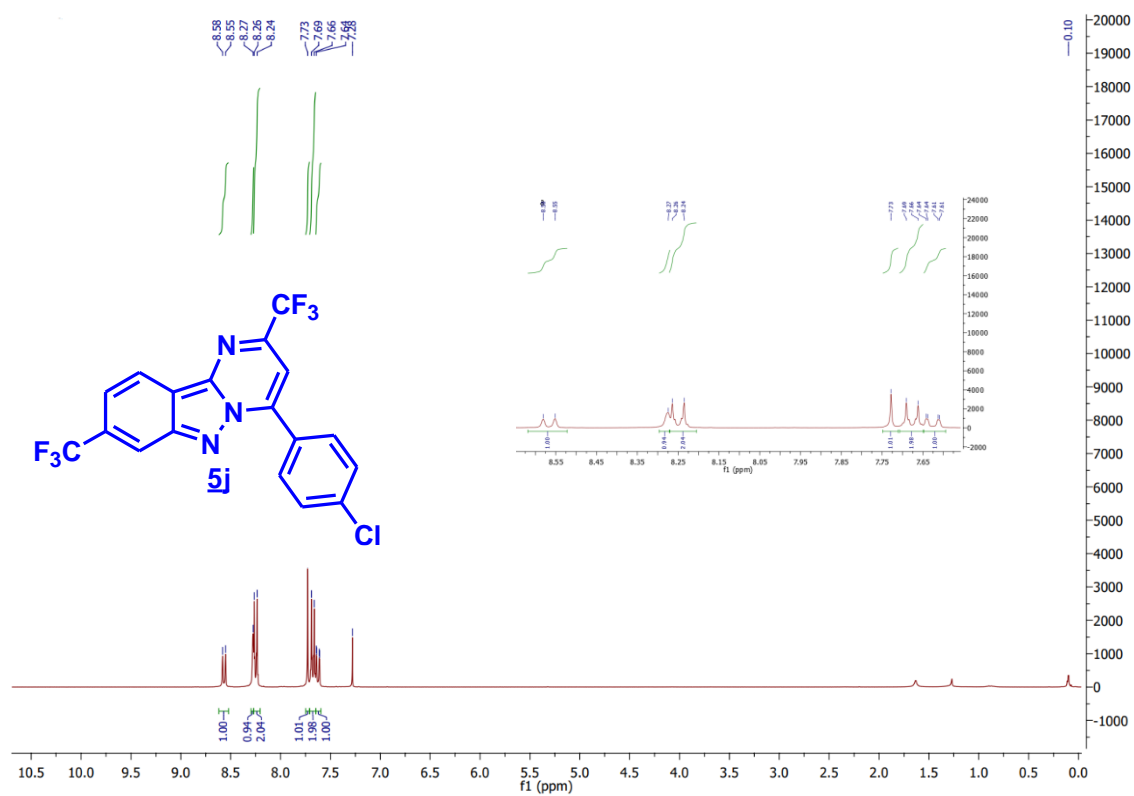


^{13}C NMR (75 MHz, CDCl_3)

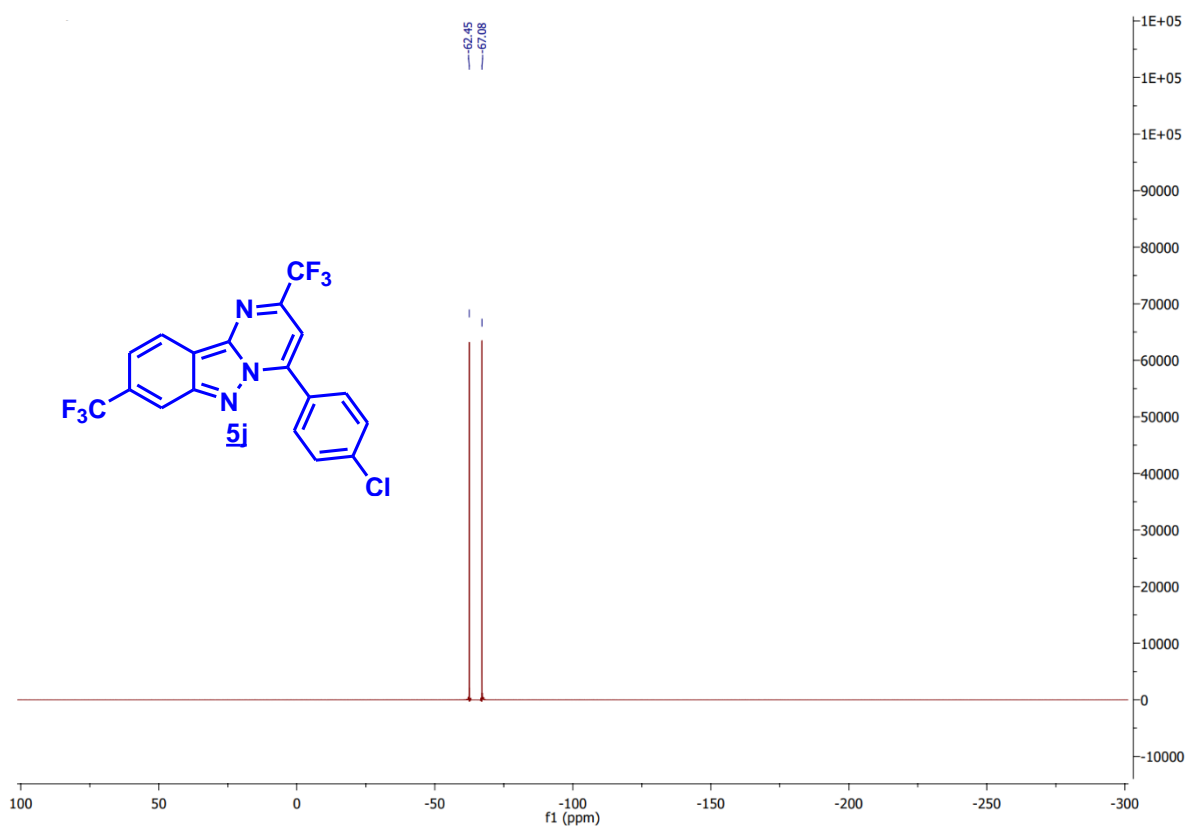


4-(4-Chloro-phenyl)-2,8-bis-trifluoromethyl-pyrimido[1,2-b]indazole (5j)

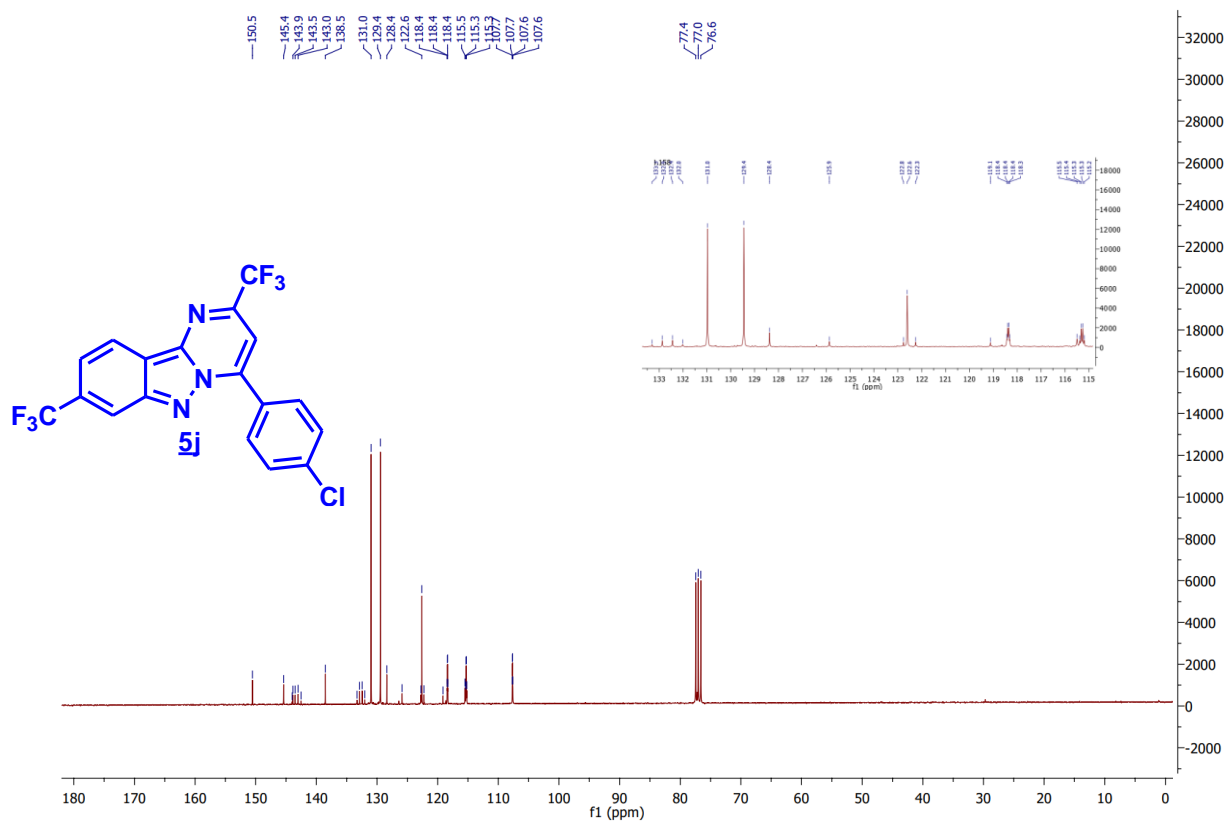
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

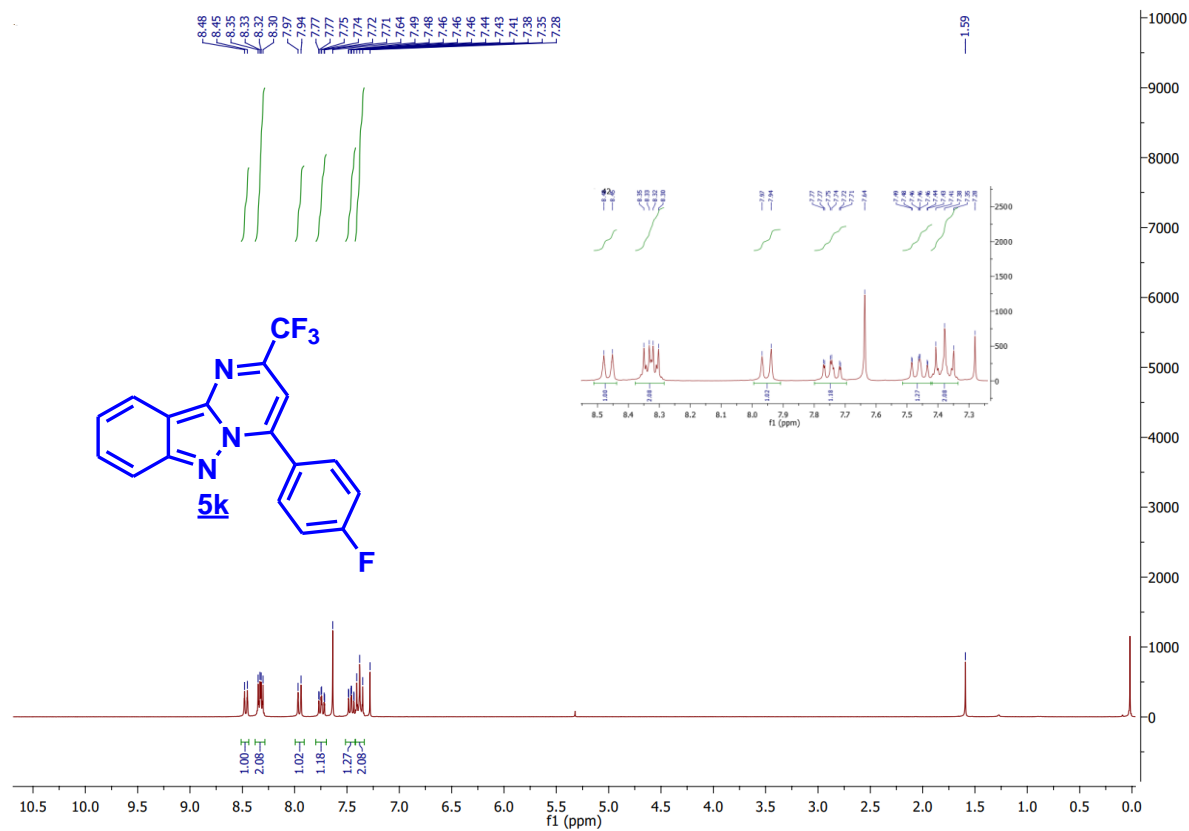


^{13}C NMR (75 MHz, CDCl_3)

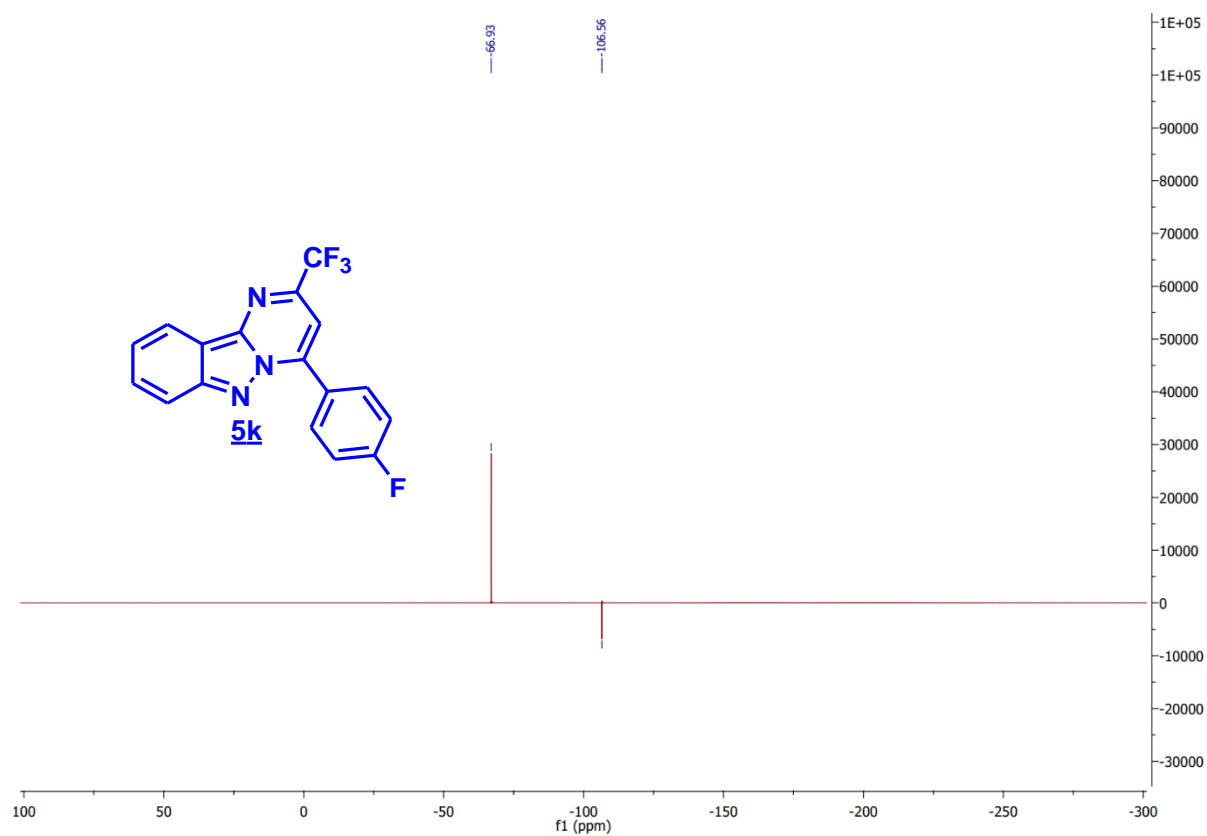


4-(4-Fluoro-phenyl)-2-trifluoromethyl-pyrimido[1,2-b]indazole (5k)

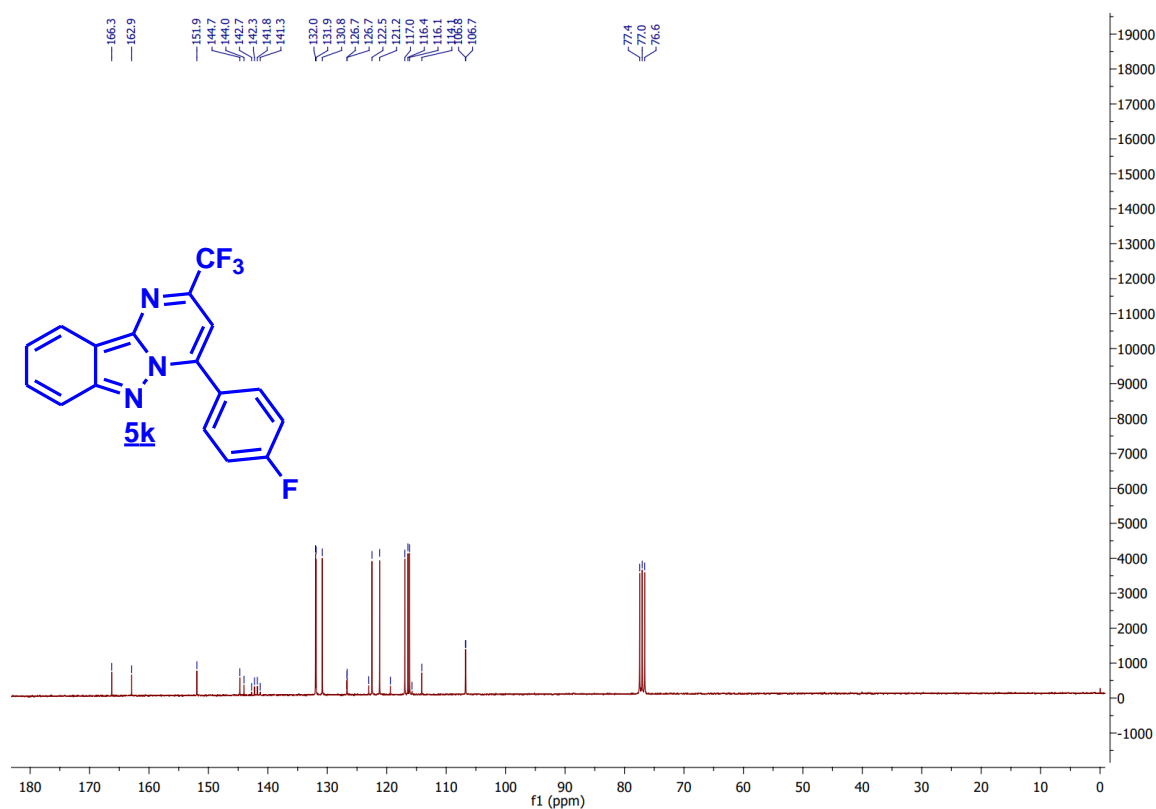
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

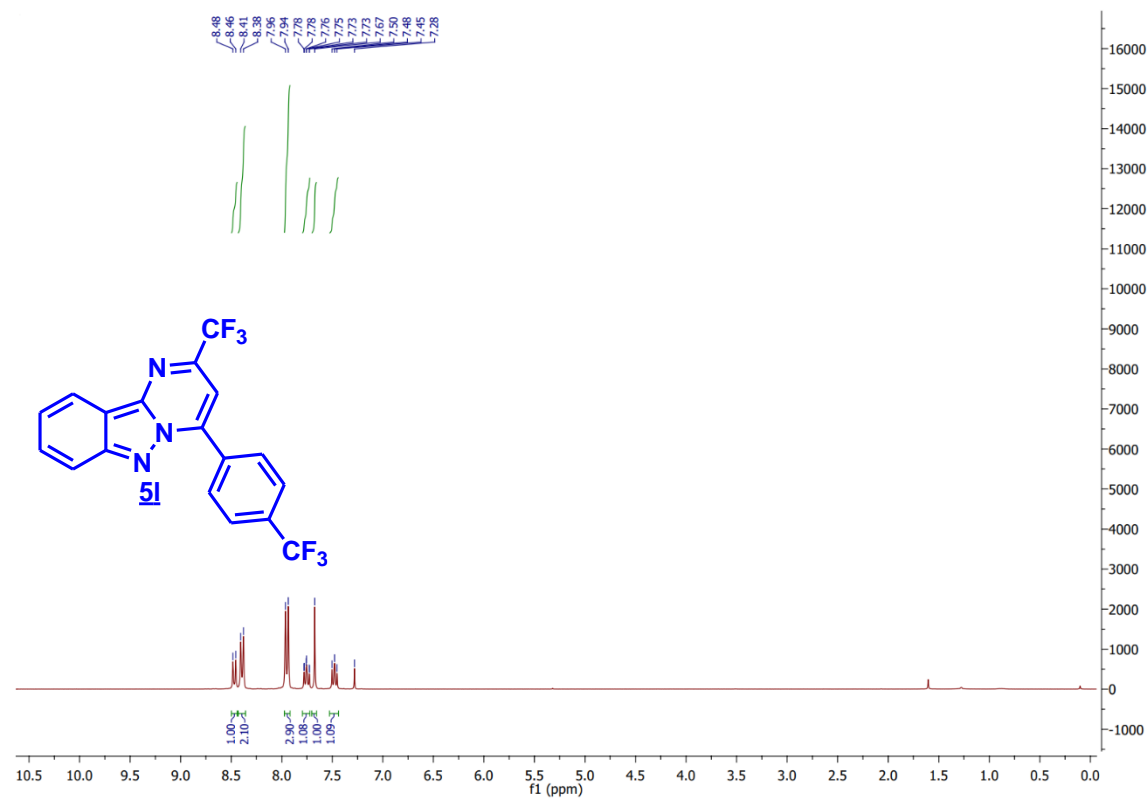


^{13}C NMR (75 MHz, CDCl_3)

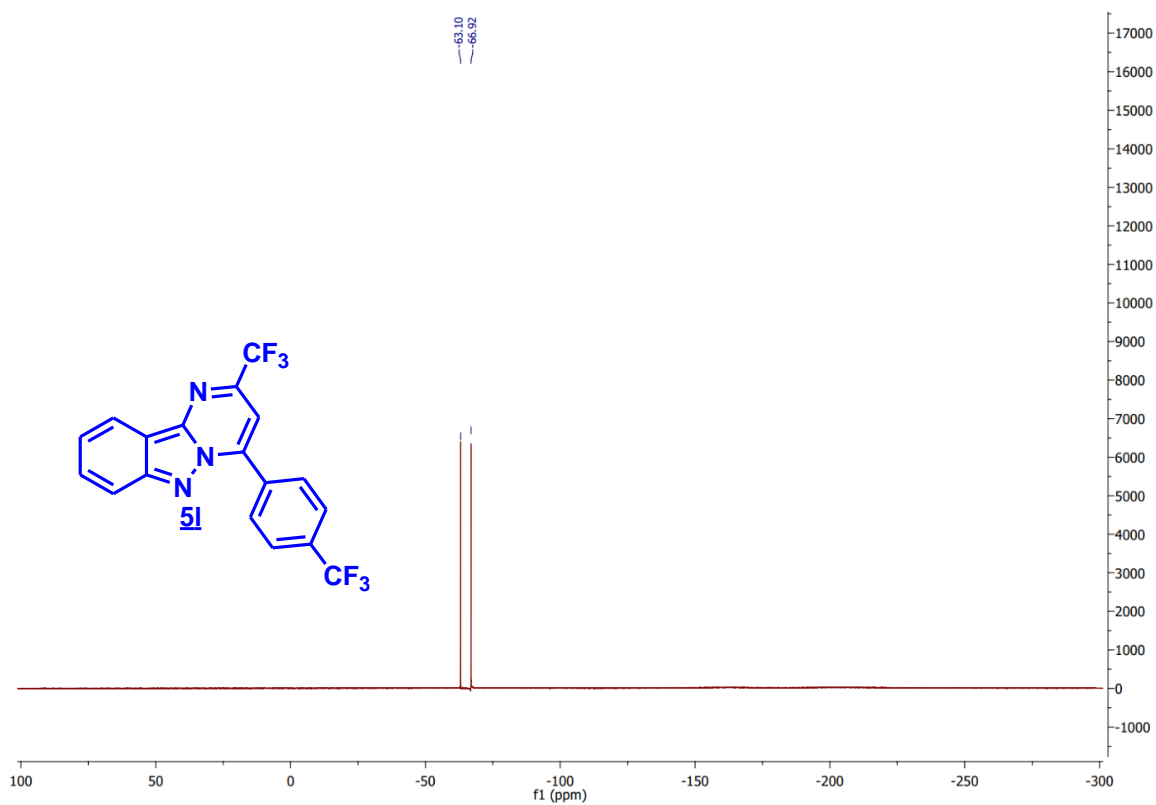


2-Trifluoromethyl-4-(4-trifluoromethyl-phenyl)-pyrimido[1,2-b]indazole (5l)

