Palladium-catalyzed Dehydrogenative C-2 Alkenylation of 5-Arylimidazoles and Related Azoles with Styrenes

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[2] Present address: SGS Italia S.p.A., Via Colombara 115, 30176 Malcontenta (VE), Italy

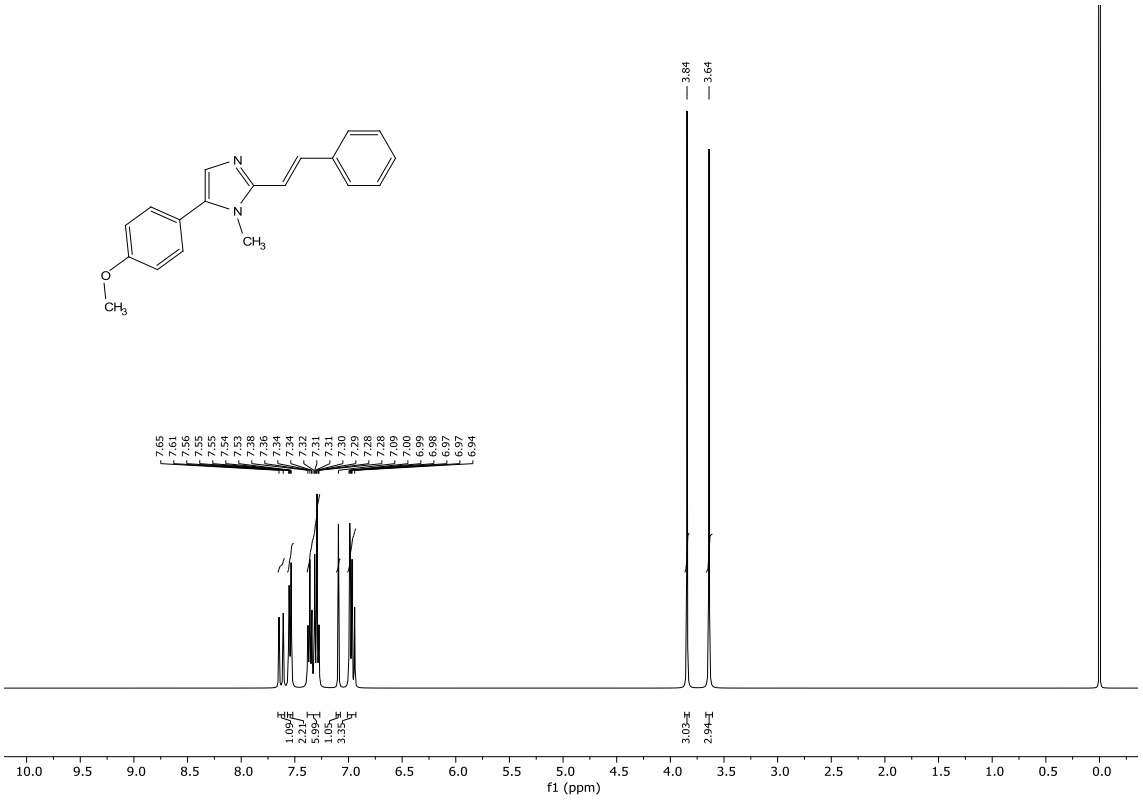
[*] Correspondence: fabio.bellina@unipi.it; Tel.: +39 0502219282

Supporting Information

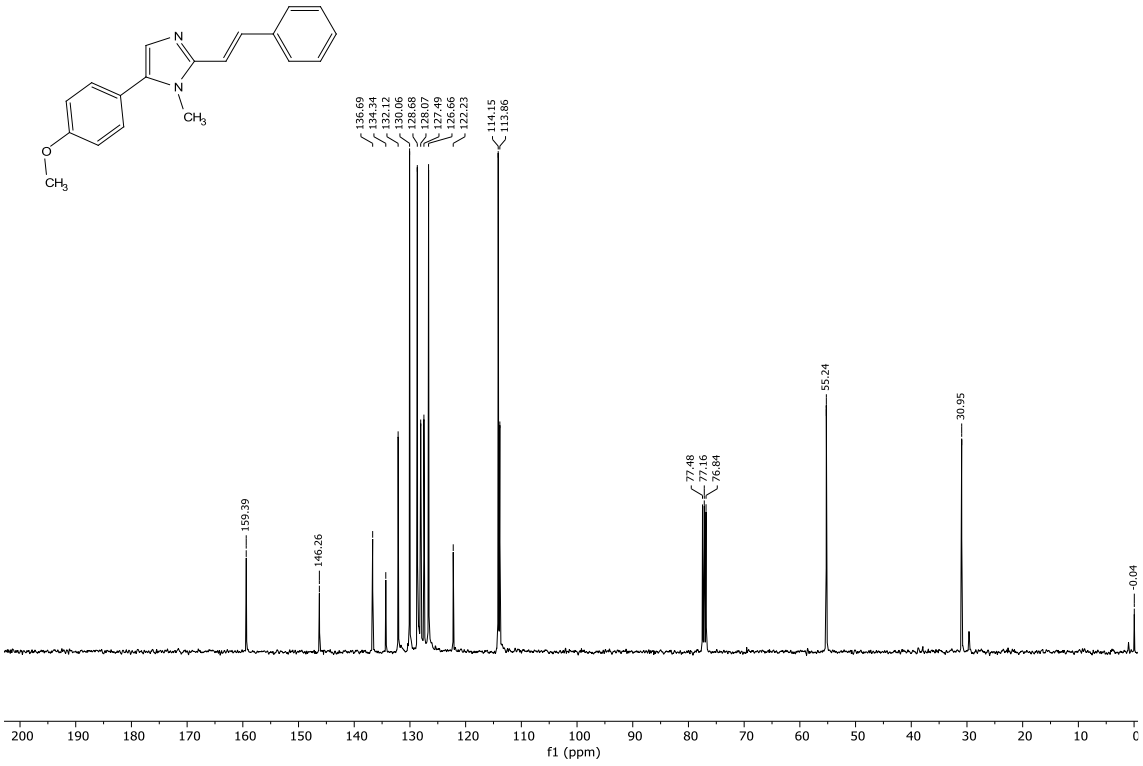
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^{1}H and ^{13}C NMR spectra of products

(E)-5-(4-Methoxyphenyl)-1-methyl-2-styryl-1H-imidazole (3a)

