

Supporting Information

Photoredox-Induced Functionalization of Alkenes for the Synthesis of Substituted Imidazolines and Oxazolidines

Jian-Qiang Chen, Wan-Lei Yu, Yun-Long Wei, Teng-Hui Li and Peng-Fei Xu*

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1. Devices for the photocatalytic reactions

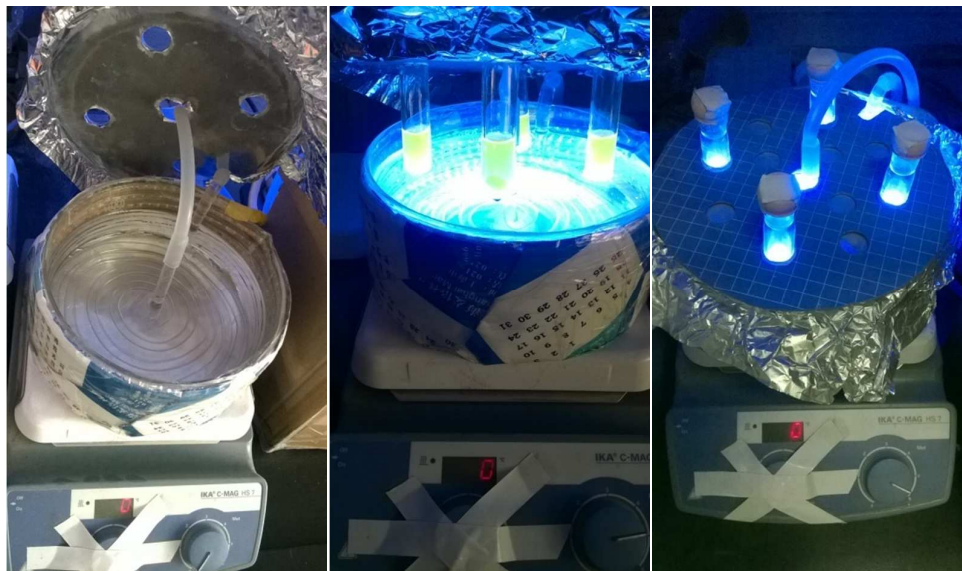
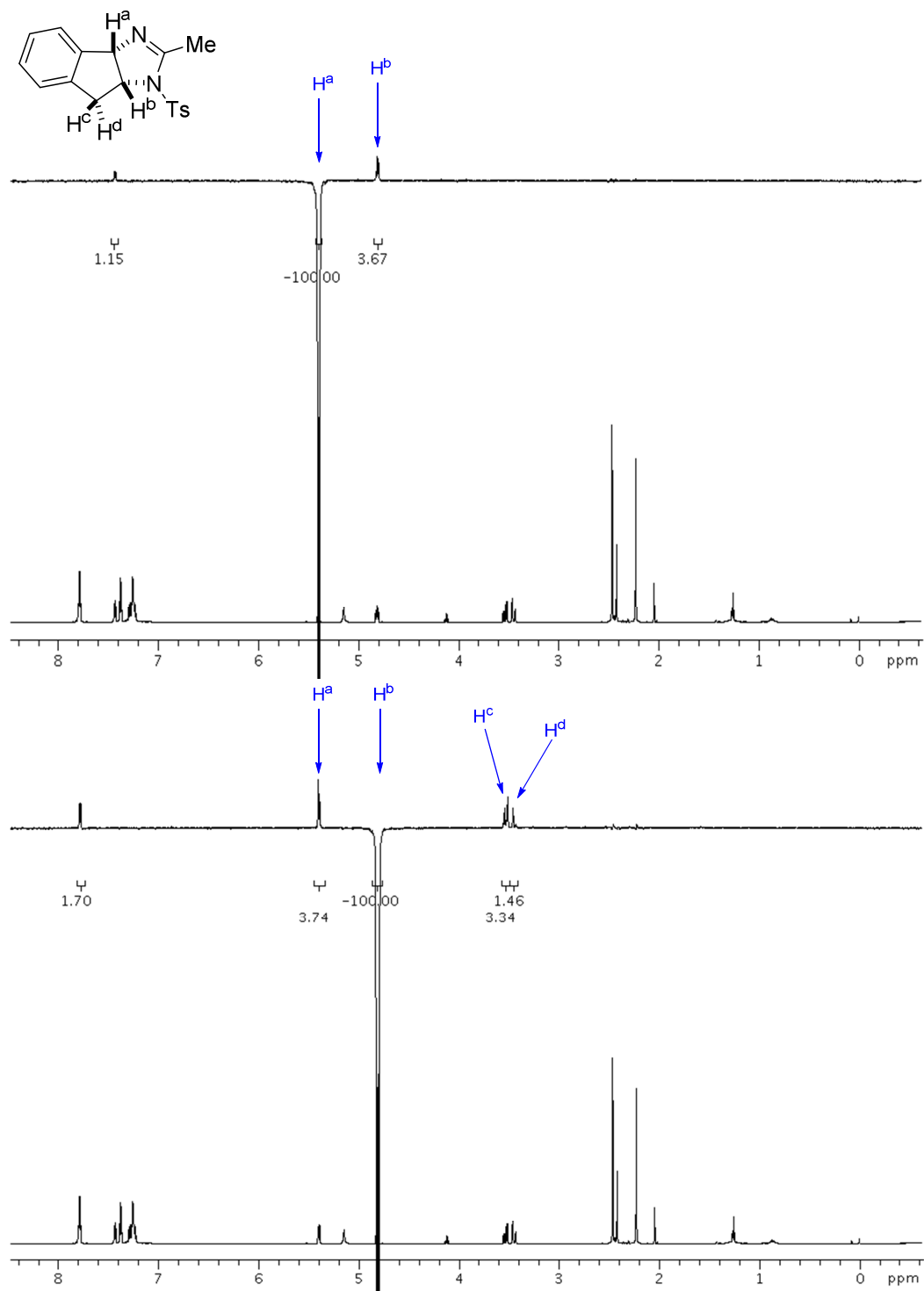


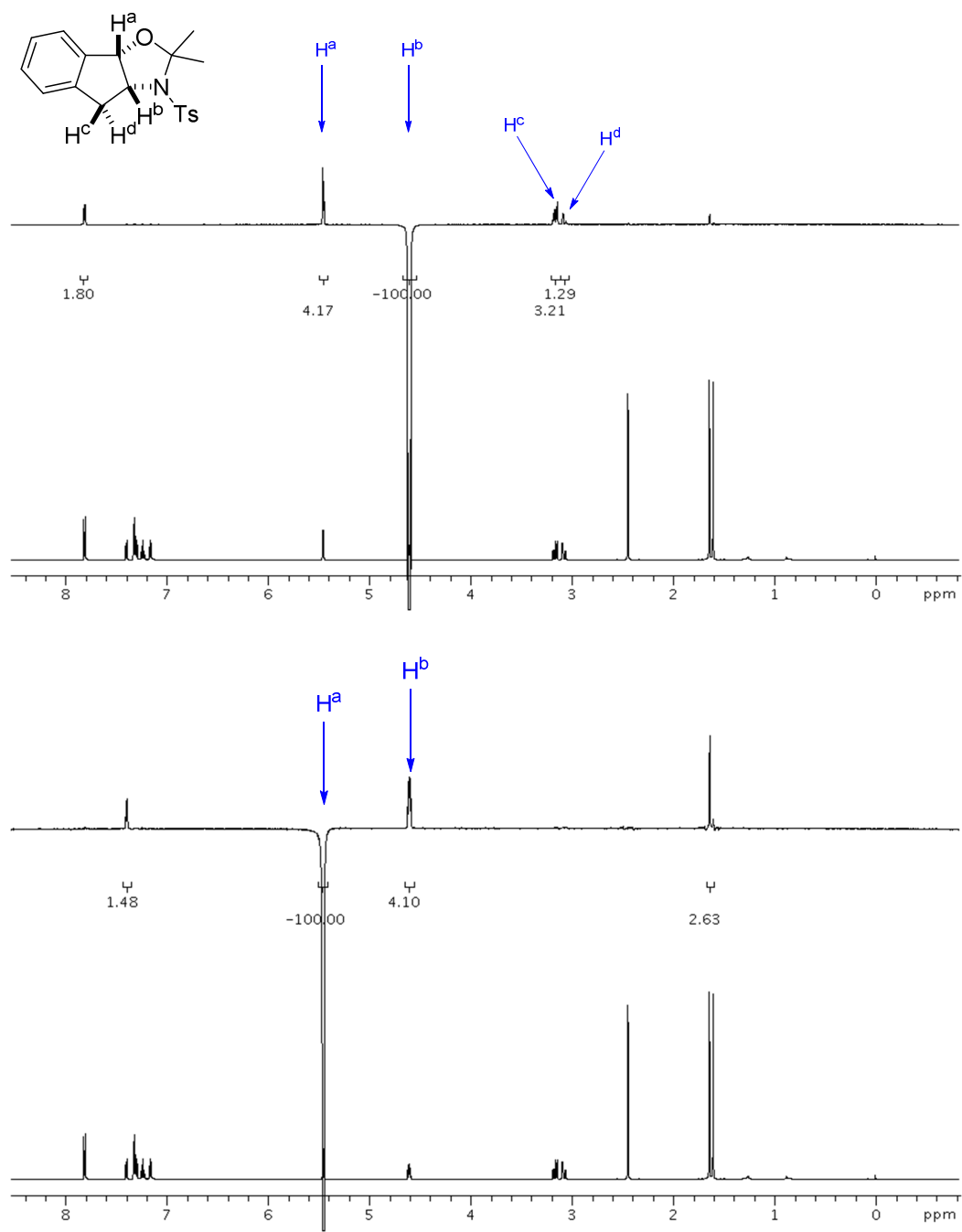
Figure 1. Devices for the photocatalytic reactions.

2. Determination of the configuration

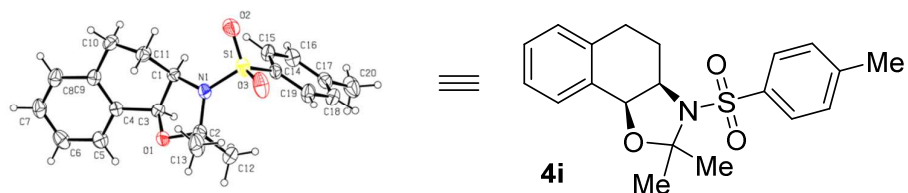
nOe spectrum of compound **31** (CDCl₃, 600MHz)



nOe spectrum of compound **4h** (CDCl₃, 600MHz)



3. X-ray data for compound **4i** (CCDC 1517534)



Bond precision: C-C = 0.0038 Å Wavelength=0.71073

Cell: a=35.044(2) b=8.2840(6) c=12.6899(7)
 alpha=90 beta=98.376(5) gamma=90

Temperature: 293 K

	Calculated	Reported
Volume	3644.6(4)	3644.7(4)
Space group	C 2/c	C 1 2/c 1
Hall group	-C 2yc	-C 2yc
Moiety formula	C ₂₀ H ₂₃ N O ₃ S	C ₂₀ H ₂₃ N O ₃ S
Sum formula	C ₂₀ H ₂₃ N O ₃ S	C ₂₀ H ₂₃ N O ₃ S
Mr	357.45	357.45
Dx, g cm ⁻³	1.303	1.303
Z	8	8
Mu (mm ⁻¹)	0.196	0.196
F ₀₀₀	1520.0	1520.0
F ₀₀₀ '	1521.63	
h,k,lmax	43,10,15	43,10,15
Nref	3595	3583
Tmin,Tmax	0.956,0.981	0.640,1.000
Tmin'	0.954	

Correction method= # Reported T Limits: Tmin=0.640

Tmax=1.000 AbsCorr = MULTI-SCAN

Data completeness= 0.997 Theta(max)= 26.020

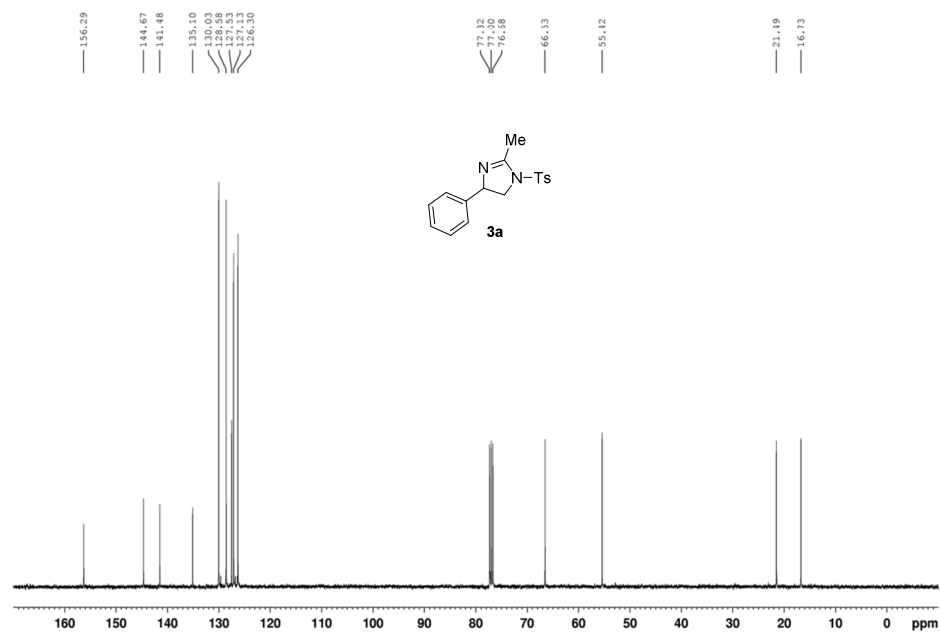
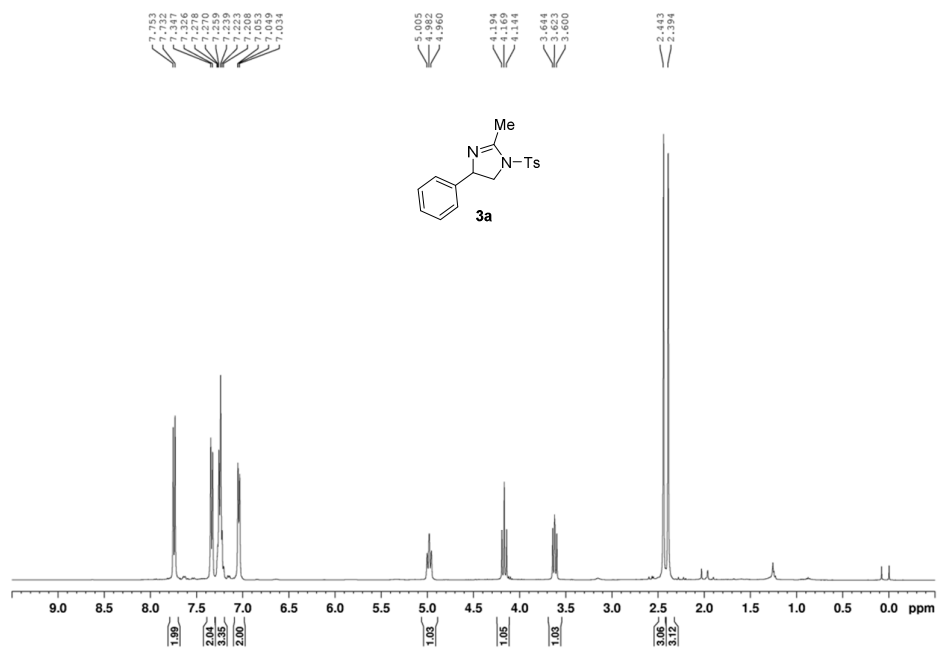
R(reflections)= 0.0524(2327) wR2(reflections)= 0.1384(3583)