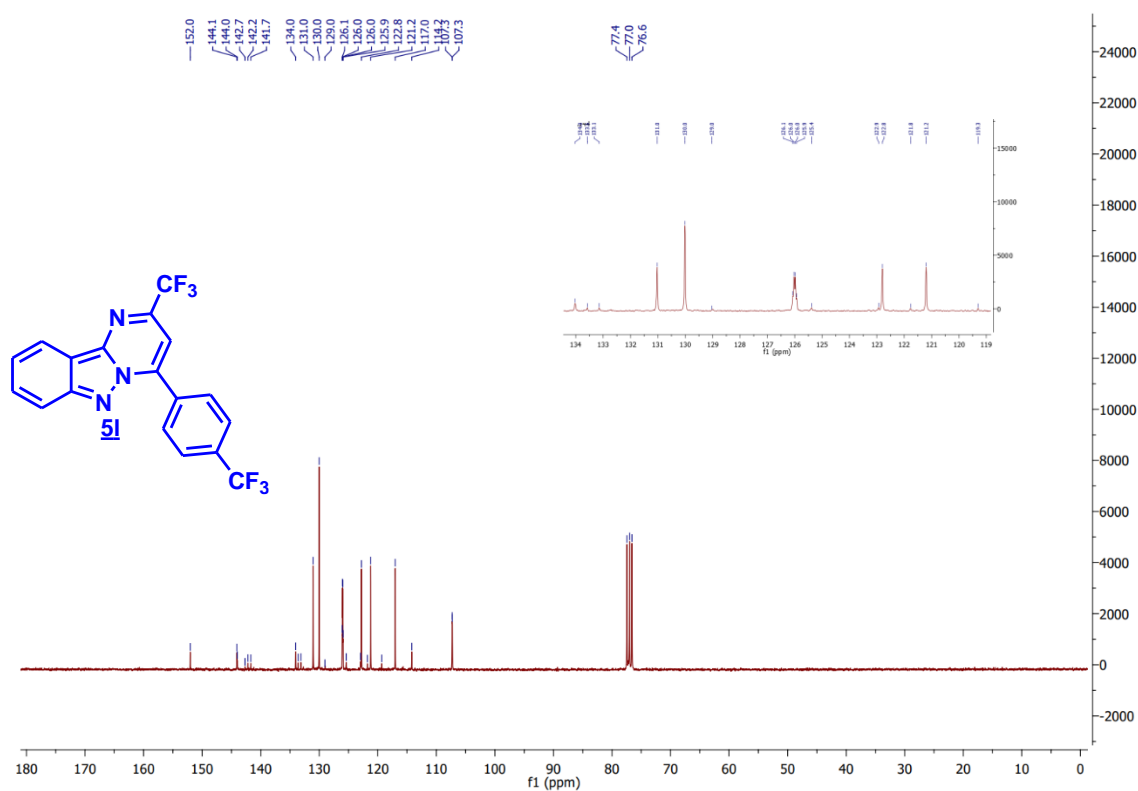
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

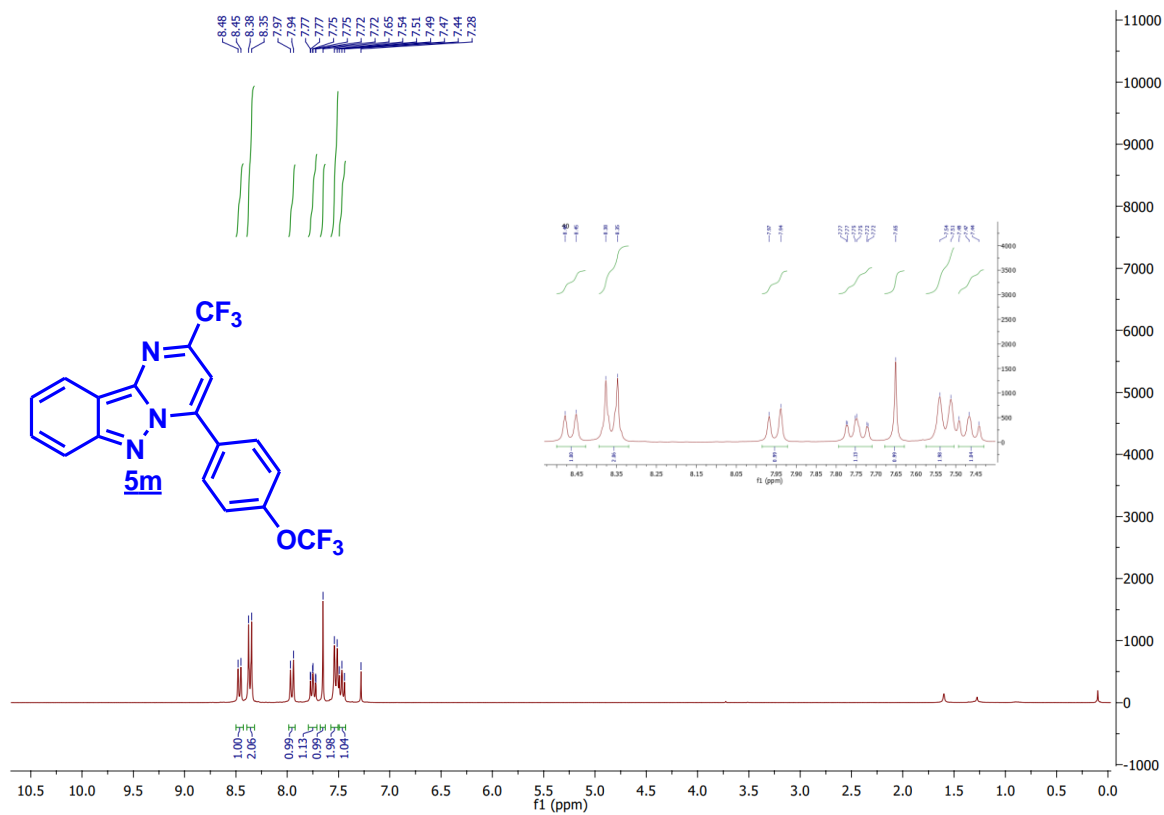


^{13}C NMR (75 MHz, CDCl_3)

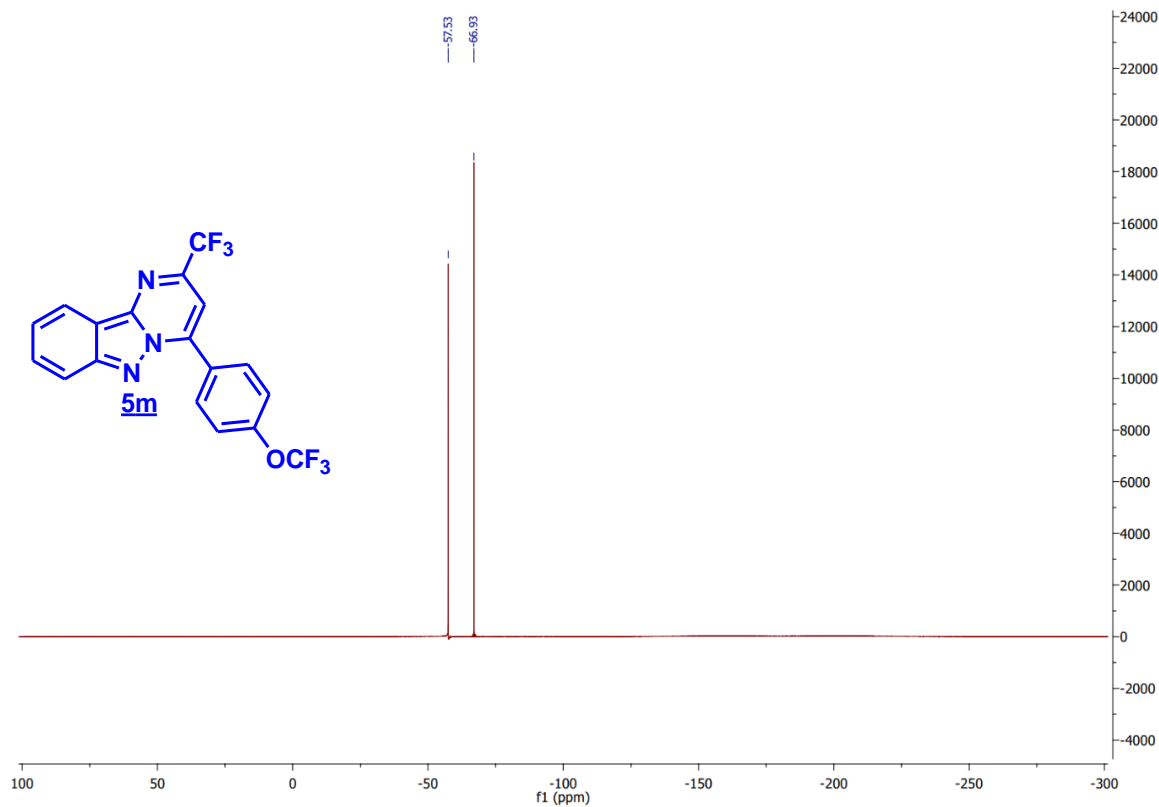


4-(4-Trifluoromethoxy-phenyl)-2-trifluoromethyl-pyrimido[1,2-b]indazole (5m)

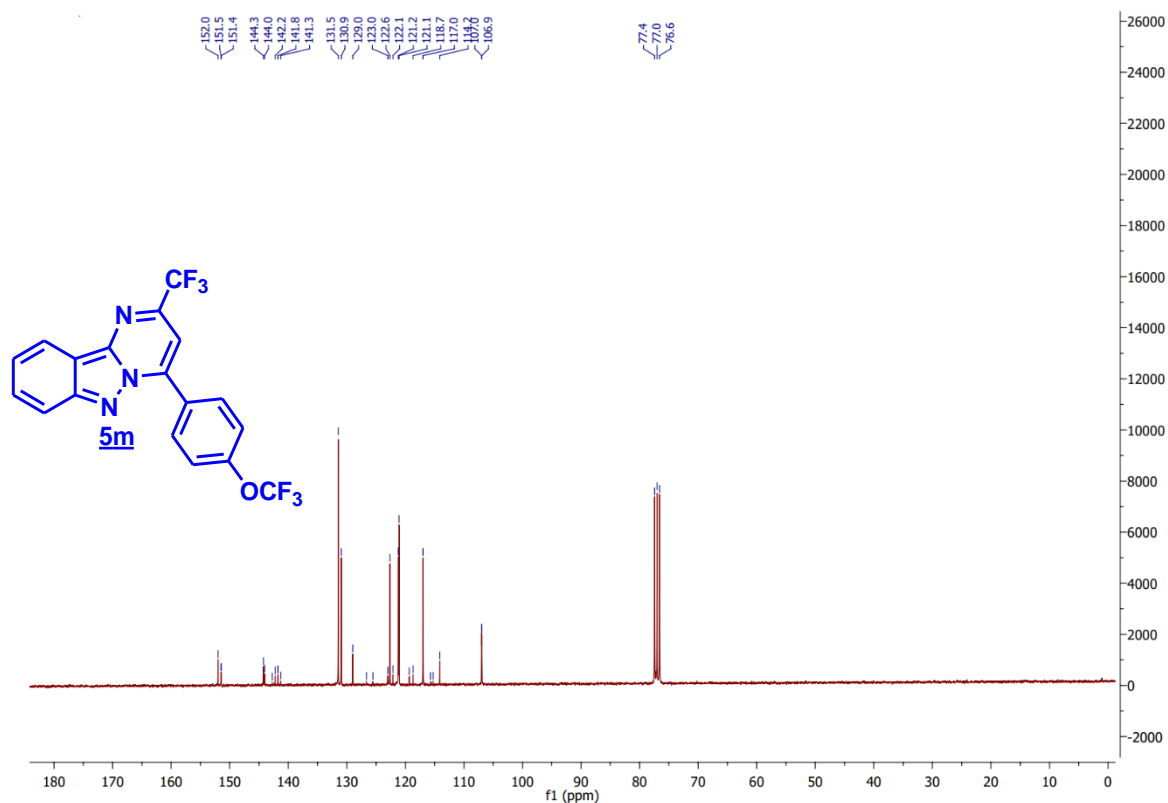
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

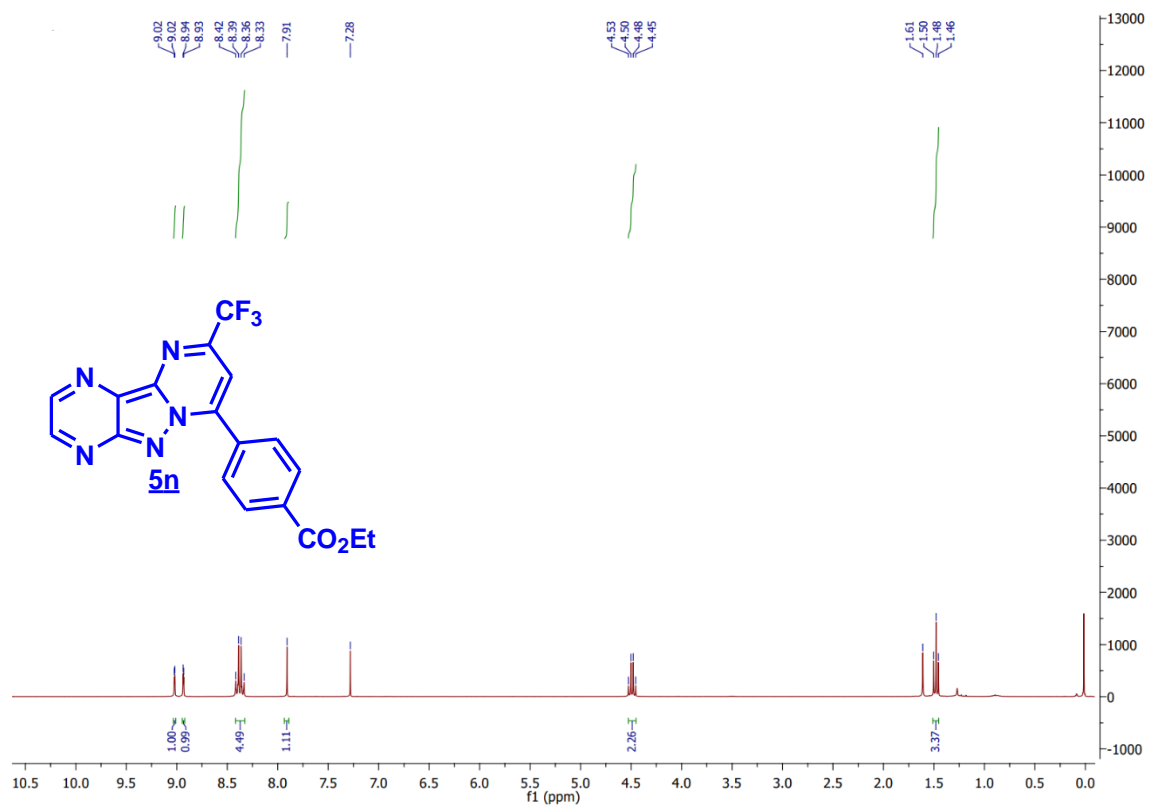


^{13}C NMR (75 MHz, CDCl_3)

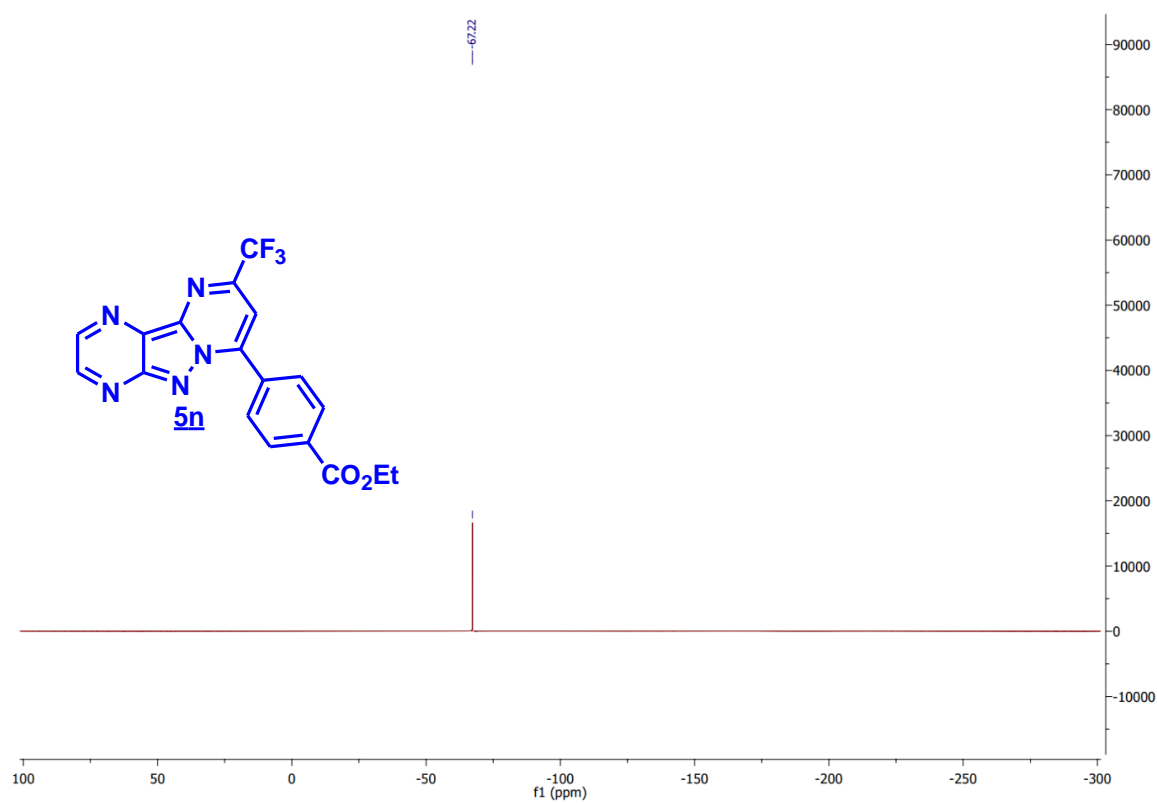


ethyl 4-[9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-*a*]pyrimidin-7-yl]benzoate (**5n**)

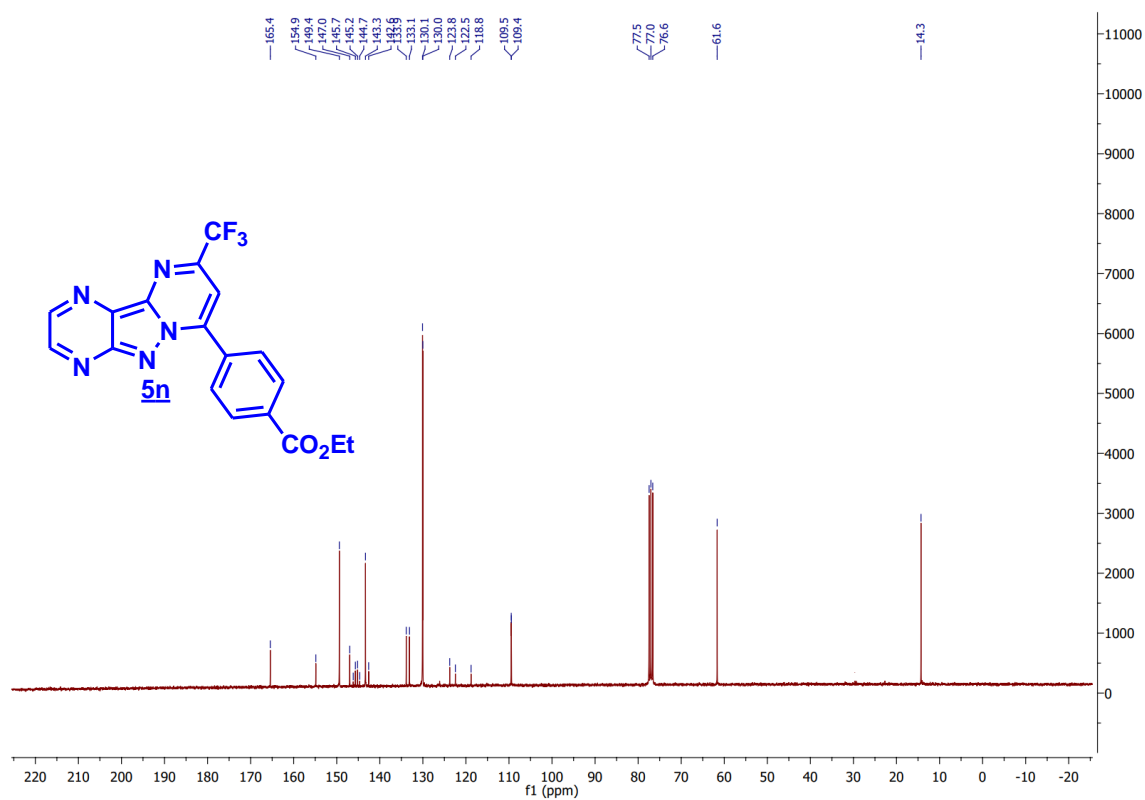
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