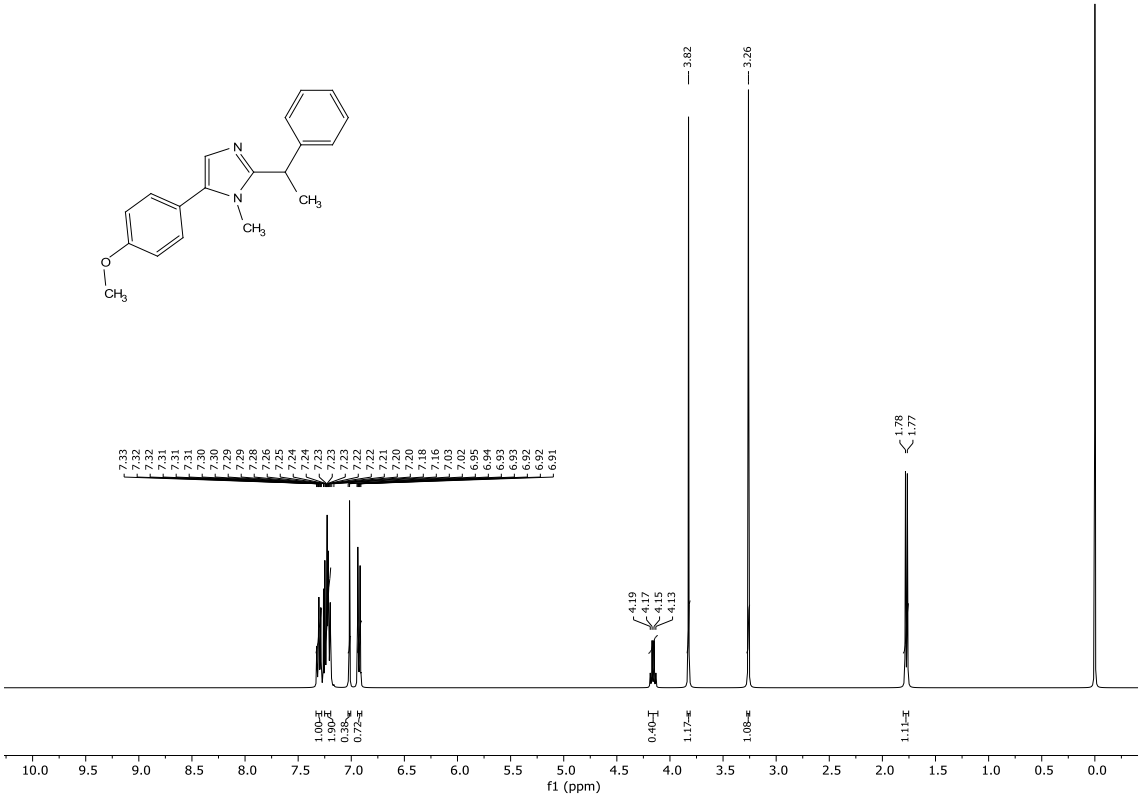


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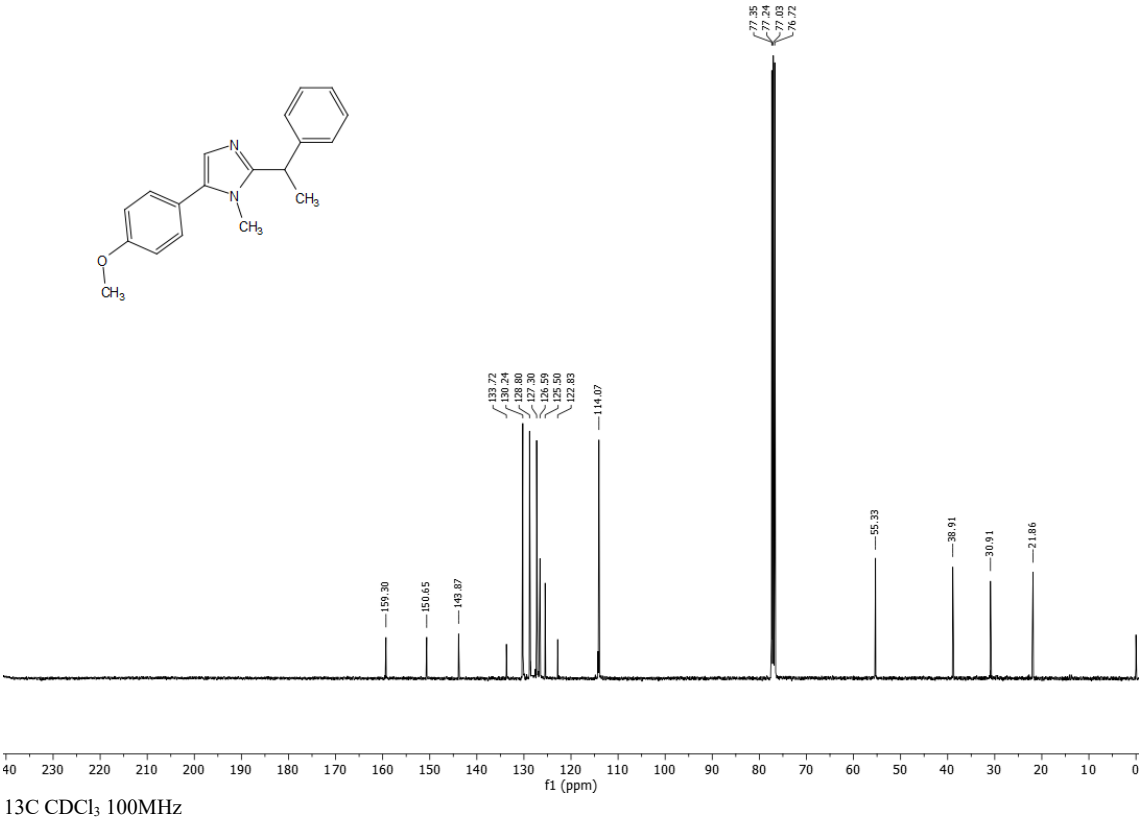


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5-(4-methoxyphenyl)-1-methyl-2-(1-phenylethyl)-1H-imidazole (4)

