

Supporting Information

Fe-Cu catalysed synthesis of symmetrical and unsymmetrical diaryl thioethers using 1,3-benzoxazole-2-thiol as sulfur surrogate

Z. Tber,^{a,b} M.-A. Hiebel,^a A. El Hakmaoui,^b M. Akssira,^b G. Guillaumet,^a and S. Berteina-Raboin^{a*}

E-mail: sabine.berteina-raboin@univ-orleans.fr

Table of contents

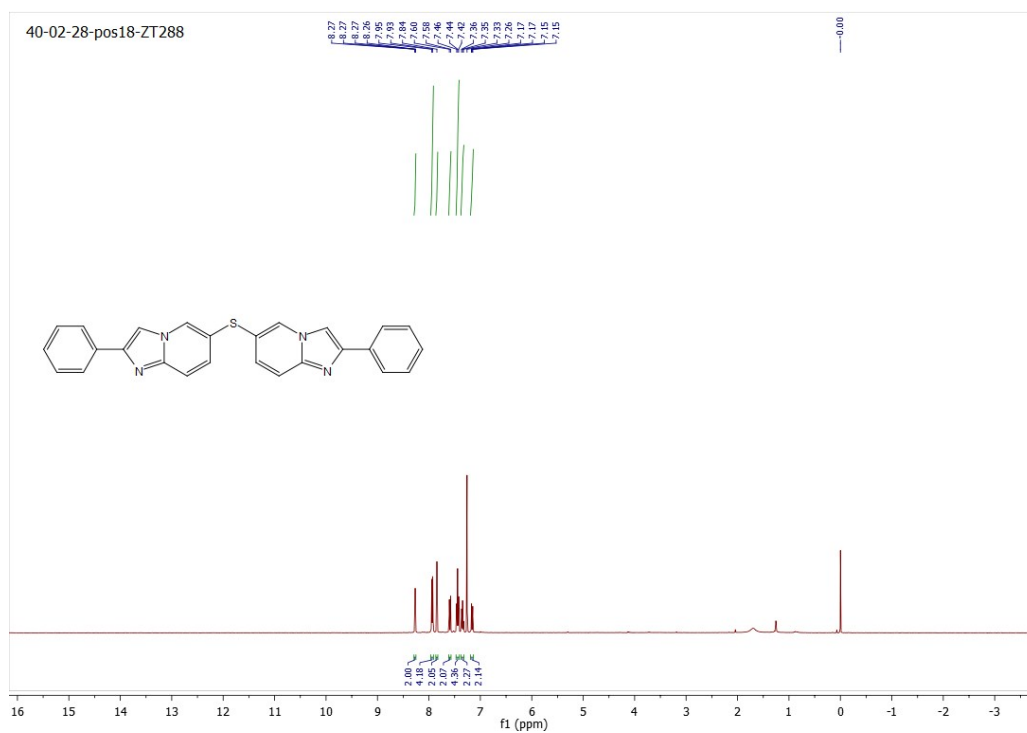
¹H and ¹³C NMR spectrum

p.2

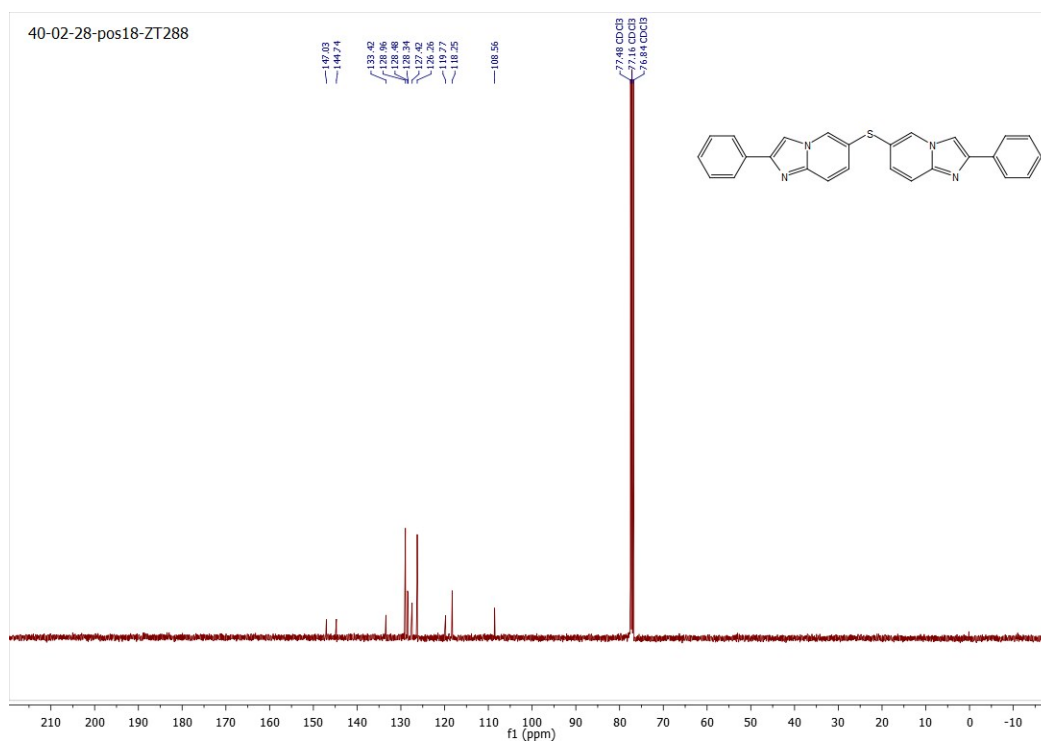


2-phenyl-6-(2-phenylimidazo[1,2-a]pyridin-6-yl)sulfanylimidazo[1,2-a]pyridine (4a)

^1H NMR (400.13 MHz, CDCl_3)

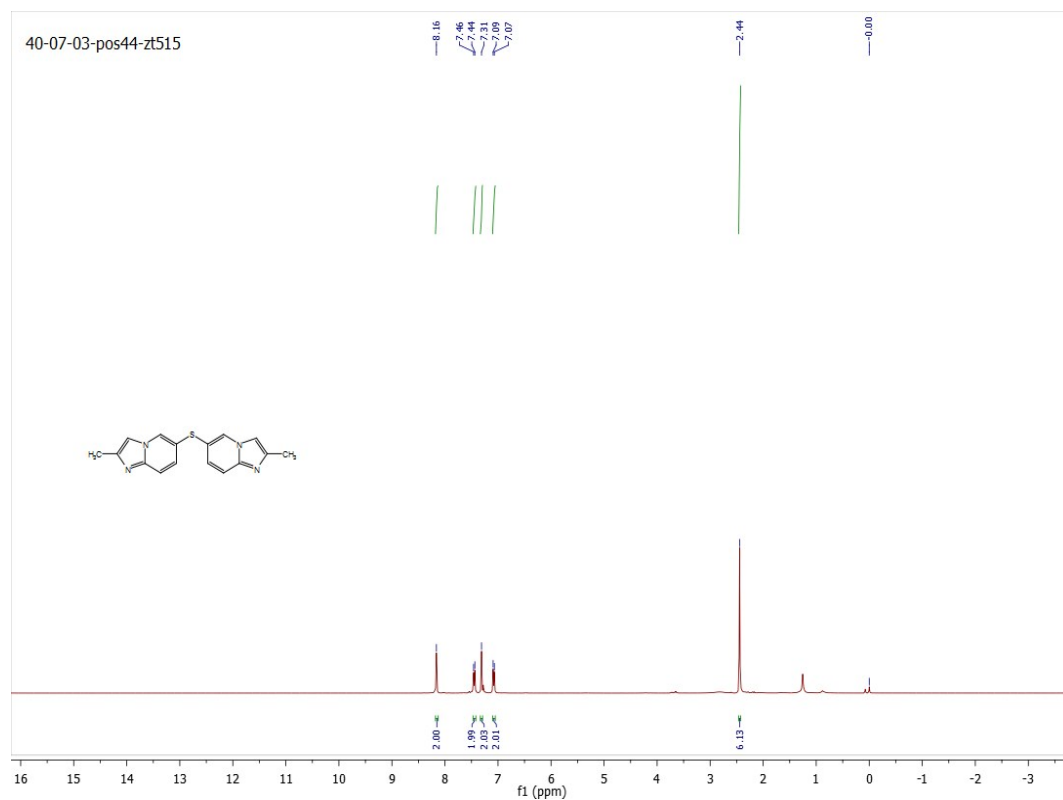


^{13}C NMR (101 MHz, CDCl_3)

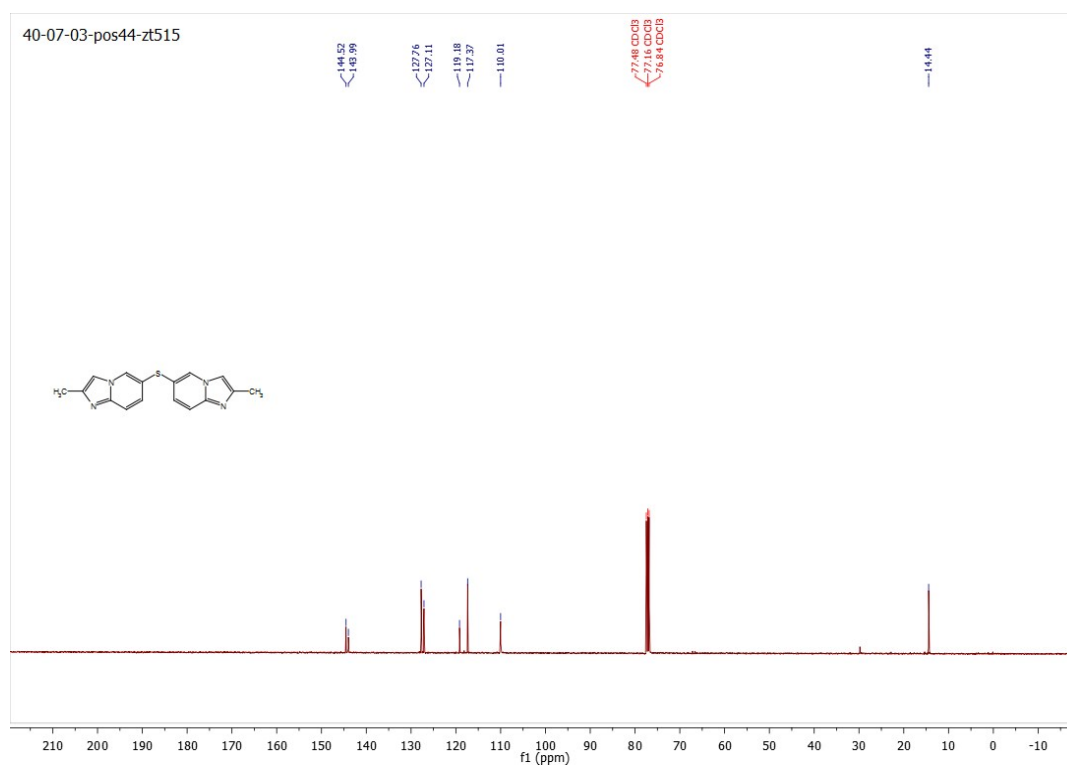


2-methyl-6-(2-methylimidazo[1,2-a]pyridin-6-yl)sulfanyl-imidazo[1,2-a]pyridine (4b)

^1H NMR (400.13 MHz, CDCl_3)

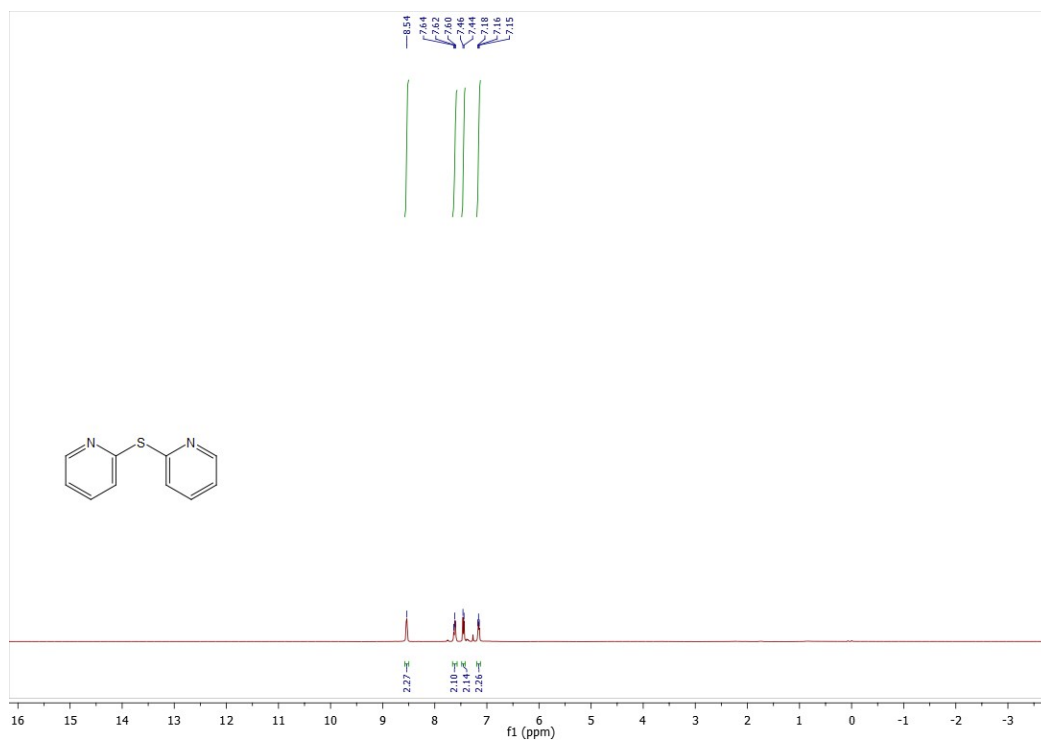


^{13}C NMR (101 MHz, CDCl_3)