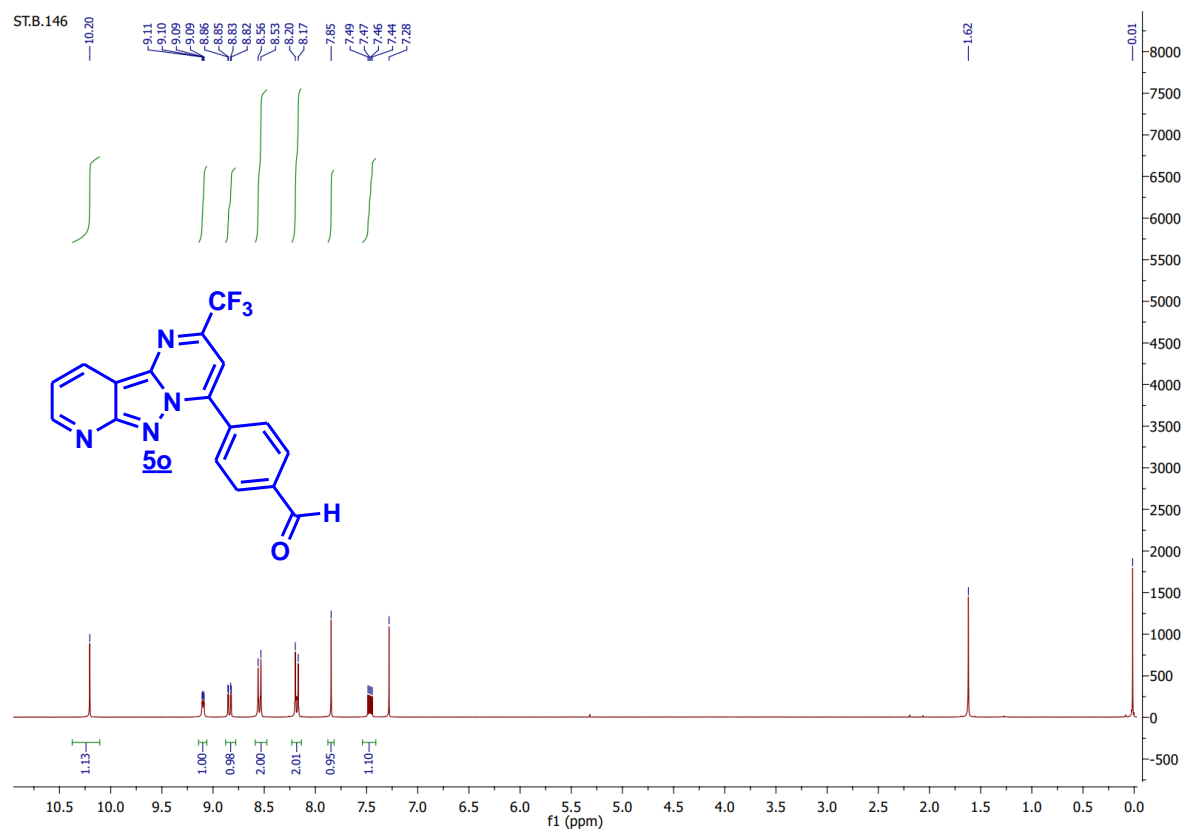


^{13}C NMR (75 MHz, CDCl_3)

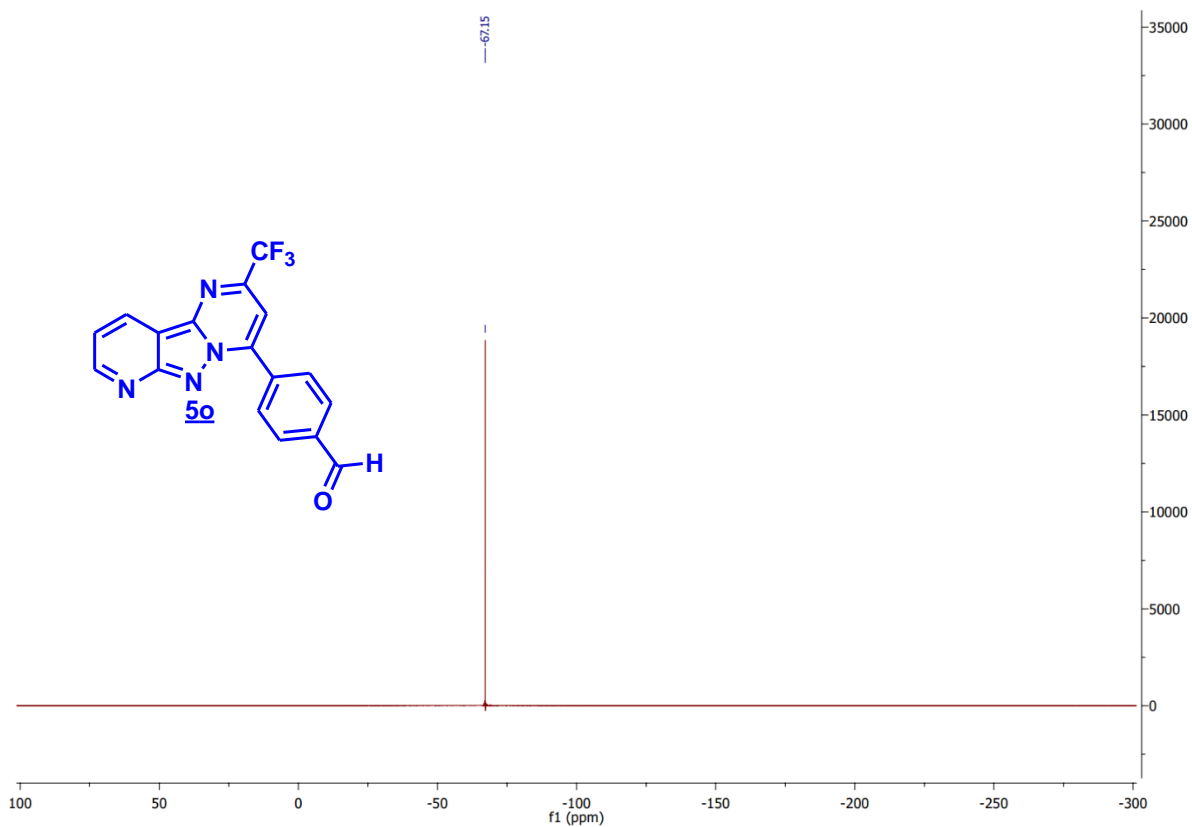


4-[2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-a]pyrimidin-4-yl]benzaldehyde (5o)

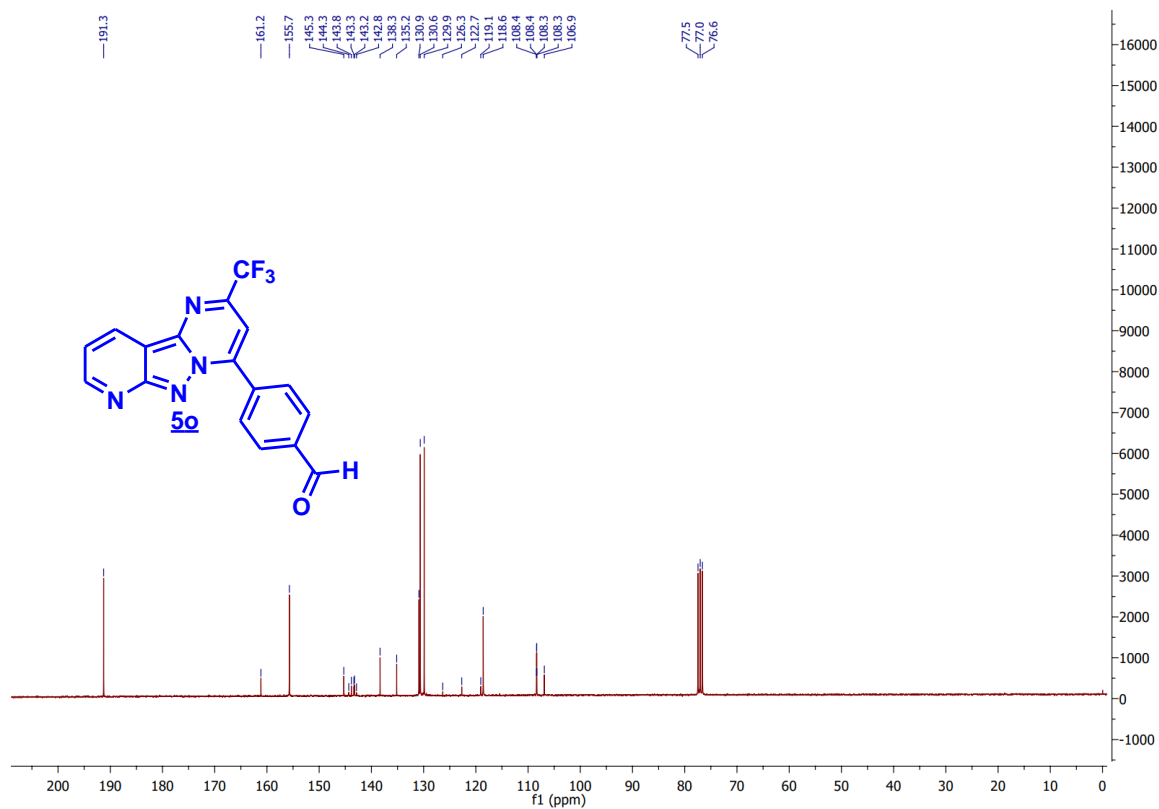
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

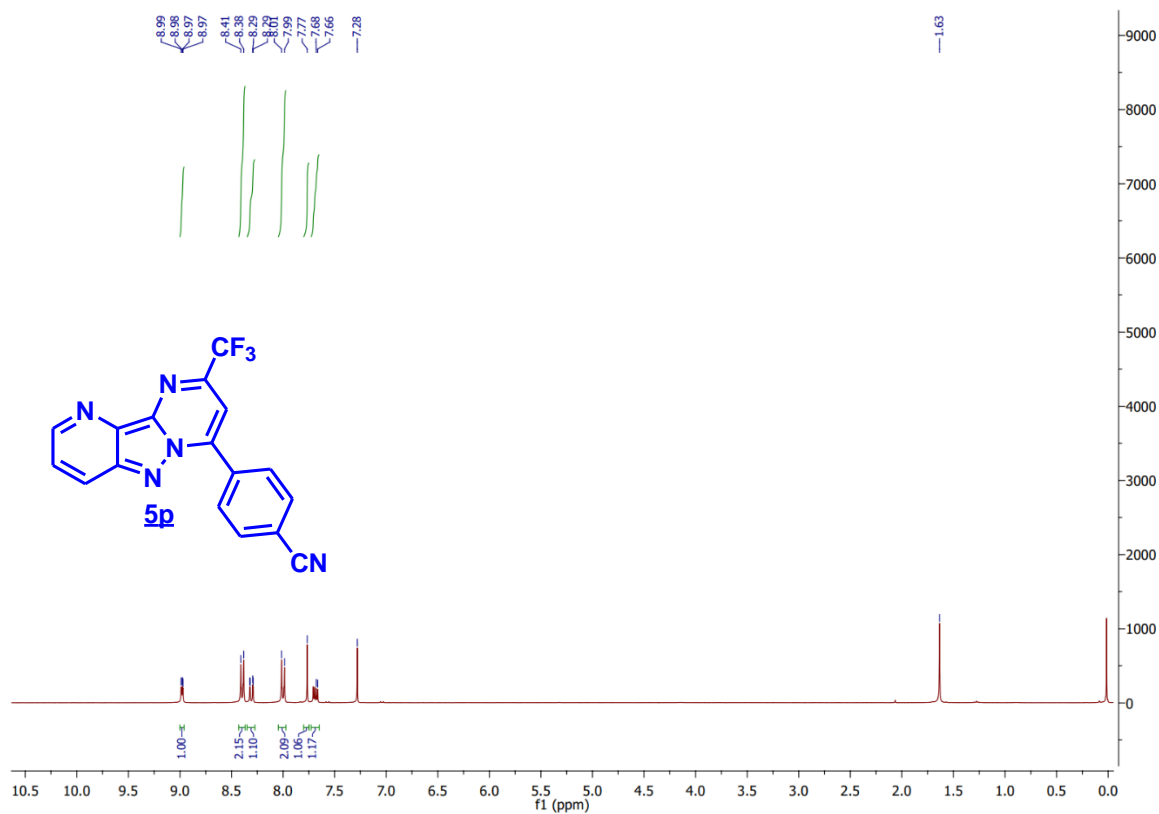


^{13}C NMR (75 MHz, CDCl_3)

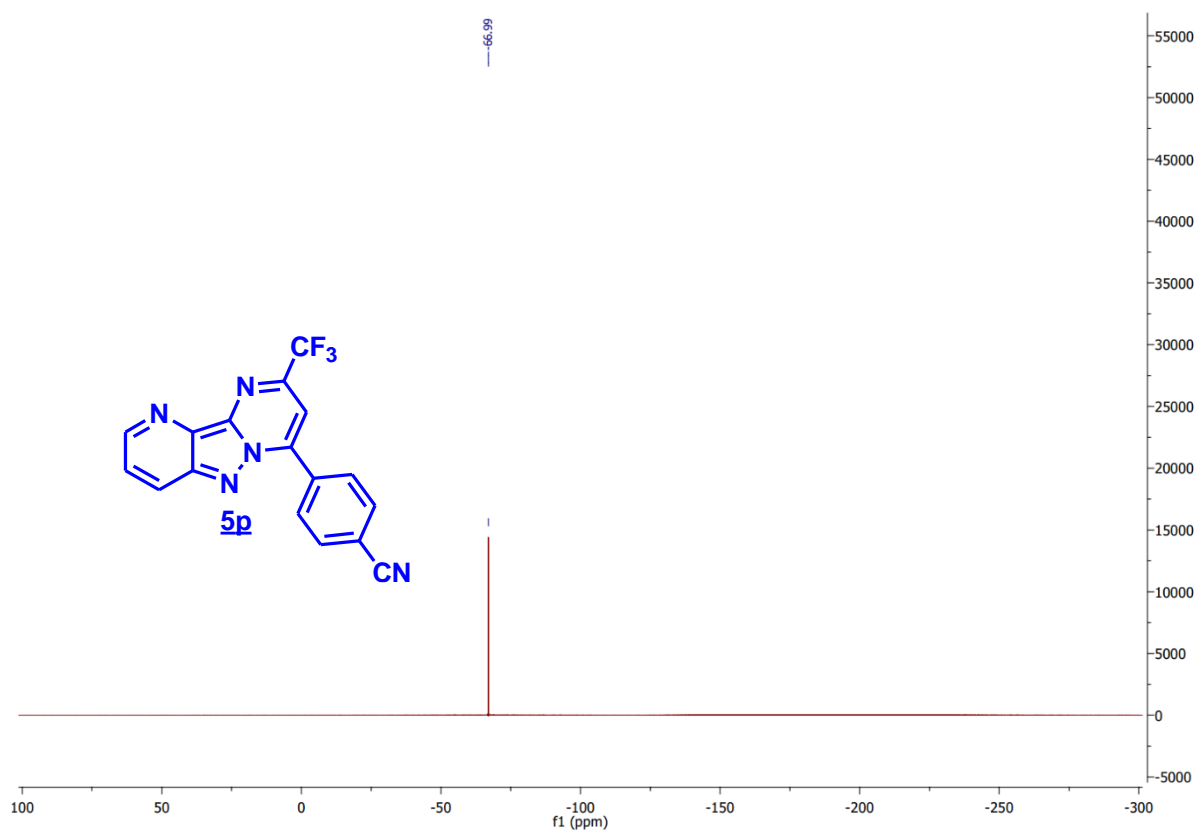


4-[9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidin-7-yl]benzonitrile (5p)

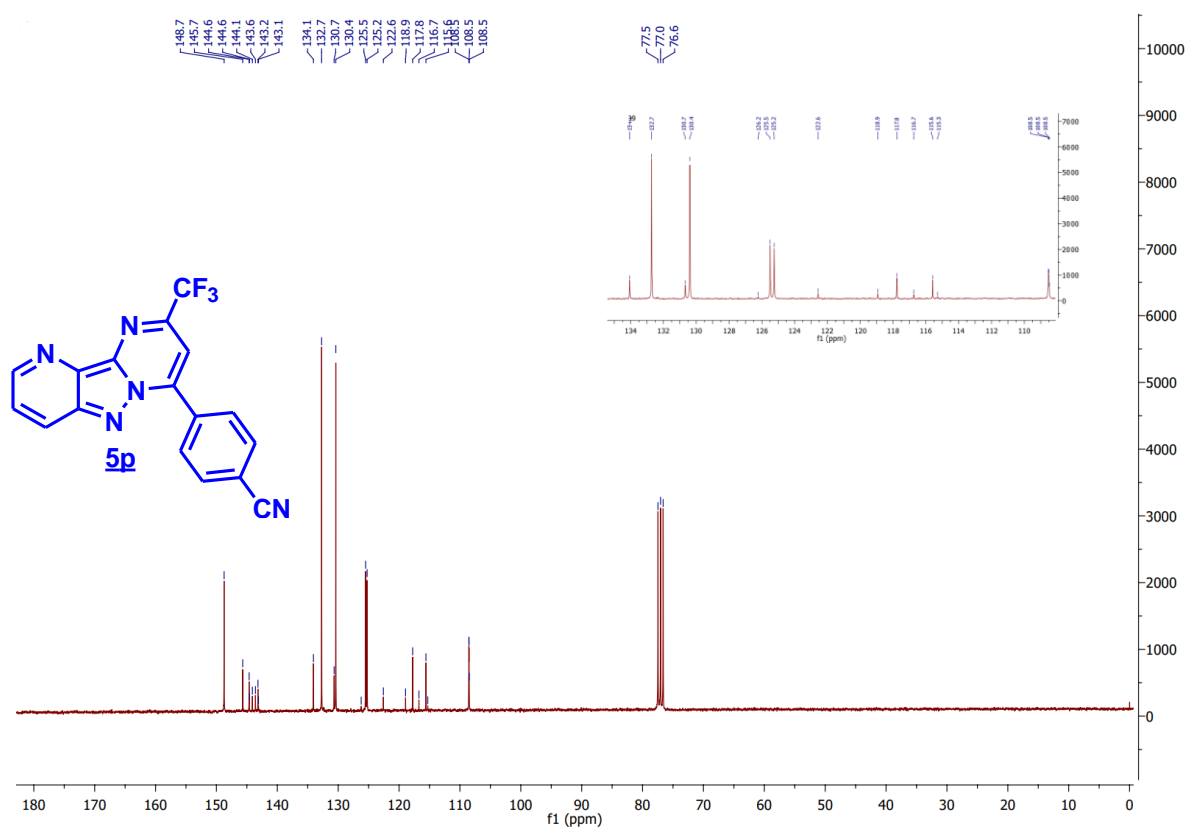
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

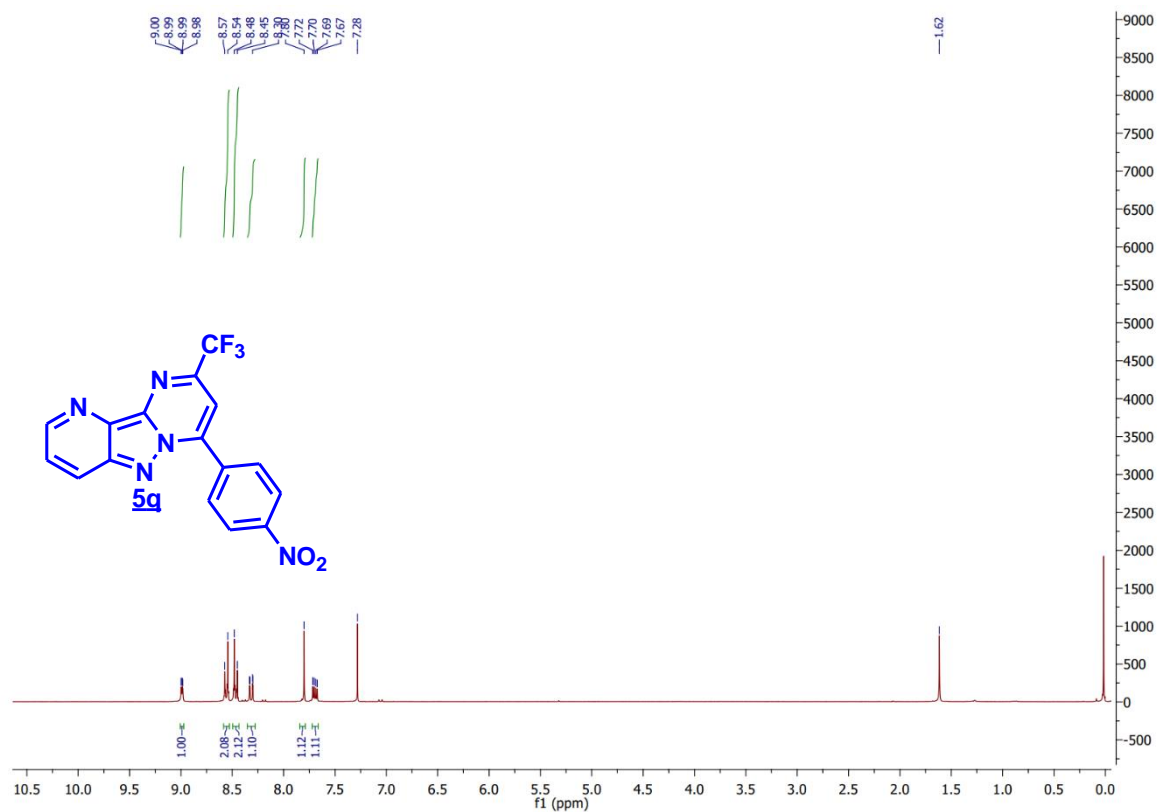


^{13}C NMR (75 MHz, CDCl_3)

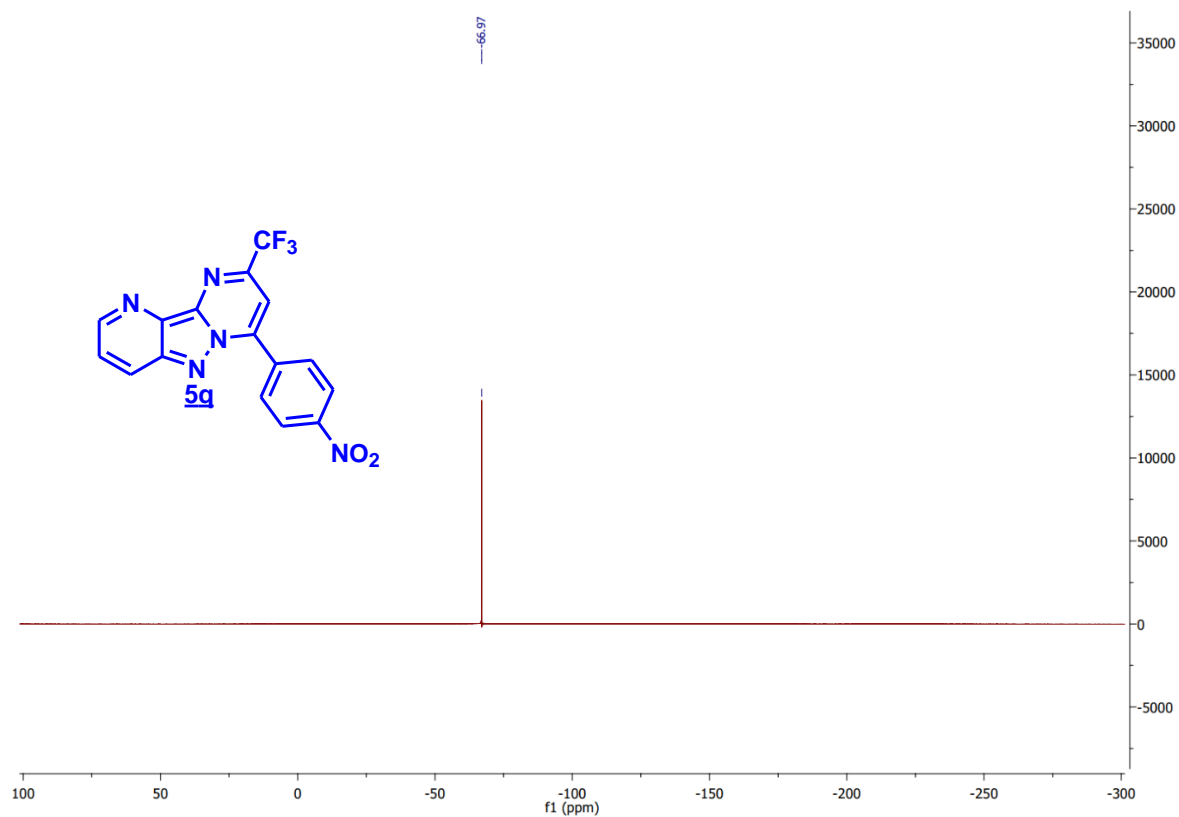


7-(4-nitrophenyl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidine (5q)