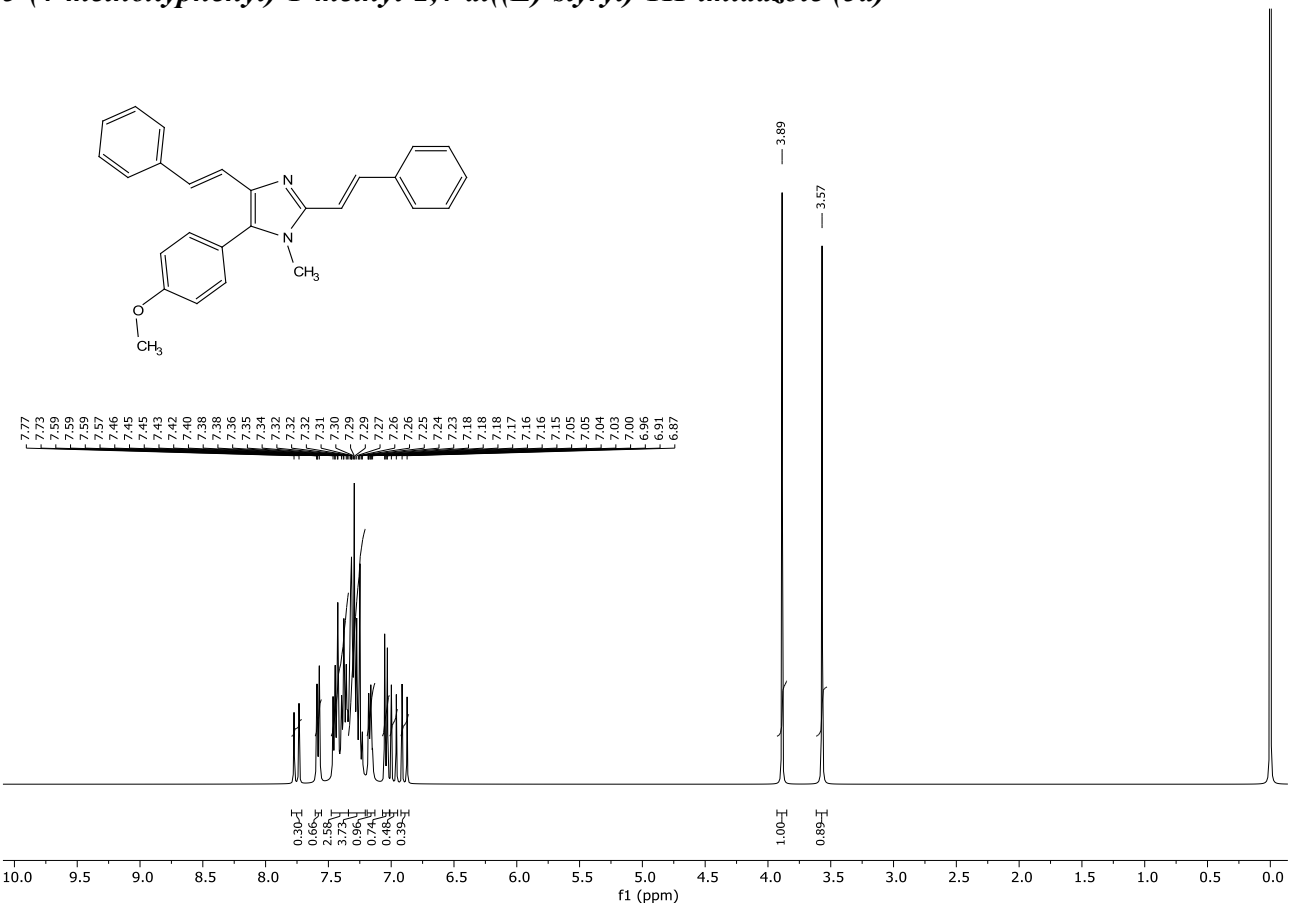


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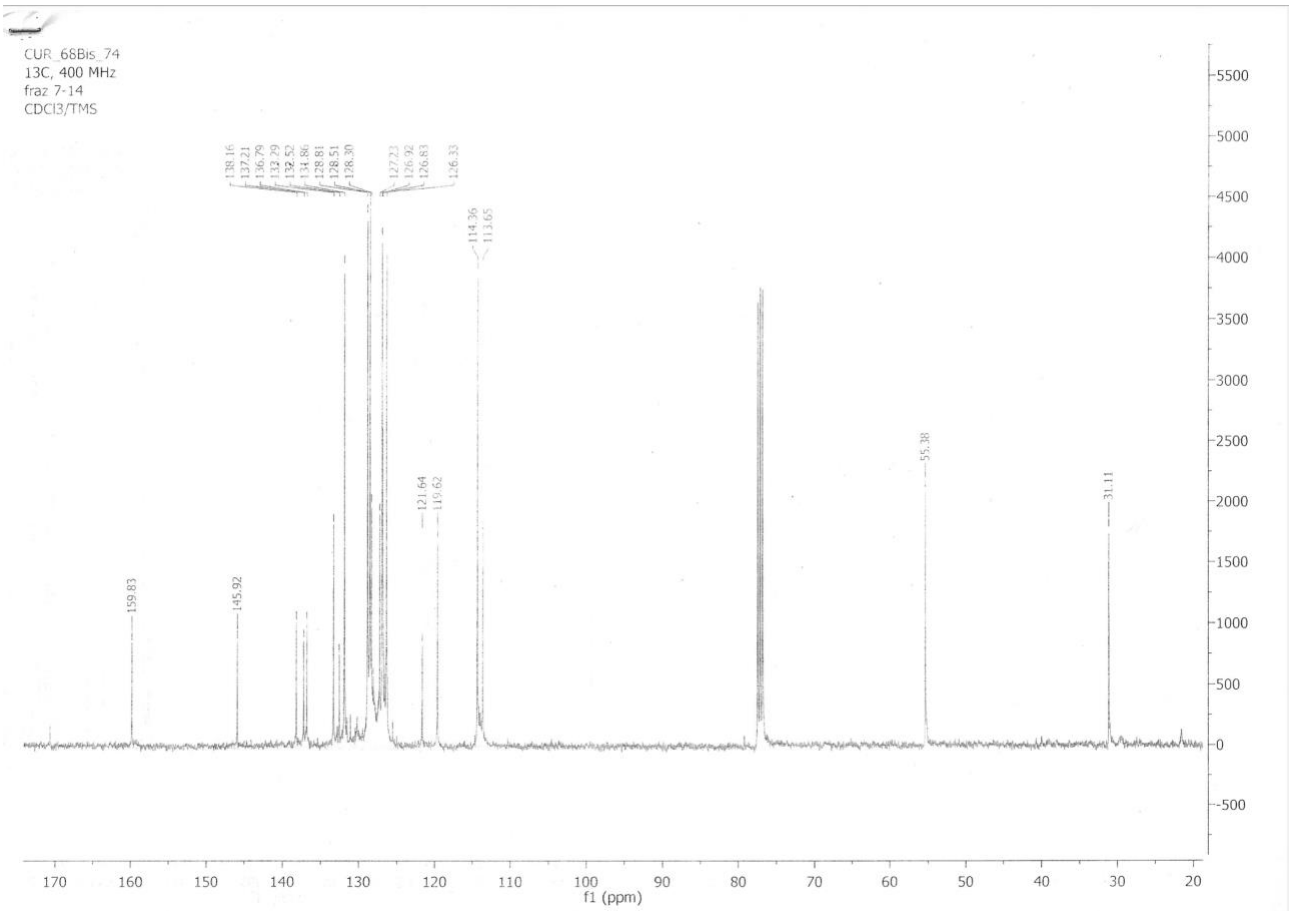