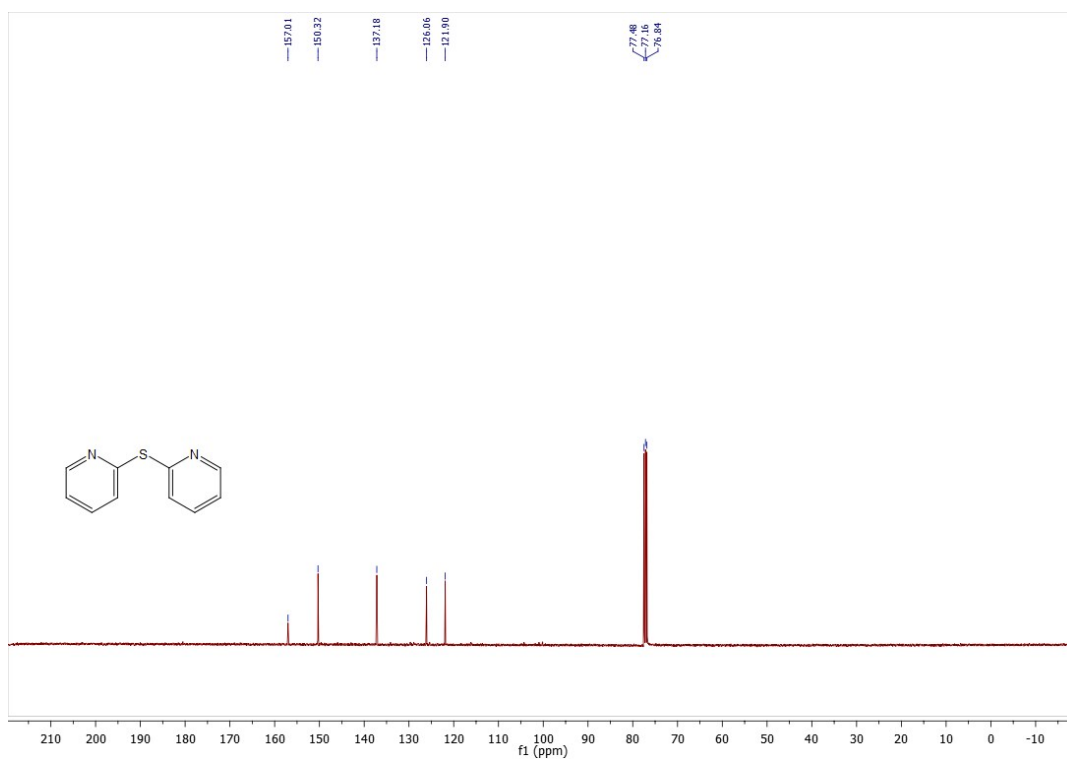


2-(pyridine-2-ylsulfanyl)pyridine (4d)

^1H NMR (400.13 MHz, CDCl_3)

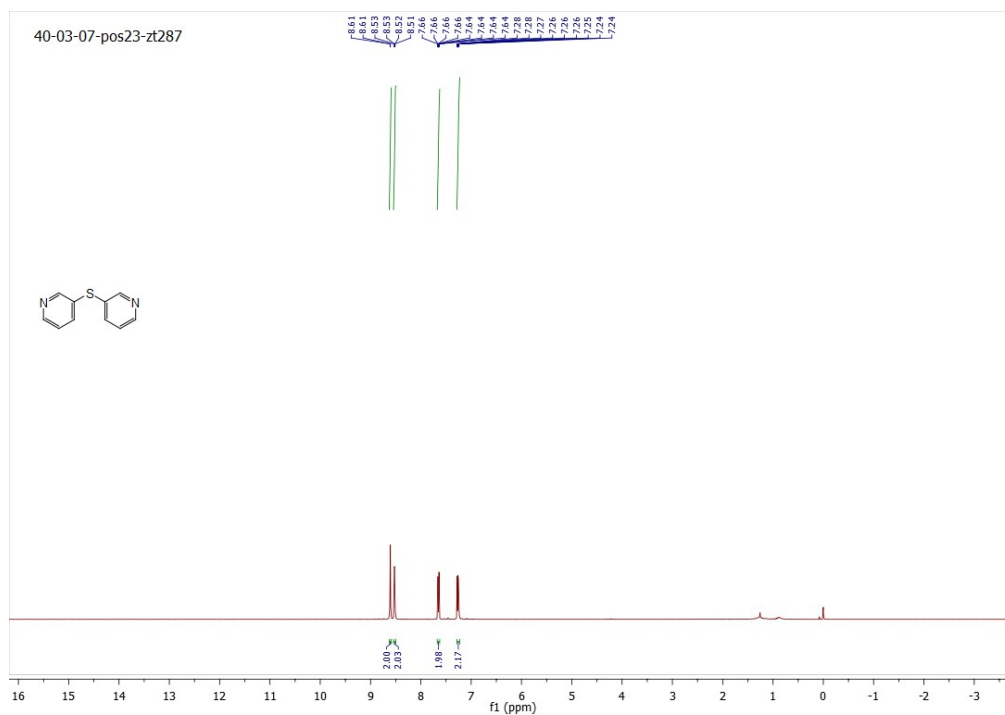


^{13}C NMR (101 MHz, CDCl_3)

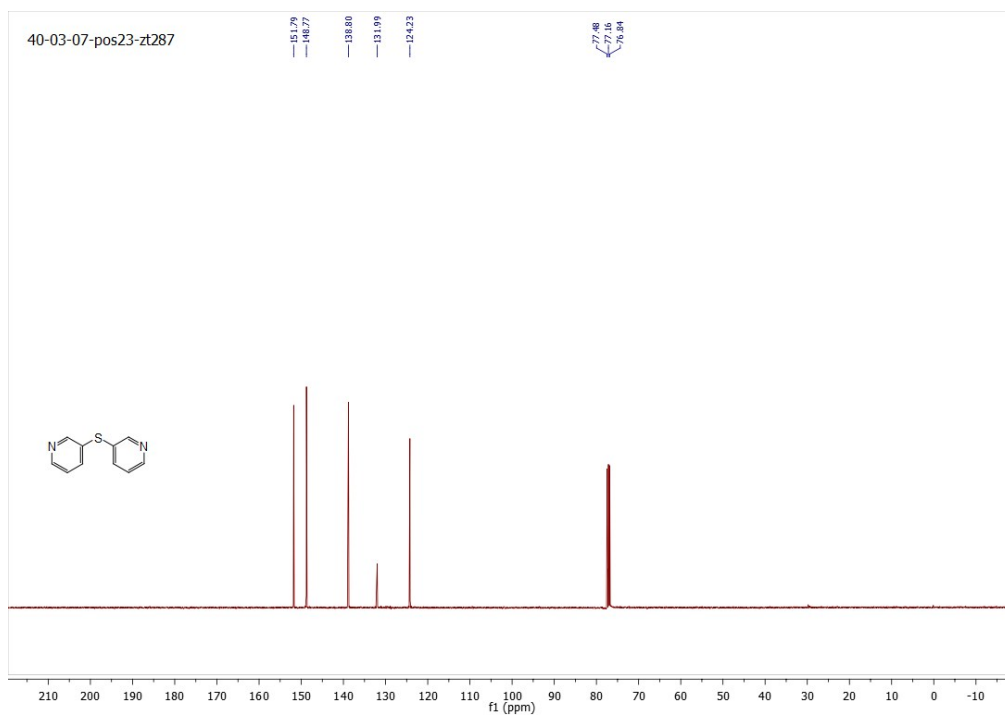


3-(pyridine-3-ylsulfanyl)pyridine (4e)

^1H NMR (400.13 MHz, CDCl_3)

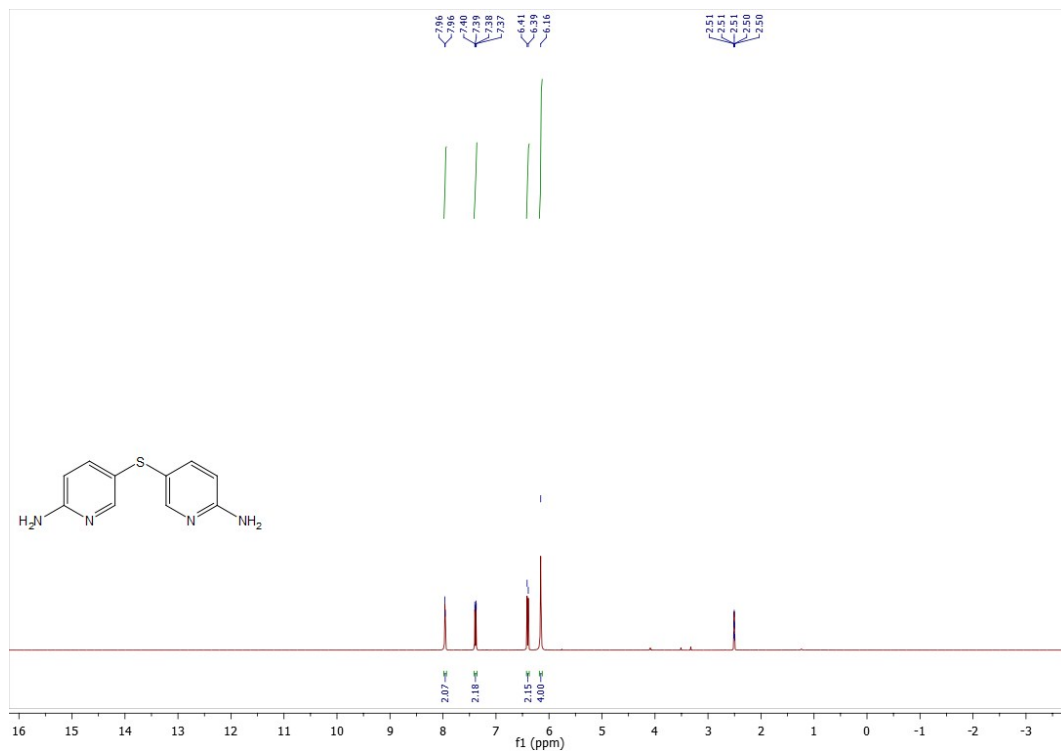


^{13}C NMR (101 MHz, CDCl_3)

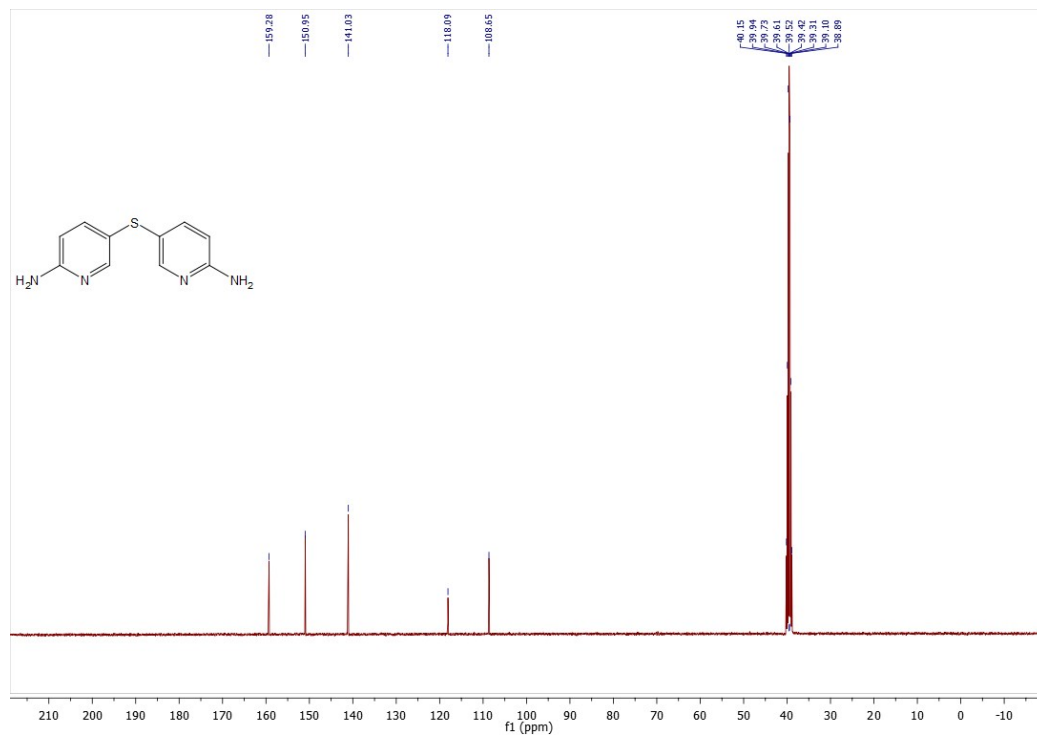


5-[(6-aminopyridin-3-yl)sulfanyl]pyridine-2-amine (4f)

^1H NMR (400.13 MHz, $\text{DMSO}-d_6$)

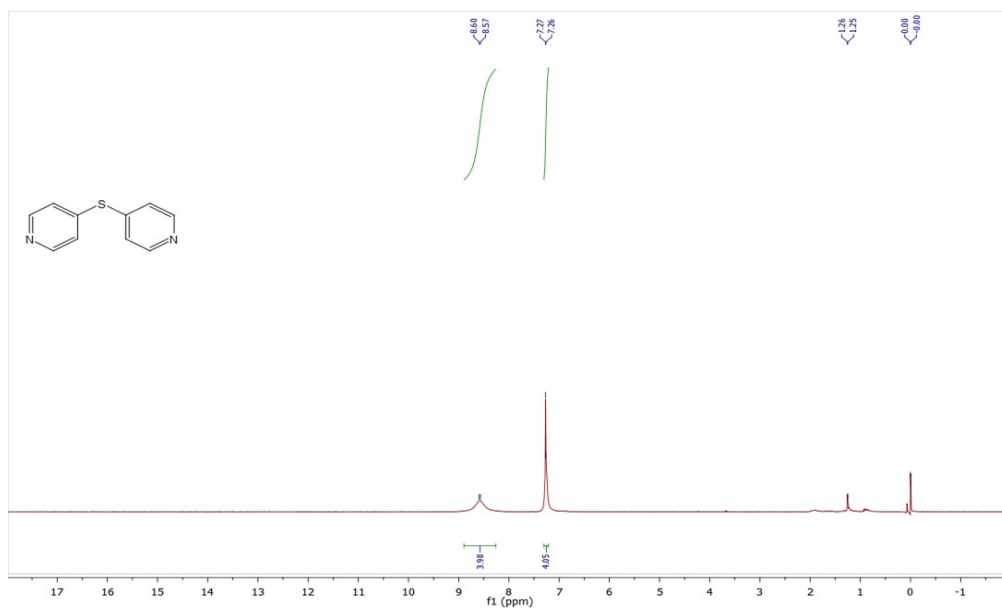


^{13}C NMR (101 MHz, $\text{DMSO}-d_6$)