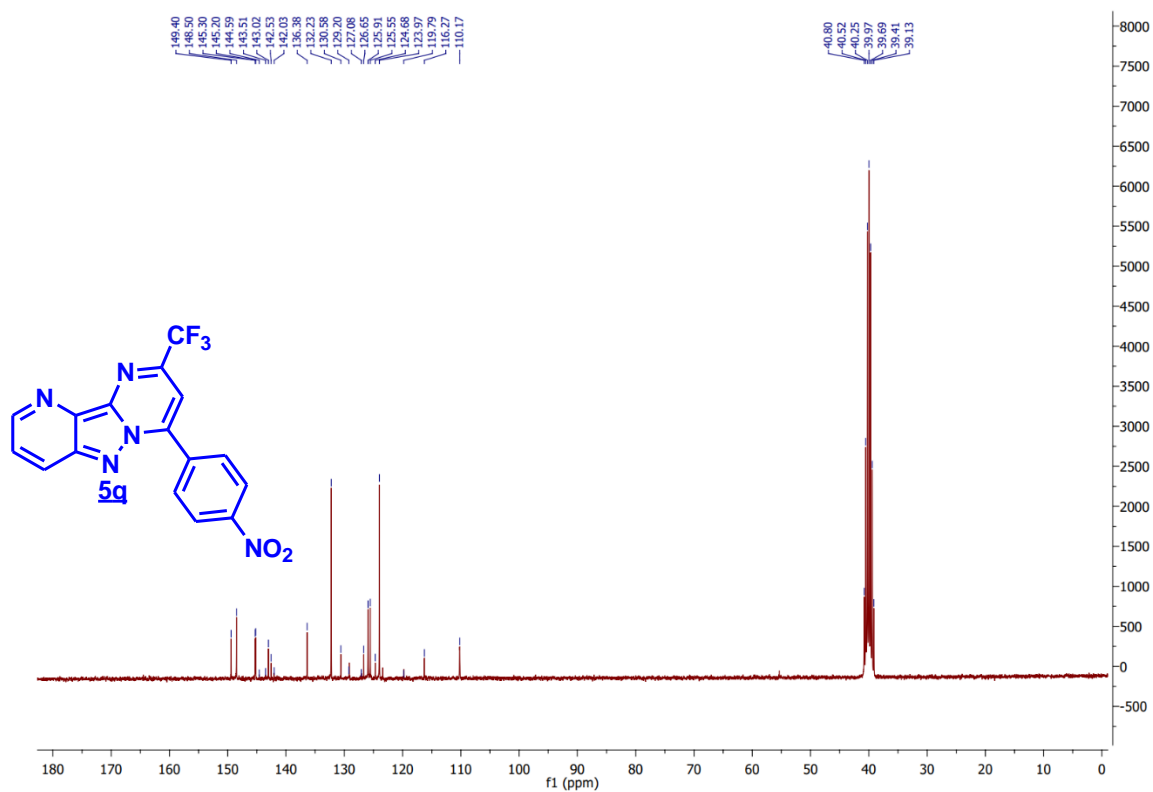
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

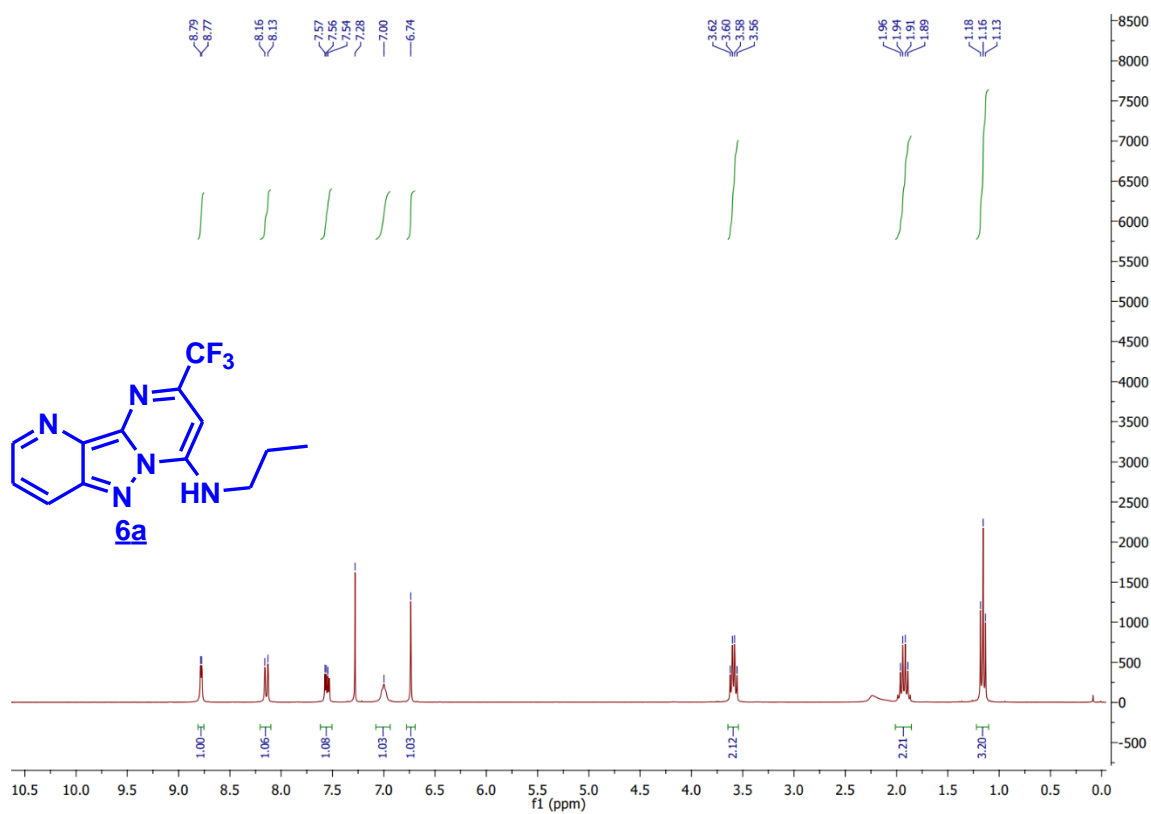


^{13}C NMR (75 MHz, DMSO- d_6)

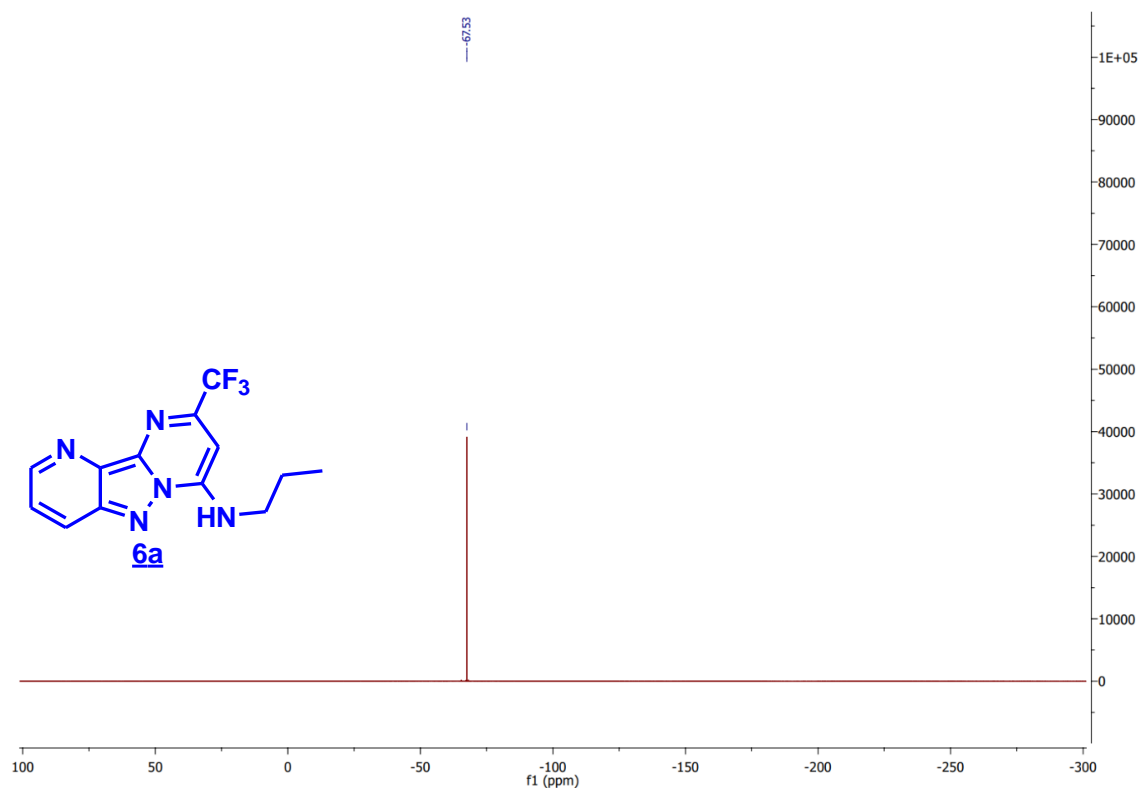


N-propyl-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidin-7-amine (**6a**)

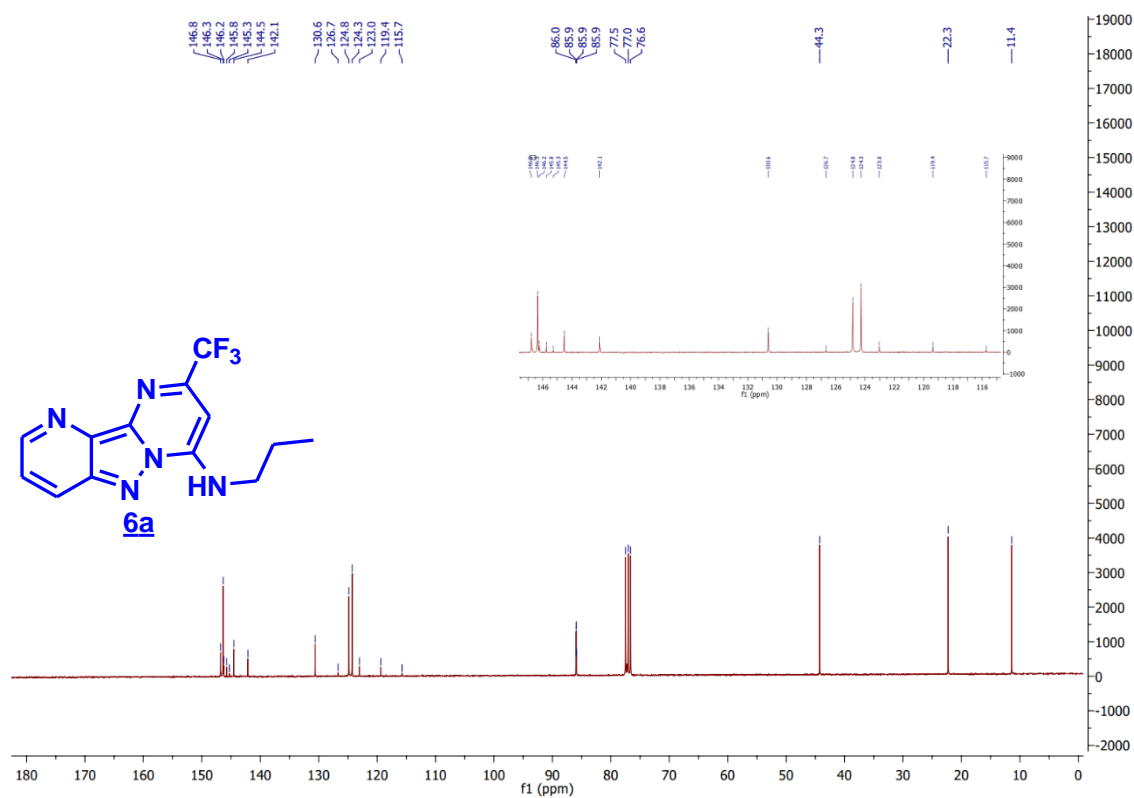
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

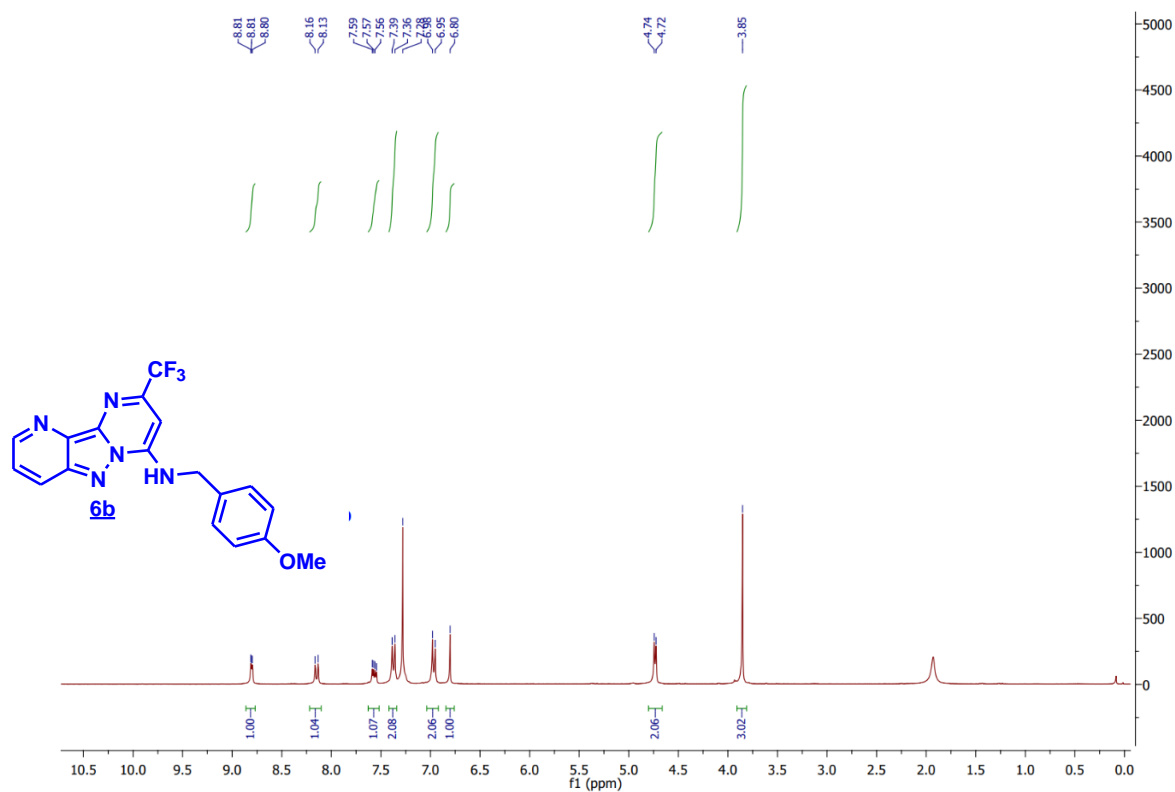


^{13}C NMR (75 MHz, CDCl_3)

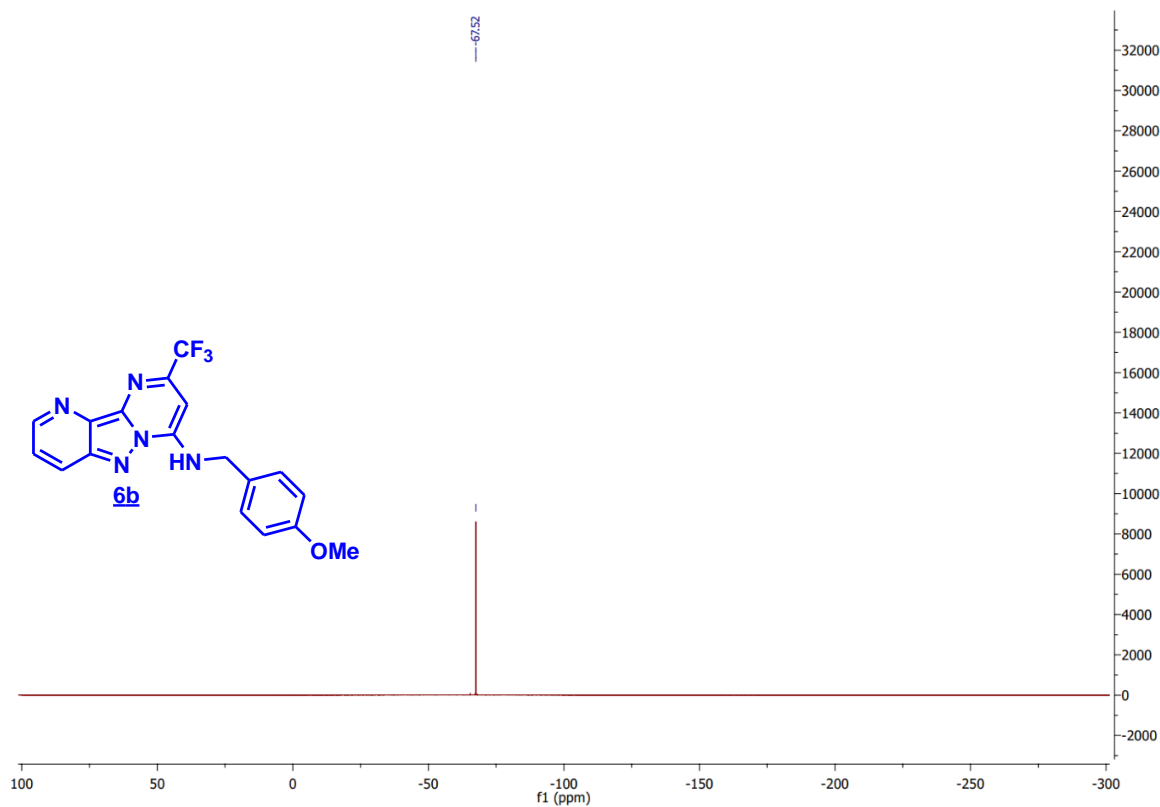


***N*-[(4-methoxyphenyl)methyl]-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidin-7-amine (**6b**)**

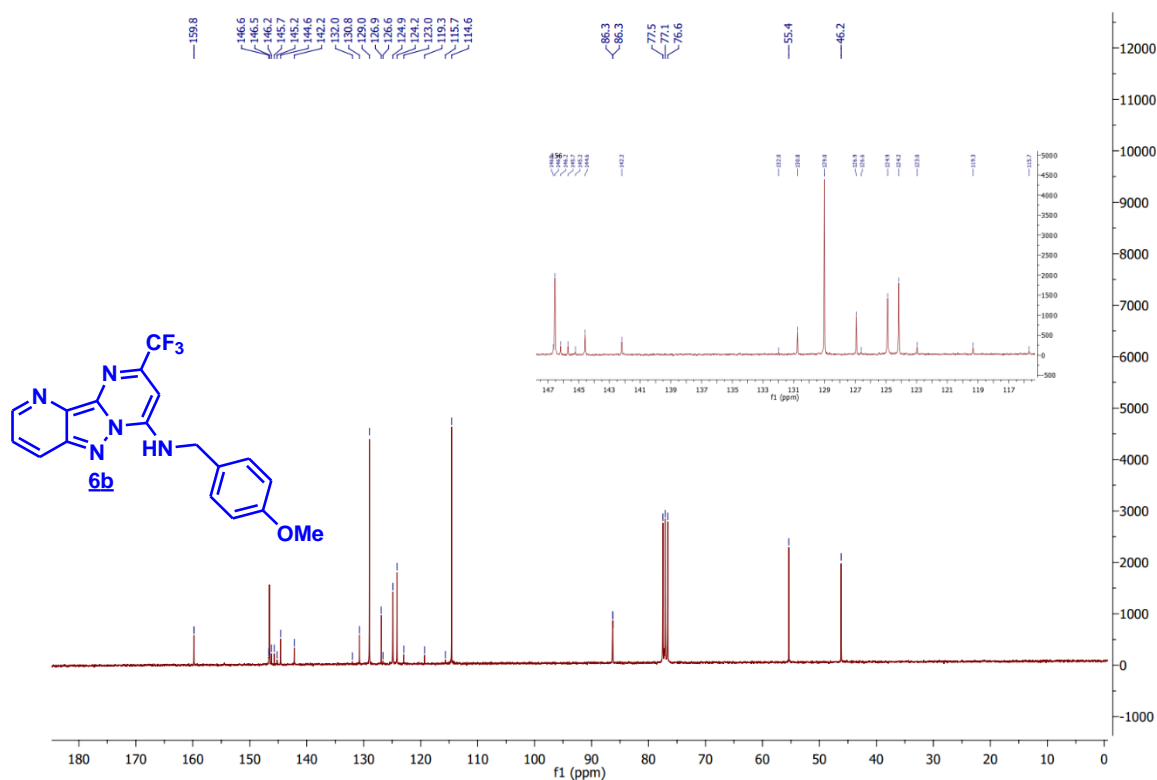
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

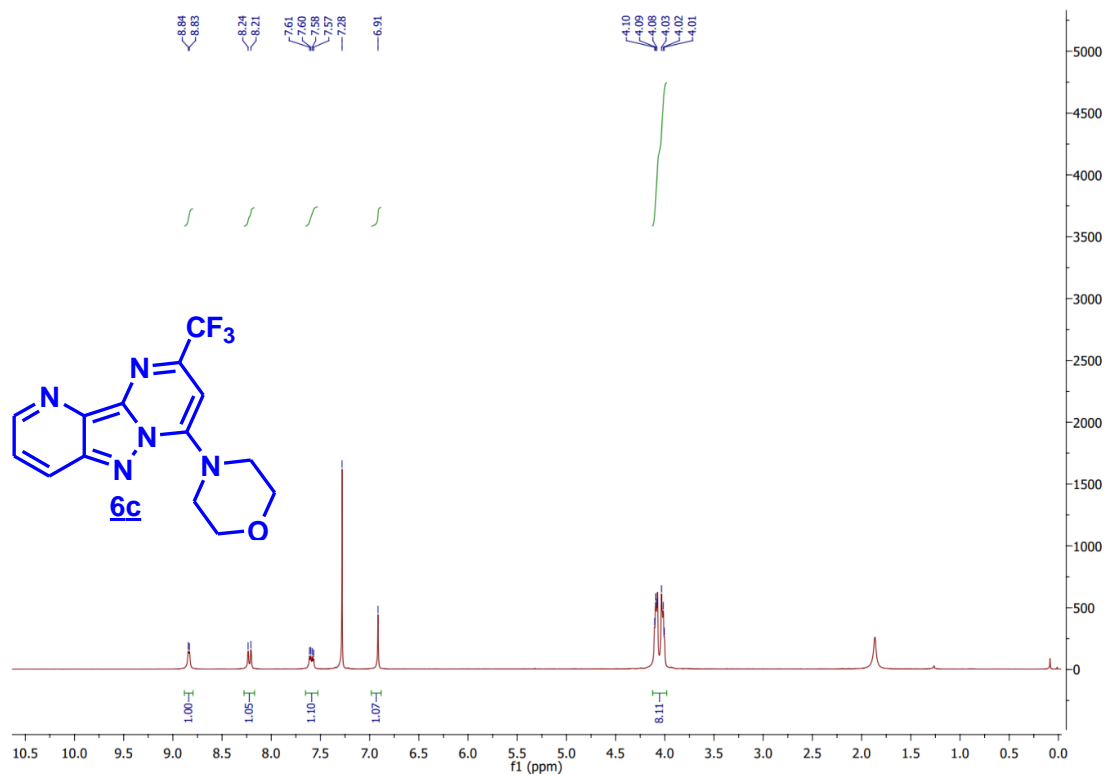


^{13}C NMR (75 MHz, CDCl_3)