S = 1.039 Npar= 229

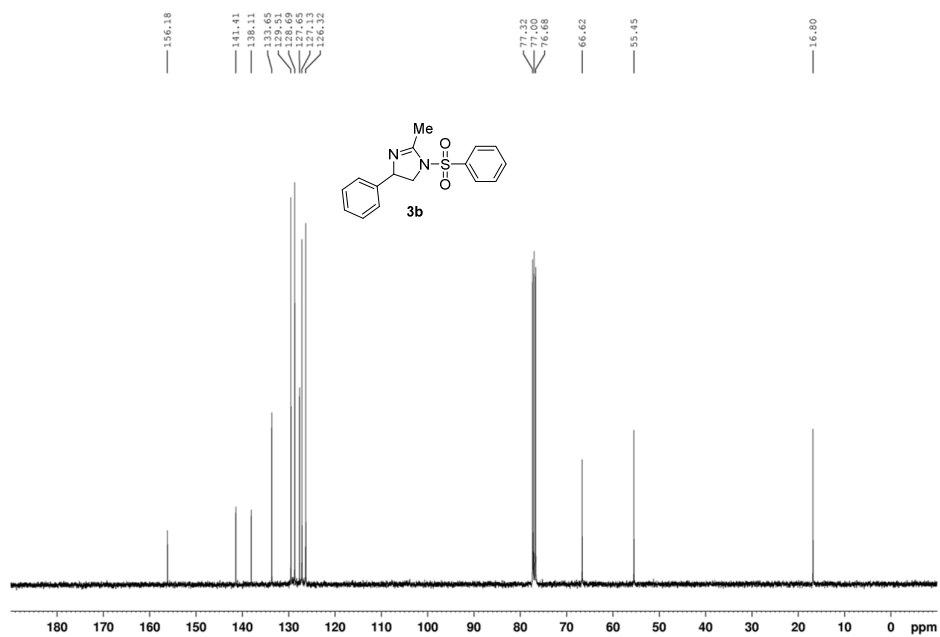
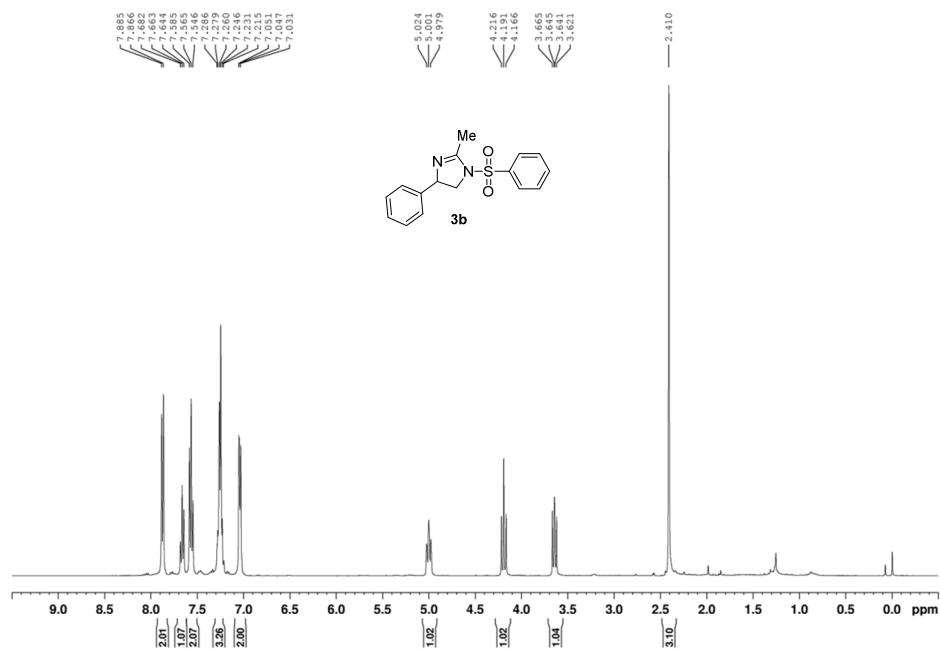
Displacement ellipsoids are drawn at 30% probability level.

4. NMR spectra of compounds

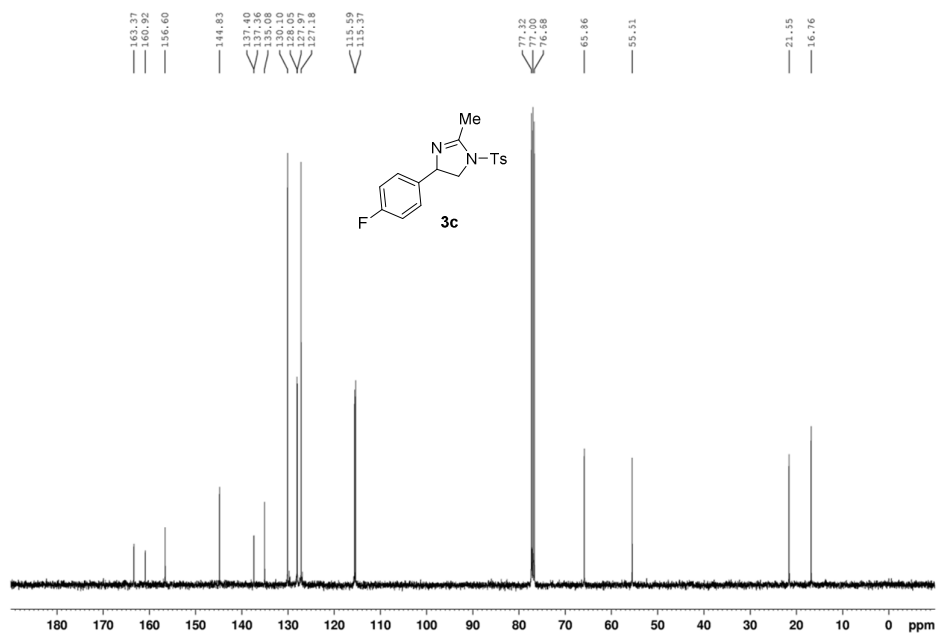
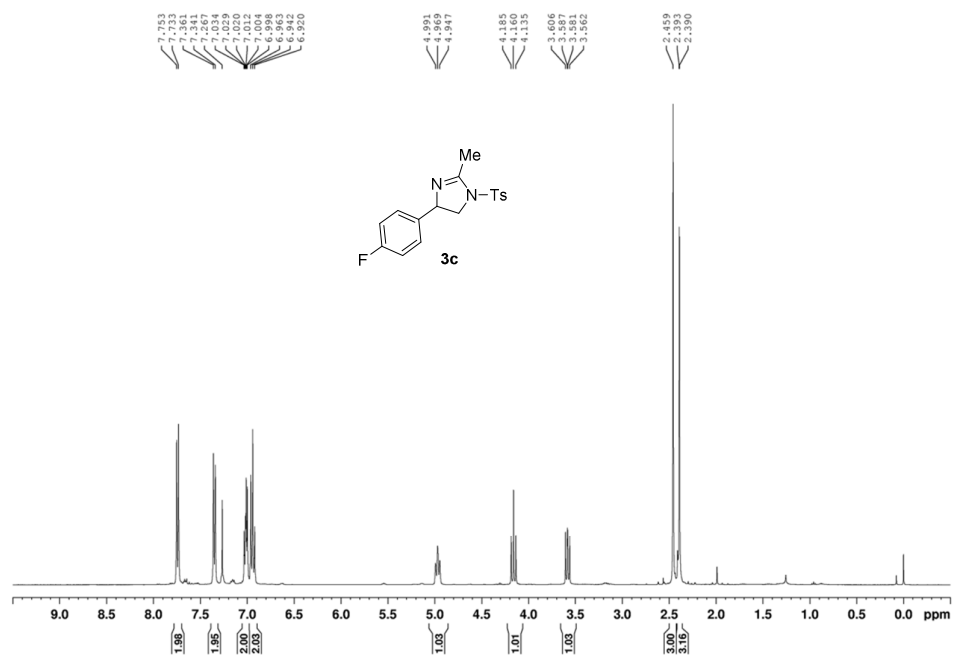
2-methyl-4-phenyl-1-tosyl-4,5-dihydro-1H-imidazole (3a)



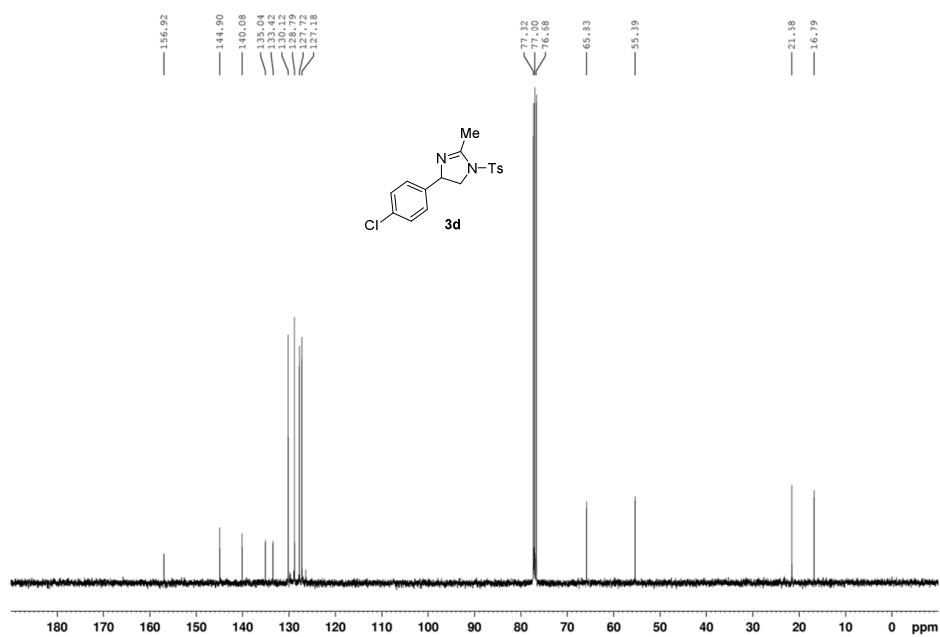
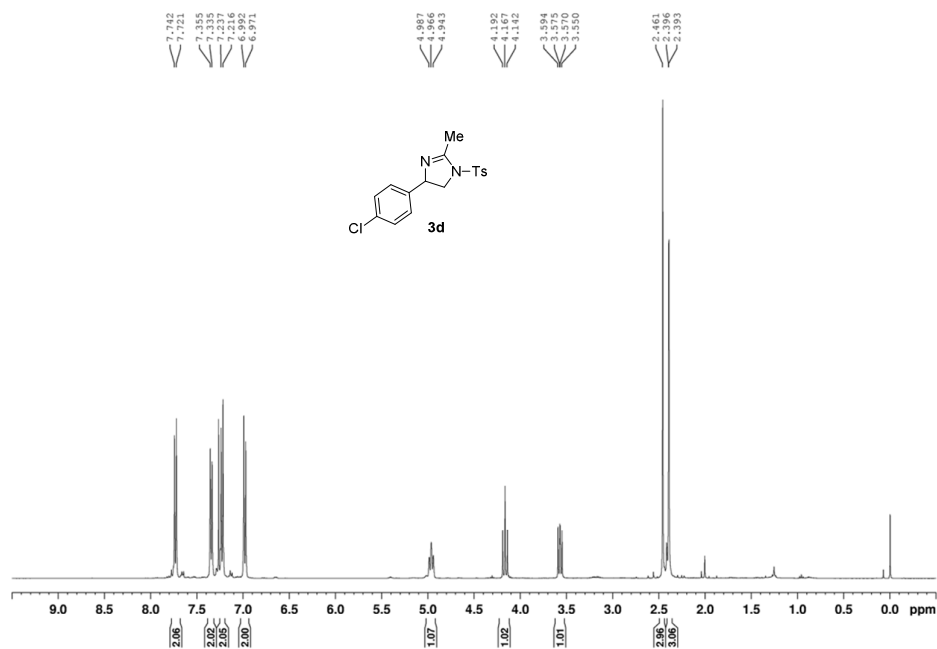
2-methyl-4-phenyl-1-(phenylsulfonyl)-4,5-dihydro-1H-imidazole (3b)



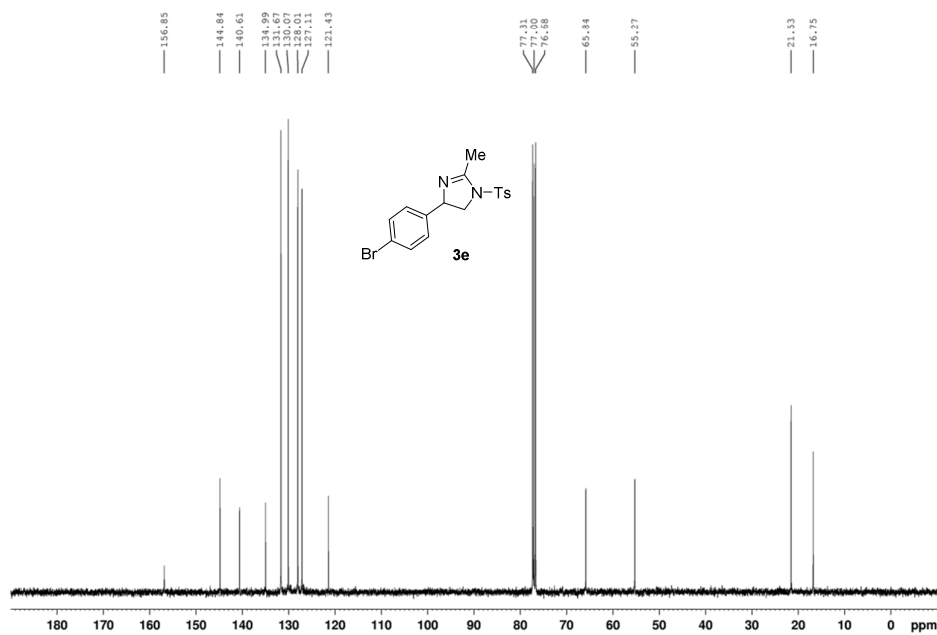
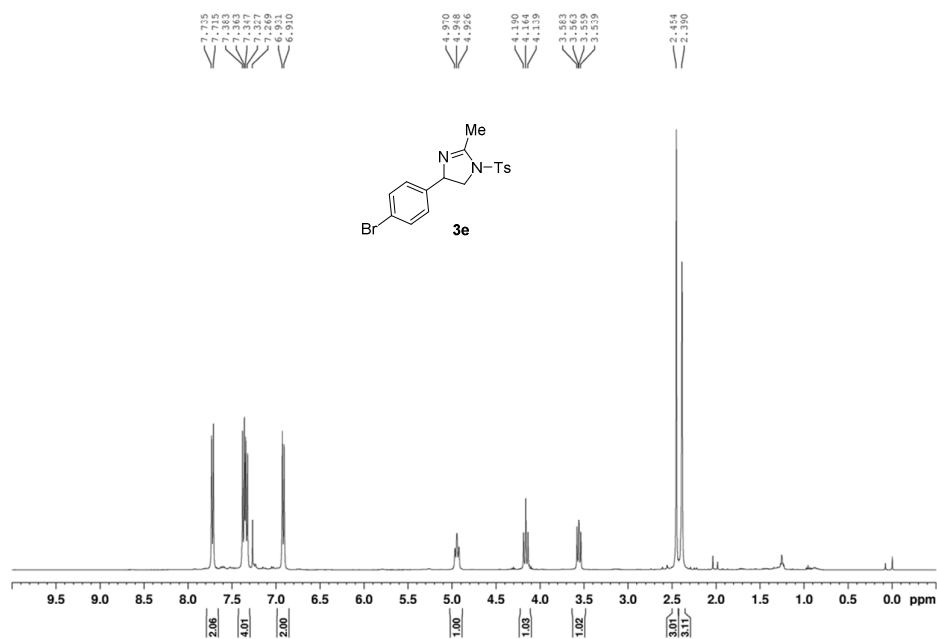
4-(4-fluorophenyl)-2-methyl-1-tosyl-4,5-dihydro-1H-imidazole (3c)