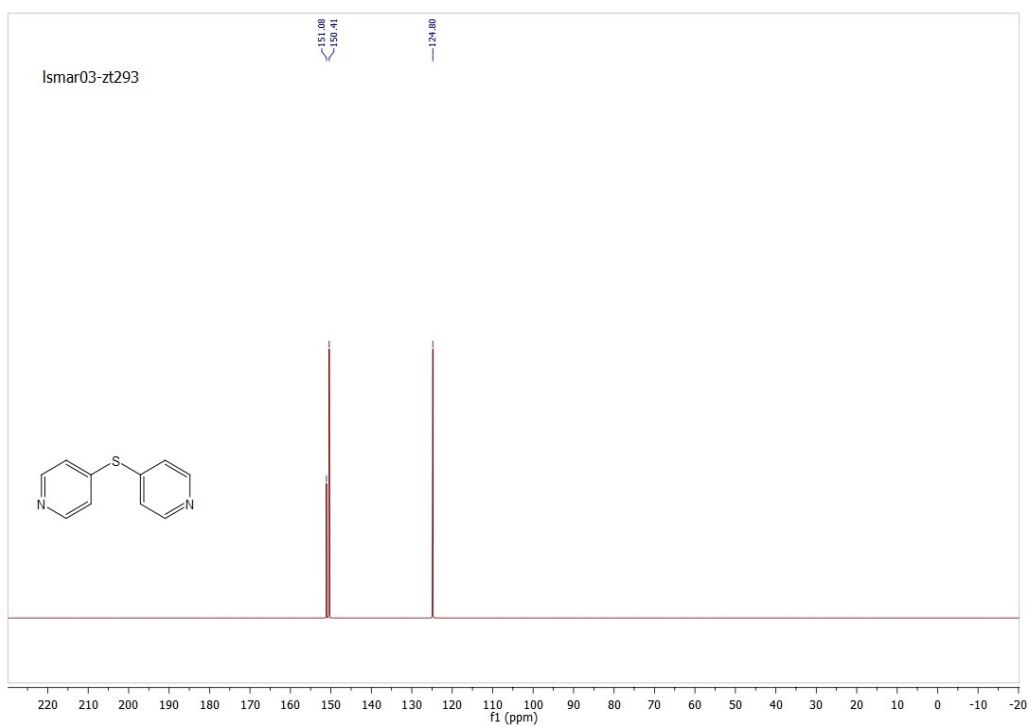


4-(pyridine-4-ylsulfanyl)pyridine (4g)

^1H NMR (250.13 MHz, CDCl_3)

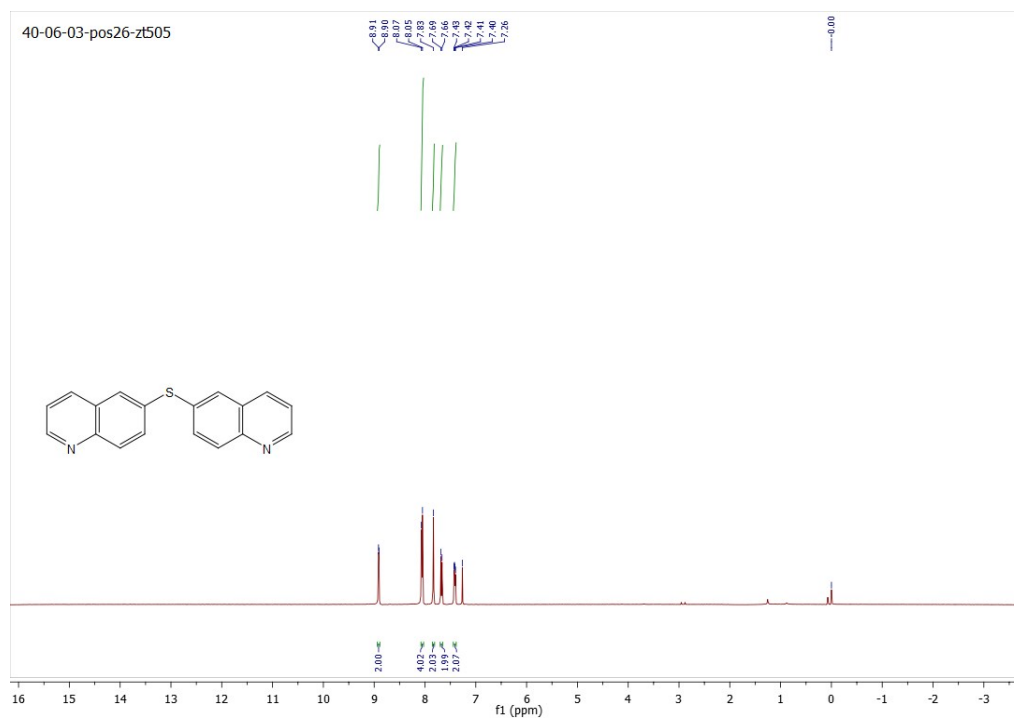


^{13}C NMR (62.9 MHz, CDCl_3)

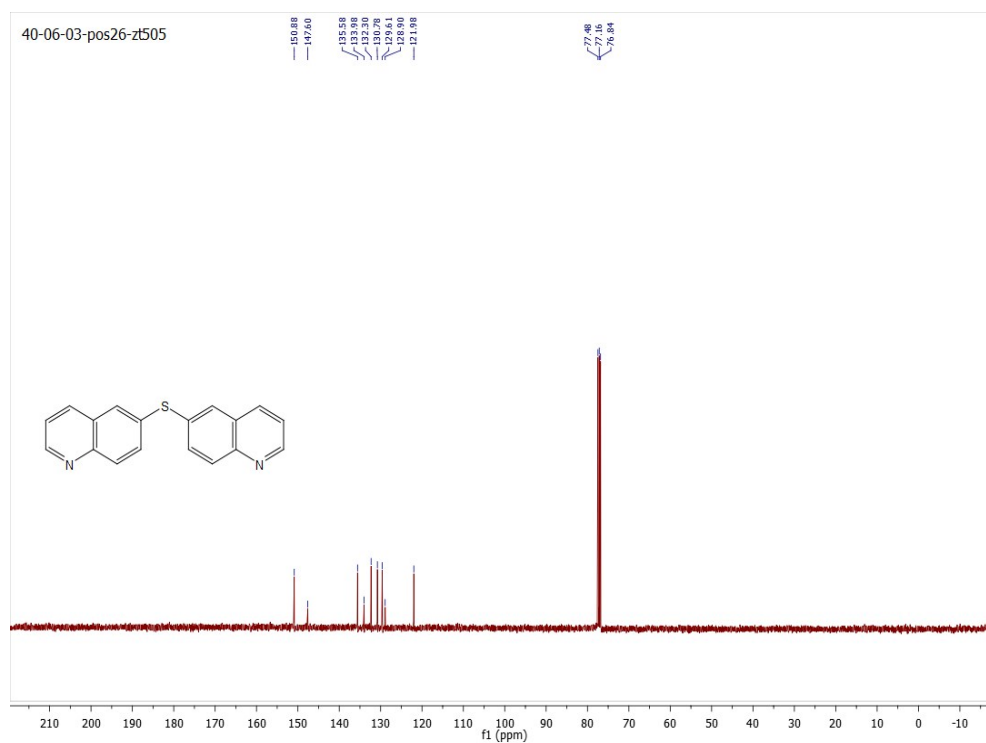


6-(quinolin-6-ylsulfany)quinoline (4h)

^1H NMR (400.13 MHz, CDCl_3)

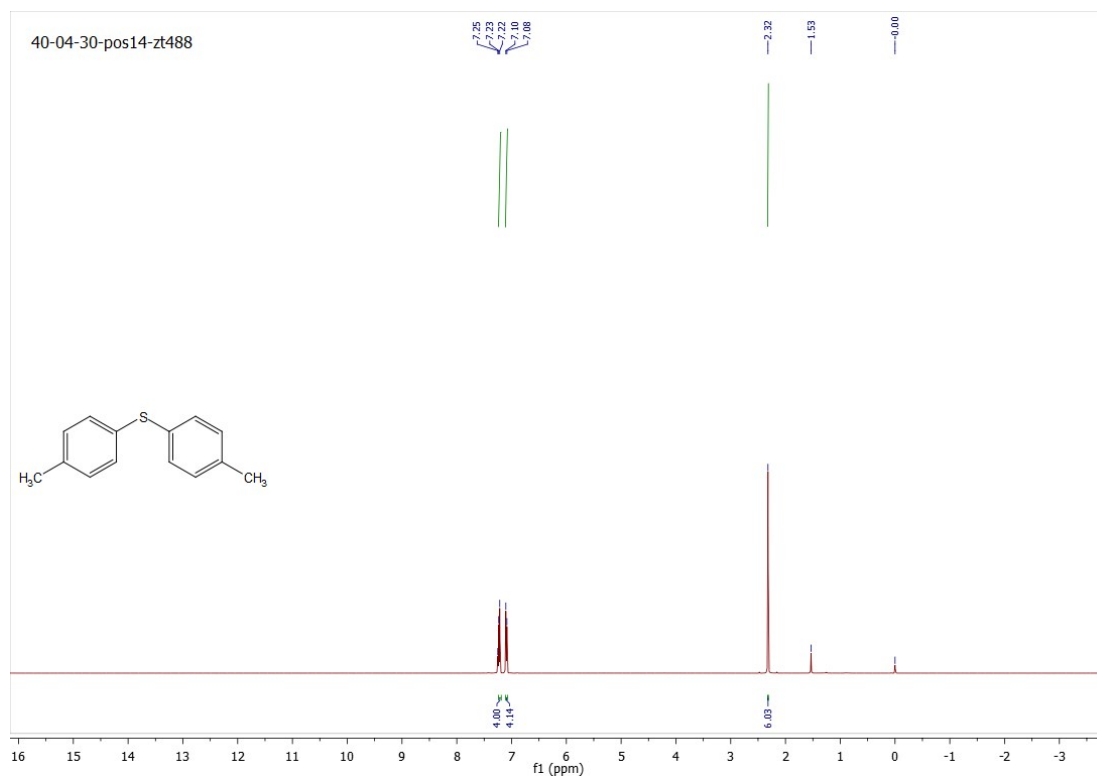


^{13}C NMR (101 MHz, CDCl_3)

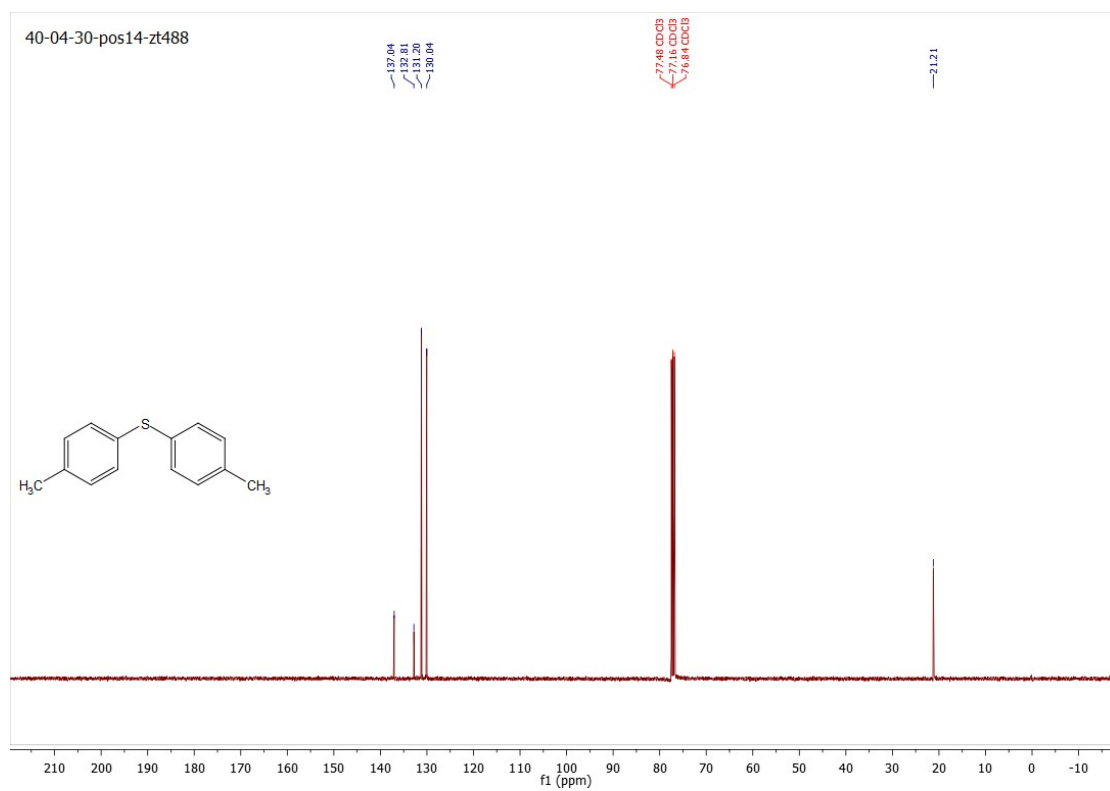


1-methyl-4-[(4-methylphenyl)sulfanyl]benzene (4k)