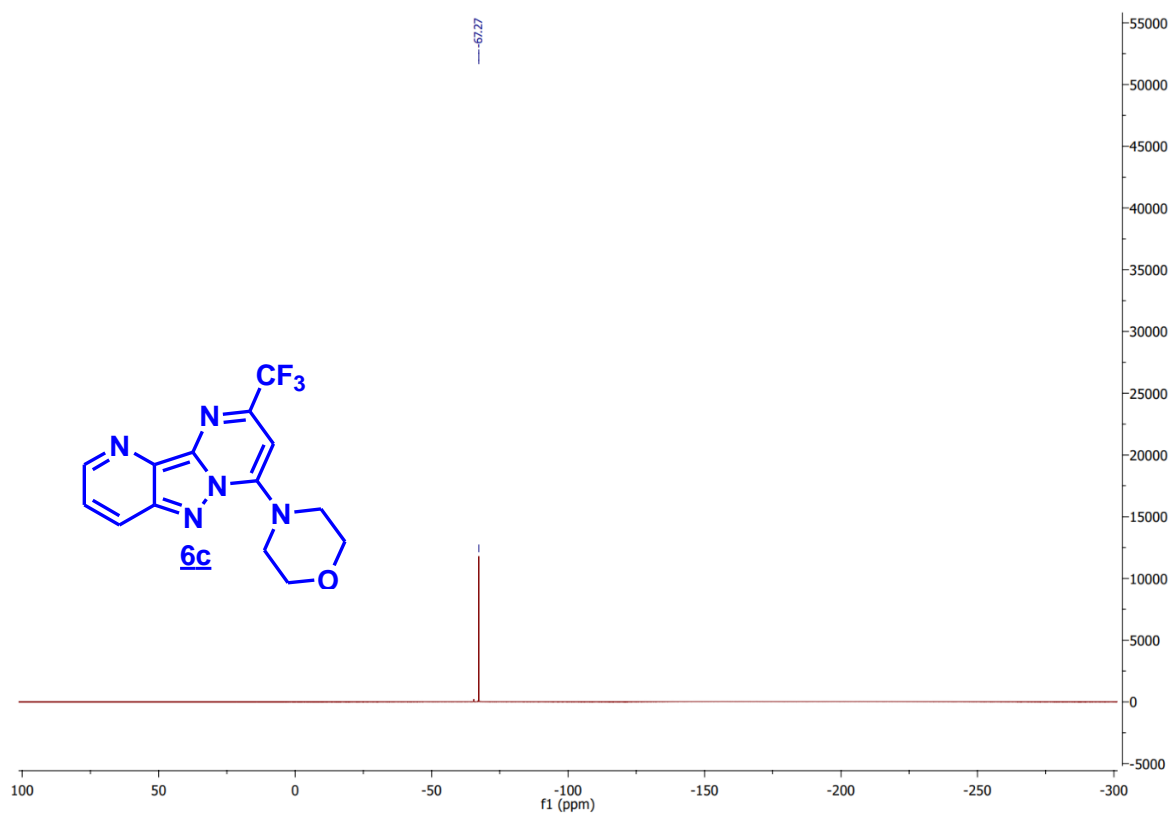


7-(morpholin-4-yl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (6c)

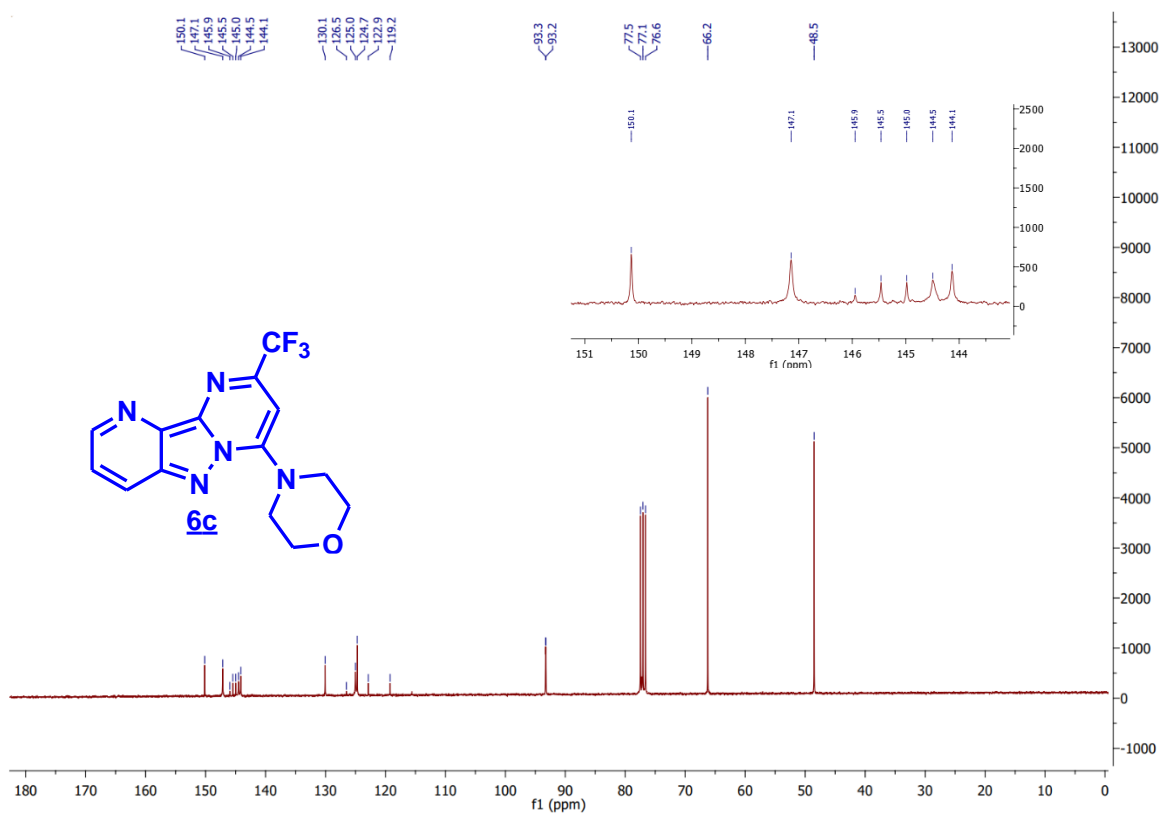
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

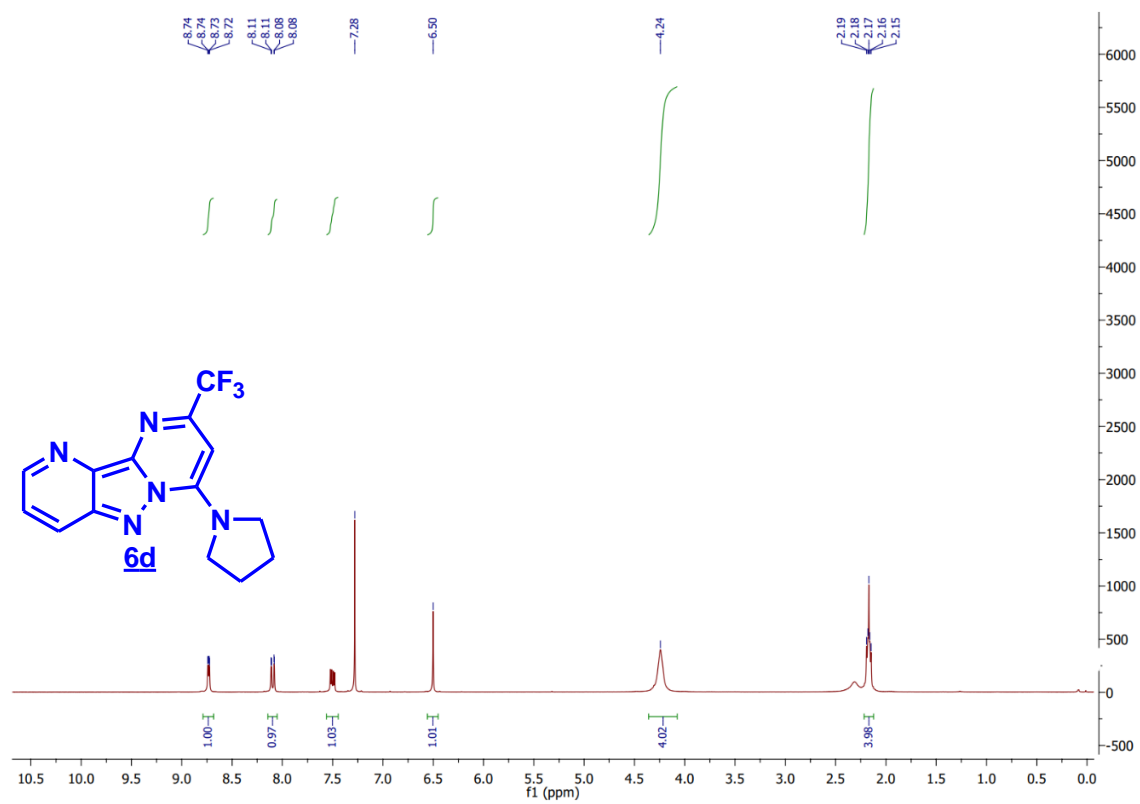


^{13}C NMR (75 MHz, CDCl_3)

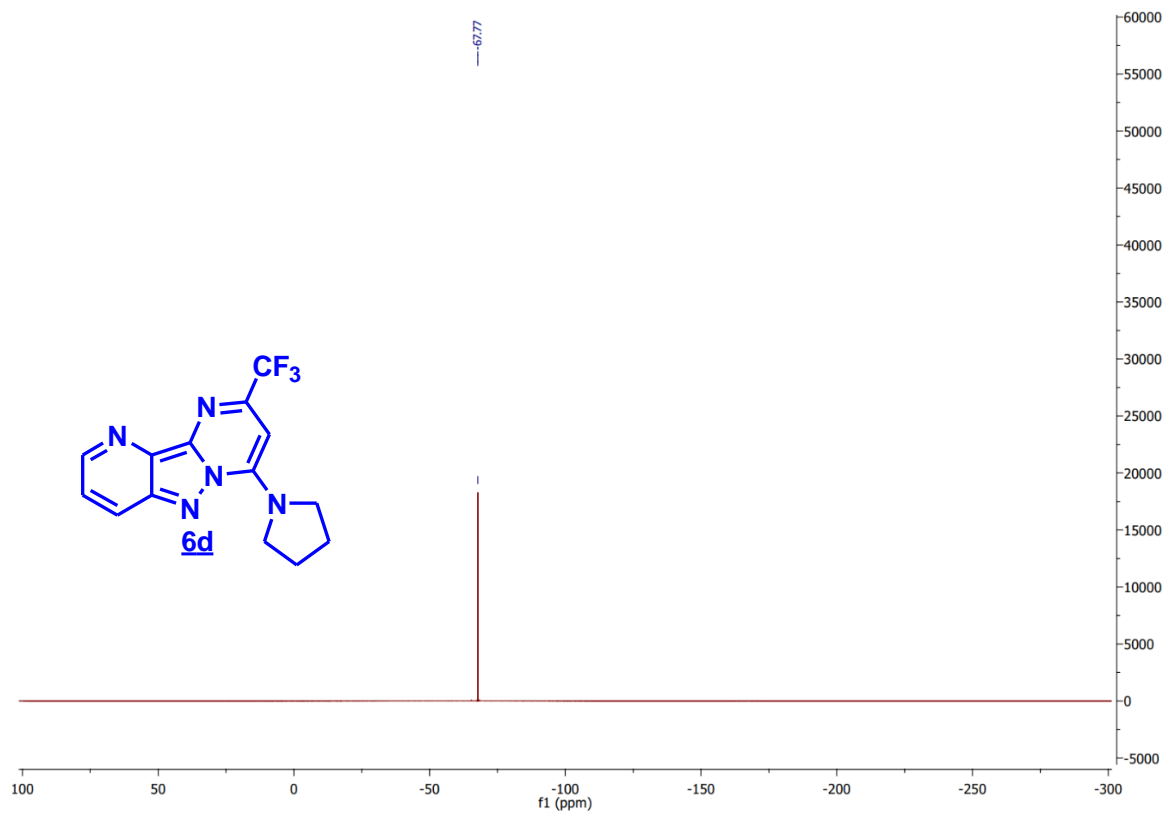


7-(pyrrolidin-1-yl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-a]pyrimidine (6d)

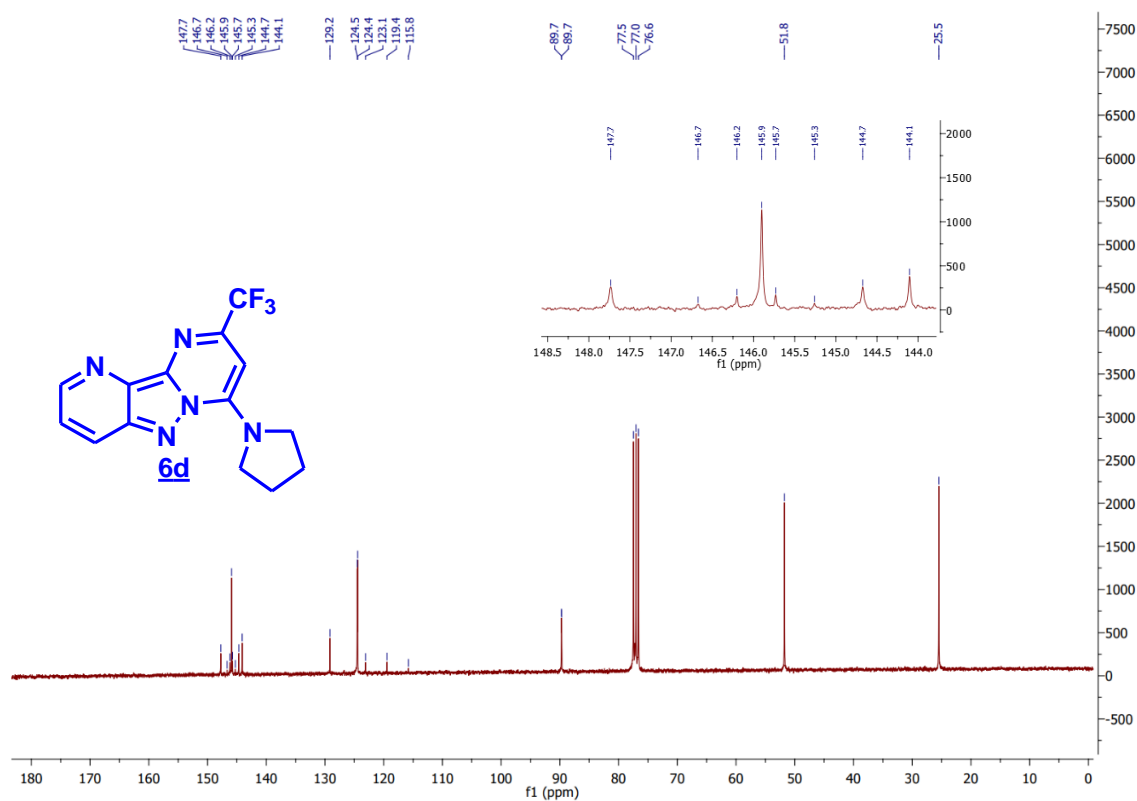
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

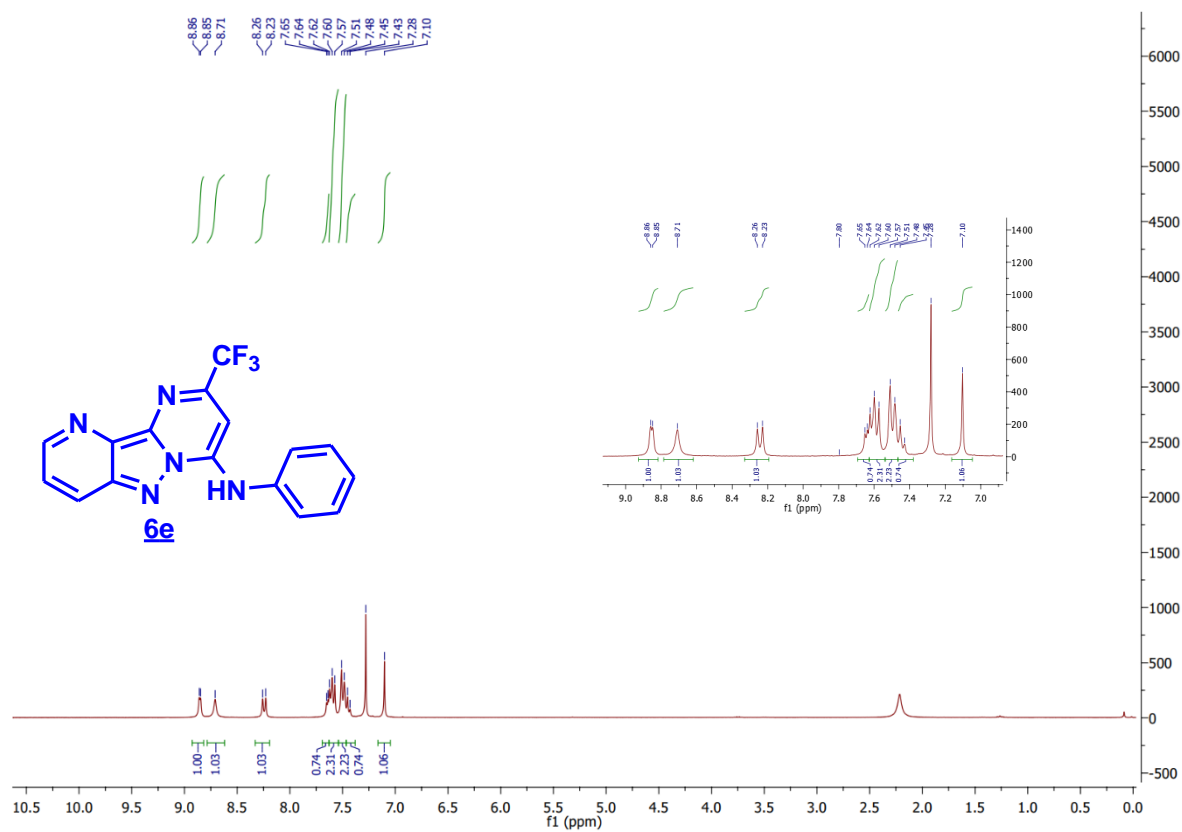


^{13}C NMR (75 MHz, CDCl_3)

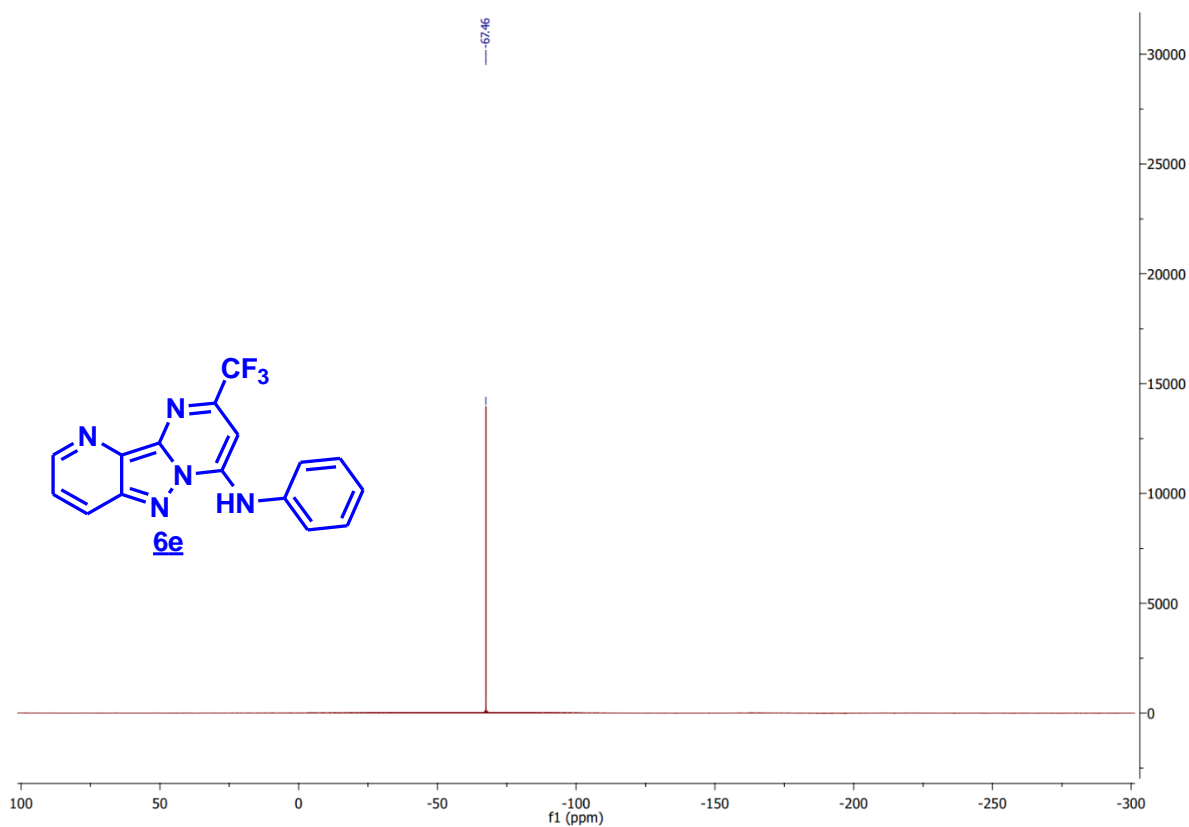


N-phenyl-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidin-7-amine (**6e**)

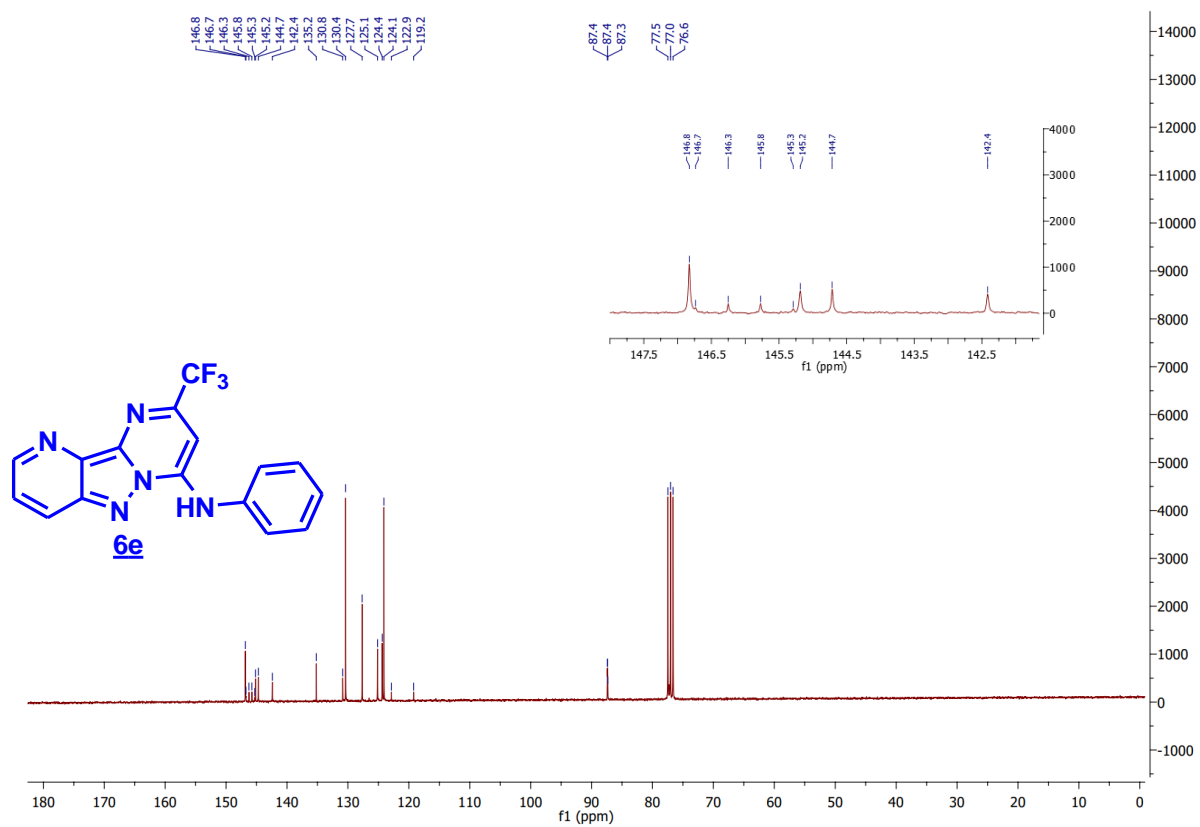
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