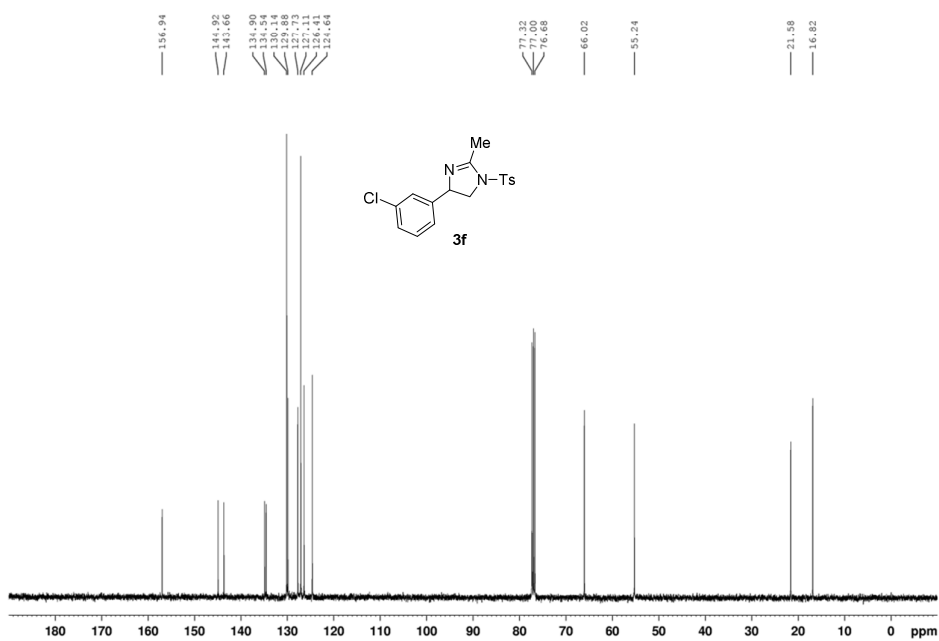
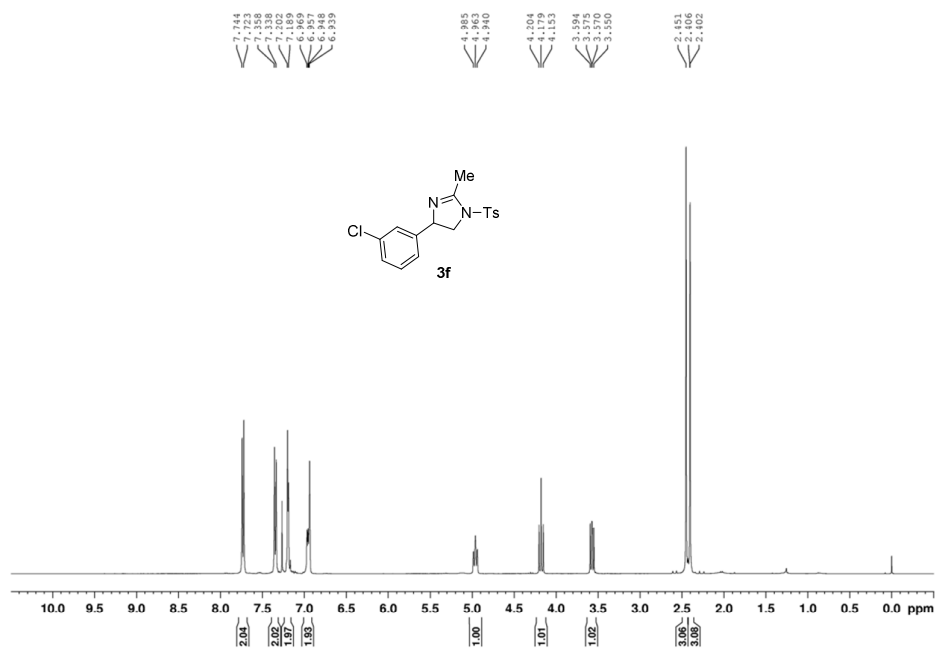
4-(4-chlorophenyl)-2-methyl-1-tosyl-4,5-dihydro-1H-imidazole (3d)



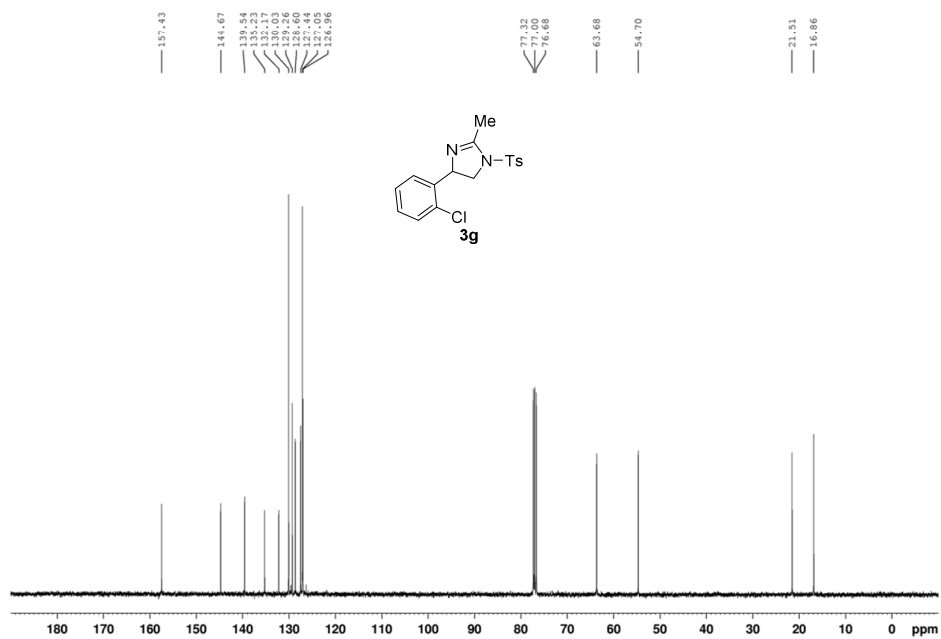
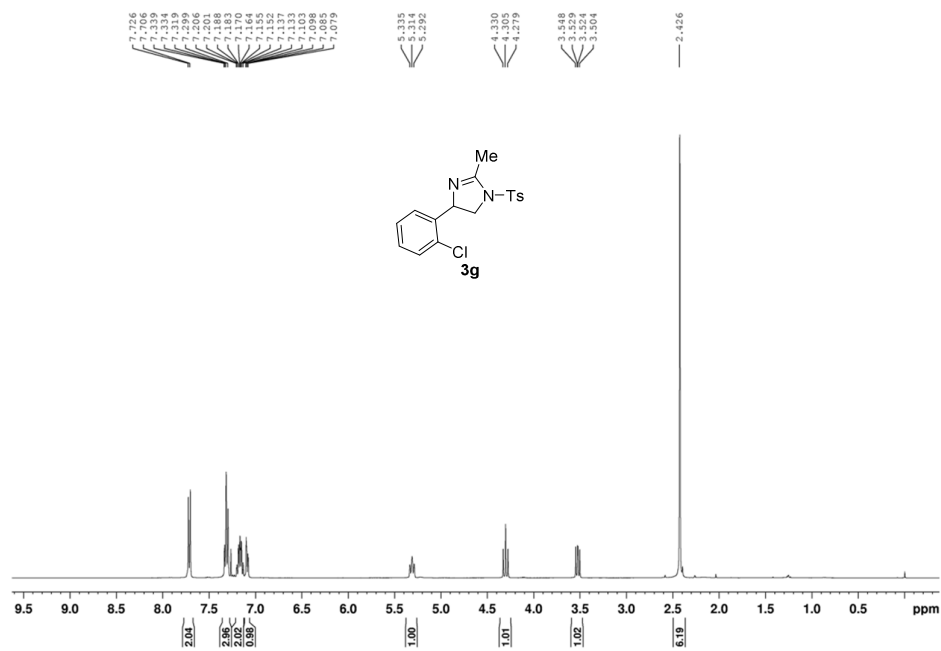
4-(4-bromophenyl)-2-methyl-1-tosyl-4,5-dihydro-1H-imidazole (3e)



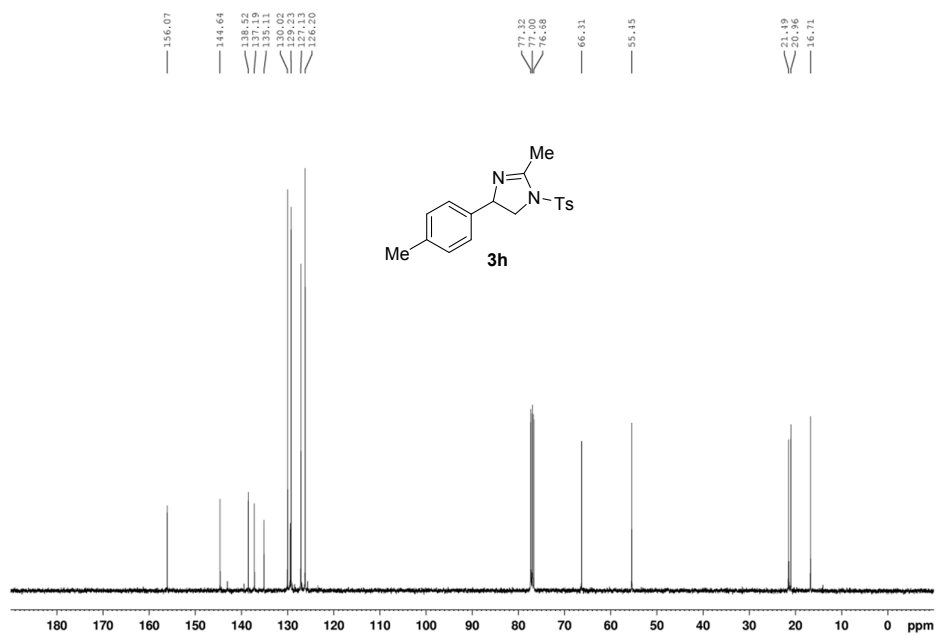
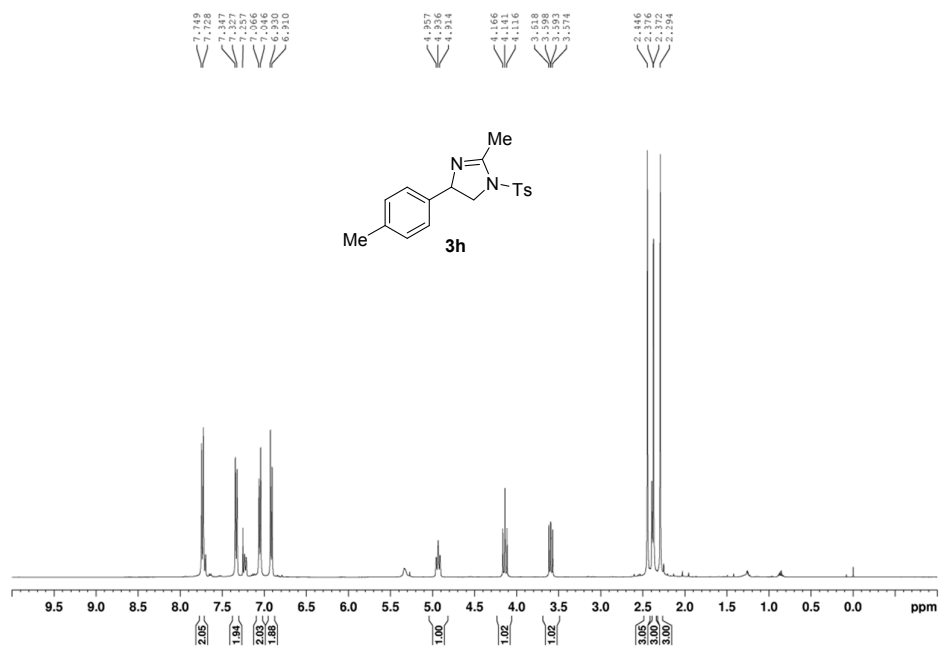
4-(3-chlorophenyl)-2-methyl-1-tosyl-4,5-dihydro-1H-imidazole (3f)



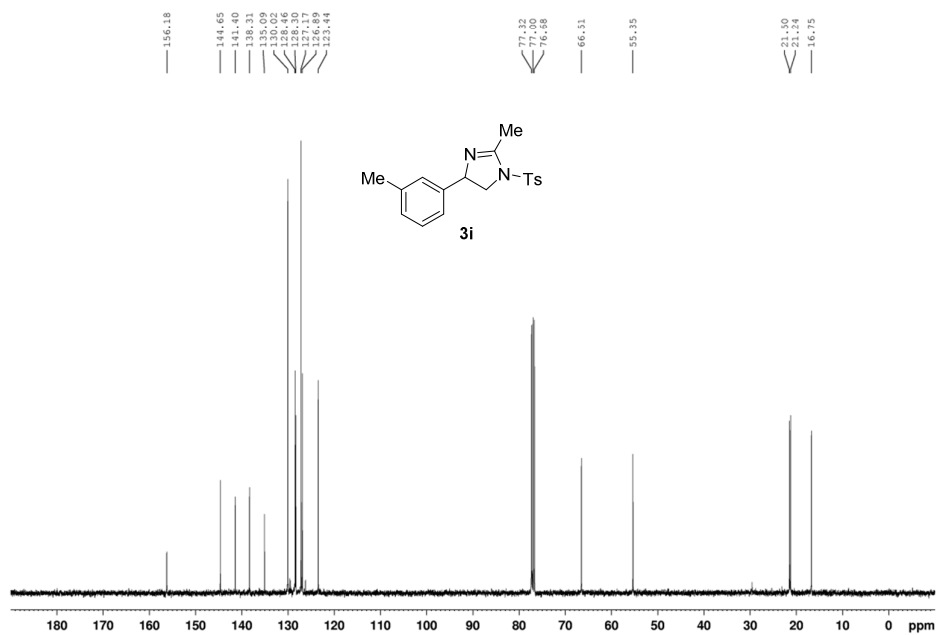
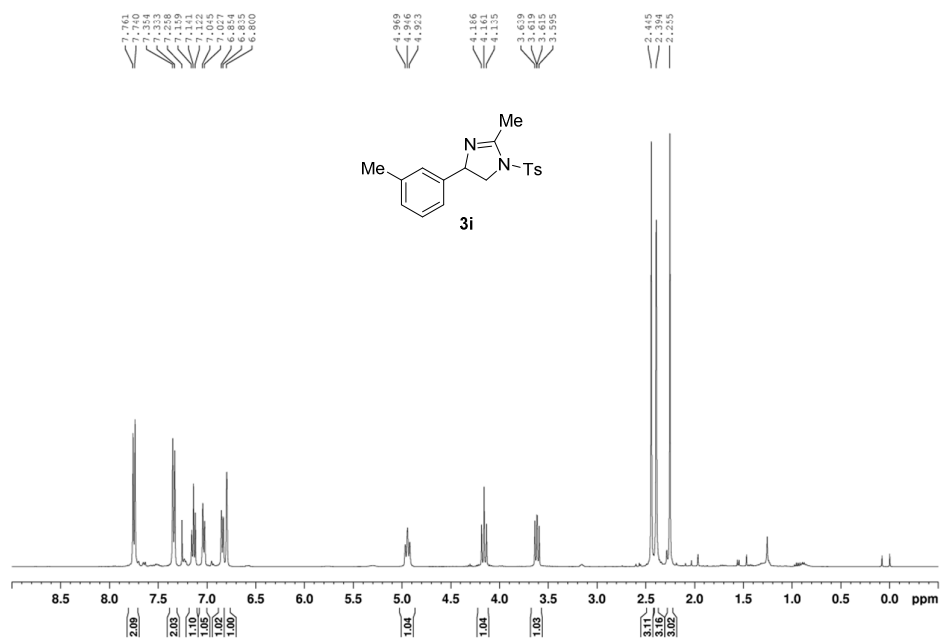
4-(2-chlorophenyl)-2-methyl-1-tosyl-4,5-dihydro-1H-imidazole (3g)