^1H NMR (400.13 MHz, CDCl_3)

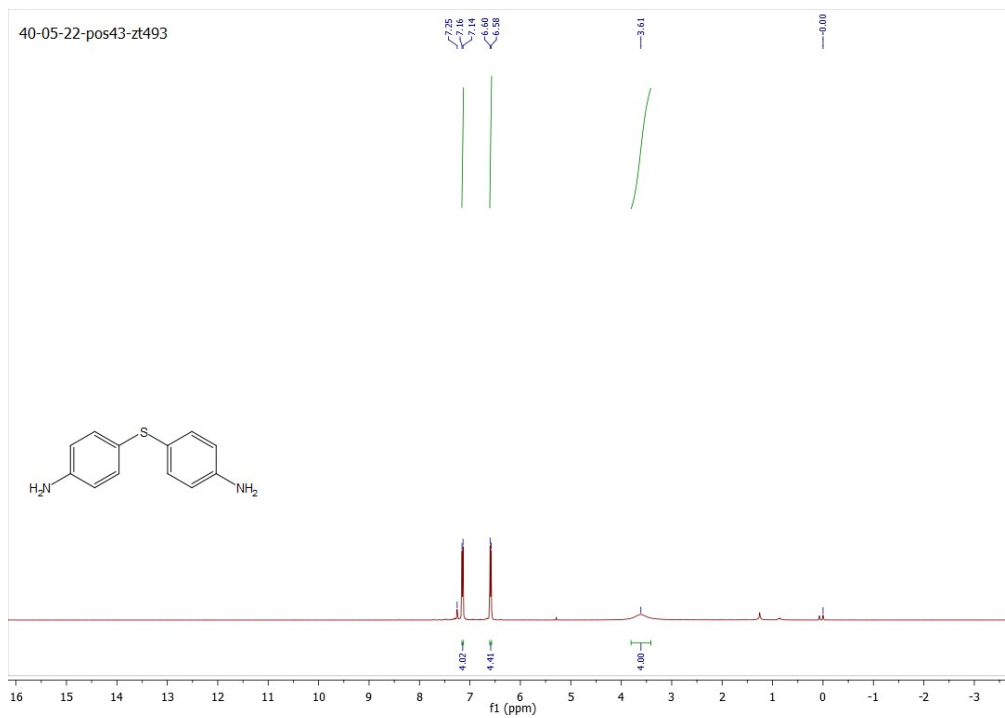


^{13}C NMR (101 MHz, CDCl_3)

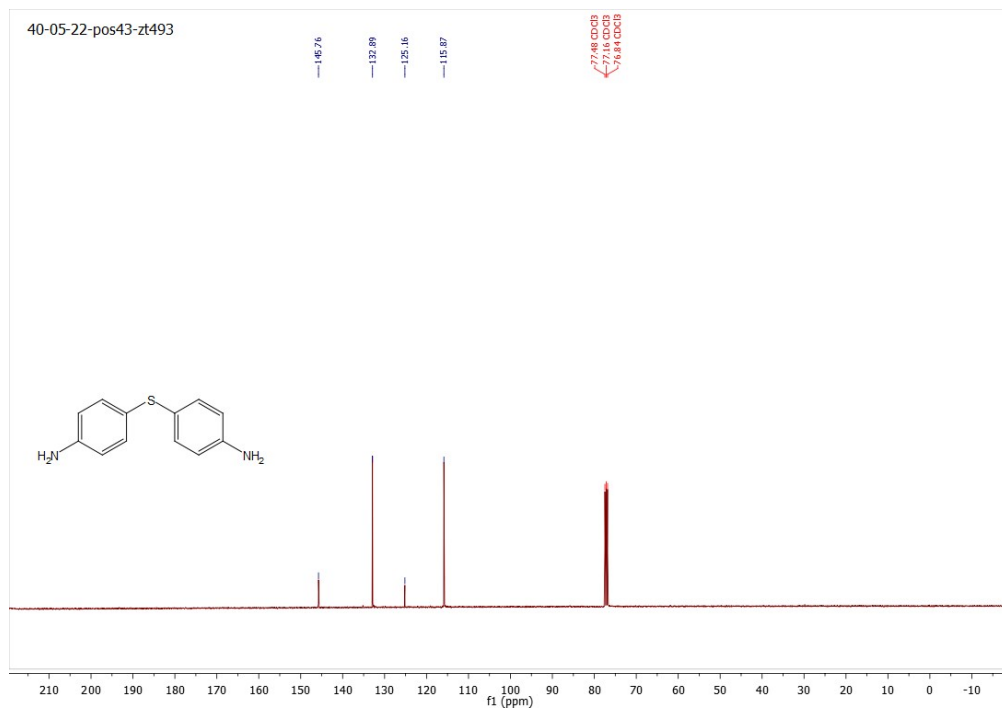


4[(4-aminophenyl)sulfanyl]aniline (4I)

^1H NMR (400.13 MHz, CDCl_3)

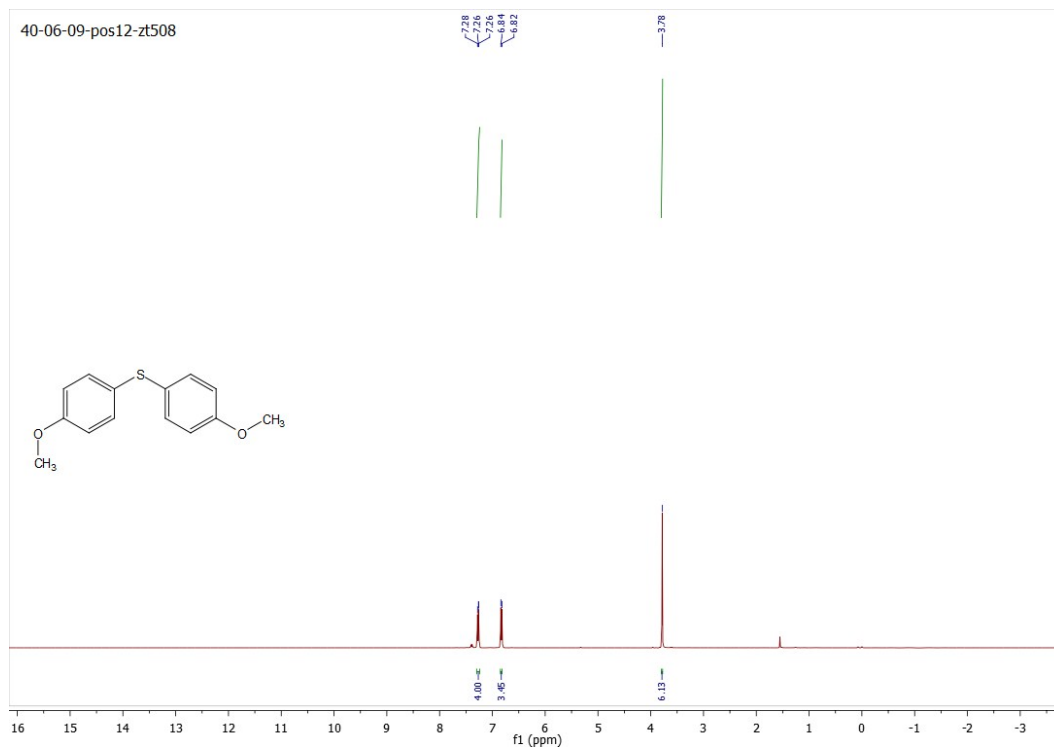


^{13}C NMR (101 MHz, CDCl_3)

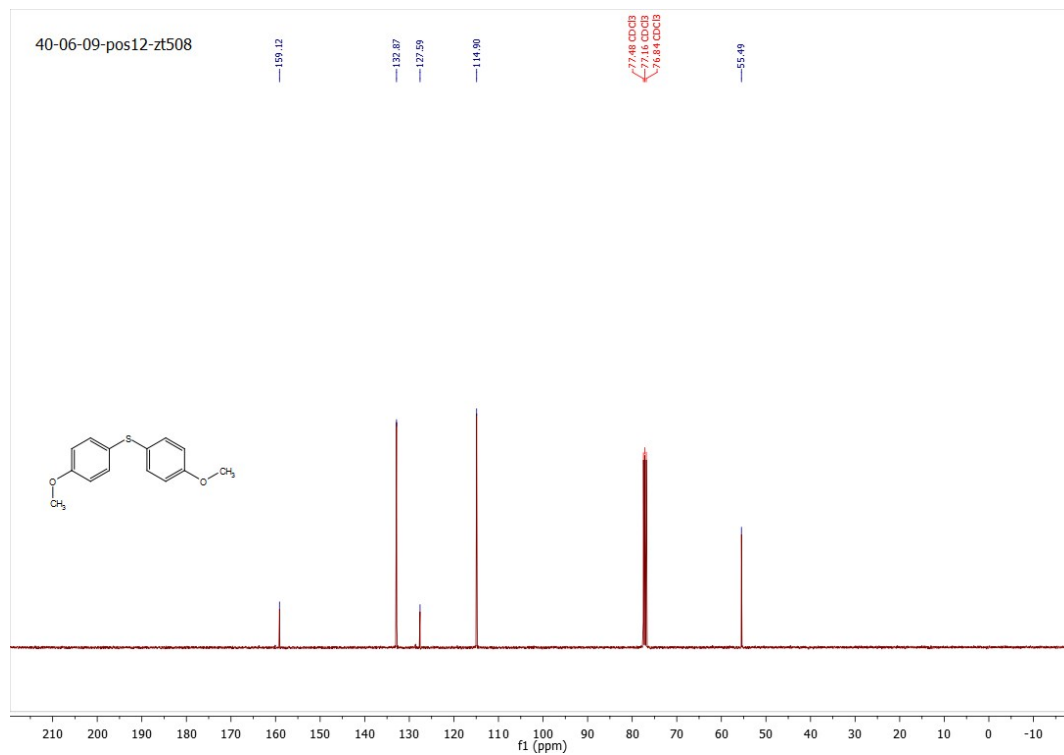


1-methoxy-4-[(4-methoxyphenyl)sulfanyl]benzene (4n)

^1H NMR (400.13 MHz, CDCl_3)

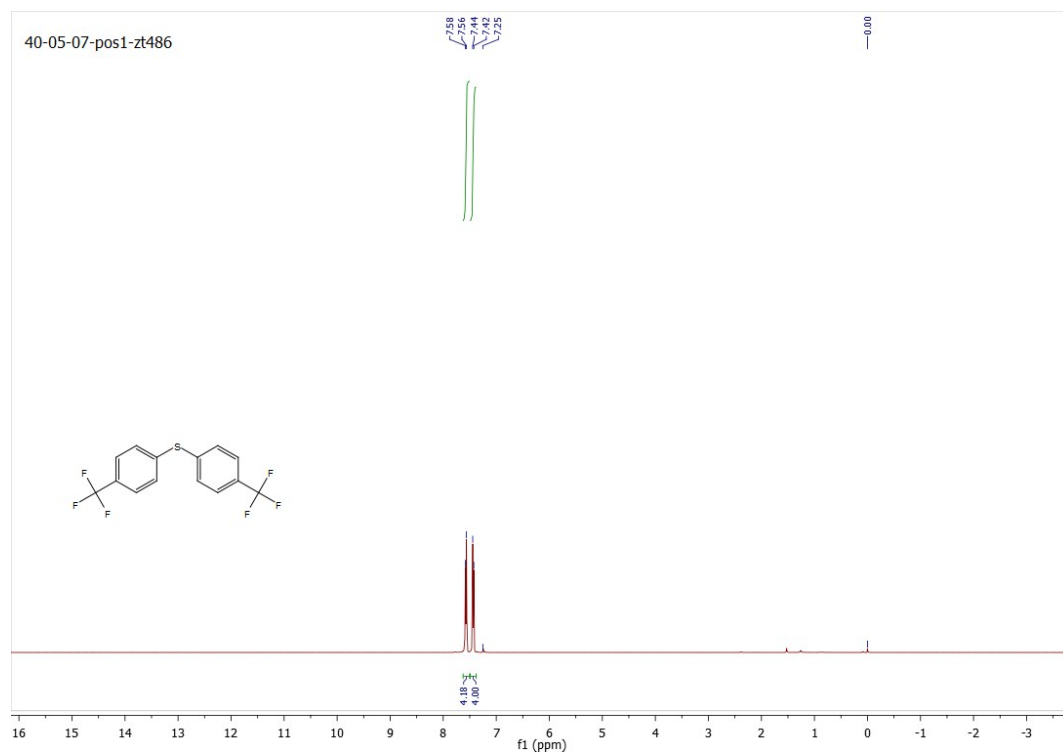


^{13}C NMR (101 MHz, CDCl_3)