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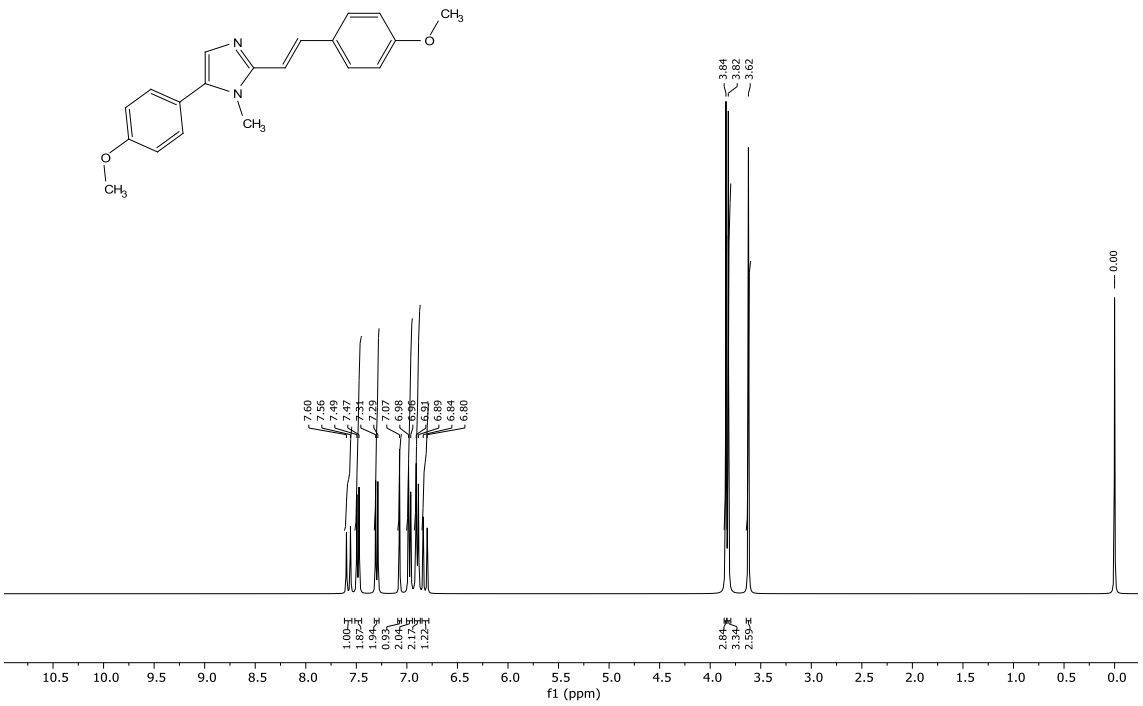
5-(4-methoxyphenyl)-1-methyl-2,4-di((E)-styryl)-1H-imidazole (5a)



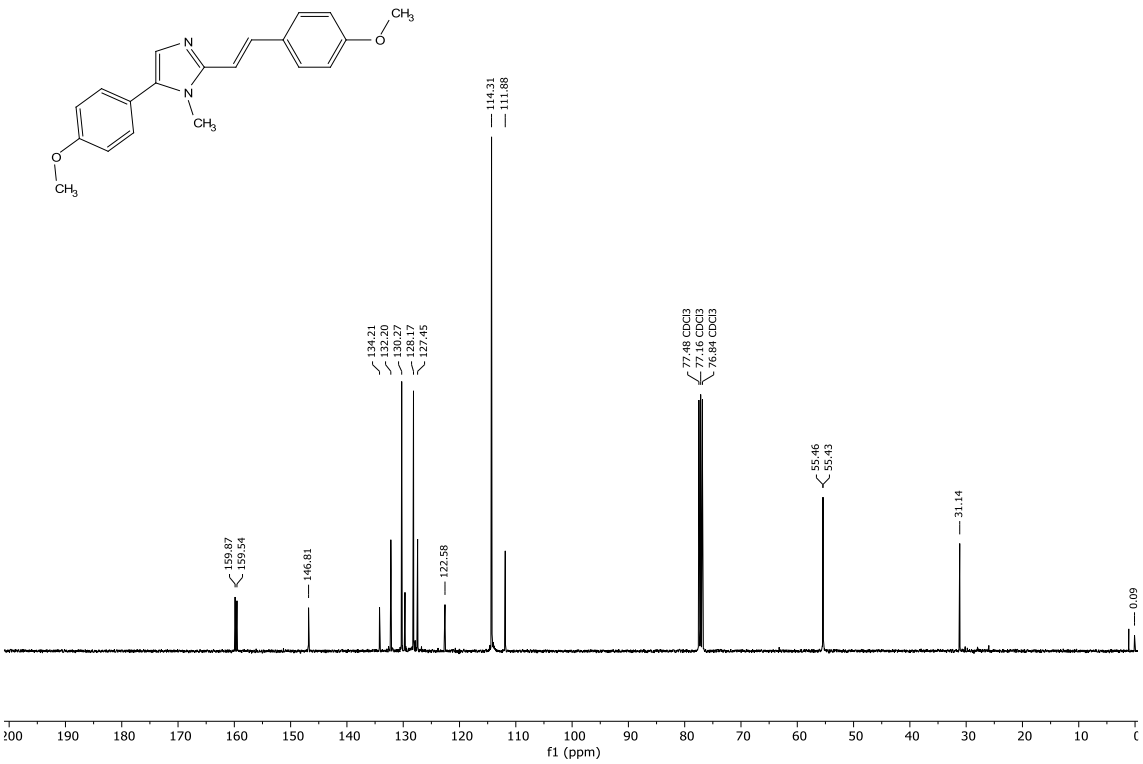
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(E)-5-(4-methoxyphenyl)-2-(4-methoxystyryl)-1-methyl-1H-imidazole (3b)