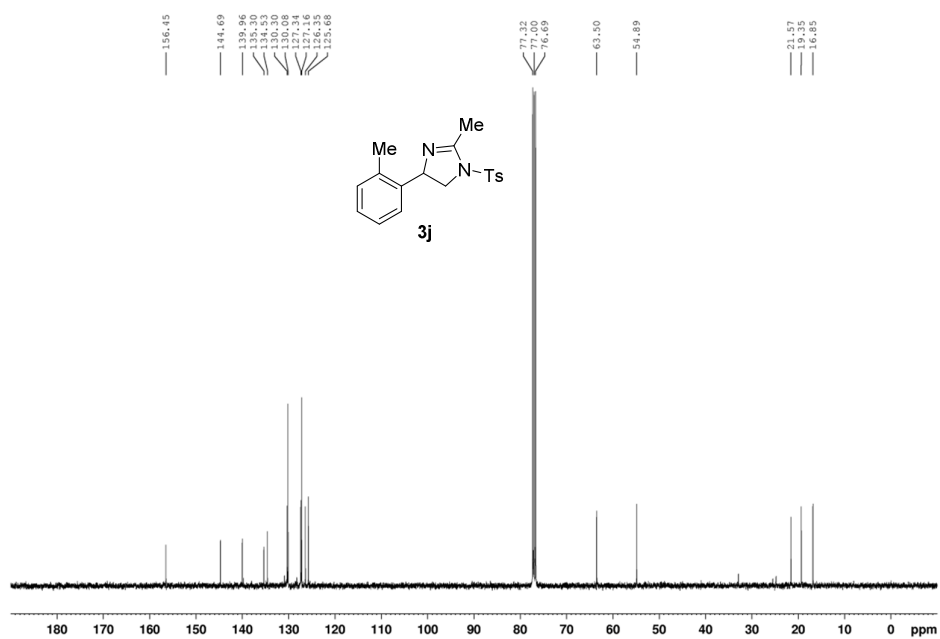
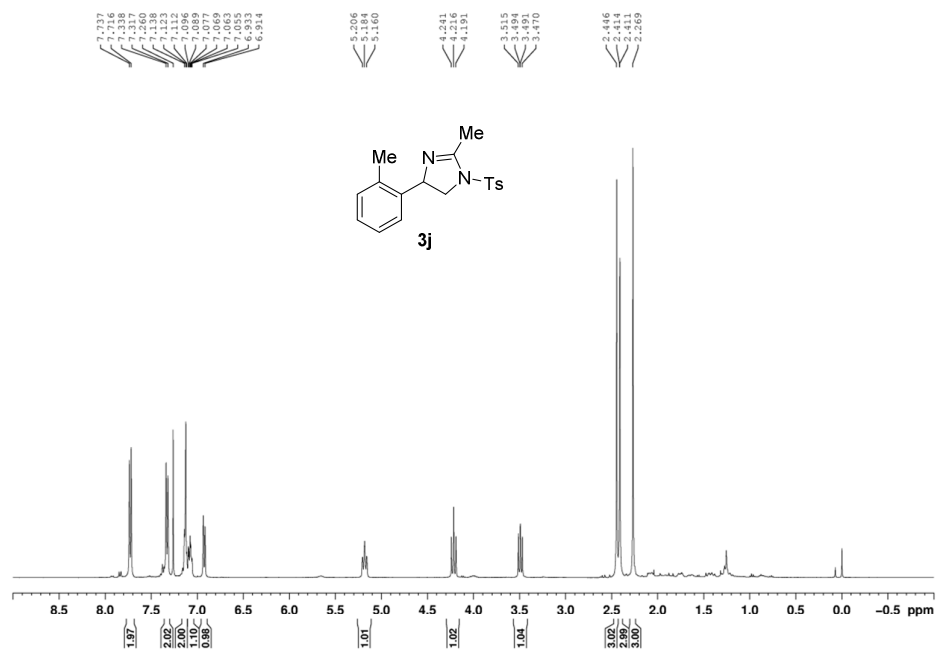
2-methyl-4-(p-tolyl)-1-tosyl-4,5-dihydro-1H-imidazole (3h)



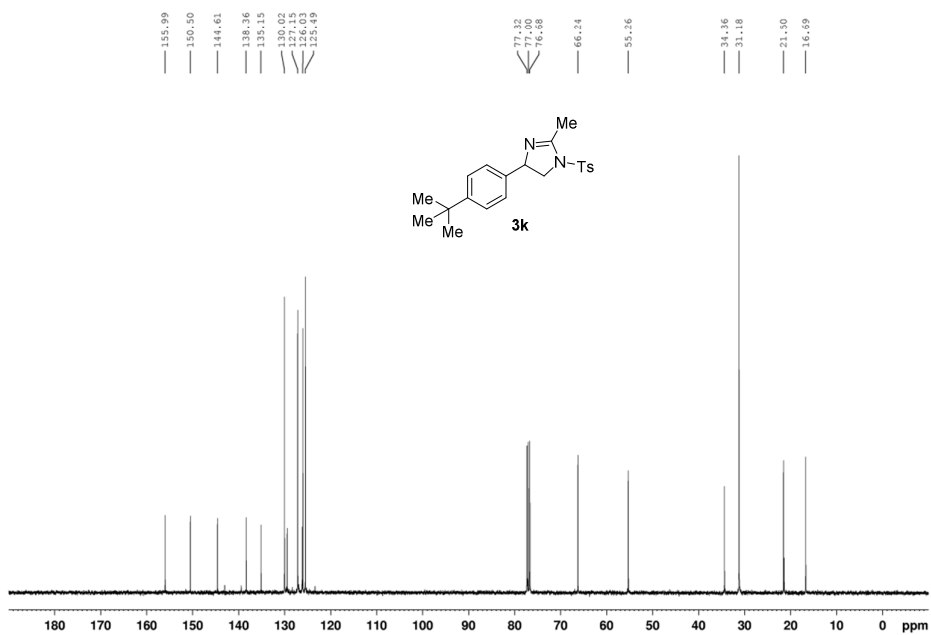
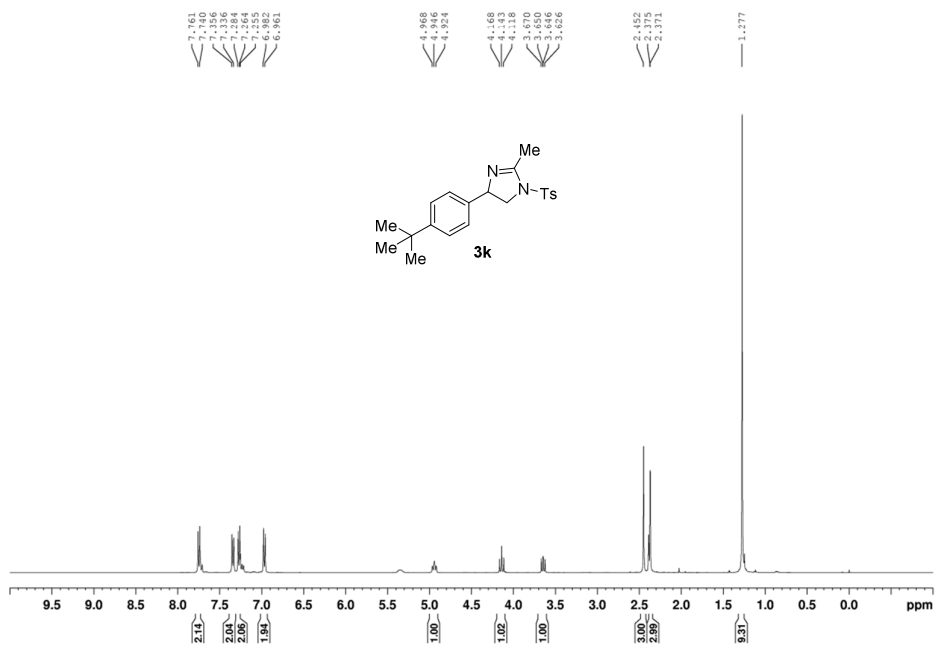
2-methyl-4-(m-tolyl)-1-tosyl-4,5-dihydro-1H-imidazole (3i)



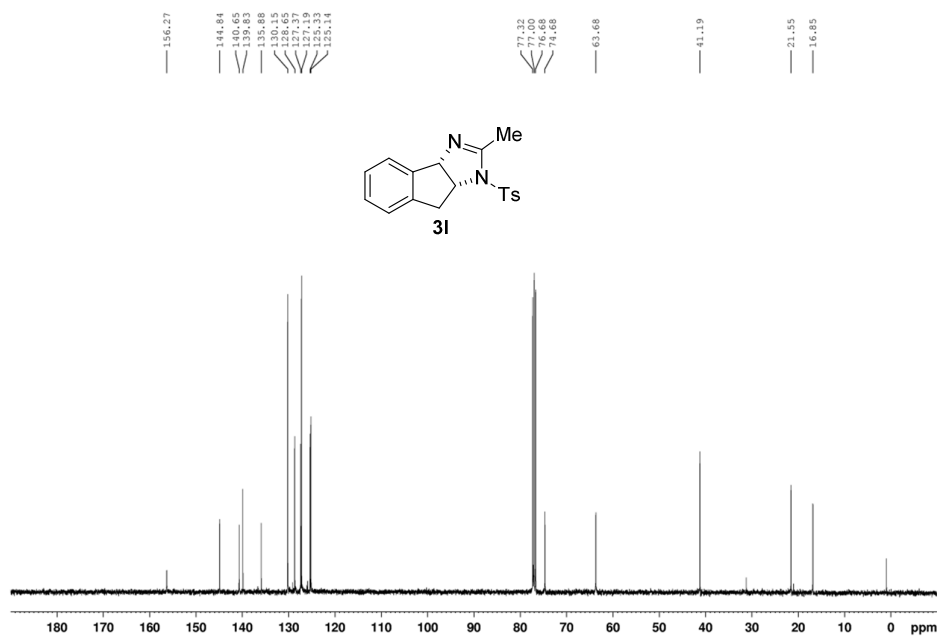
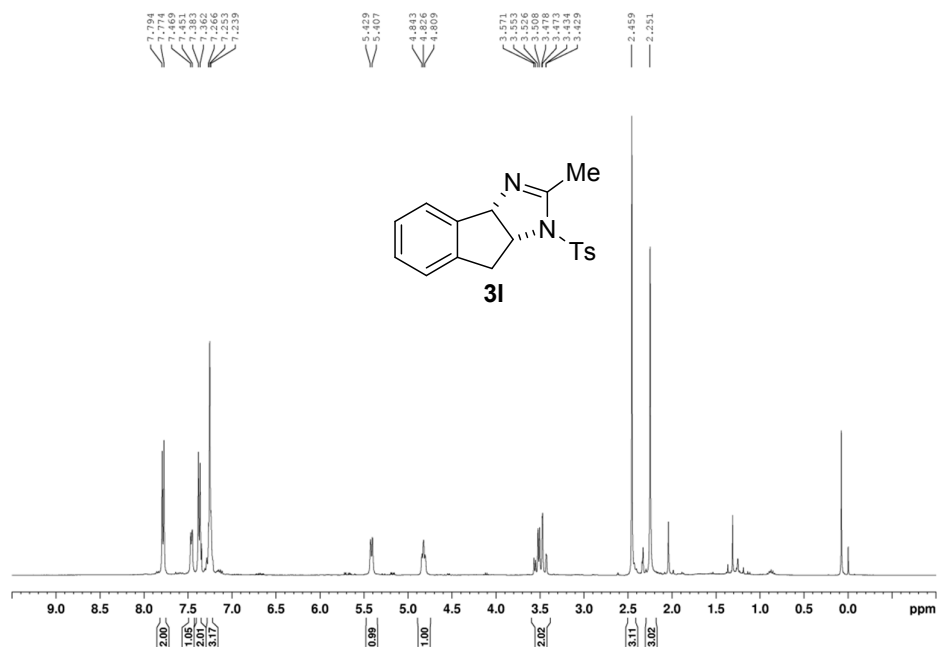
2-methyl-4-(o-tolyl)-1-tosyl-4,5-dihydro-1H-imidazole (3j)



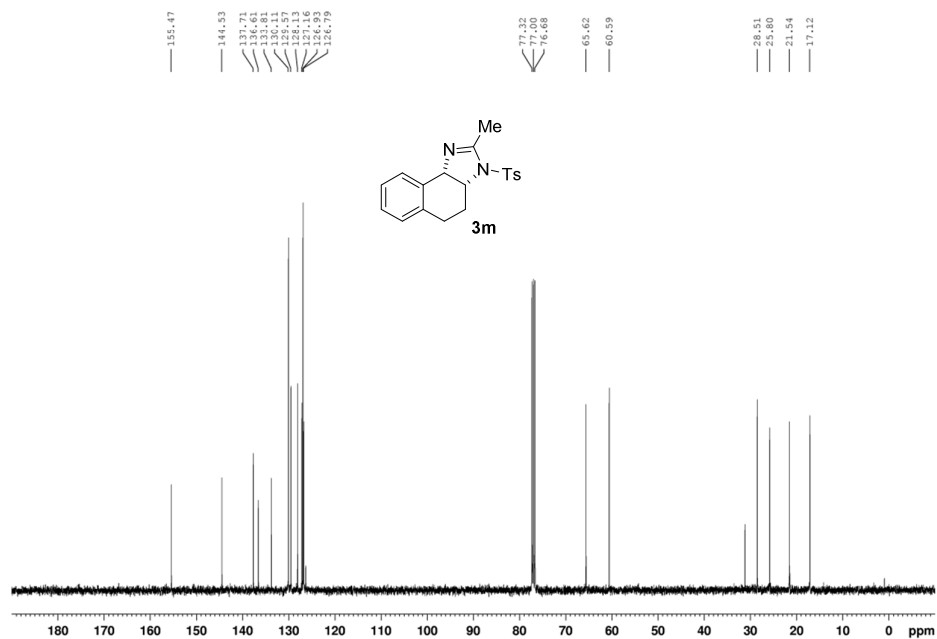
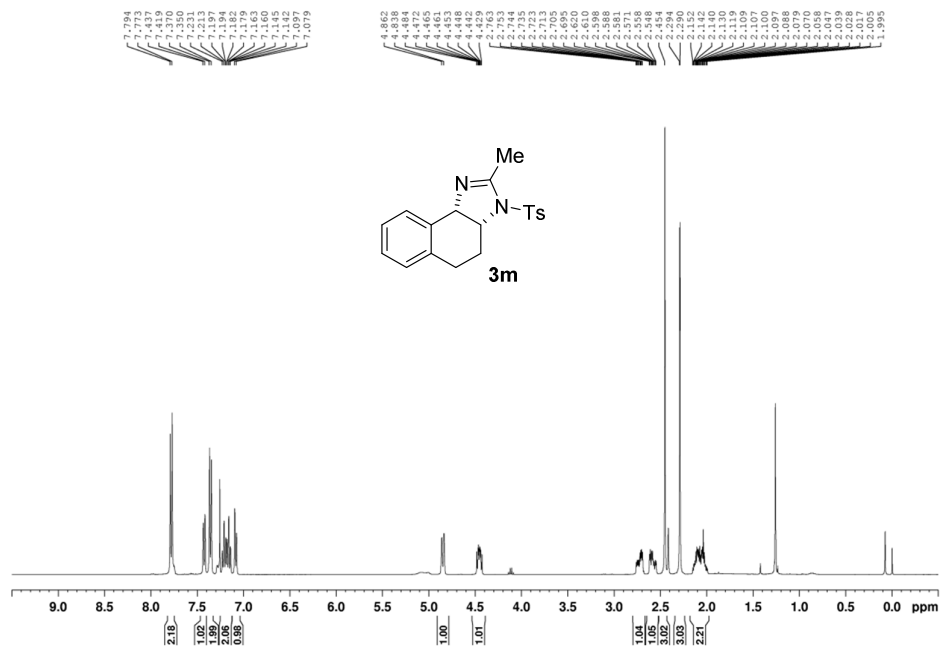
4-(4-(tert-butyl)phenyl)-2-methyl-1-tosyl-4,5-dihydro-1H-imidazole (3k)