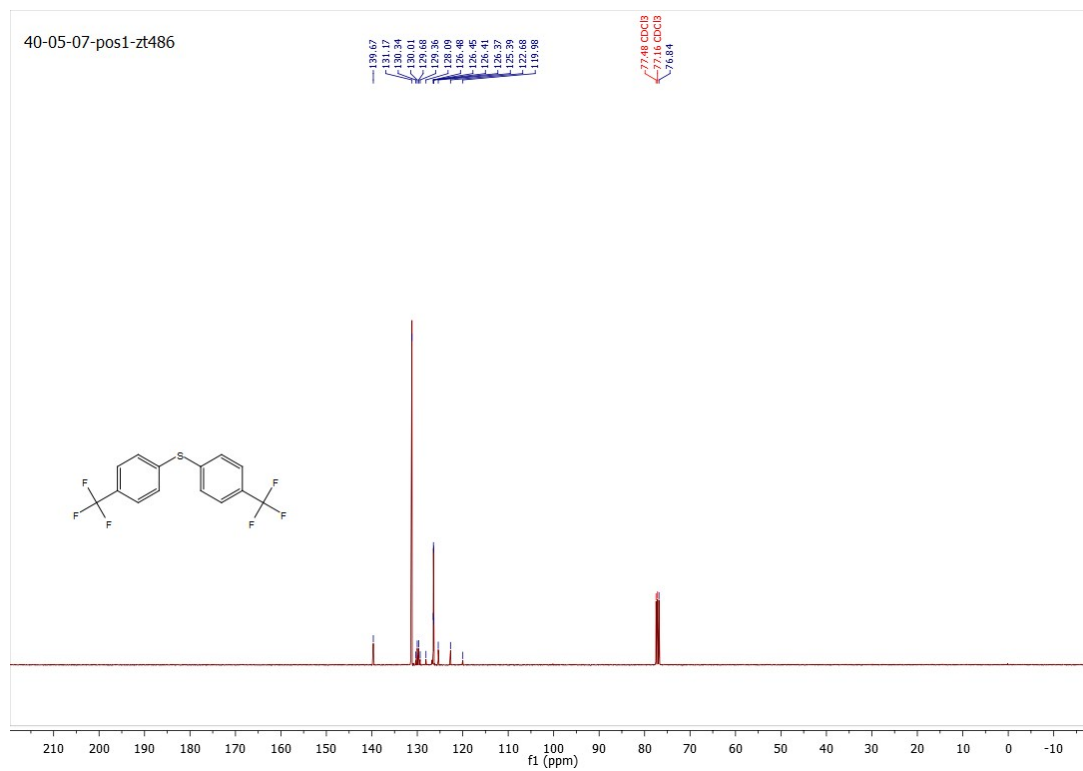


1-(trifluoromethyl)-4-{{4-(trifluoromethyl)phenyl}sulfanyl}benzene (4o)

^1H NMR (400.13 MHz, CDCl_3)



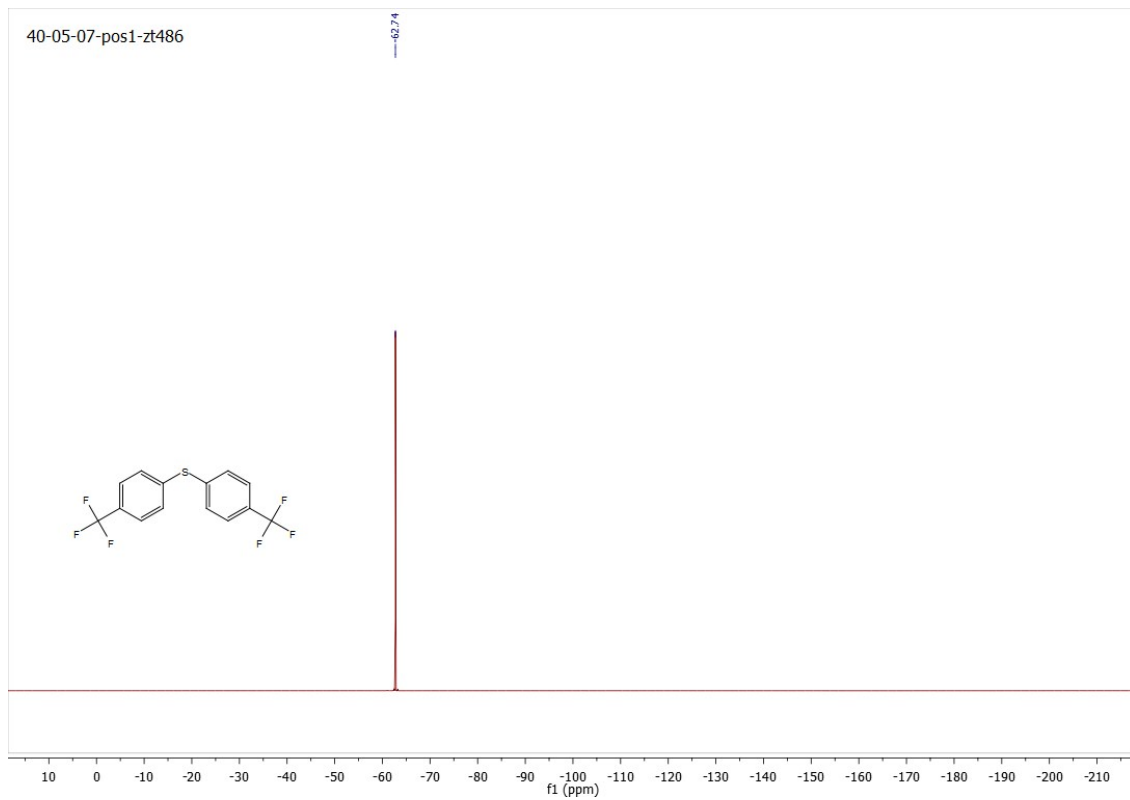
^{13}C NMR (101 MHz, CDCl_3)



^{19}F NMR (376 MHz, CDCl_3)

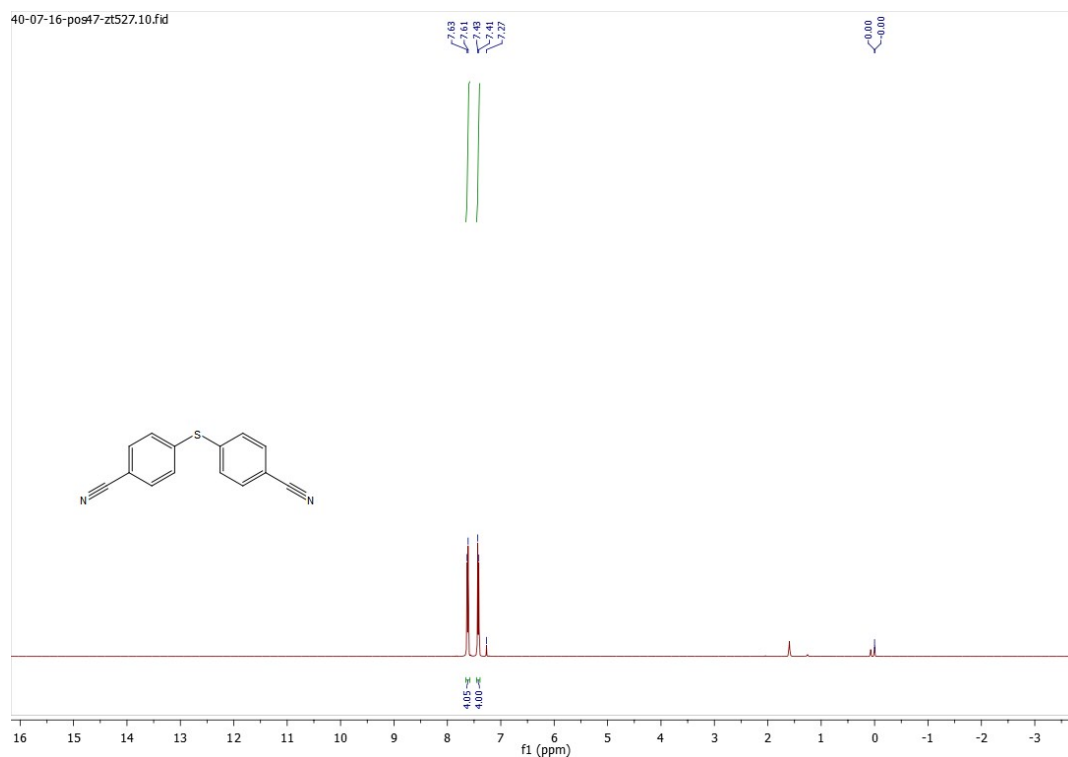


40-05-07-pos1-zt486

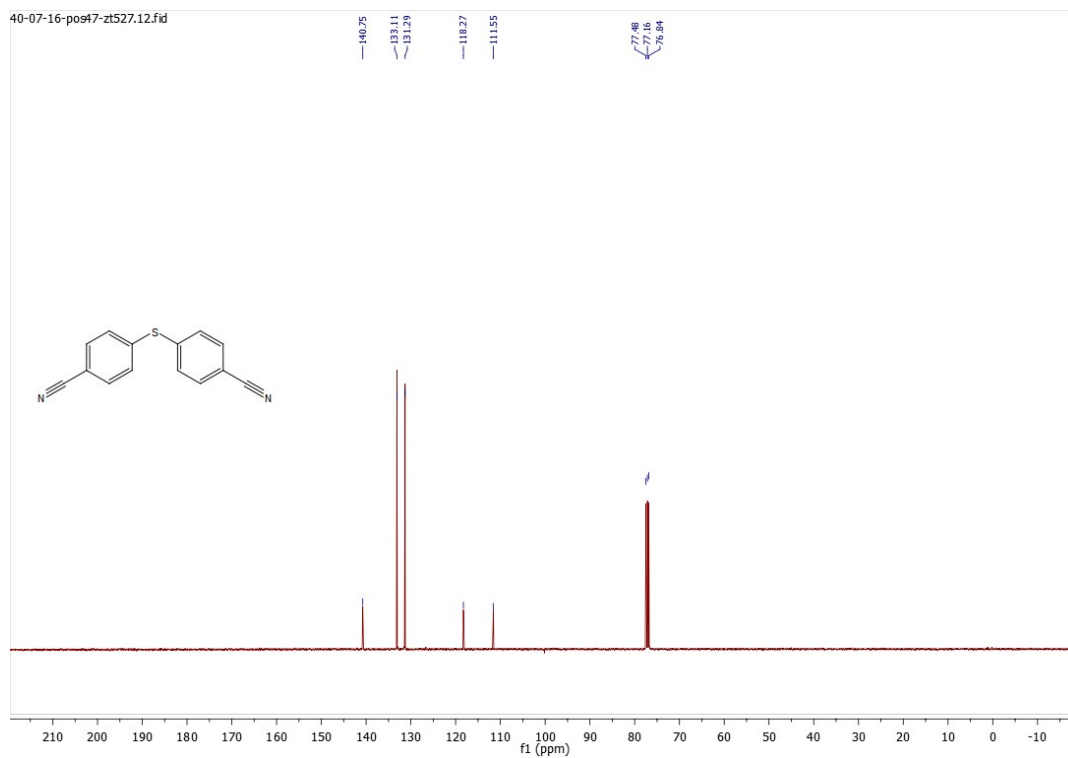


4-[(4-cyanophenyl)sulfanyl]benzonitrile (4p)

^1H NMR (400.13 MHz, CDCl_3)

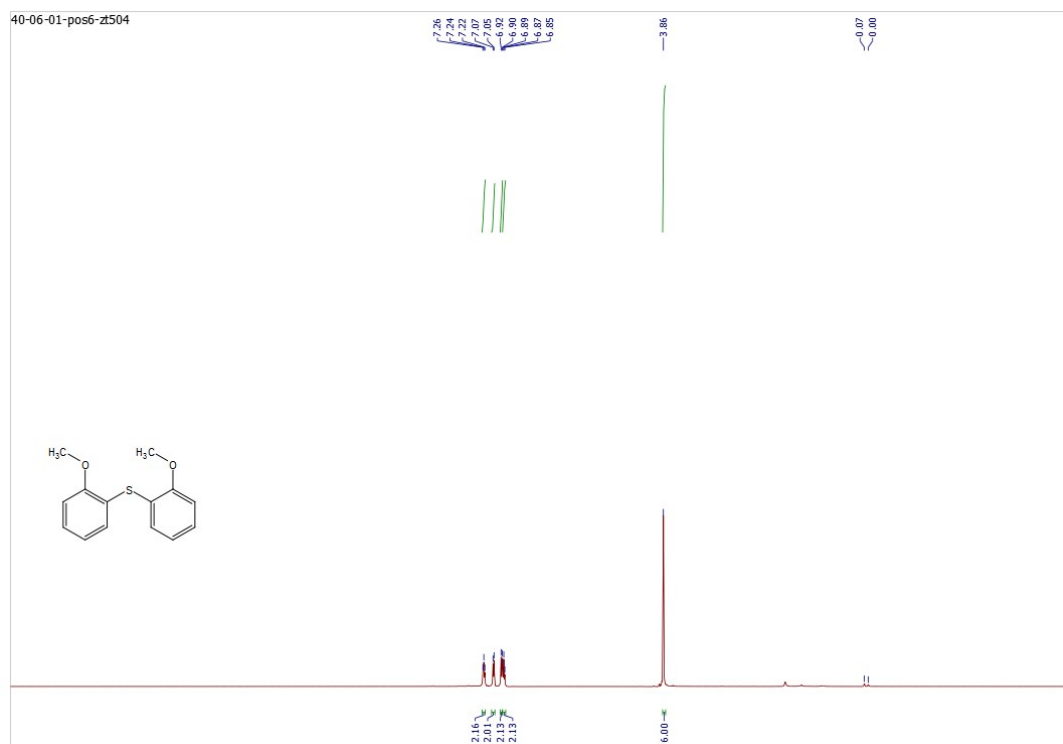


^{13}C NMR (101 MHz, CDCl_3)