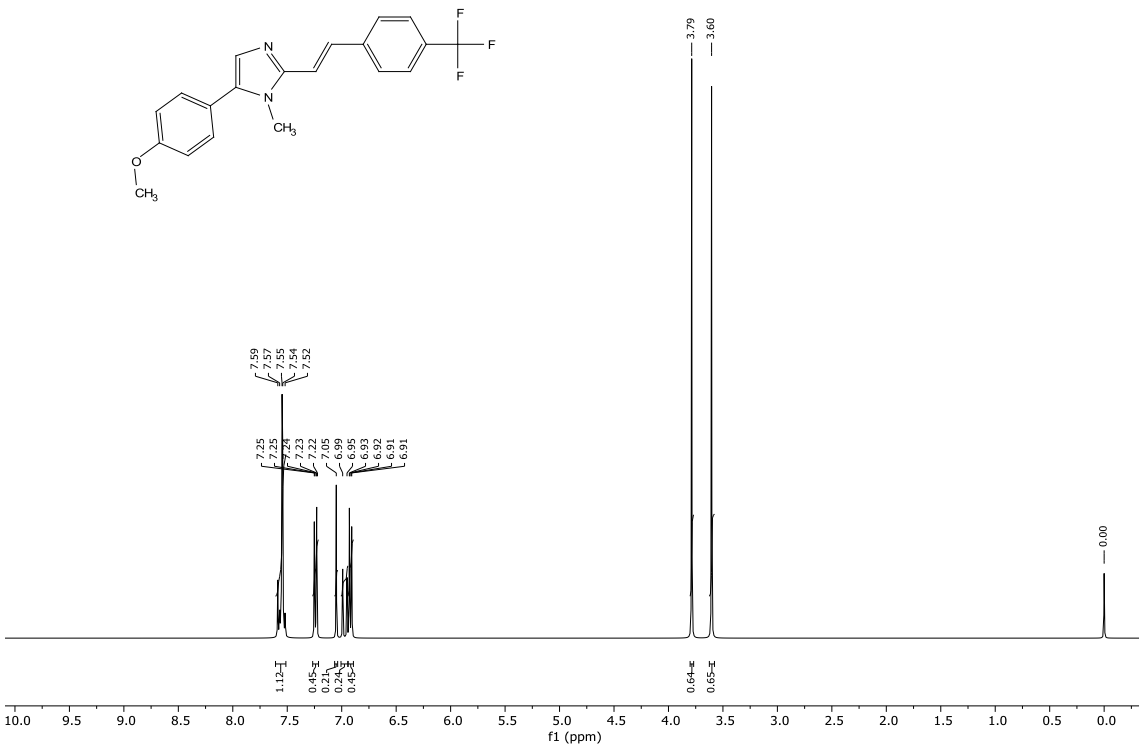


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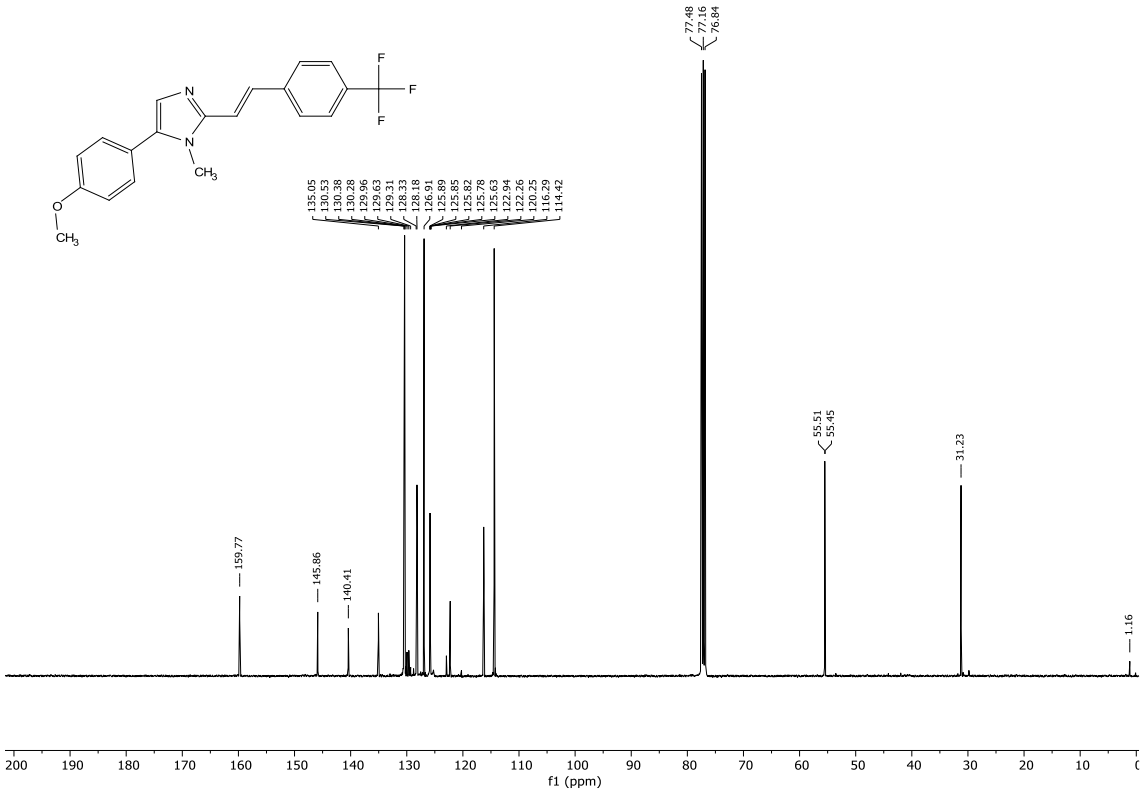


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(E)-5-(4-methoxyphenyl)-1-methyl-2-(4-(trifluoromethyl)styryl)-1H-imidazole (3c)