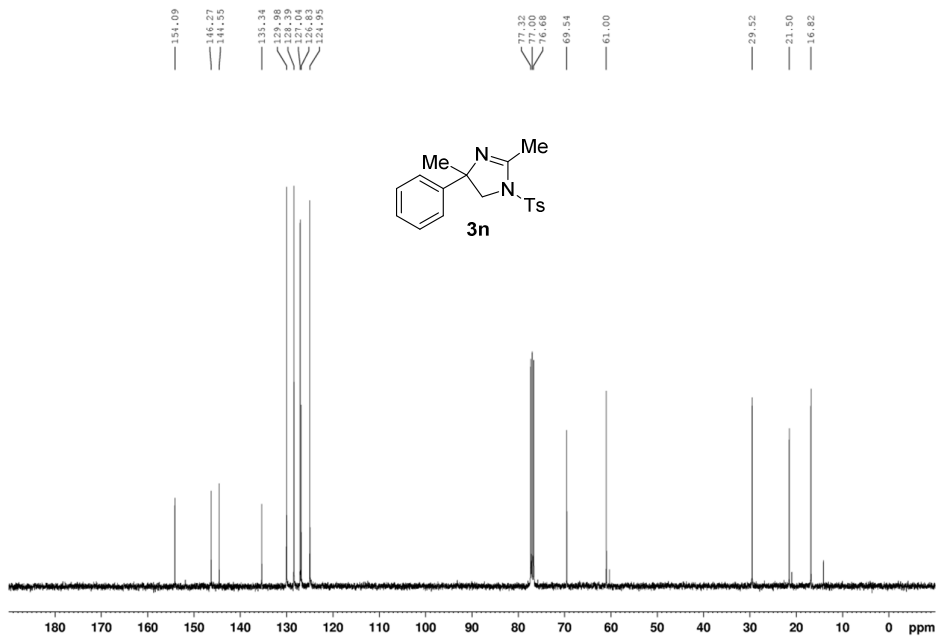
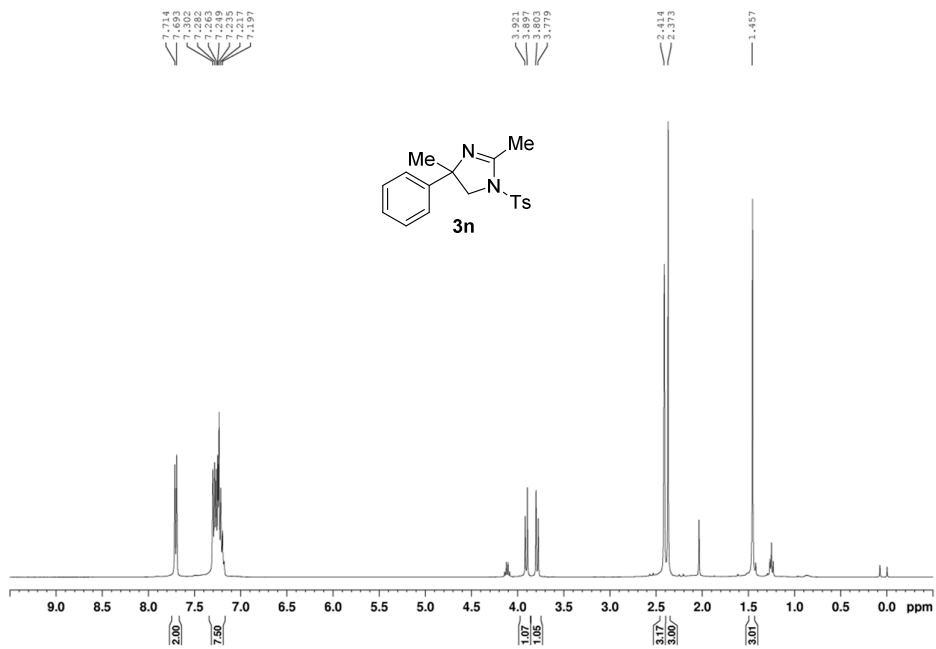
2-methyl-1-tosyl-1,3a,8,8a-tetrahydroindeno[1,2-d]imidazole (3l)



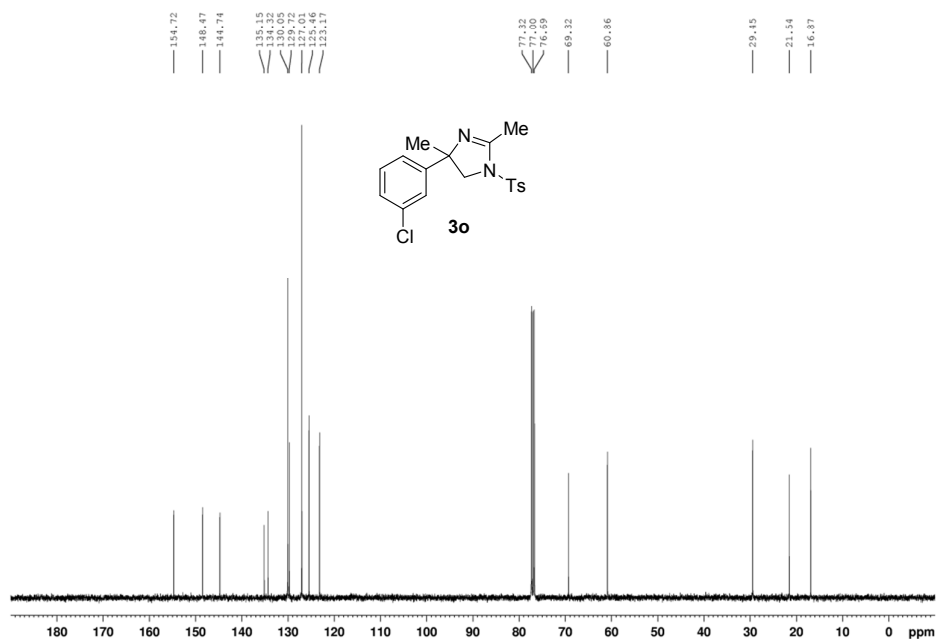
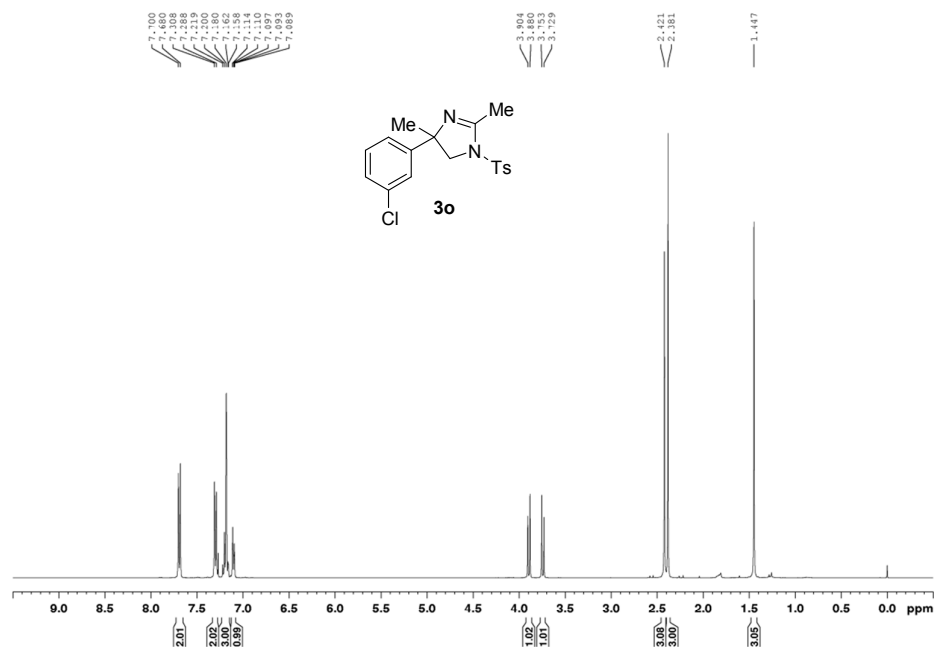
2-methyl-3-tosyl-3a,4,5,9b-tetrahydro-3H-naphtho[1,2-d]imidazole (3m)



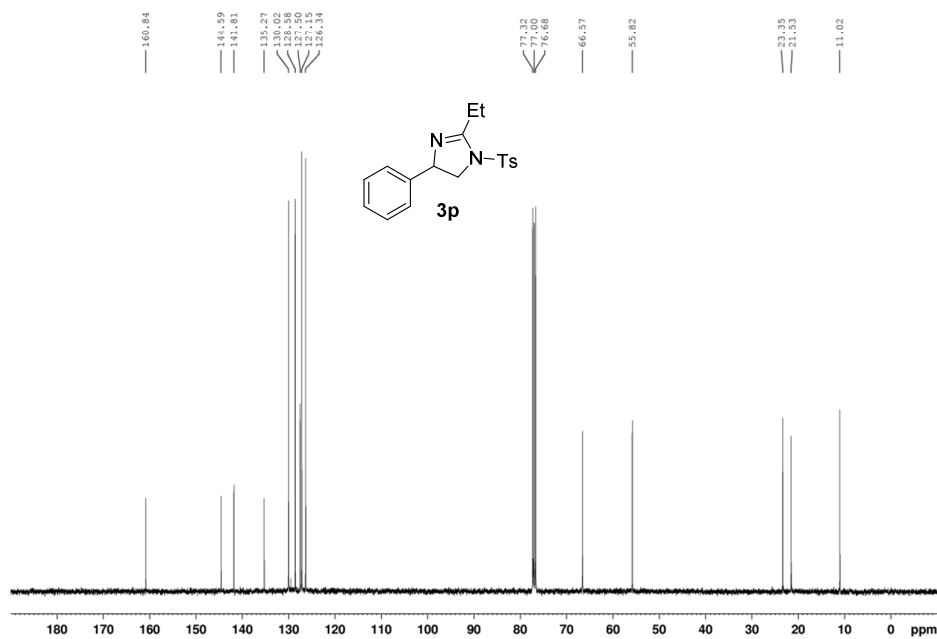
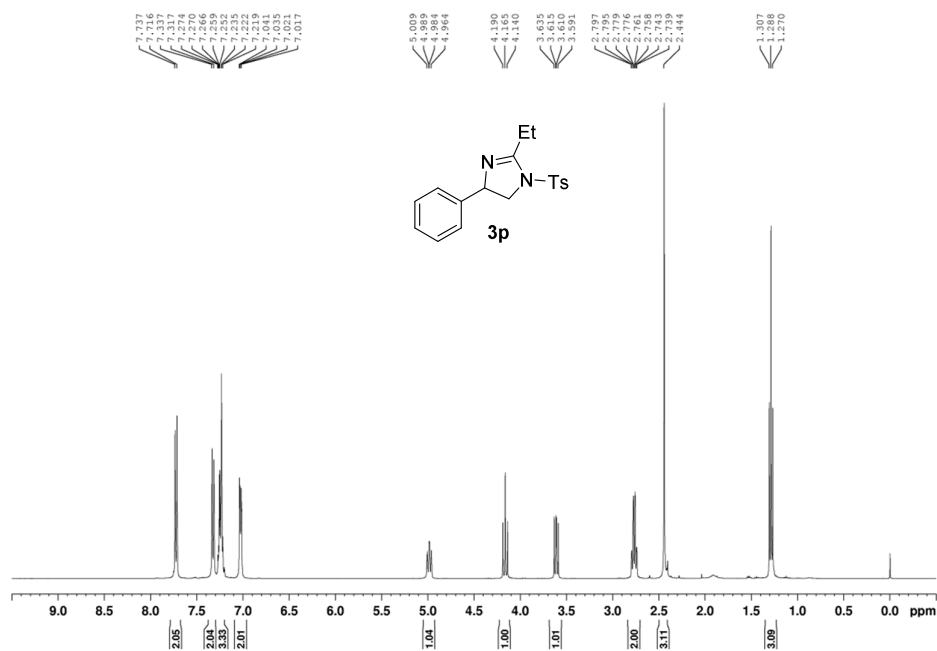
2,4-dimethyl-4-phenyl-1-tosyl-4,5-dihydro-1H-imidazole (3n)