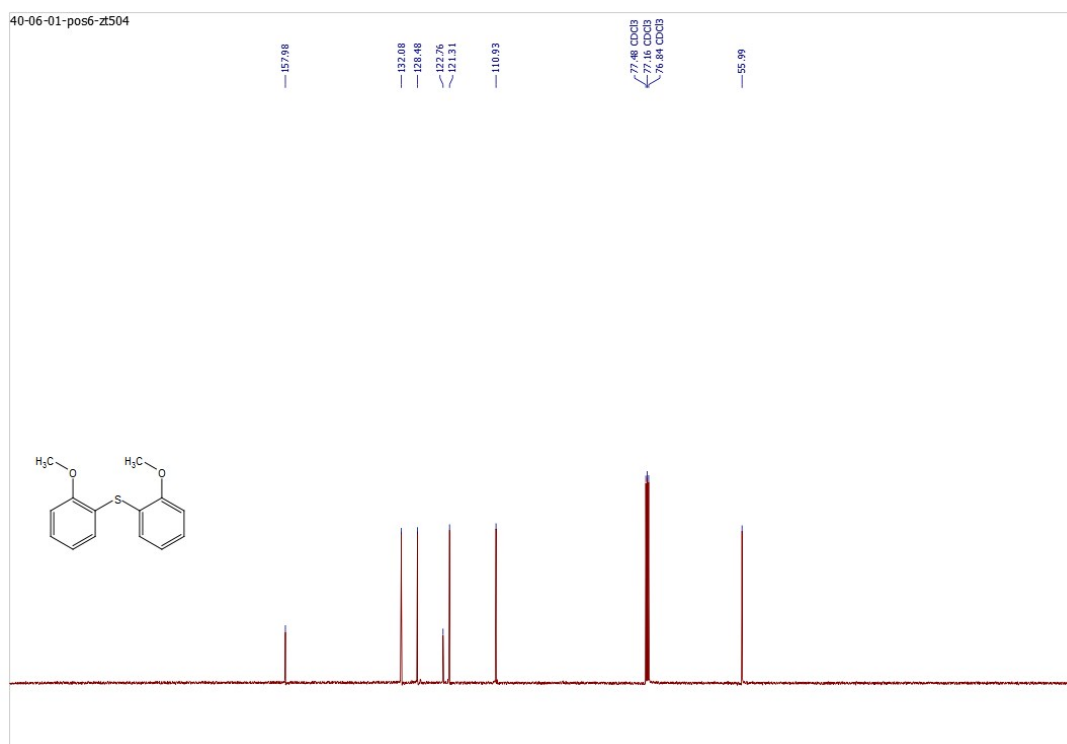


1-methoxy-2-[(2-methoxyphenyl)sulfanyl]benzene (4r)

^1H NMR (400.13 MHz, CDCl_3)

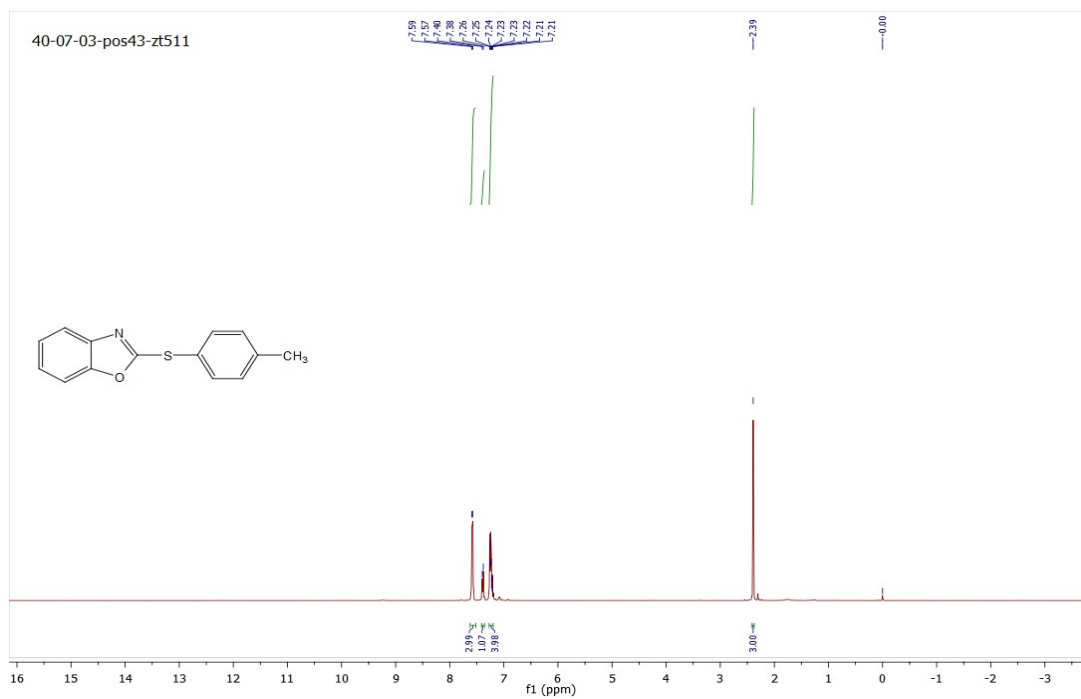


^{13}C NMR (101 MHz, CDCl_3)

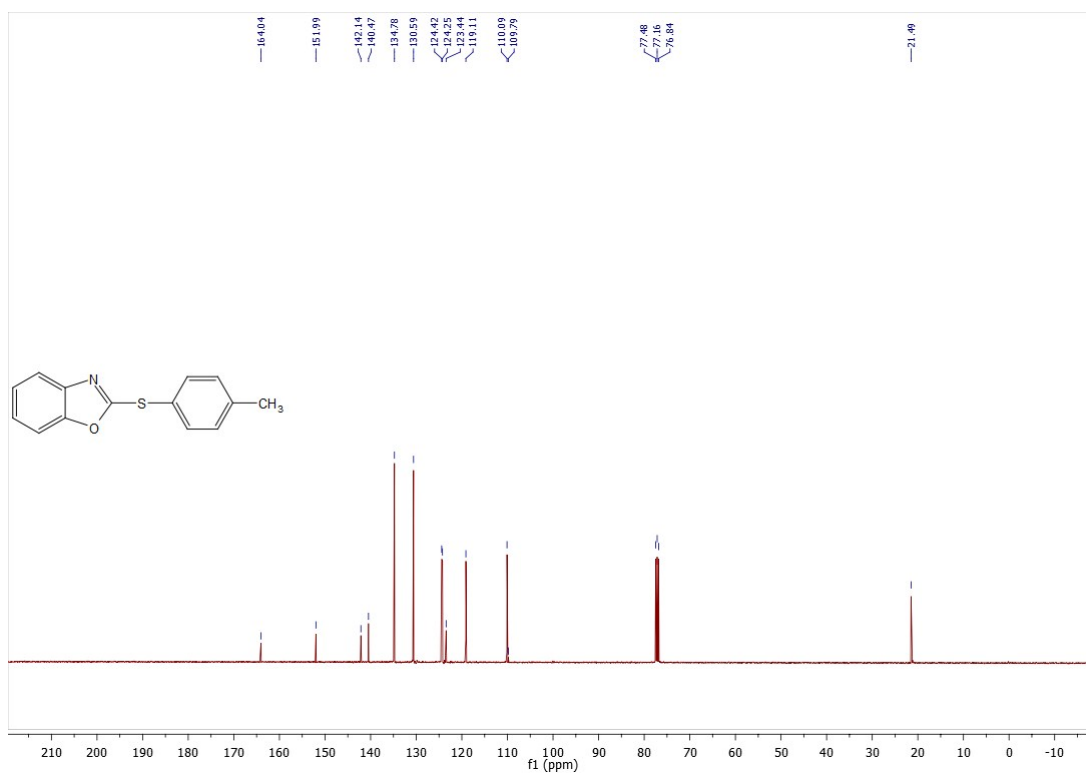


2-(4-methylphenyl)sulfanyl-1,3-benzoxazole (5a)

^1H NMR (400.13 MHz, CDCl_3)

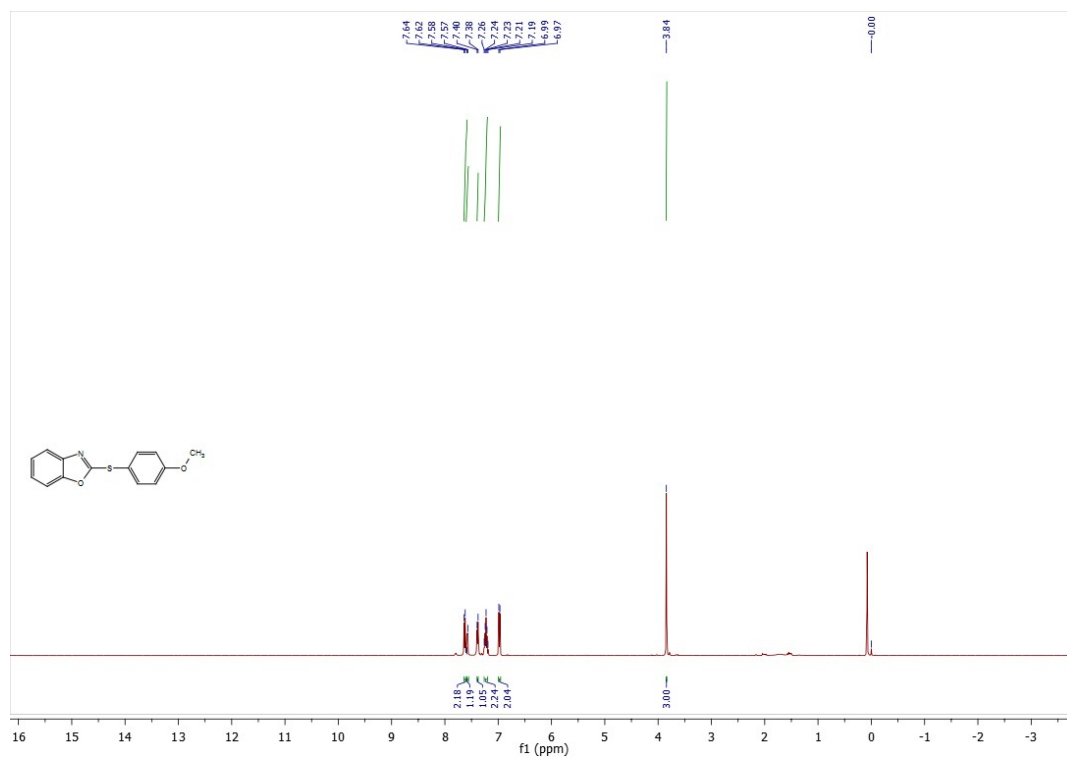


^{13}C NMR (101 MHz, CDCl_3)

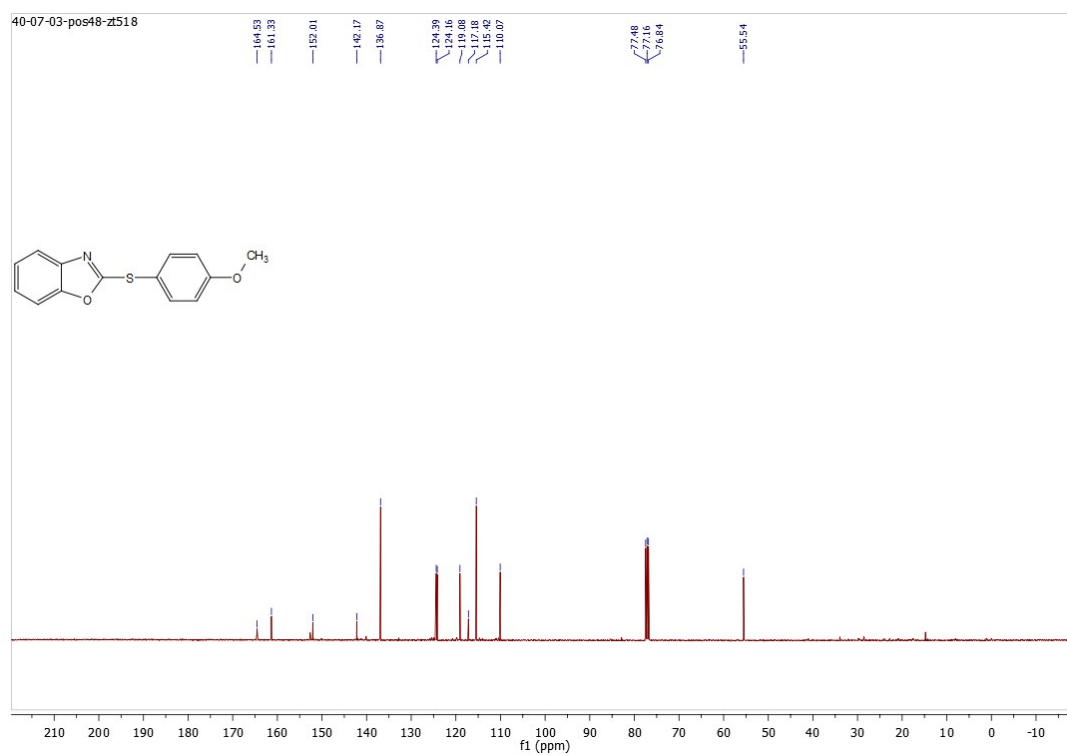


2-(4-methoxyphenyl)sulfanyl-1,3-benzoxazole (5b)

^1H NMR (400.13 MHz, CDCl_3)