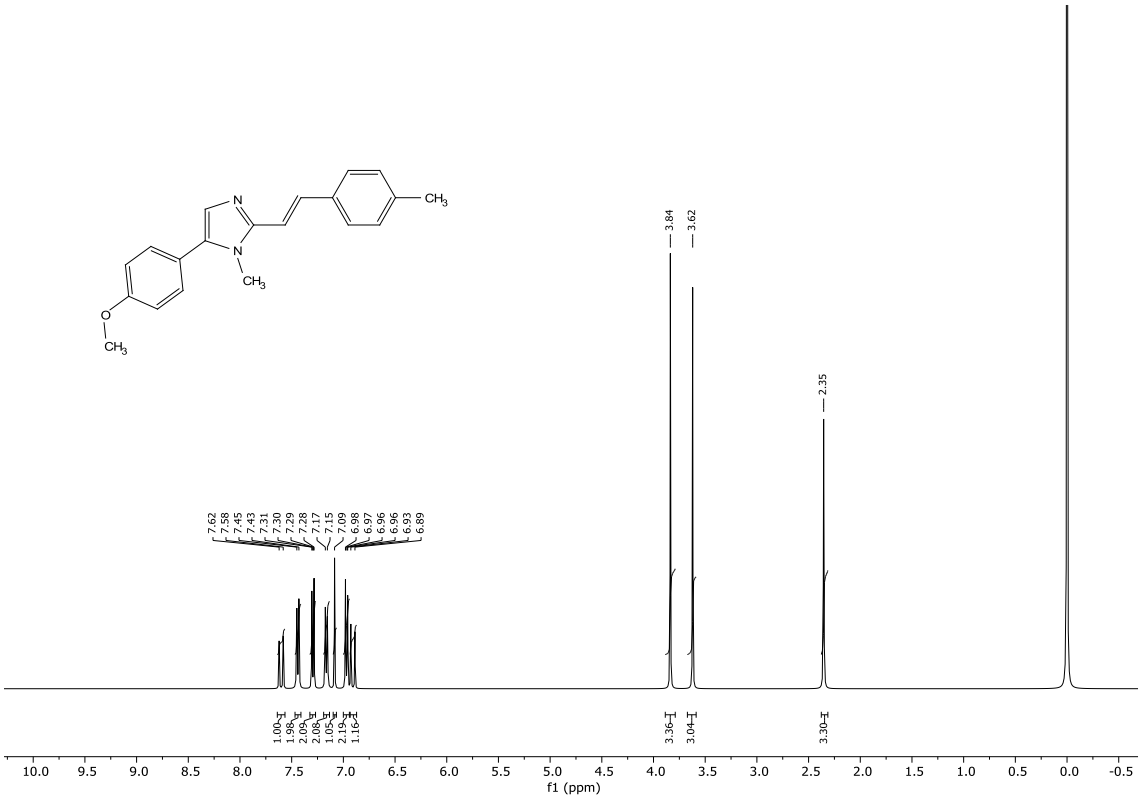


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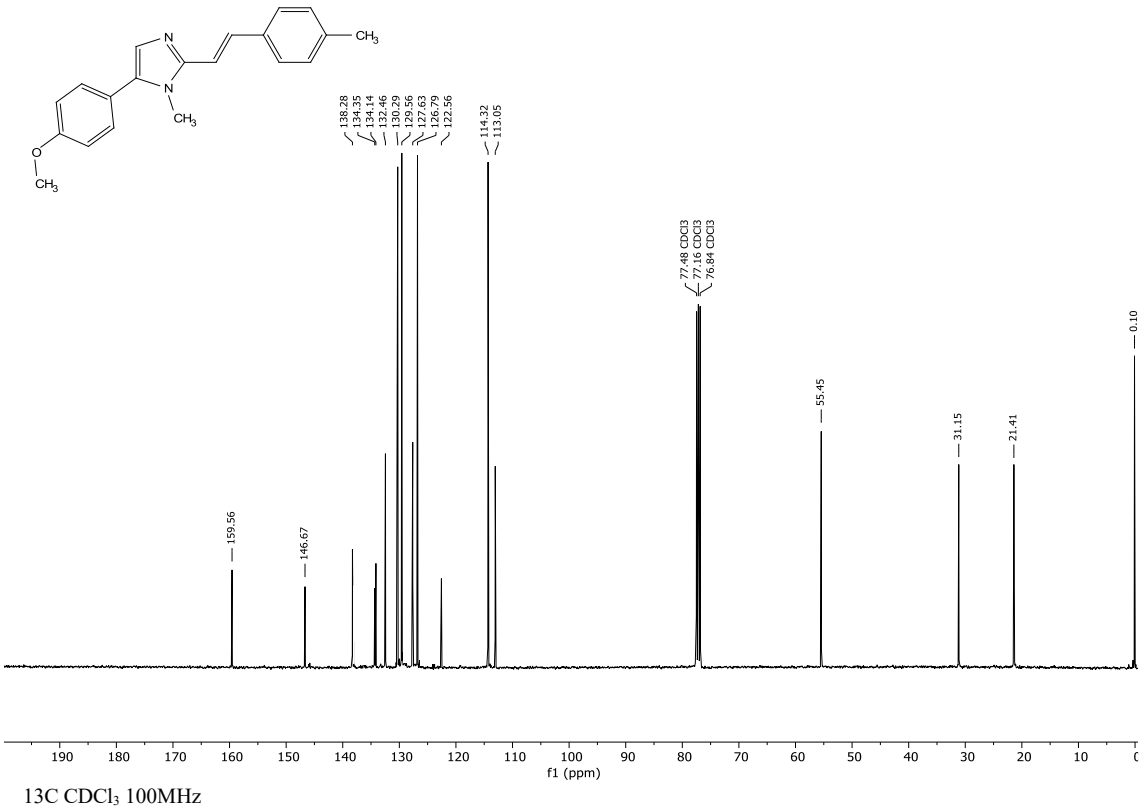


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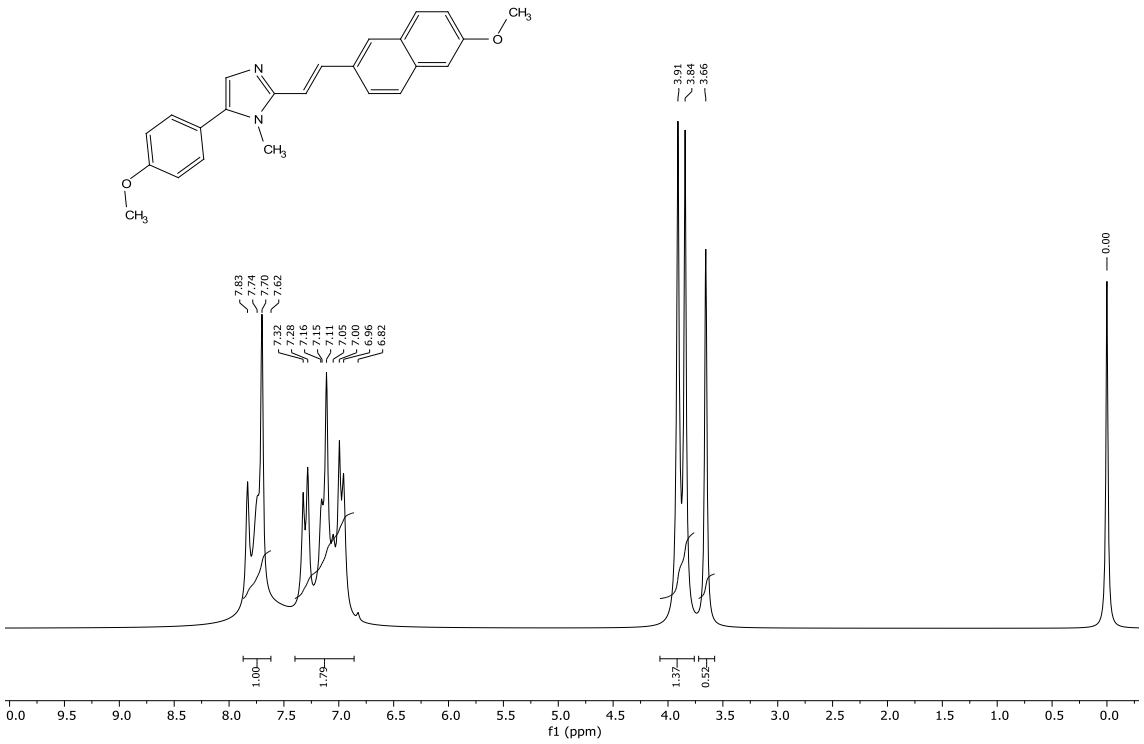


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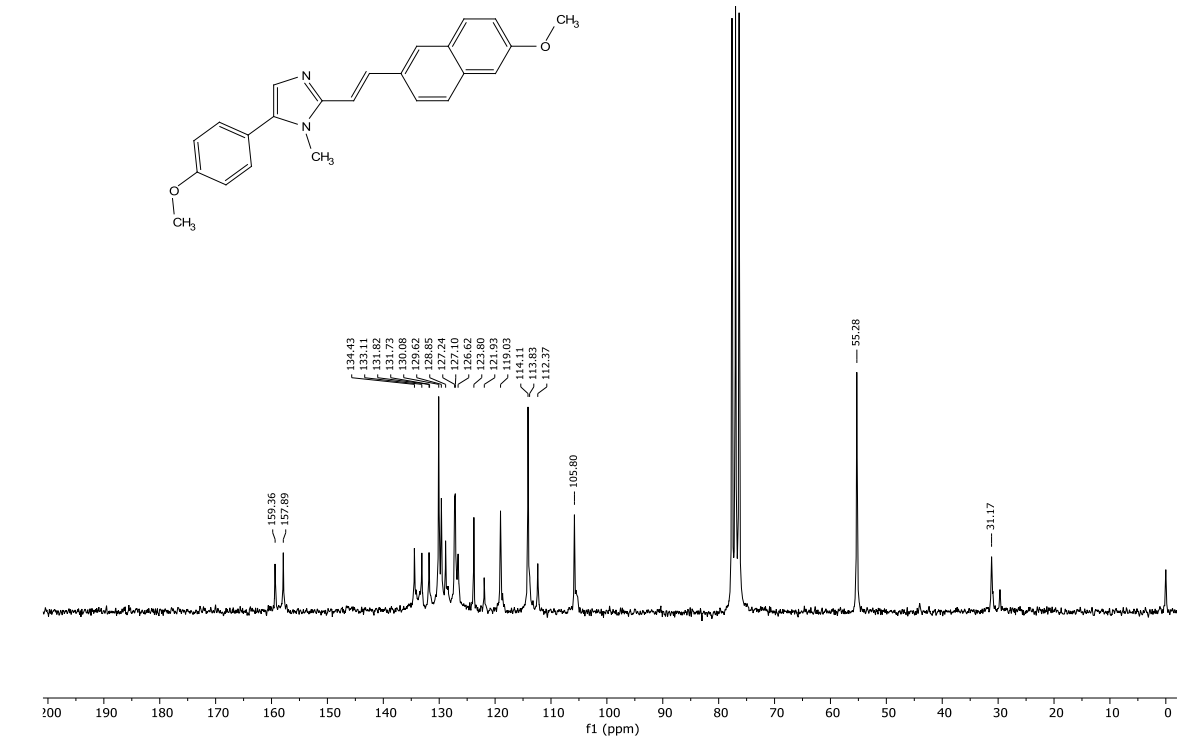