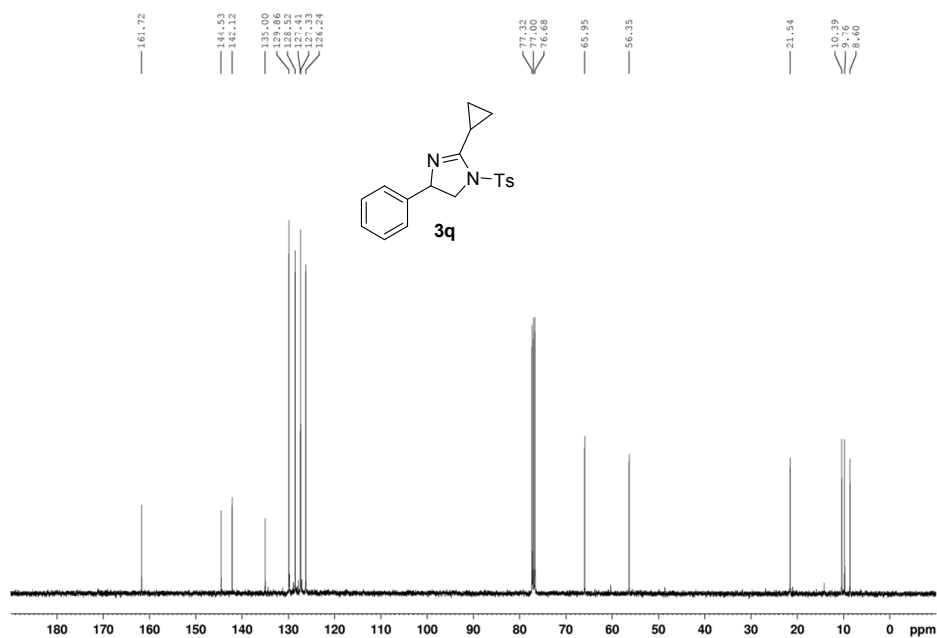
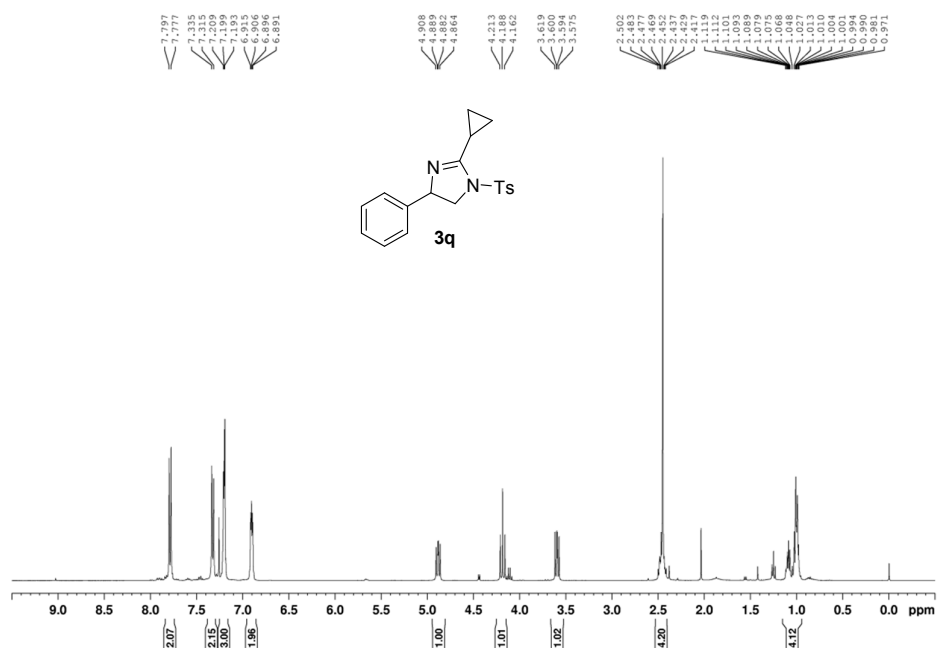
4-(3-chlorophenyl)-2,4-dimethyl-1-tosyl-4,5-dihydro-1H-imidazole (3o)



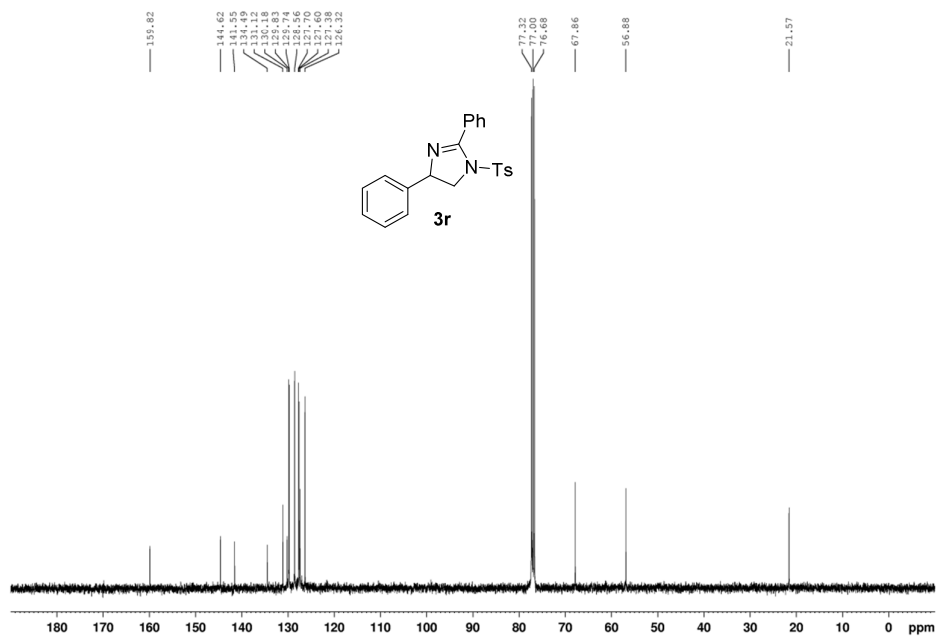
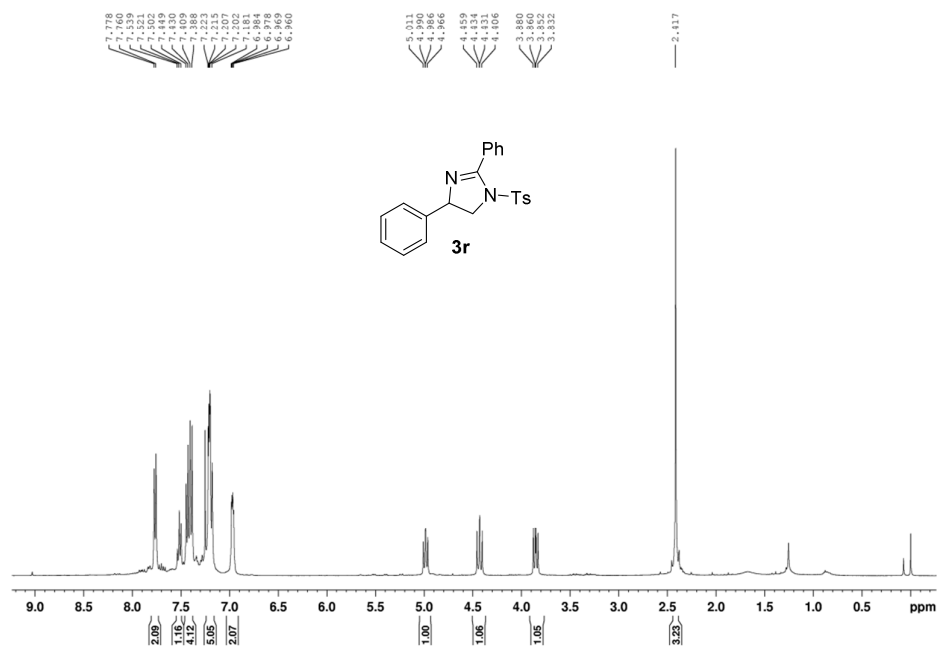
2-ethyl-4-phenyl-1-tosyl-4,5-dihydro-1H-imidazole (3p)



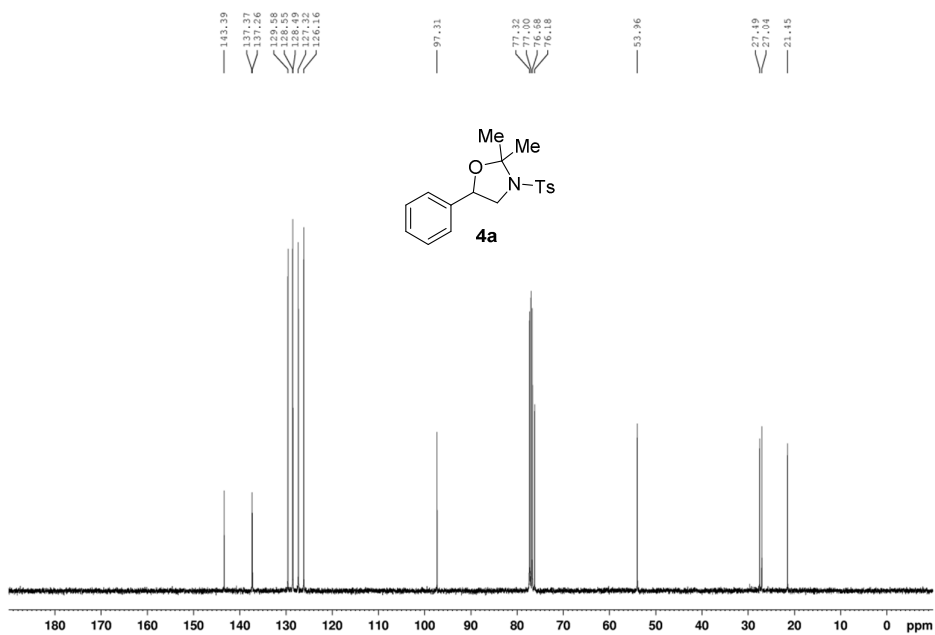
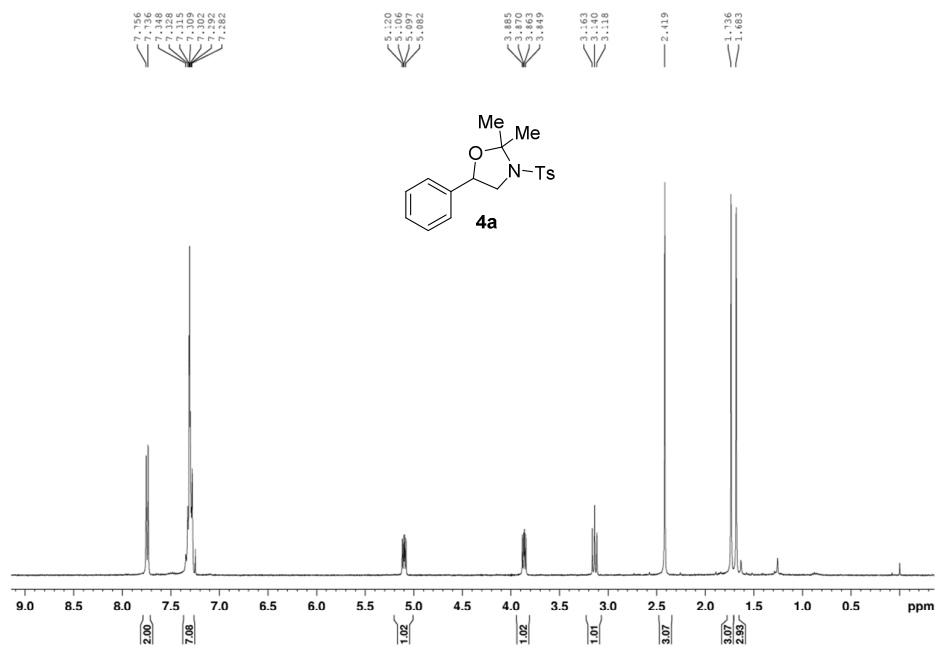
2-cyclopropyl-4-phenyl-1-tosyl-4,5-dihydro-1H-imidazole (3q)



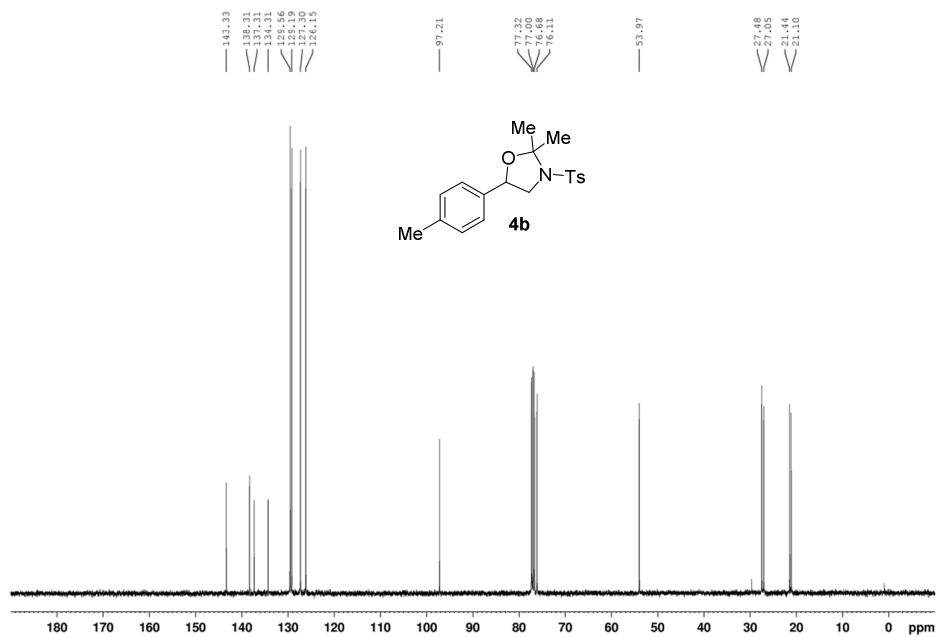
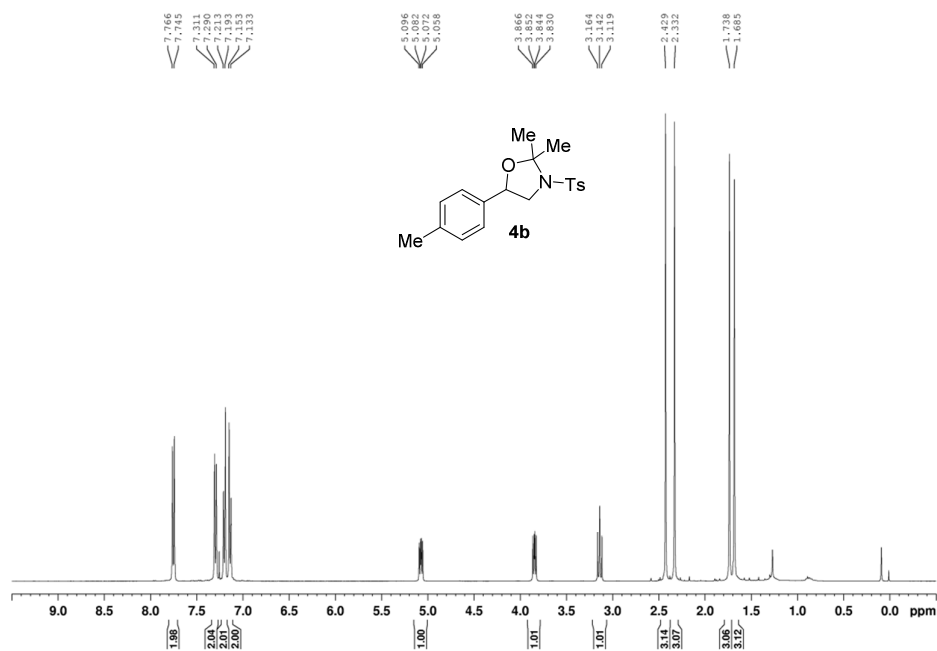
2,4-diphenyl-1-tosyl-4,5-dihydro-1H-imidazole (3r)