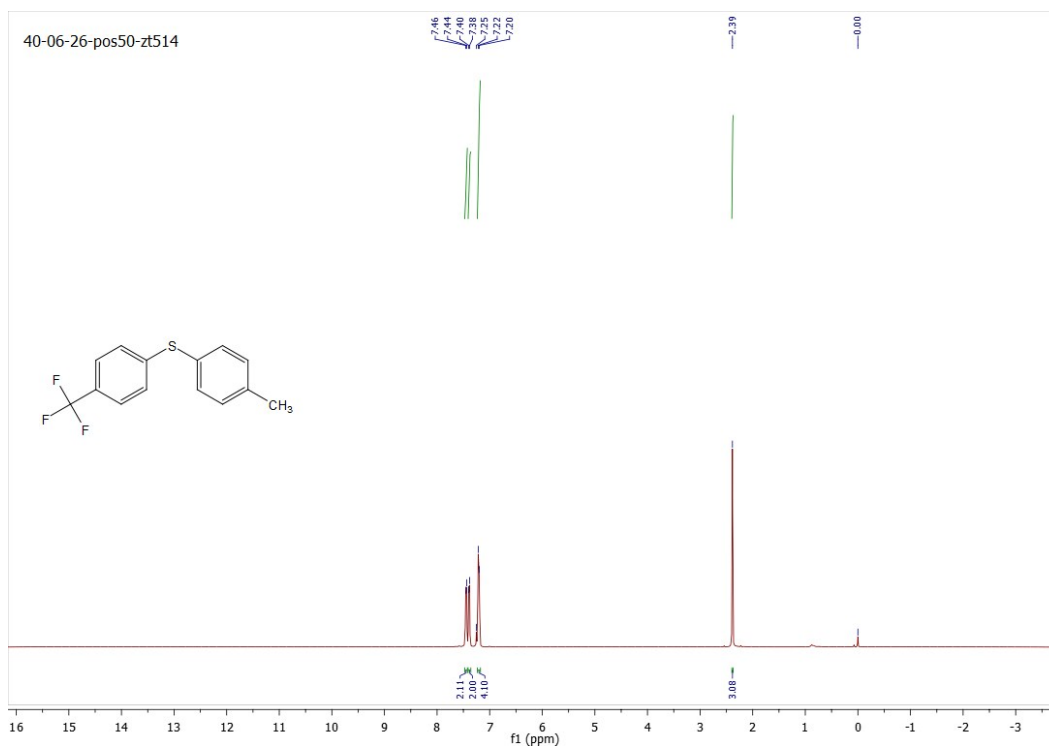


^{13}C NMR (101 MHz, CDCl_3)

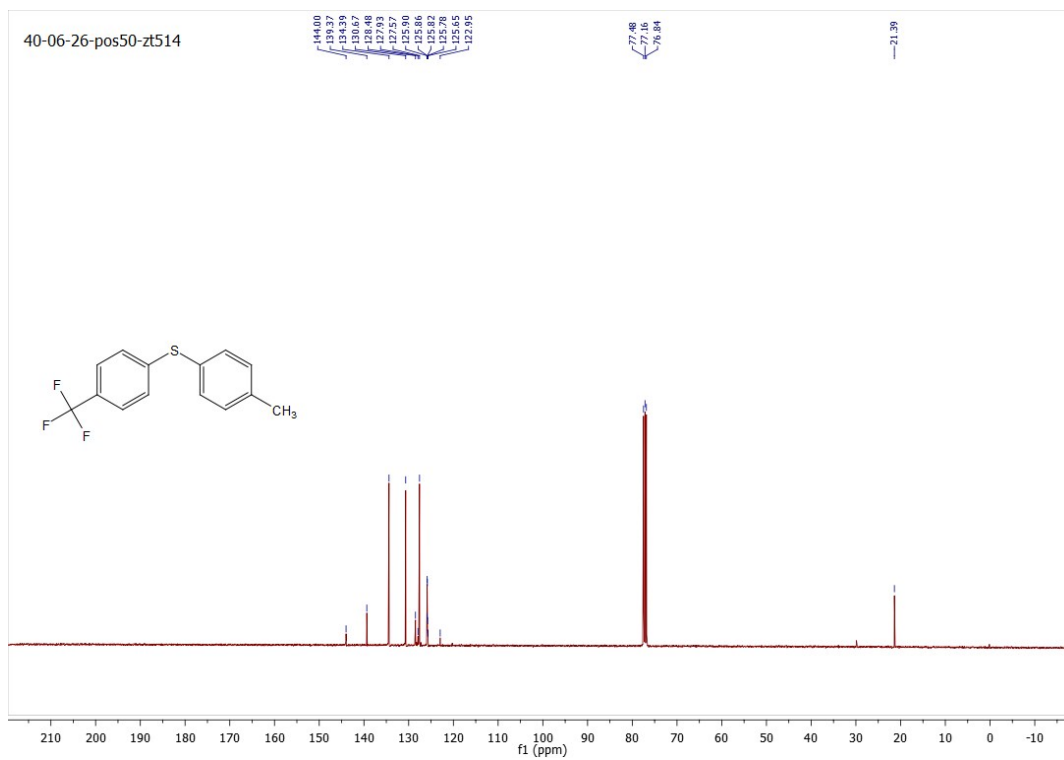


1-[(4-methylphenyl)sulfanyl]-4-(trifluoromethyl)benzene (6a)

^1H NMR (400.13 MHz, CDCl_3)

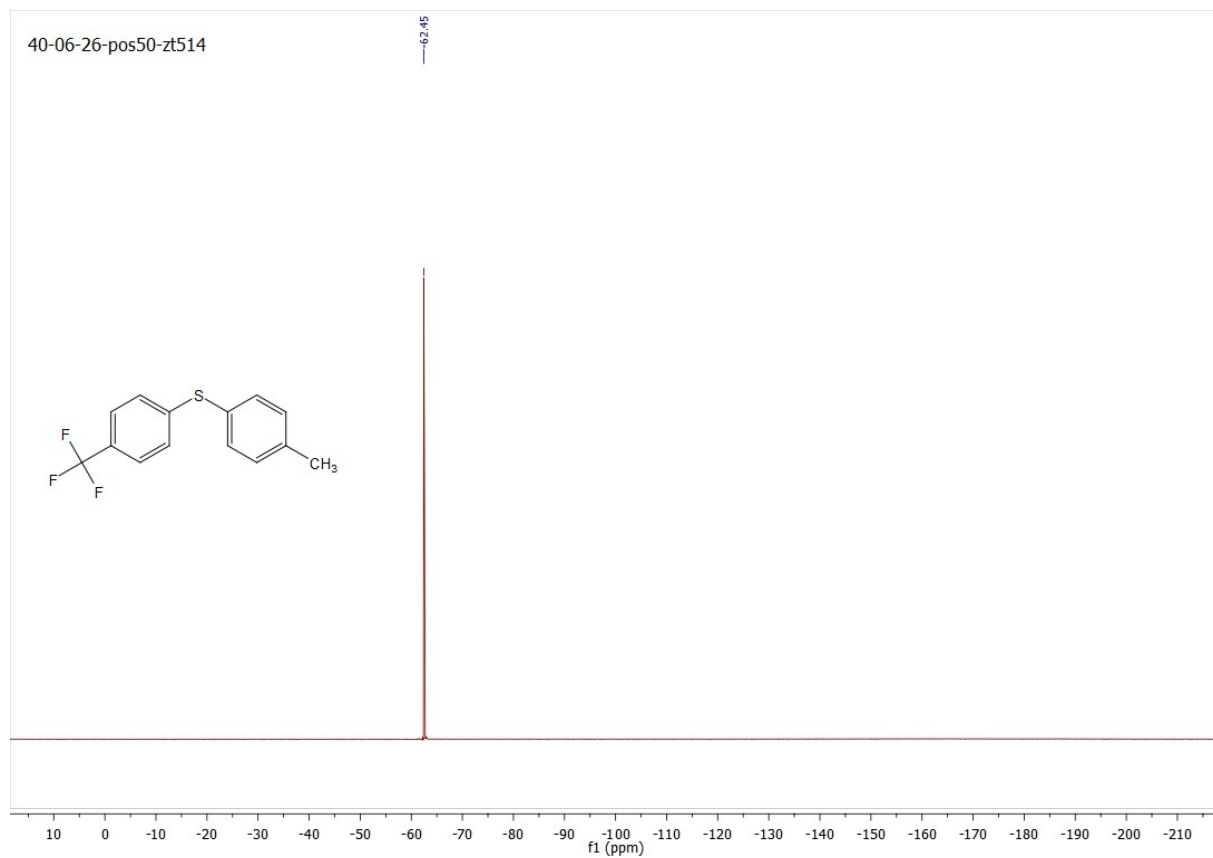


^{13}C NMR (101 MHz, CDCl_3)



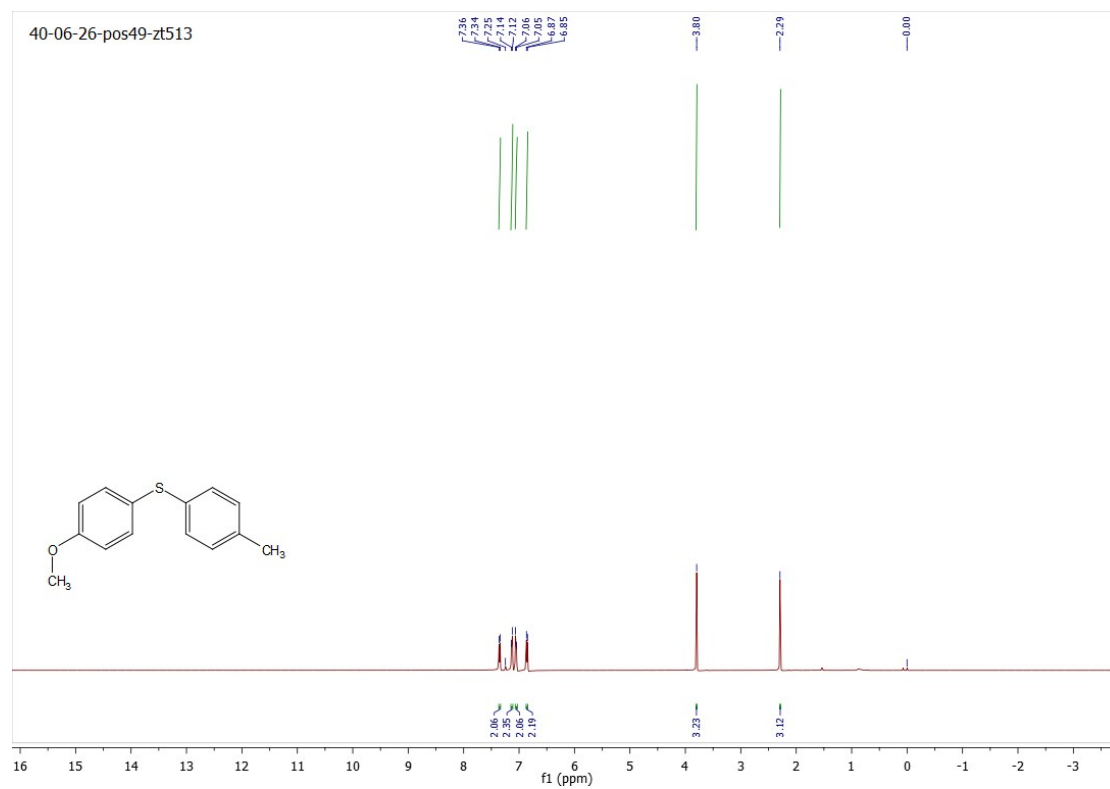
¹⁹F NMR (376 MHz, CDCl₃)

40-06-26-pos50-zt514

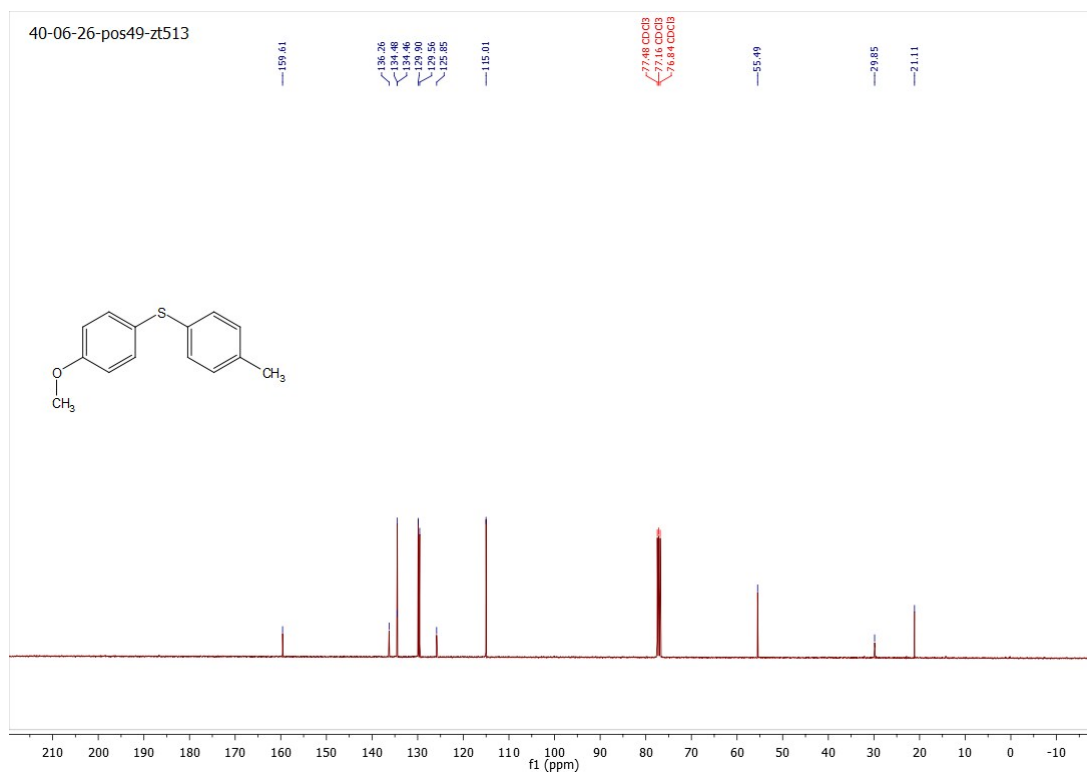


1-methoxy-4-[(4-methylphenyl)sulfanyl]benzene (6b)

^1H NMR (400.13 MHz, CDCl_3)