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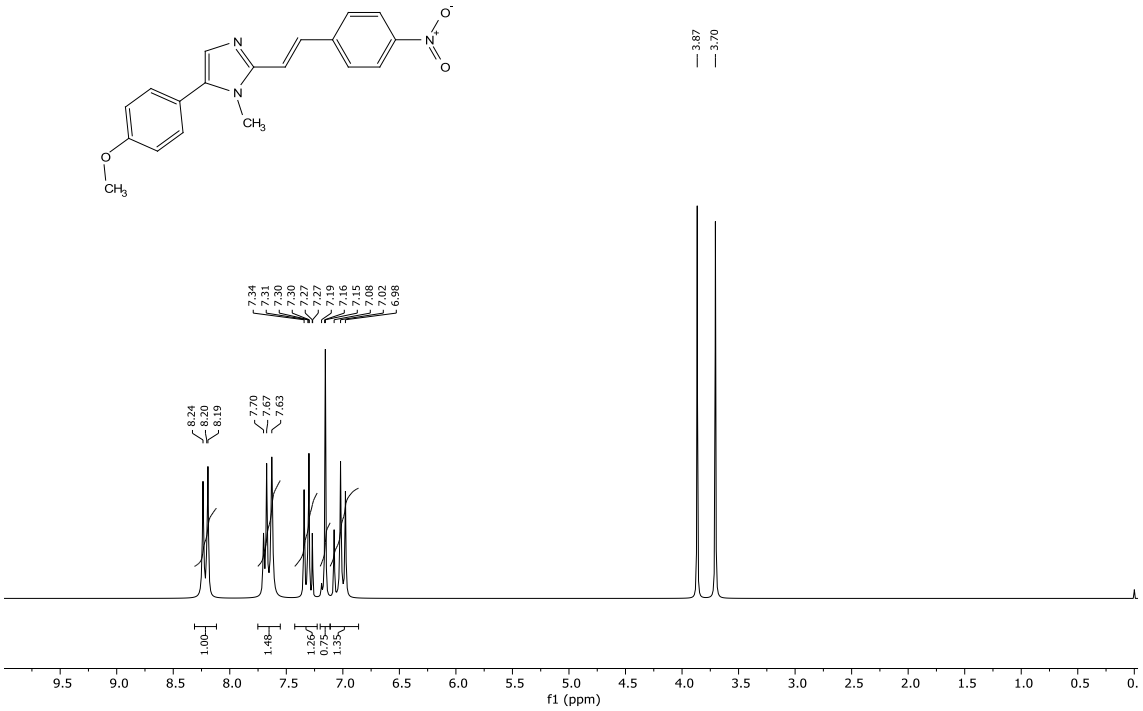


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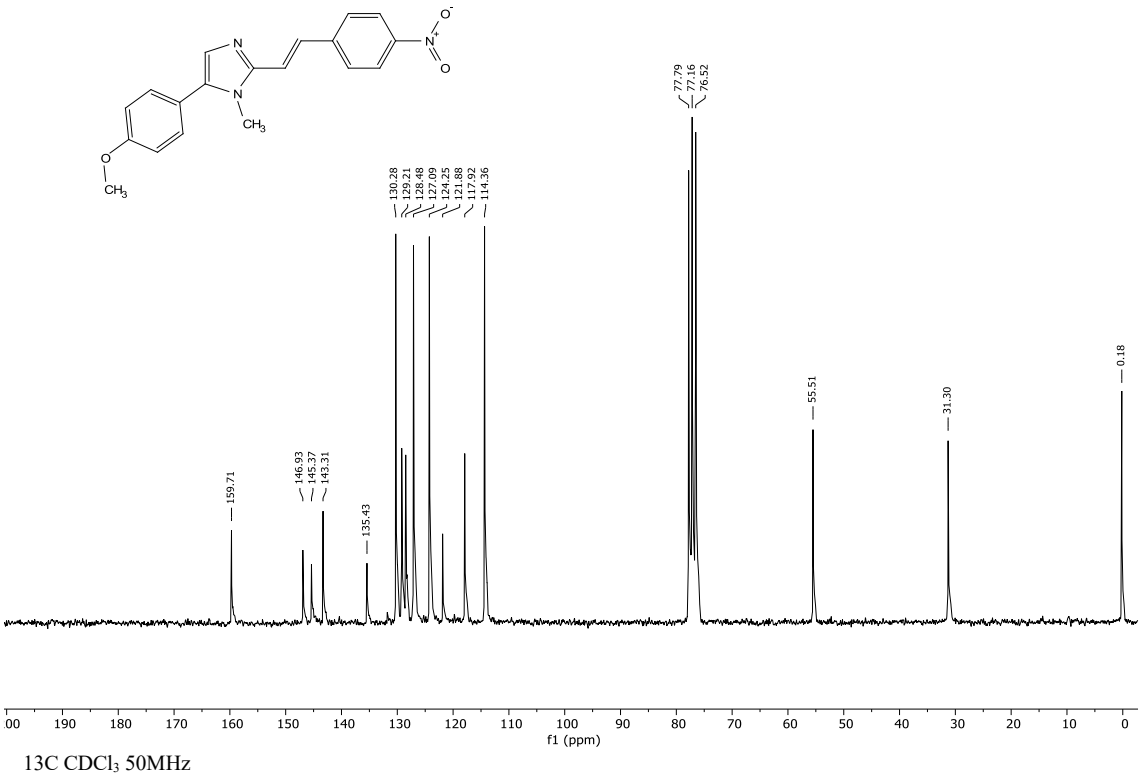


13C $CDCl_3$ 50MHz

(E)-5-(4-methoxyphenyl)-1-methyl-2-(4-nitrostyryl)-1H-imidazole (3f)