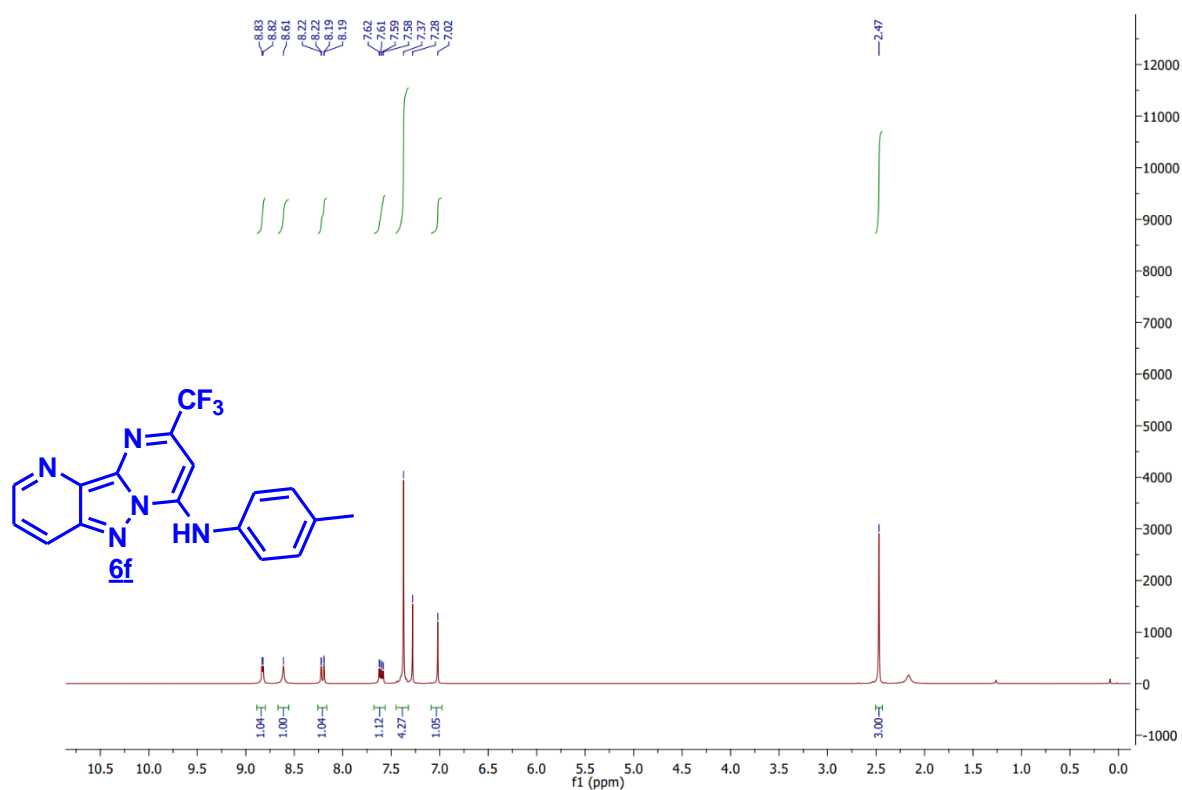


^{13}C NMR (75 MHz, CDCl_3)

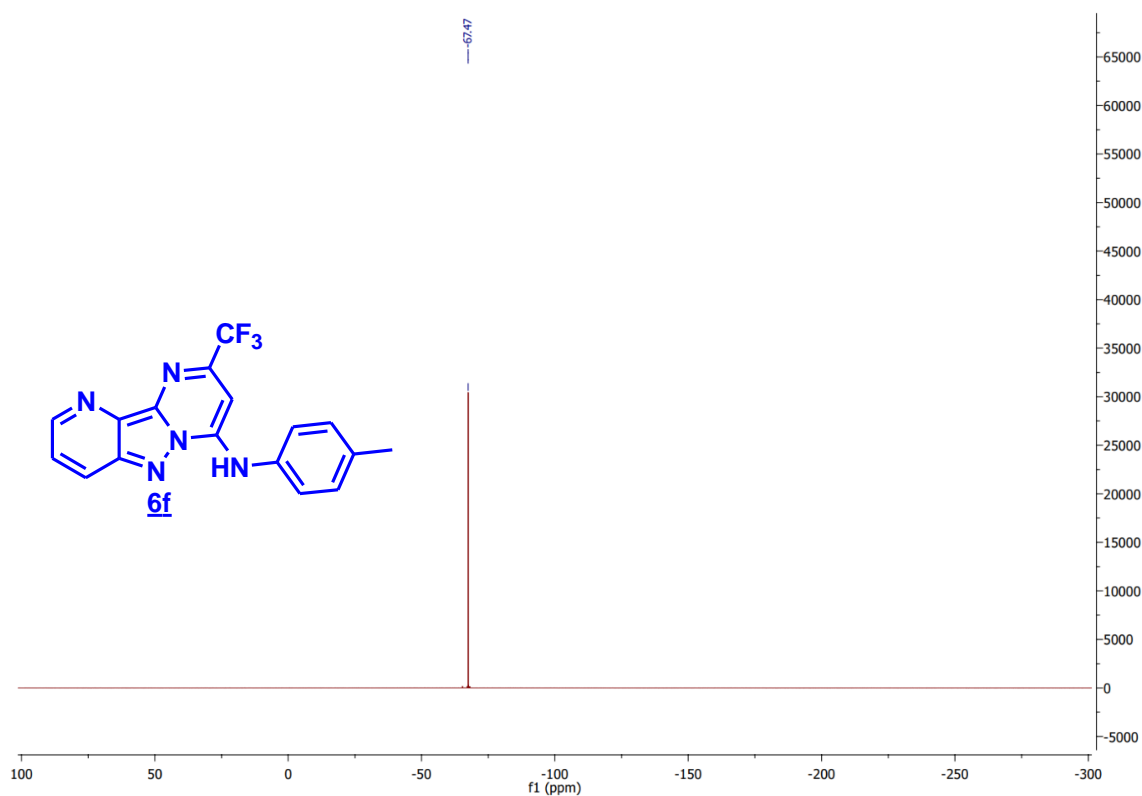


***N*-(4-methylphenyl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidin-7-amine (6f)**

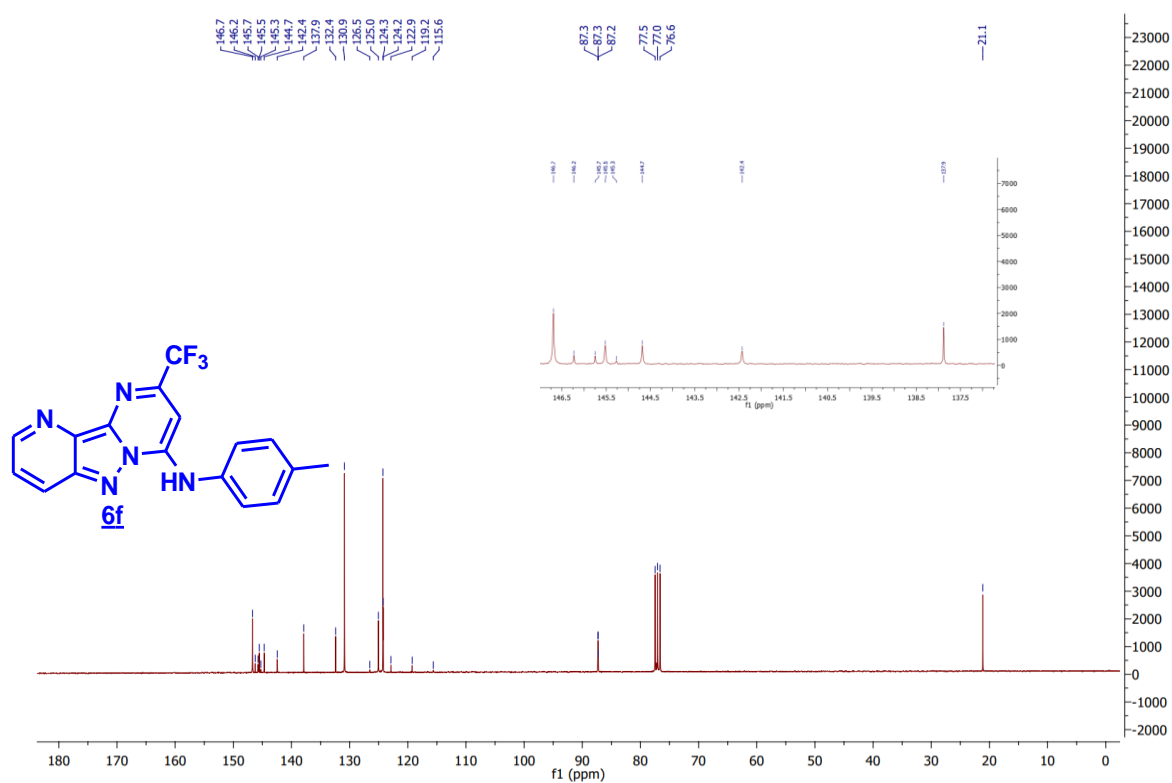
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

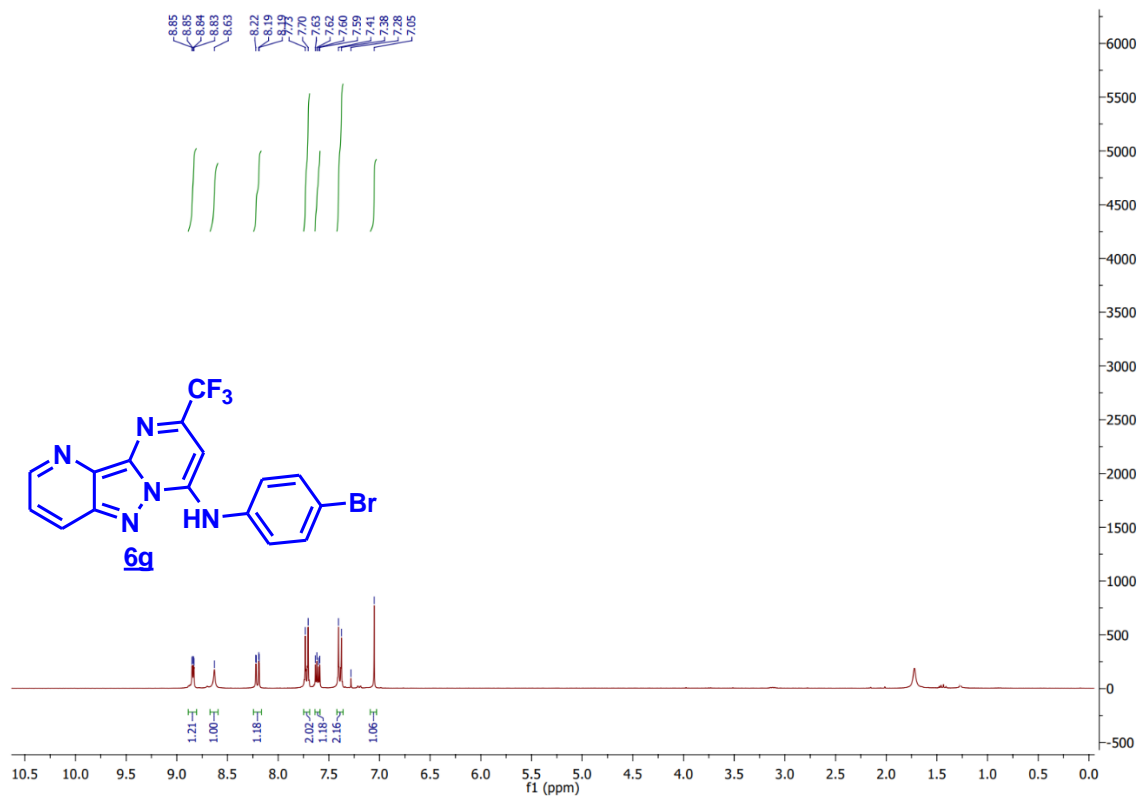


^{13}C NMR (75 MHz, CDCl_3)

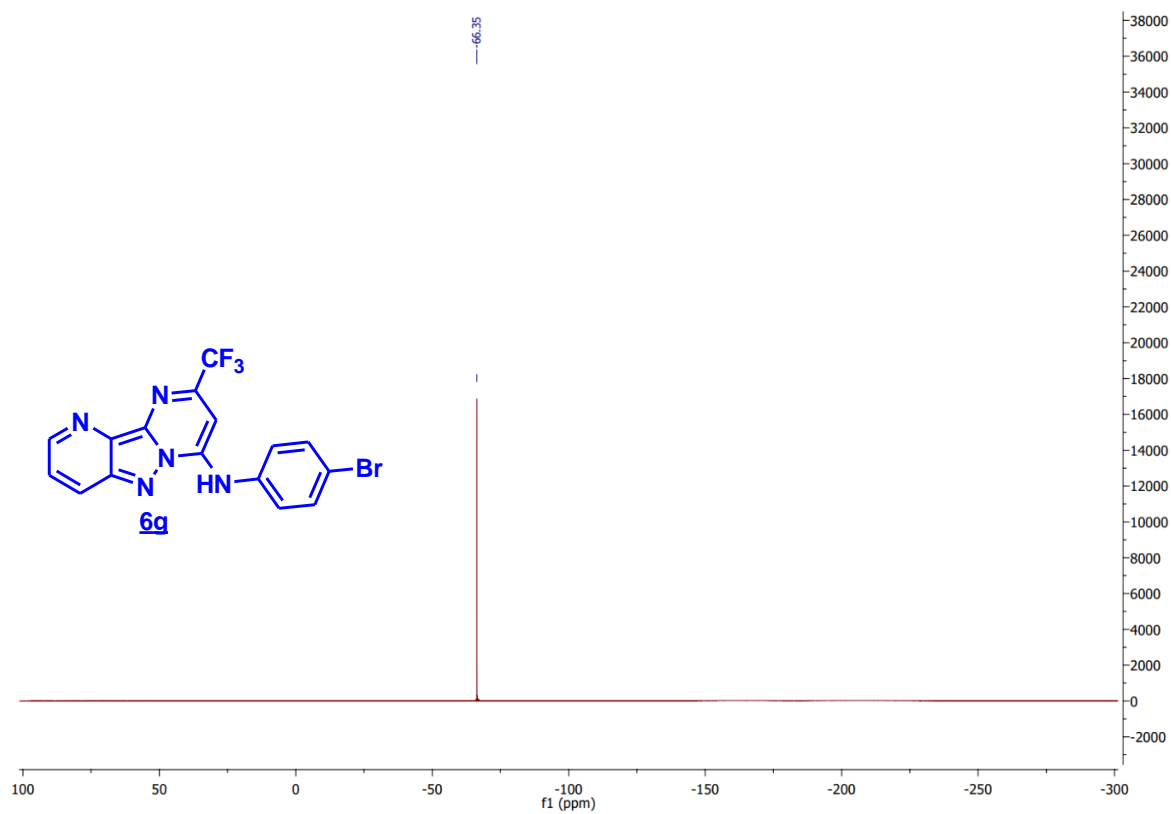


***N*-(4-bromophenyl)-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidin-7-amine (6g)**

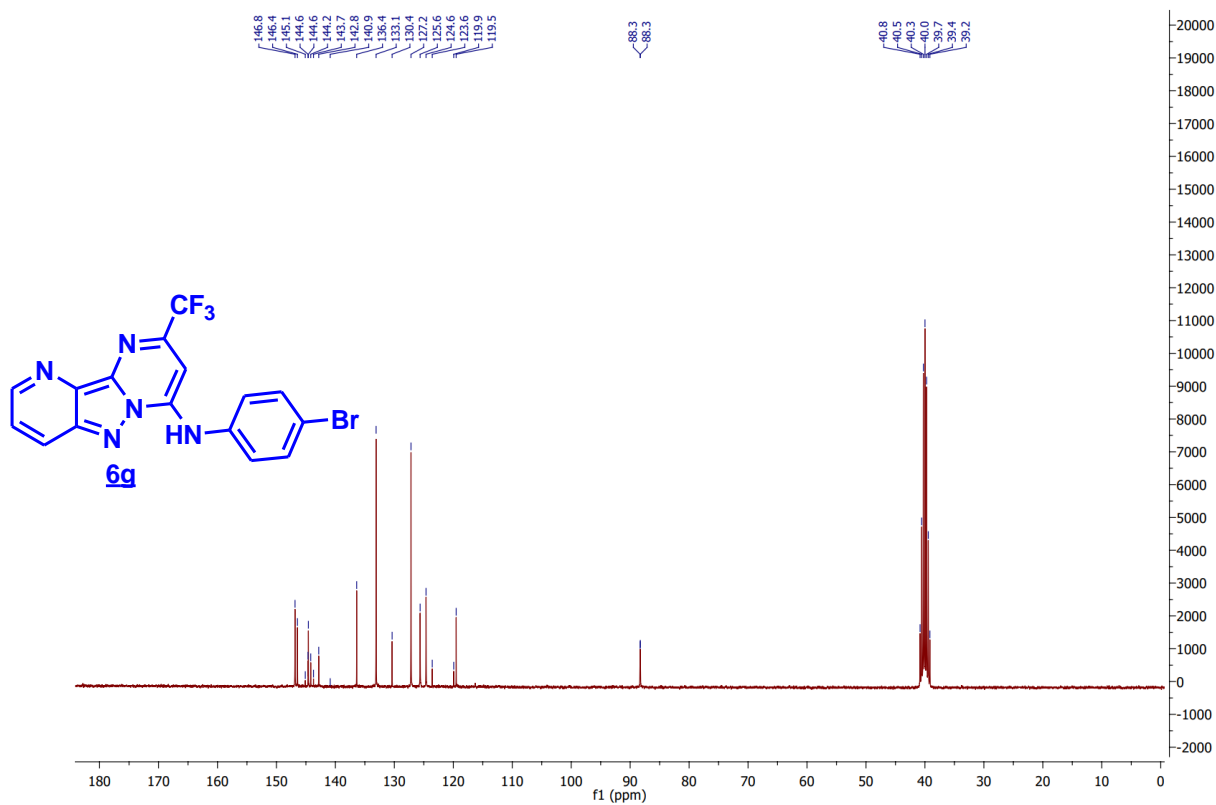
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

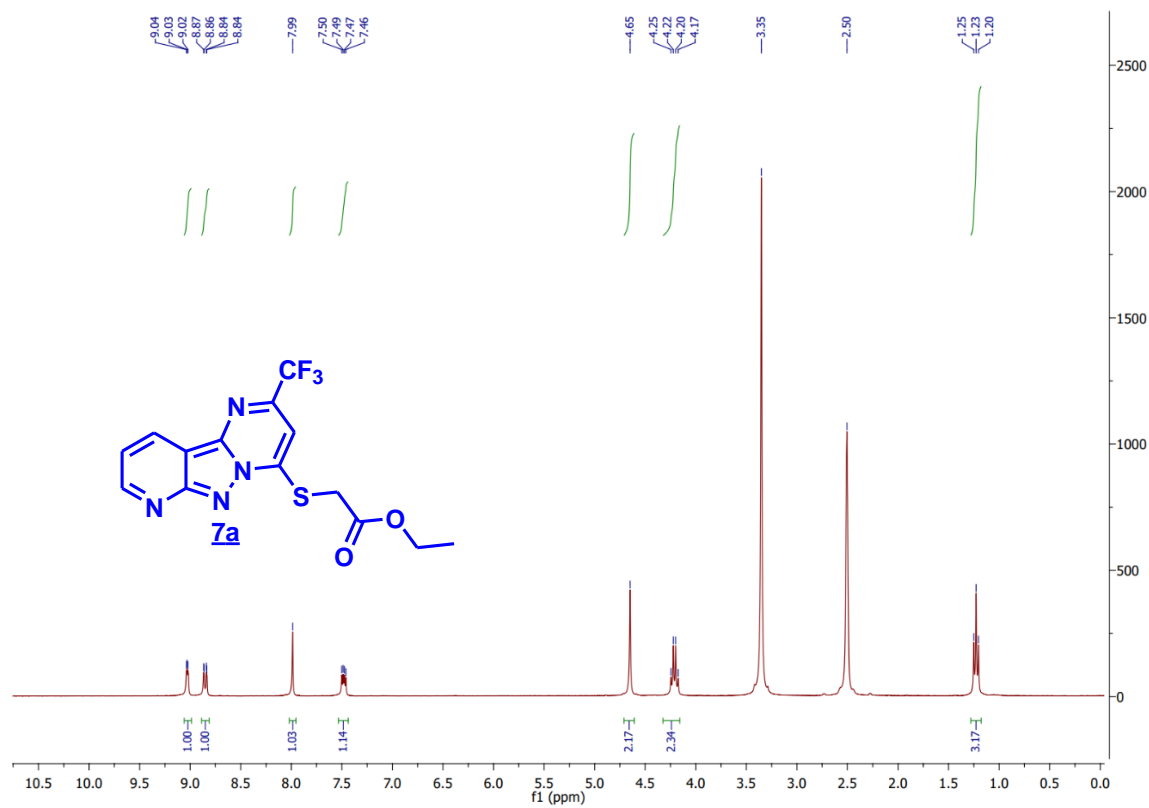


^{13}C NMR (75 MHz, DMSO-d_6)

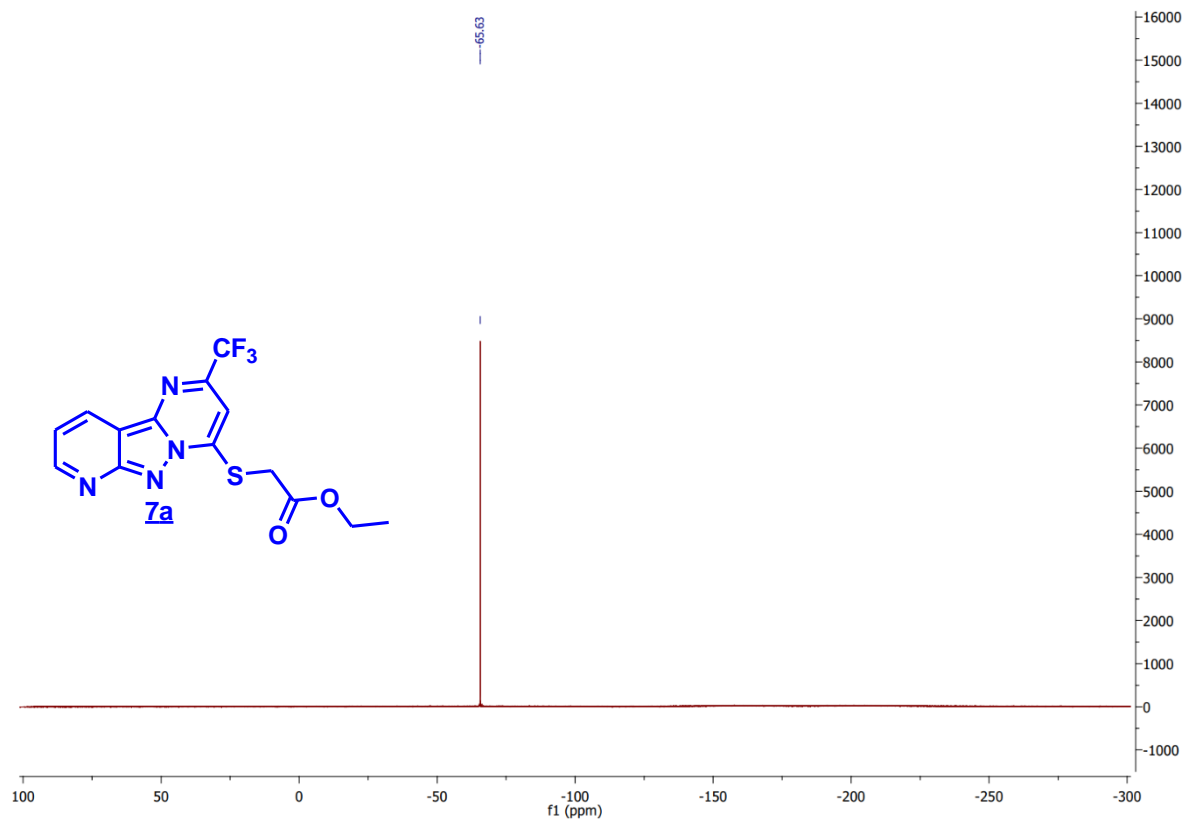


Ethyl-{{2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidin-4-yl}sulfanyl}acetate (7a)