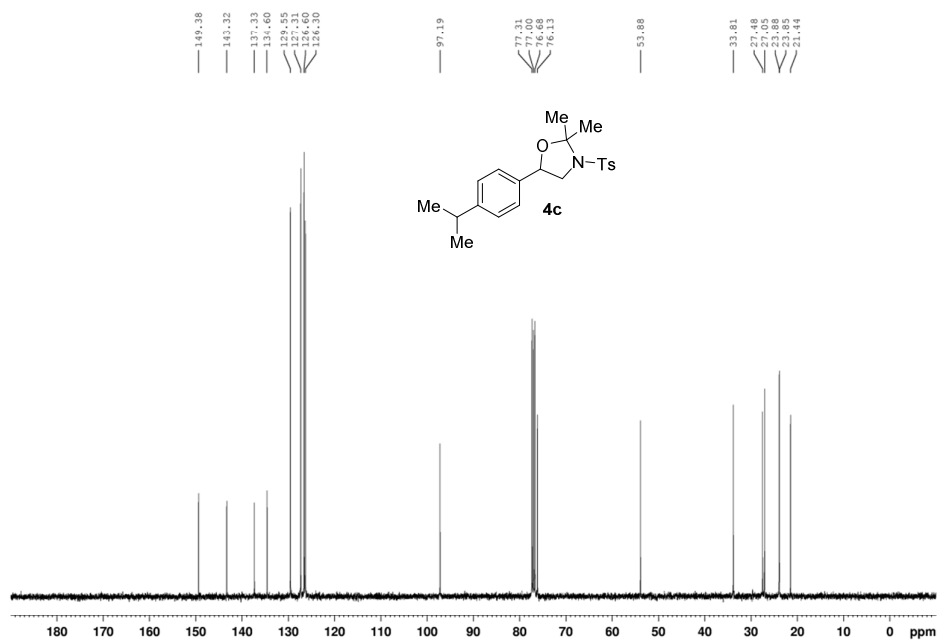
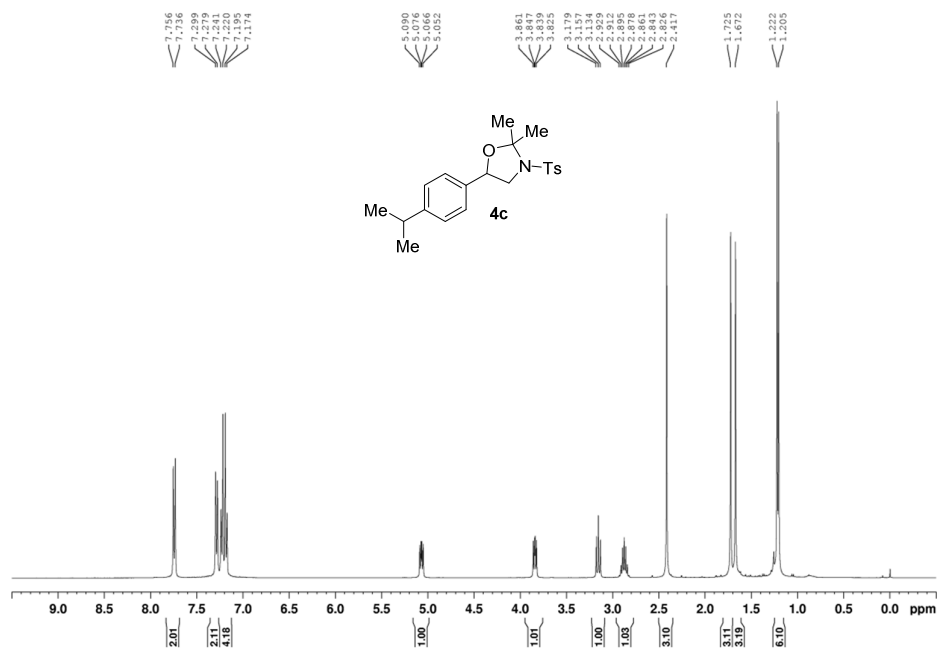
2,2-dimethyl-5-phenyl-3-tosyloxazolidine (**4a**)



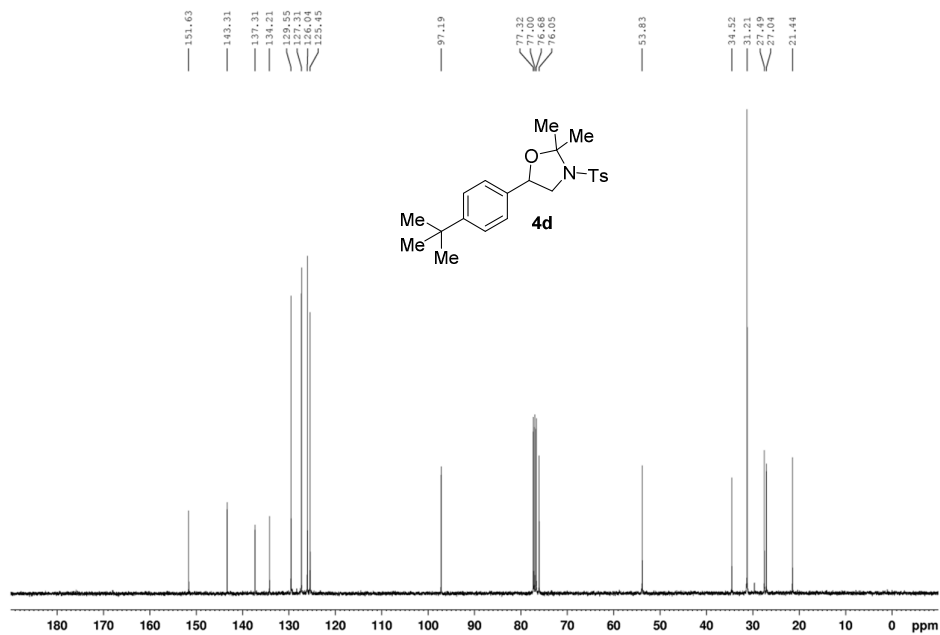
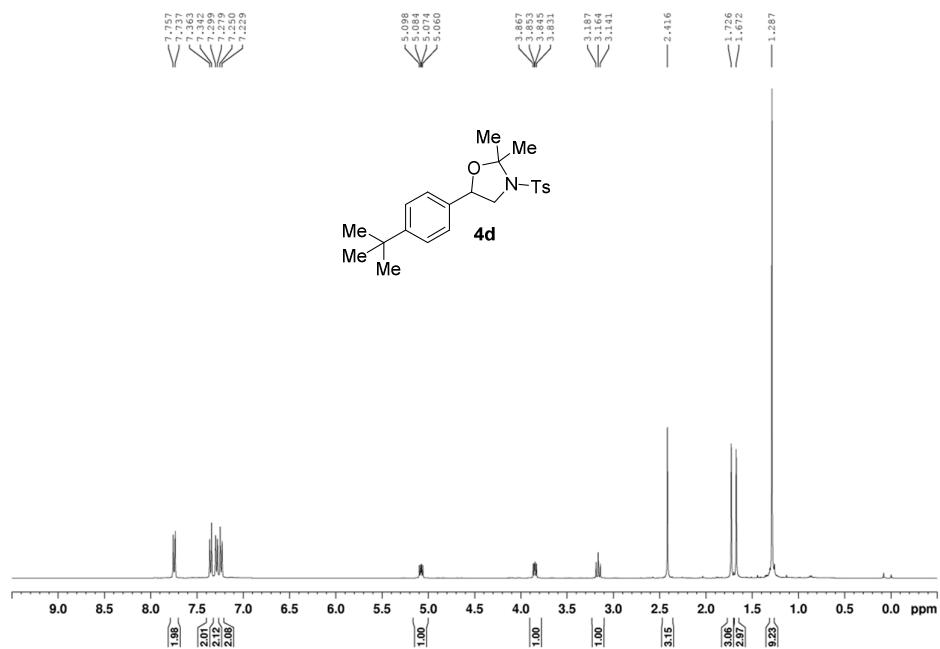
2,2-dimethyl-5-(p-tolyl)-3-tosyloxazolidine (4b)



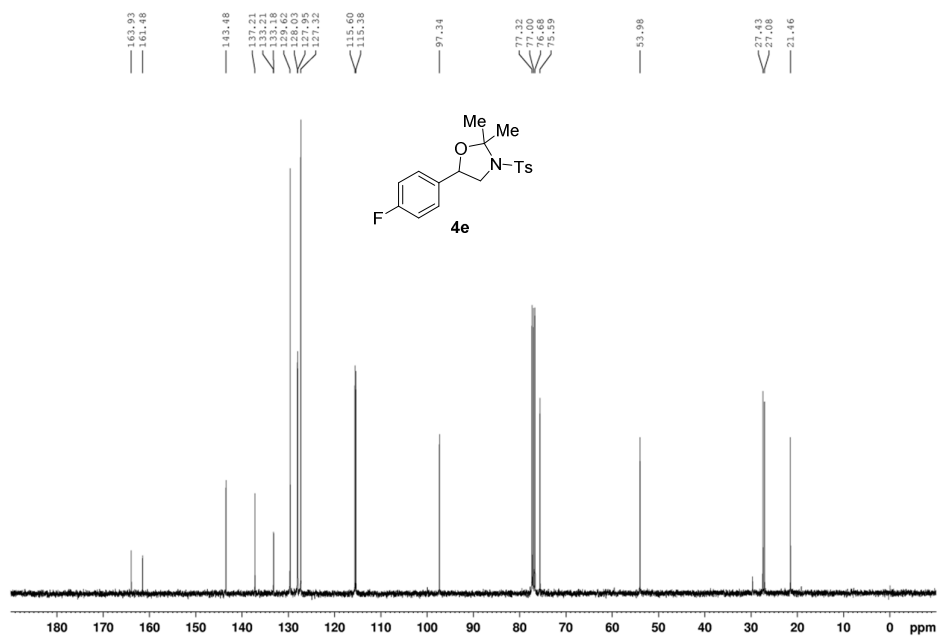
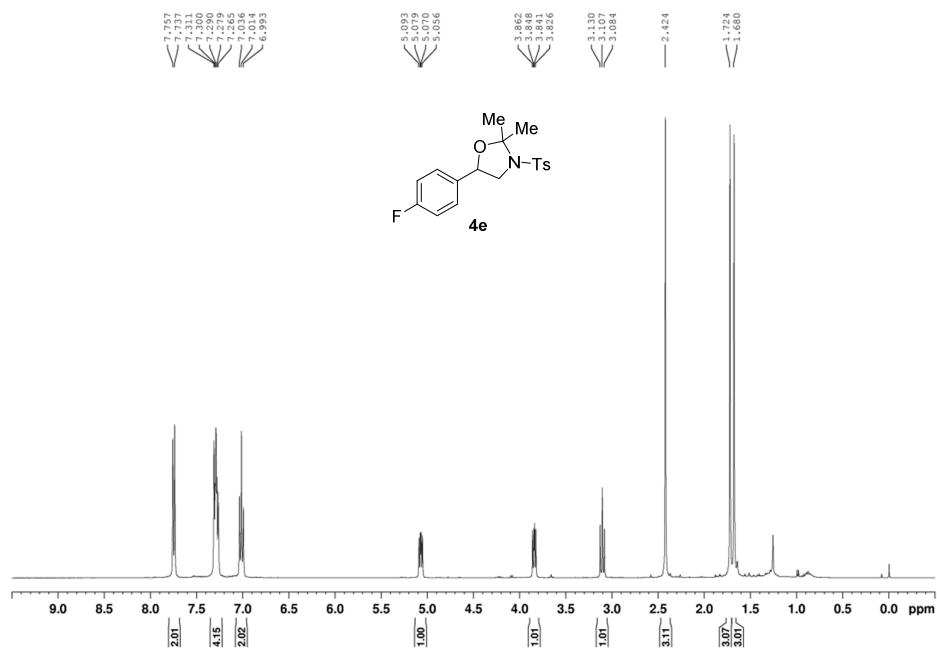
5-(4-isopropylphenyl)-2,2-dimethyl-3-tosyloxazolidine (4c)



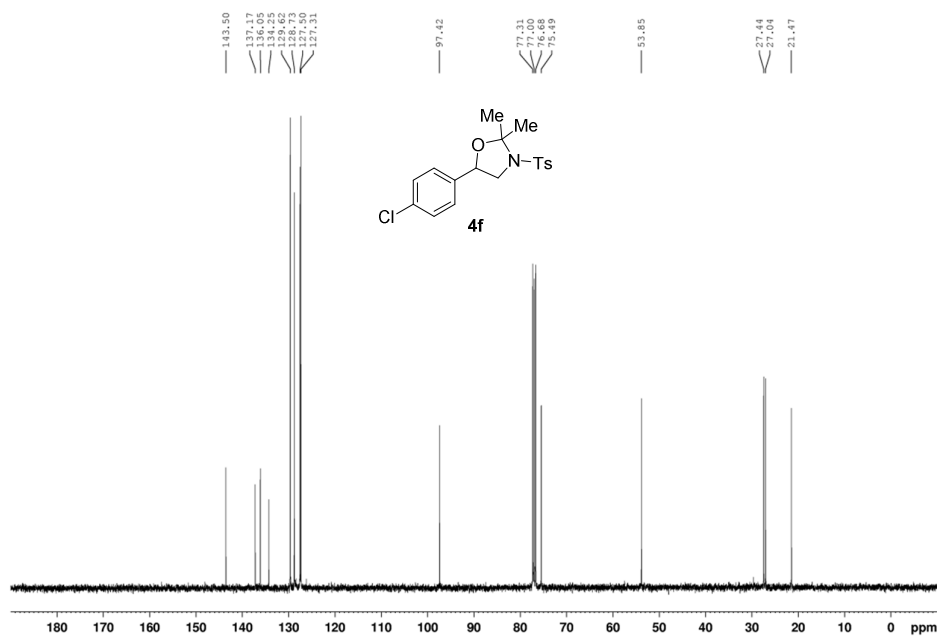
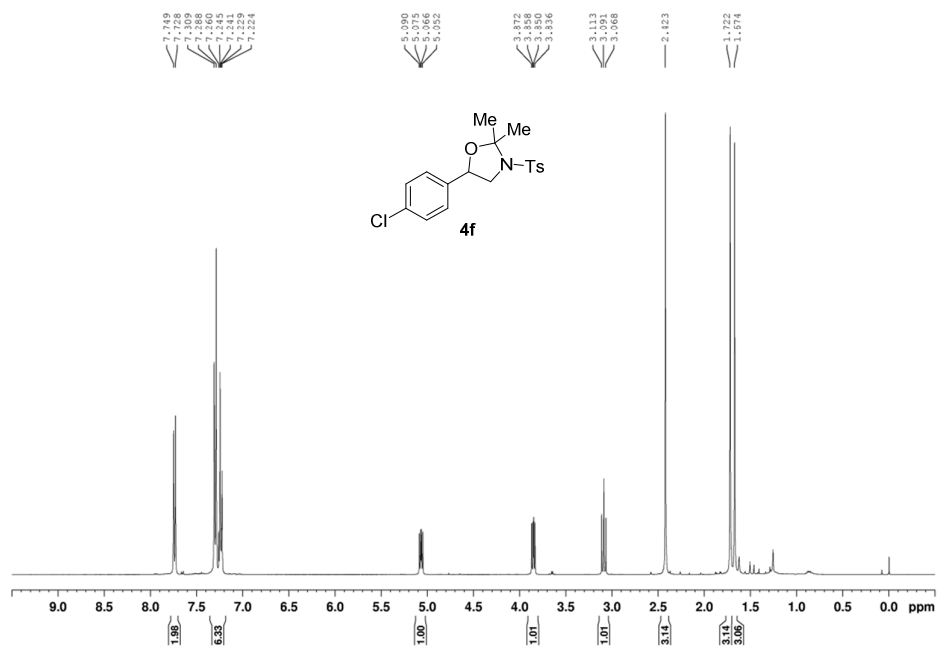
5-(4-(tert-butyl)phenyl)-2,2-dimethyl-3-tosyloxazolidine (4d)