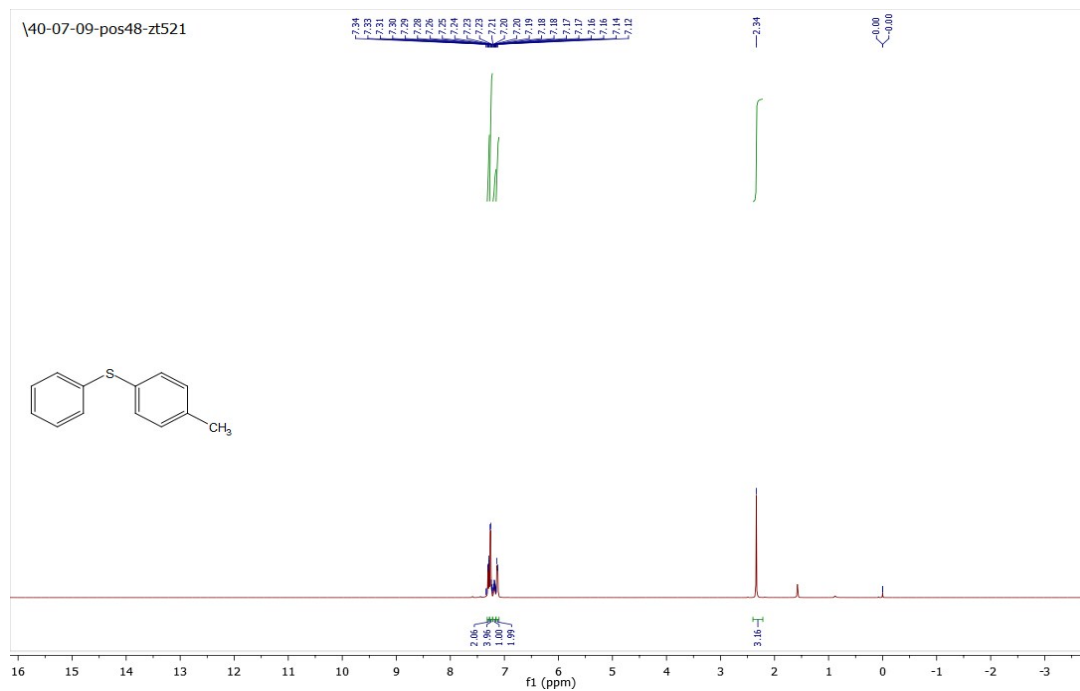


^{13}C NMR (101 MHz, CDCl_3)

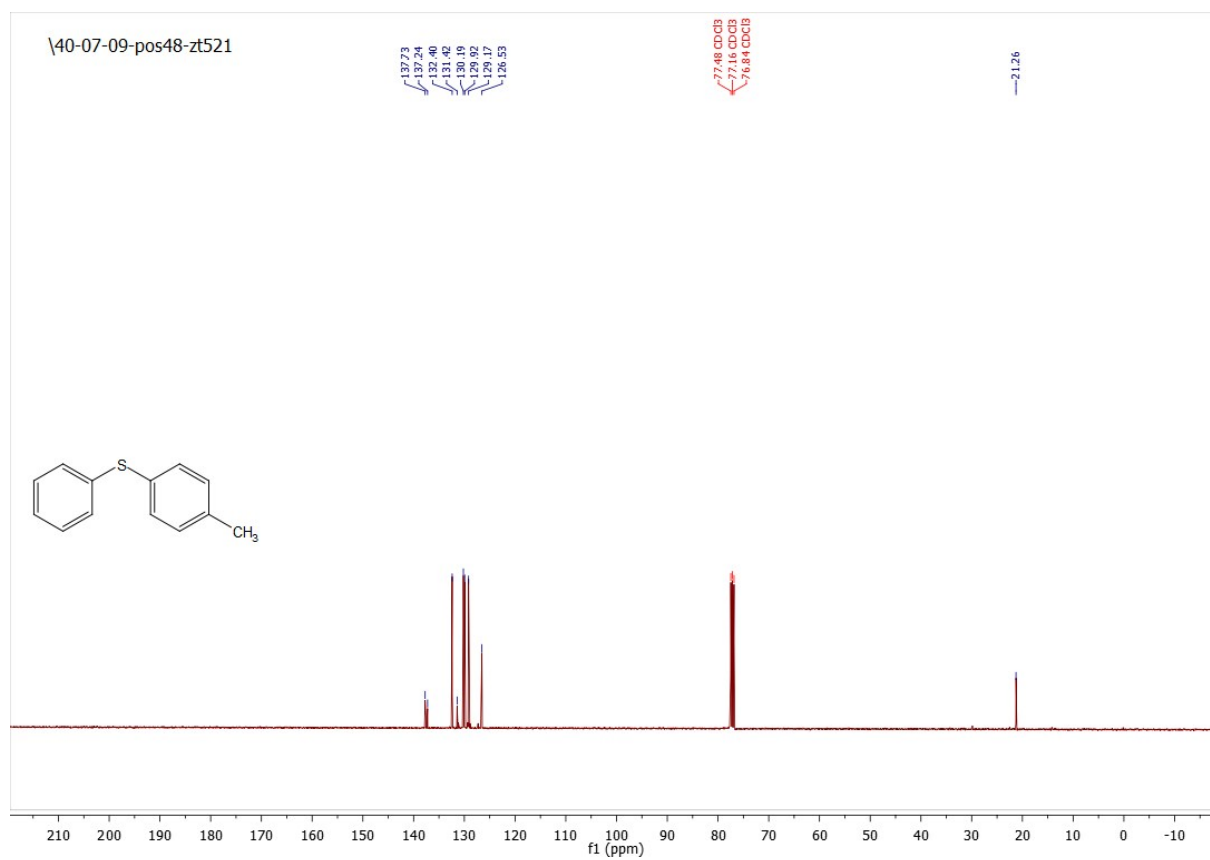


1-methyl-4-(phenylsulfanyl)benzene (6c)

^1H NMR (CDCl_3 , 400.13 MHz)

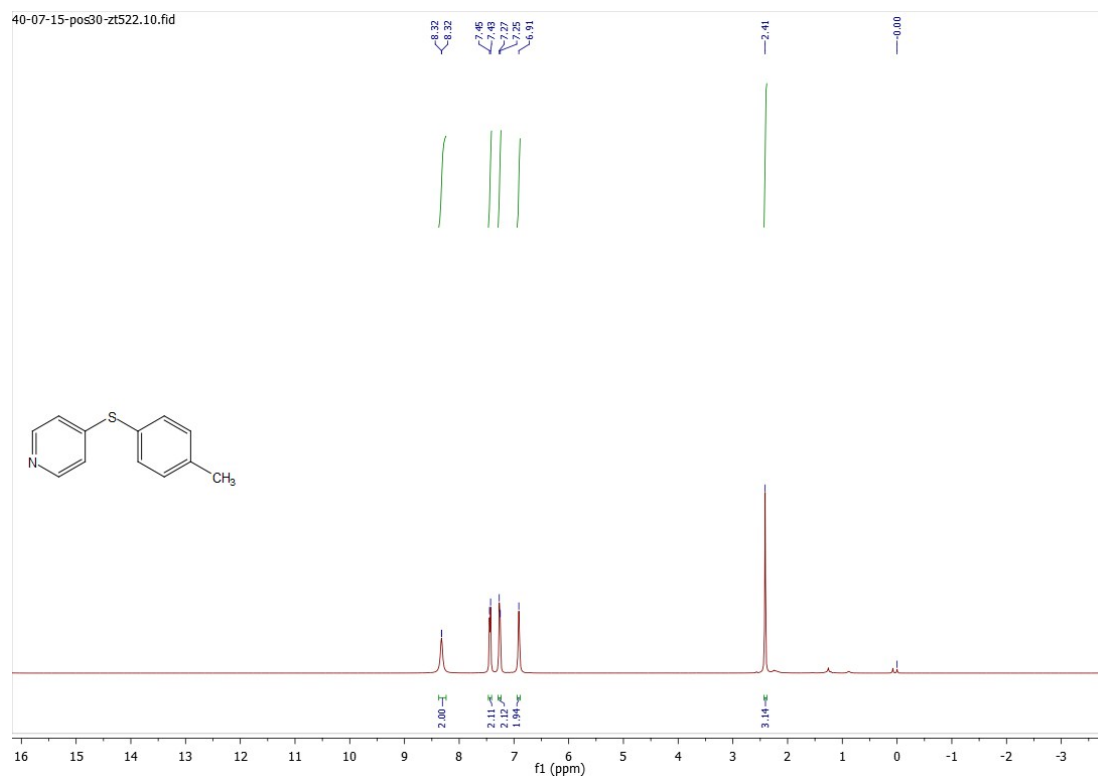


^{13}C NMR (CDCl_3 , 101 MHz)

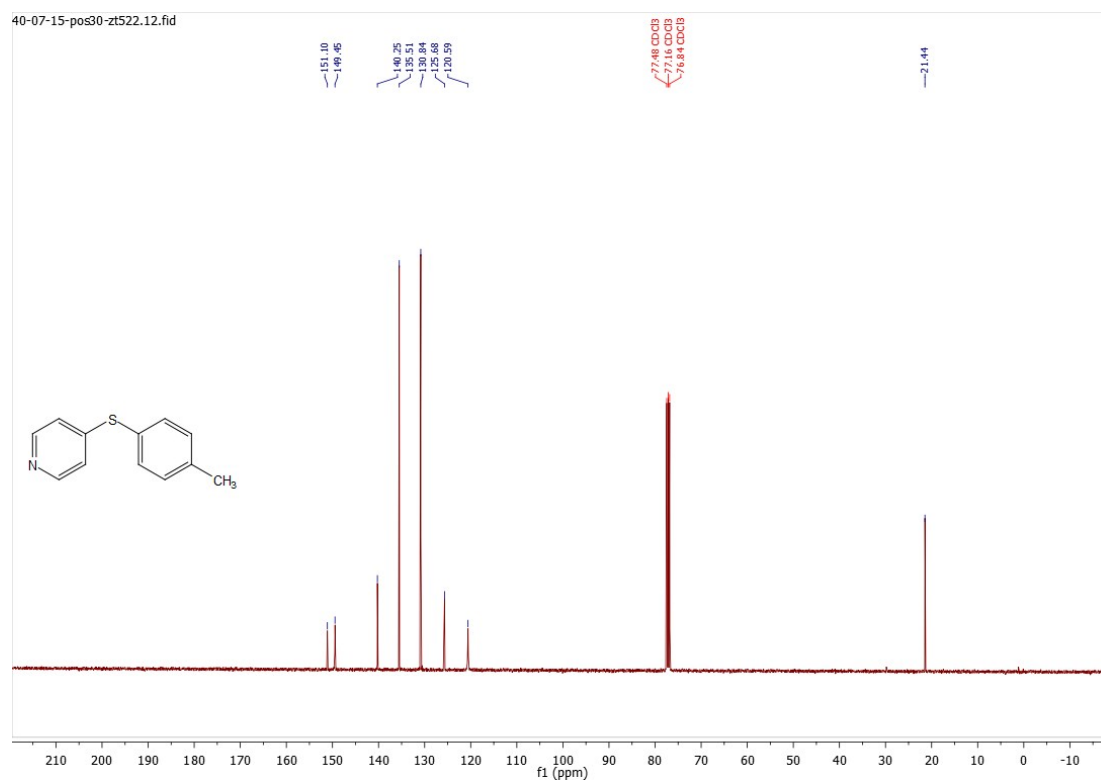


4-[(4-methylphenyl)sulfanyl]pyridine (6d)

^1H NMR (400 MHz, CDCl_3)

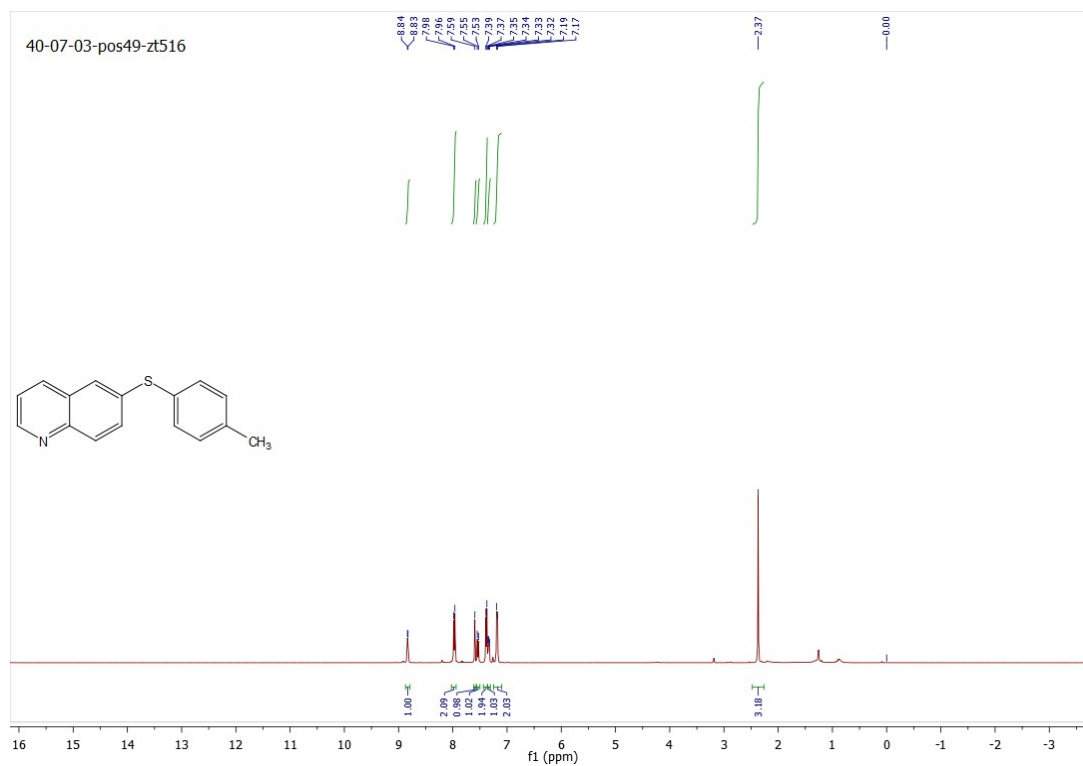


^{13}C NMR (101 MHz, CDCl_3)



6-[(4-methylphenyl)sulfanyl]quinolone (6e)

^1H NMR (400 MHz, CDCl_3)



^{13}C NMR (101 MHz, CDCl_3)