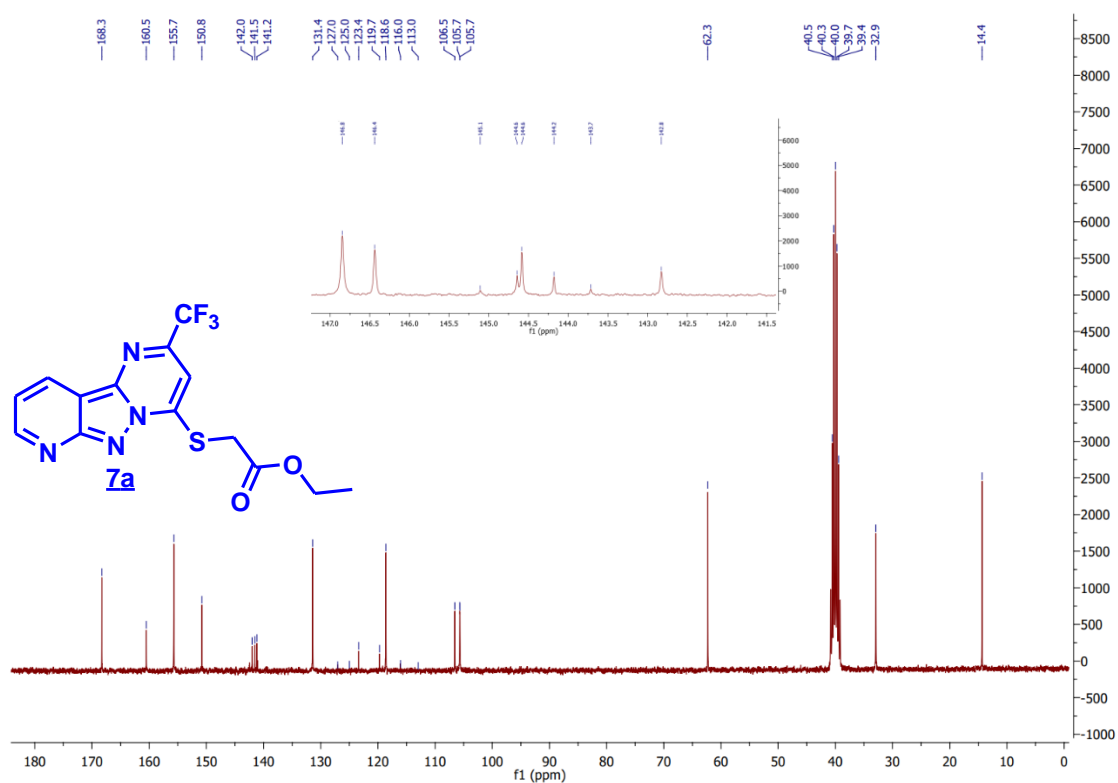
¹H NMR (300 MHz, DMSO-*d*₆)



¹⁹F NMR (282 MHz, DMSO-*d*₆)

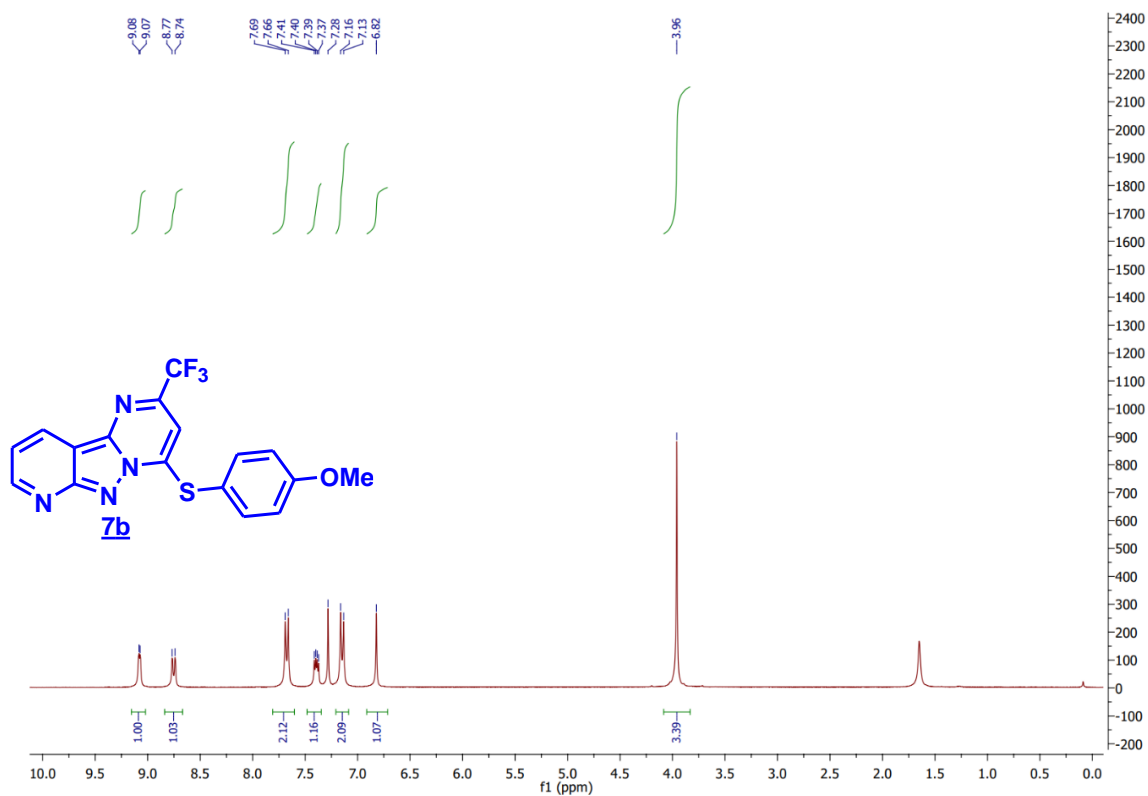


^{13}C NMR (75 MHz, DMSO- d_6)

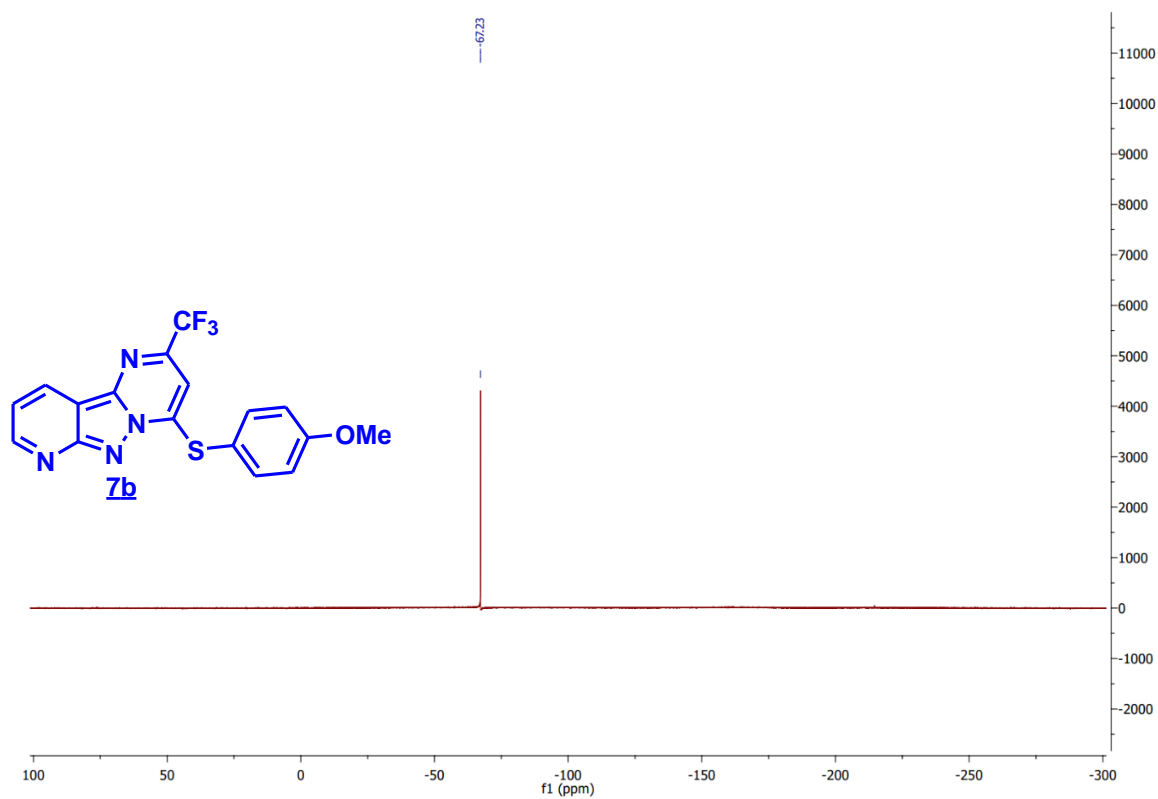


4-[(4-methoxyphenyl)sulfanyl]-2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (**7b**)

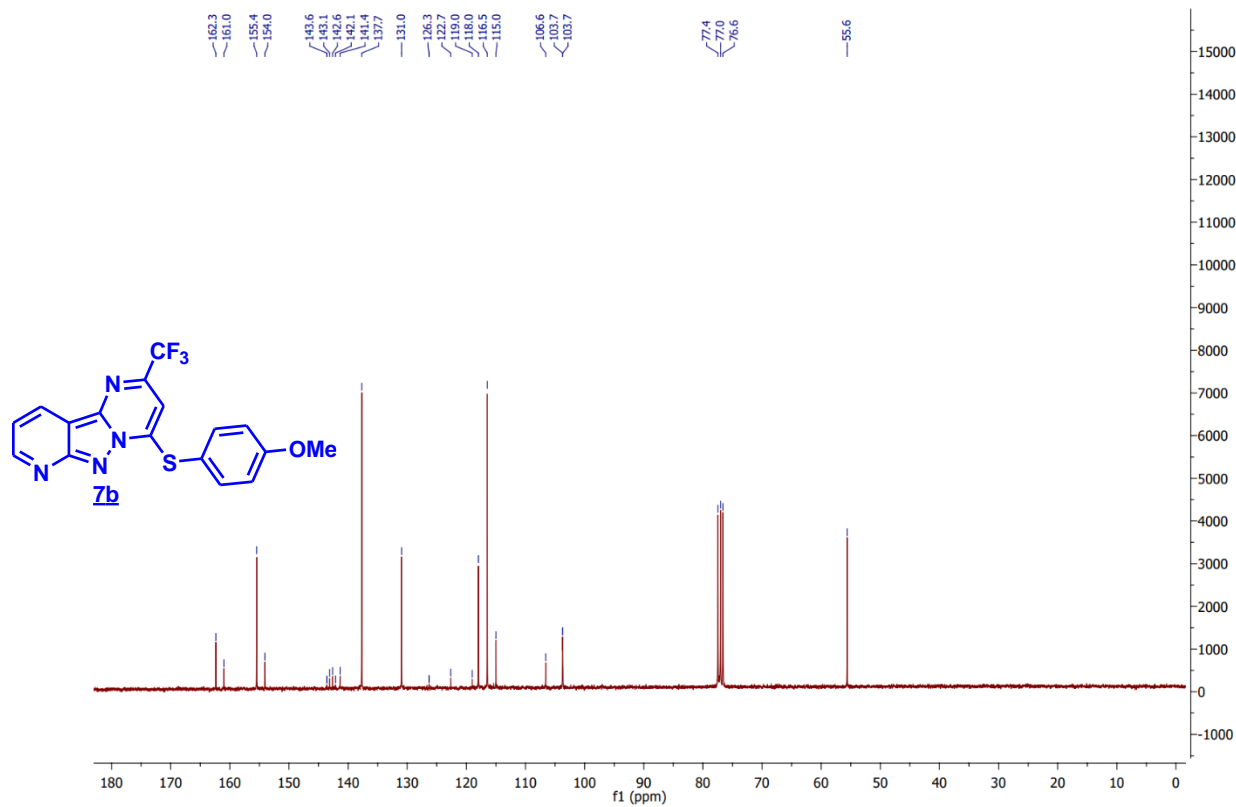
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

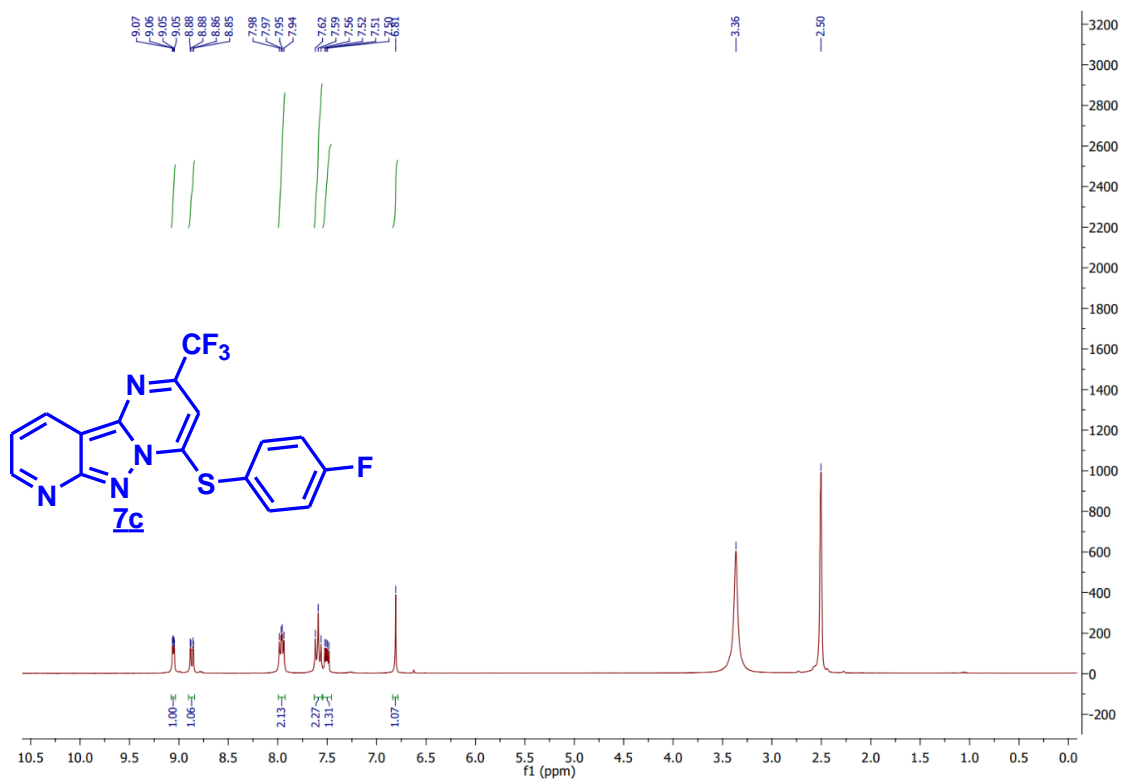


^{13}C NMR (75 MHz, CDCl_3)

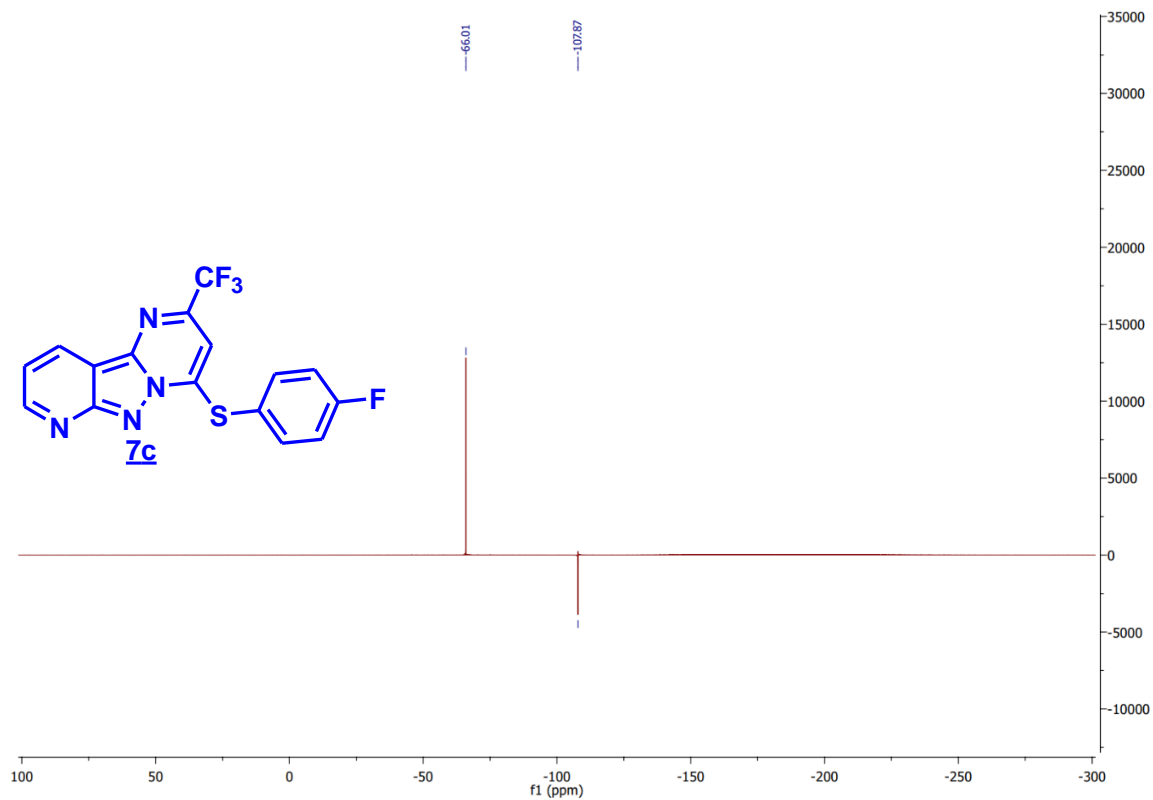


4-[(4-fluorophenyl)sulfanyl]-2-(trifluoromethyl)pyrido[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (7c)

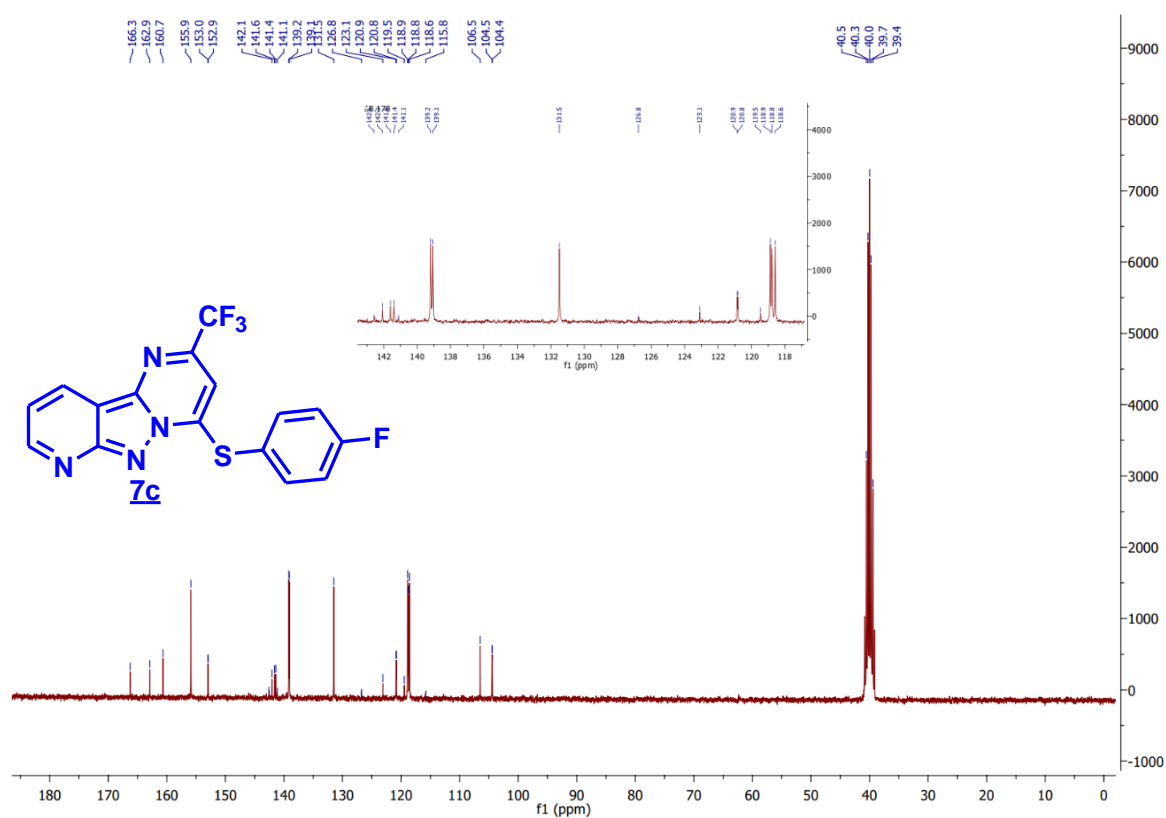
¹H NMR (300 MHz, DMSO-d₆)



¹⁹F NMR (282 MHz, DMSO-d₆)