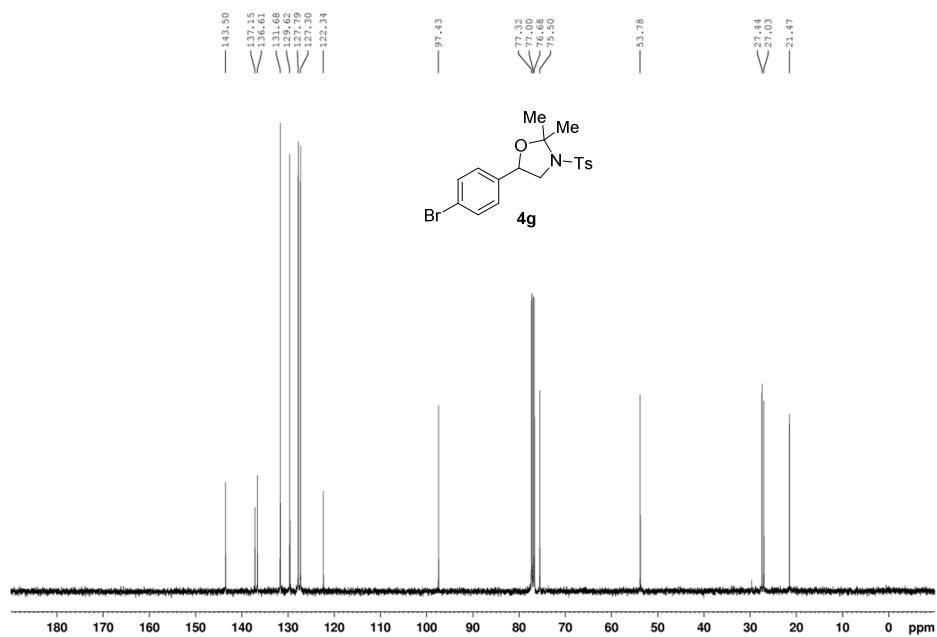
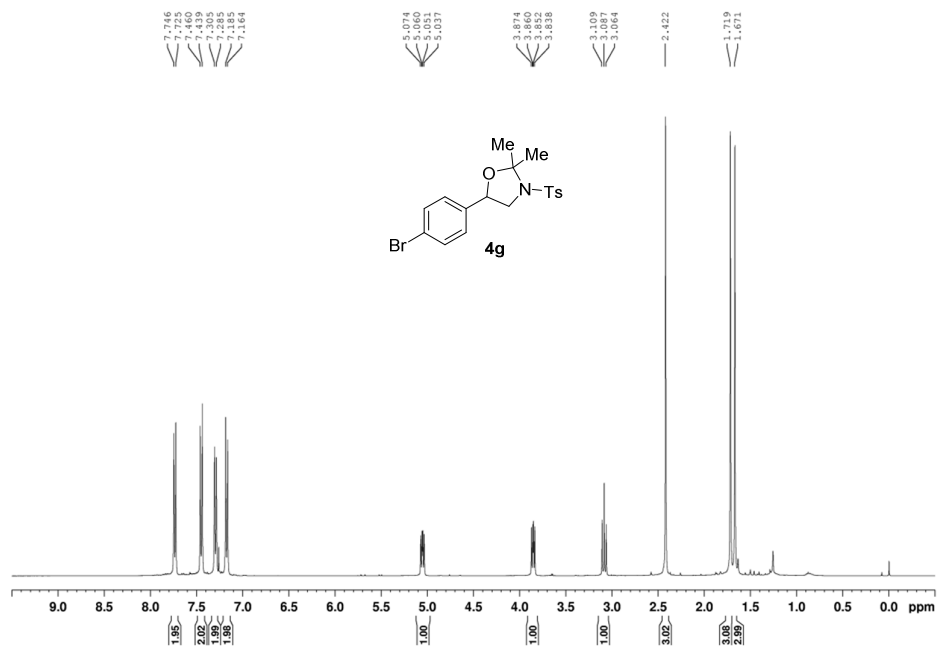
5-(4-fluorophenyl)-2,2-dimethyl-3-tosyloxazolidine (4e)



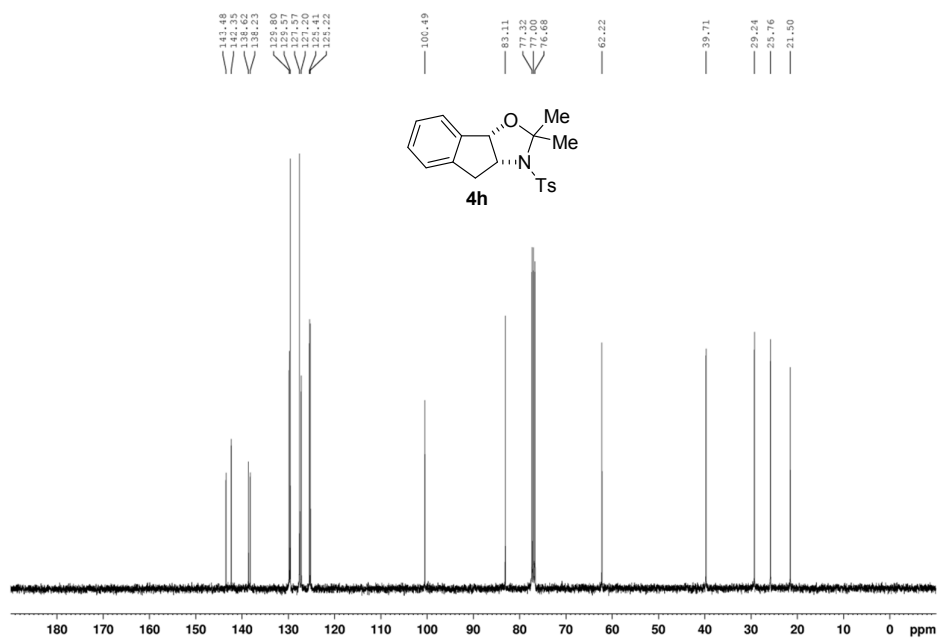
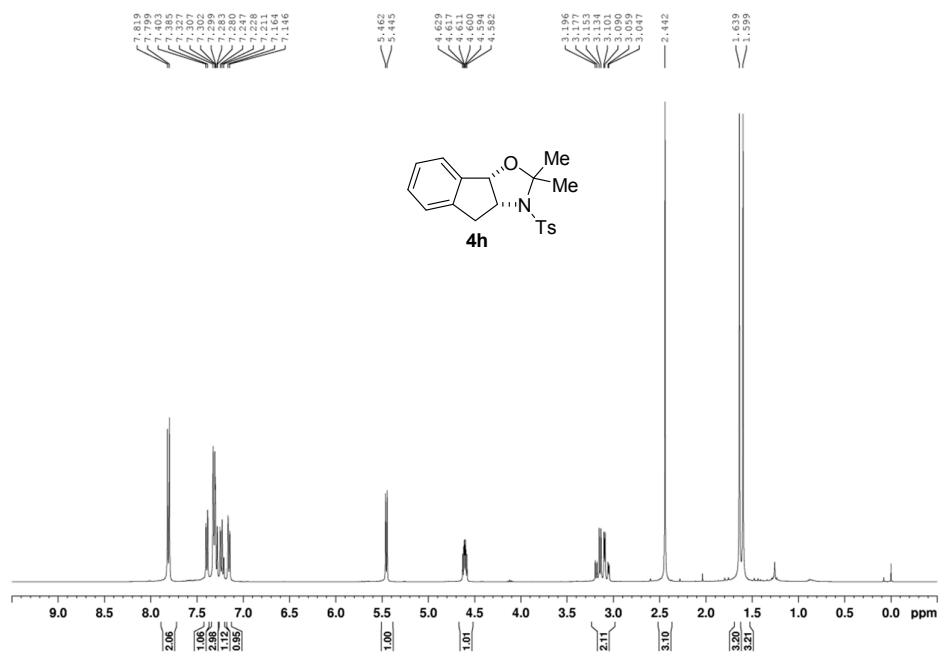
5-(4-chlorophenyl)-2,2-dimethyl-3-tosyloxazolidine (4f)



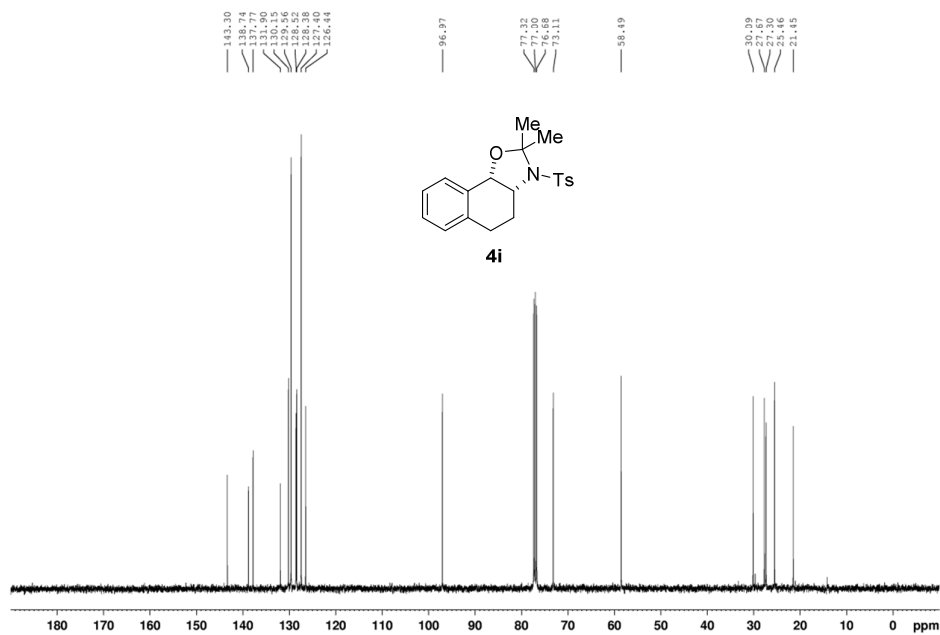
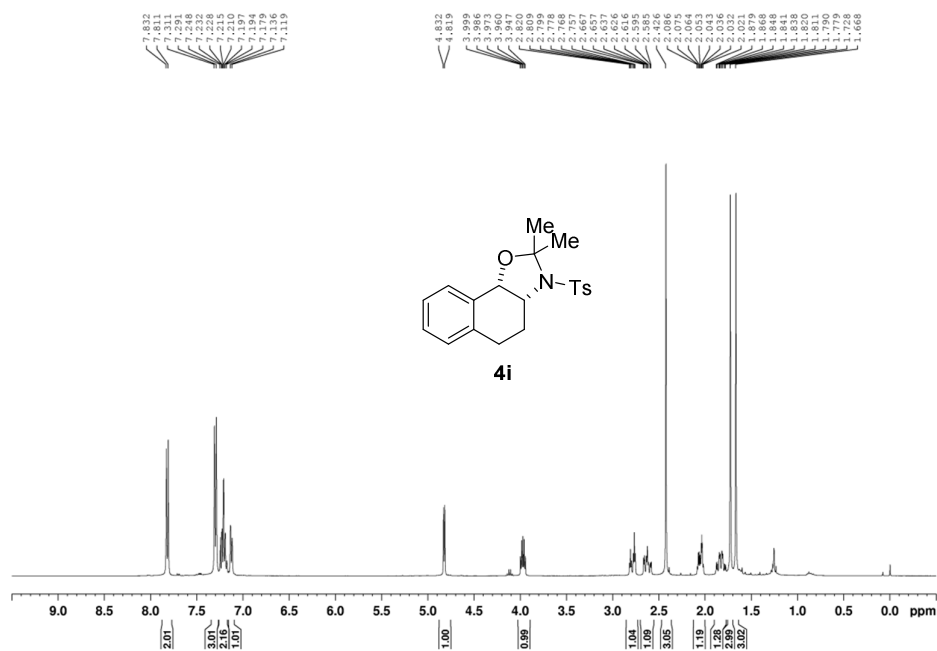
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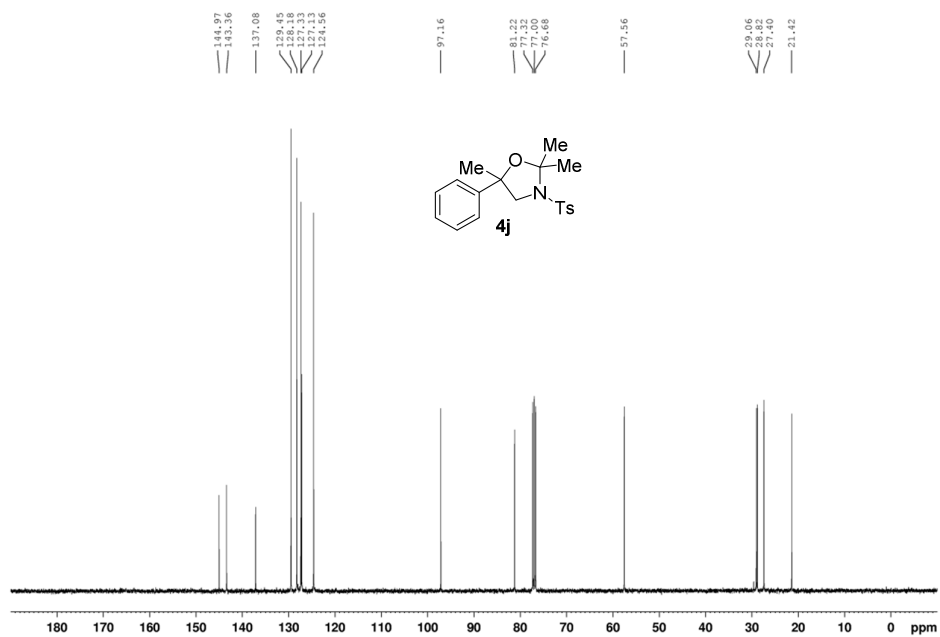
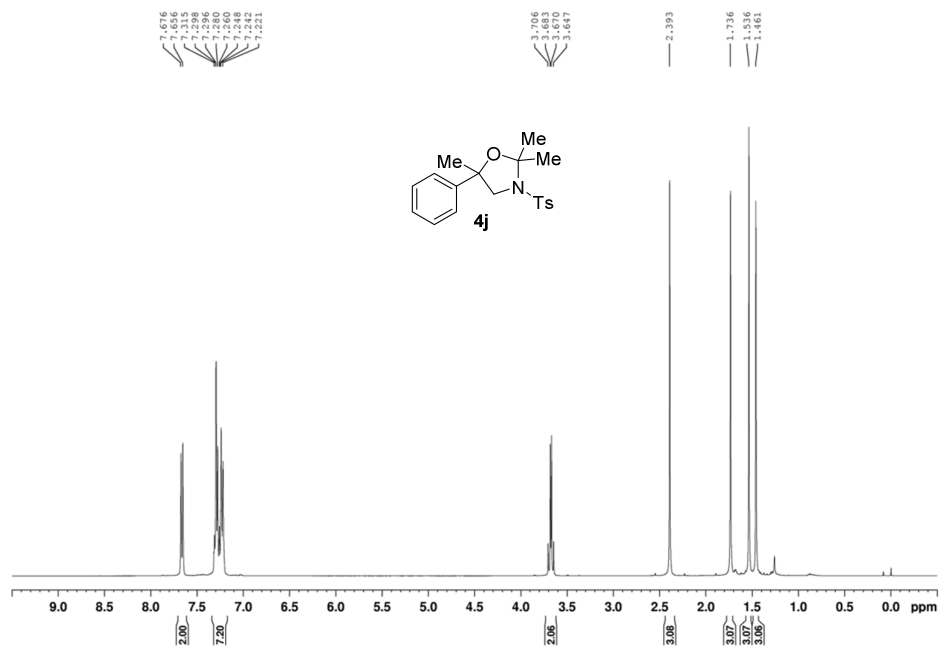
2,2-dimethyl-3-tosyl-3,3a,4,8b-tetrahydro-2H-indeno[2,1-d]oxazole (4h)



2,2-dimethyl-3-tosyl-2,3,3a,4,5,9b-hexahydronaphtho[2,1-d]oxazole (4i)



2,2,5-trimethyl-5-phenyl-3-tosyloxazolidine (**4j**)



5-(3-chlorophenyl)-2,2,5-trimethyl-3-tosyloxazolidine (4k)