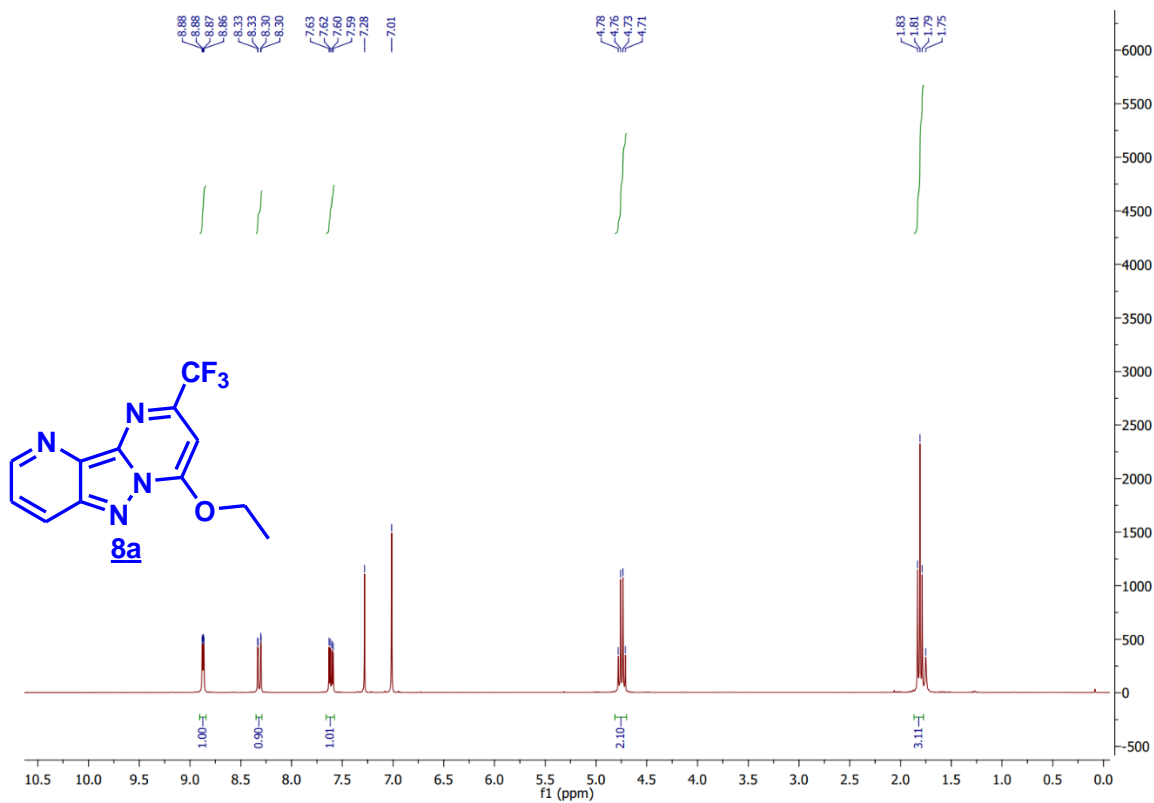


^{13}C NMR (75 MHz, DMSO- d_6)

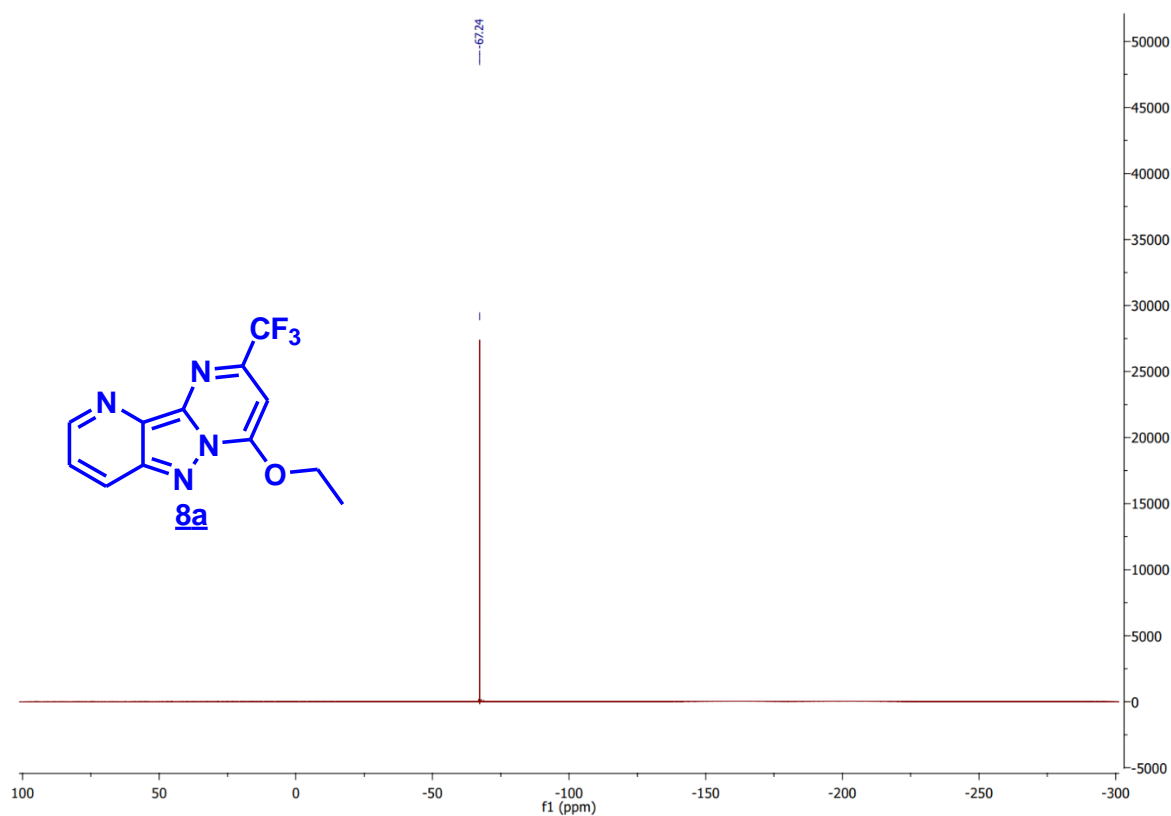


7-ethoxy-9-(trifluoromethyl)pyrido[3',2':3,4]pyrazolo[1,5-*a*]pyrimidine (**8a**)

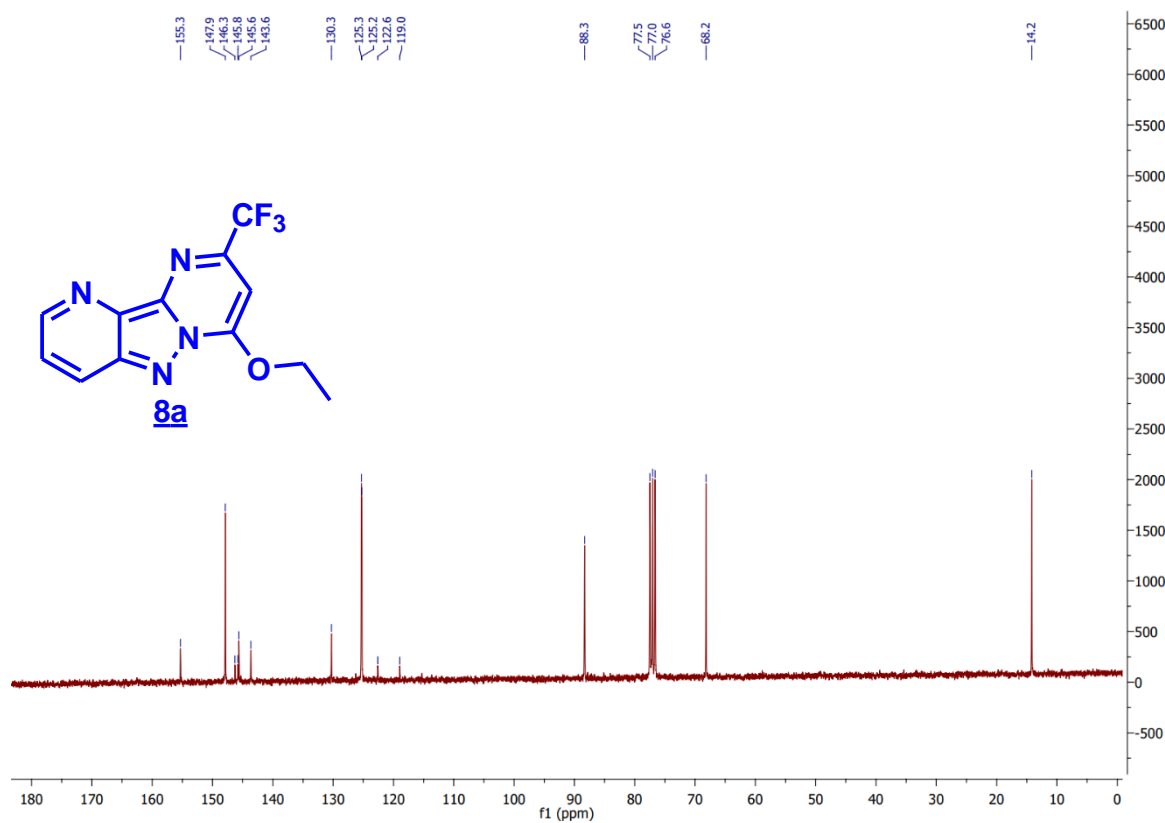
^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)

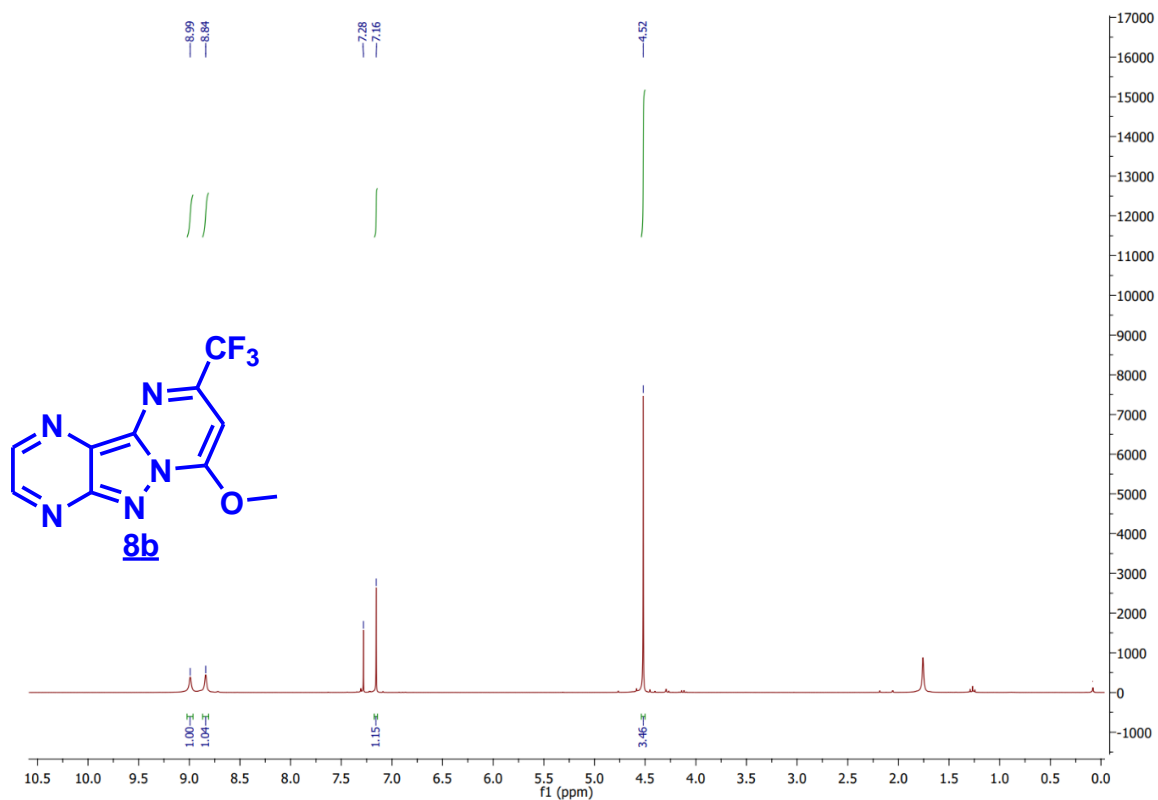


^{13}C NMR (75 MHz, CDCl_3)

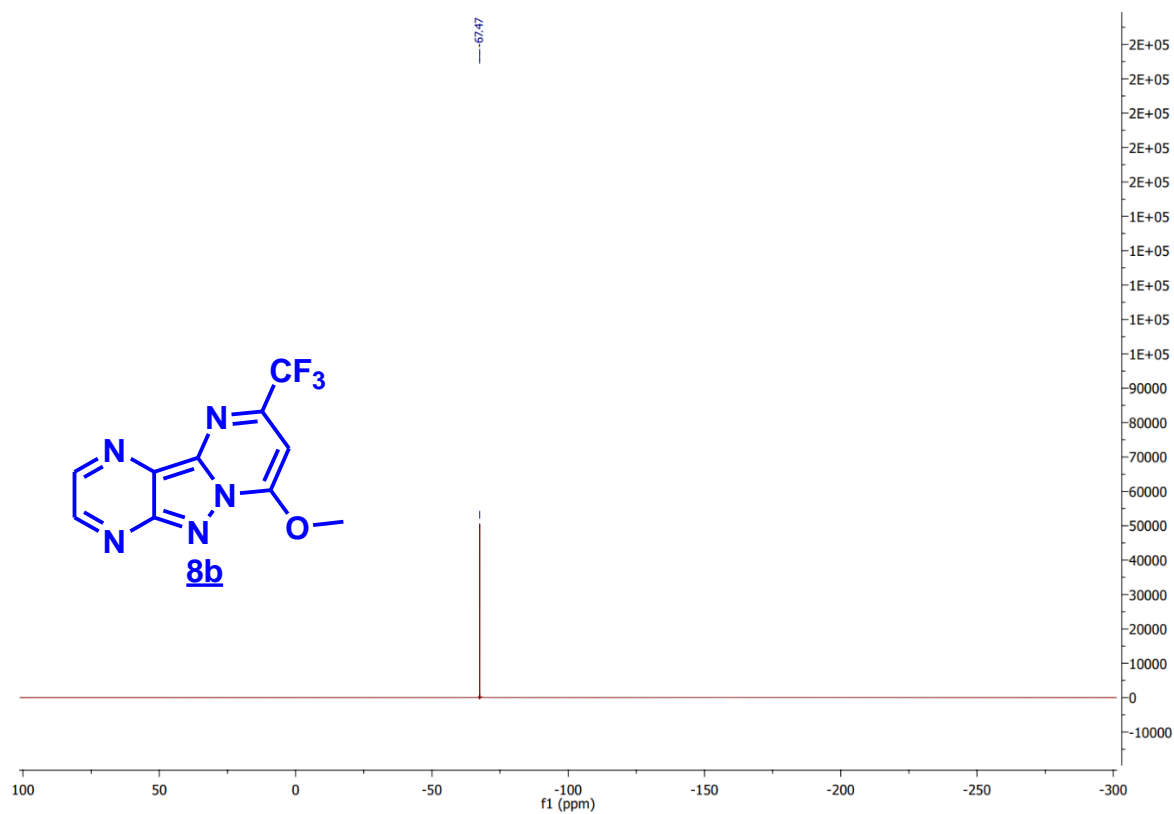


7-methoxy-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-*a*]pyrimidine (8b)

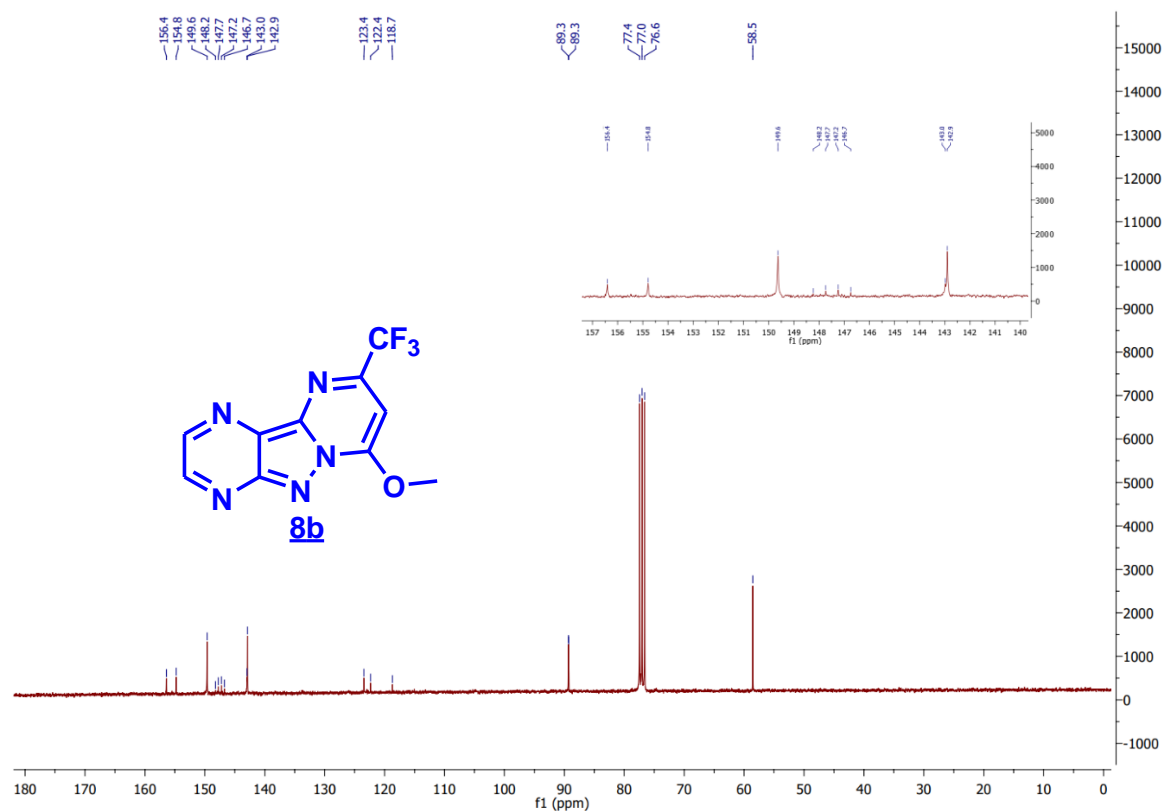
¹H NMR (300 MHz, CDCl₃)



¹⁹F NMR (282 MHz, CDCl₃)

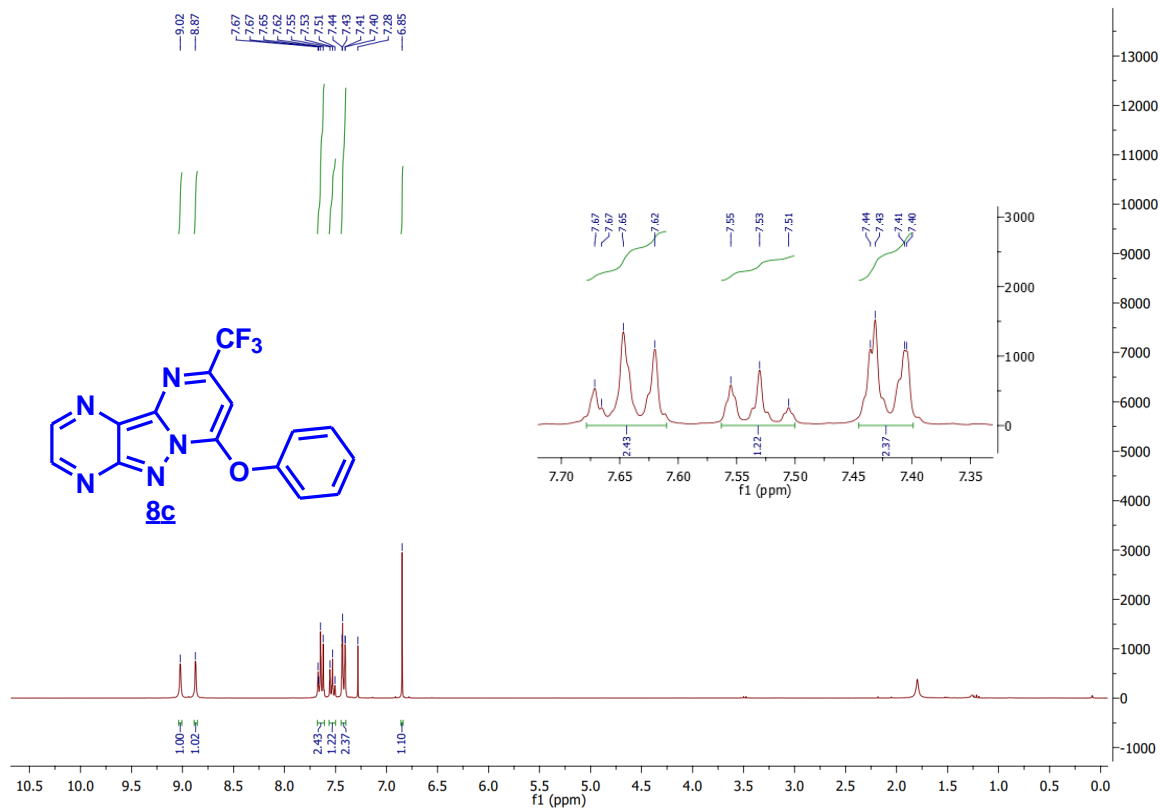


^{13}C NMR (75 MHz, CDCl_3)

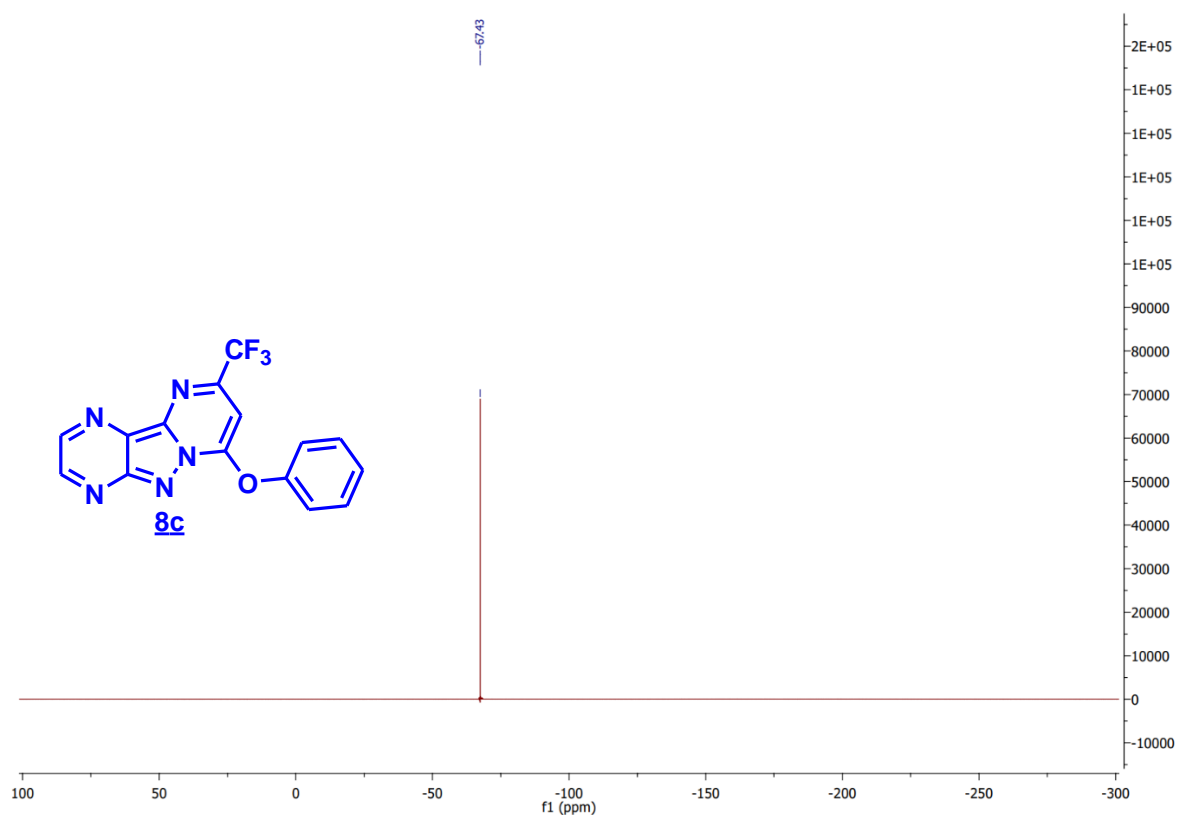


7-phenoxy-9-(trifluoromethyl)pyrazino[2',3':3,4]pyrazolo[1,5-a]pyrimidine (8c)

^1H NMR (300 MHz, CDCl_3)



^{19}F NMR (282 MHz, CDCl_3)



^{13}C NMR (75 MHz, CDCl_3)