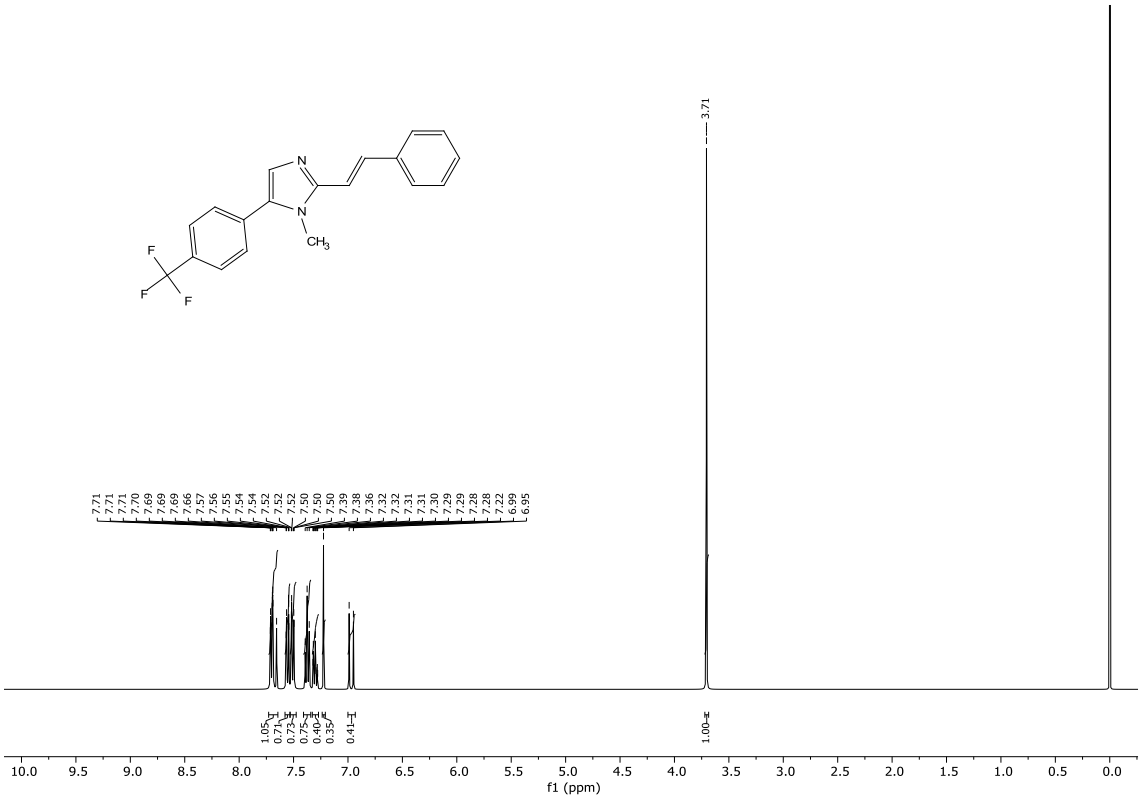


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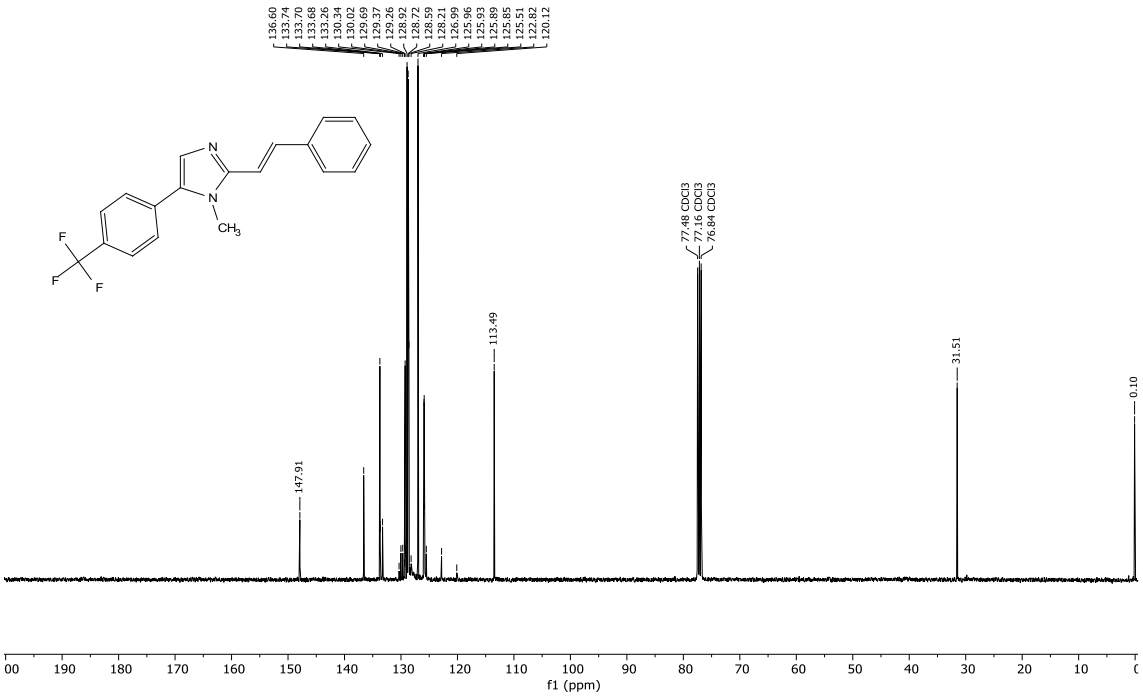


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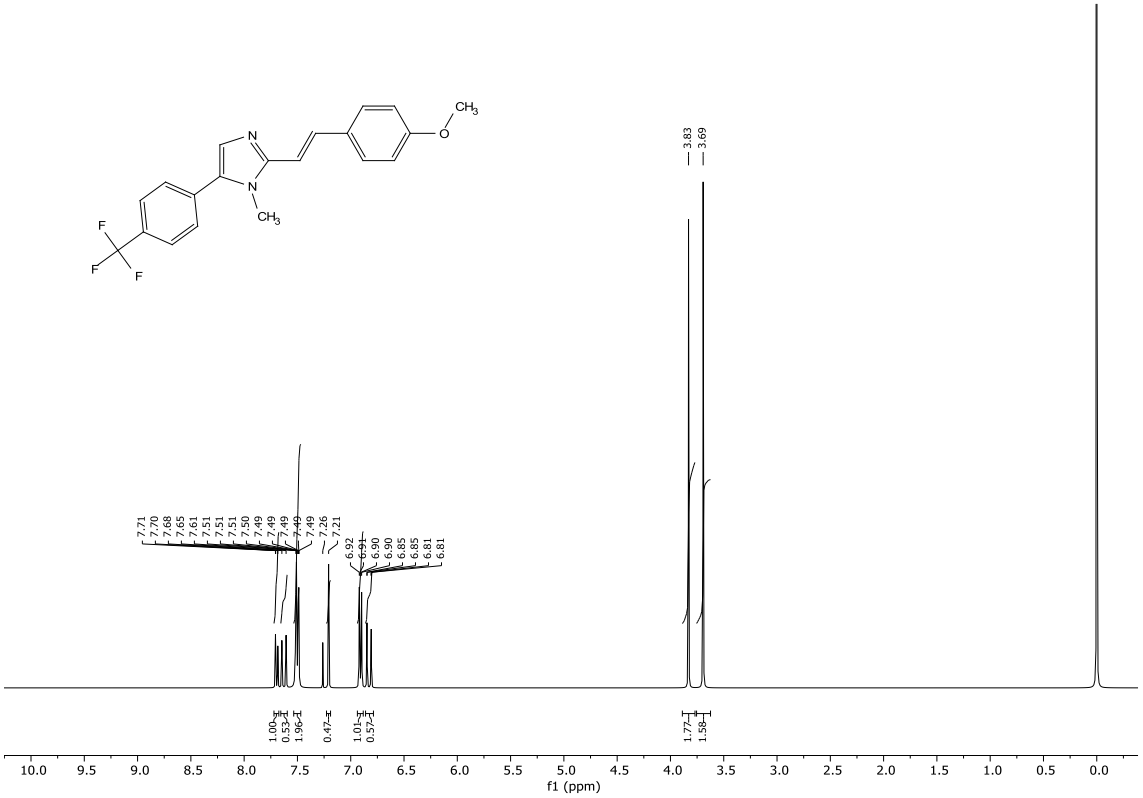


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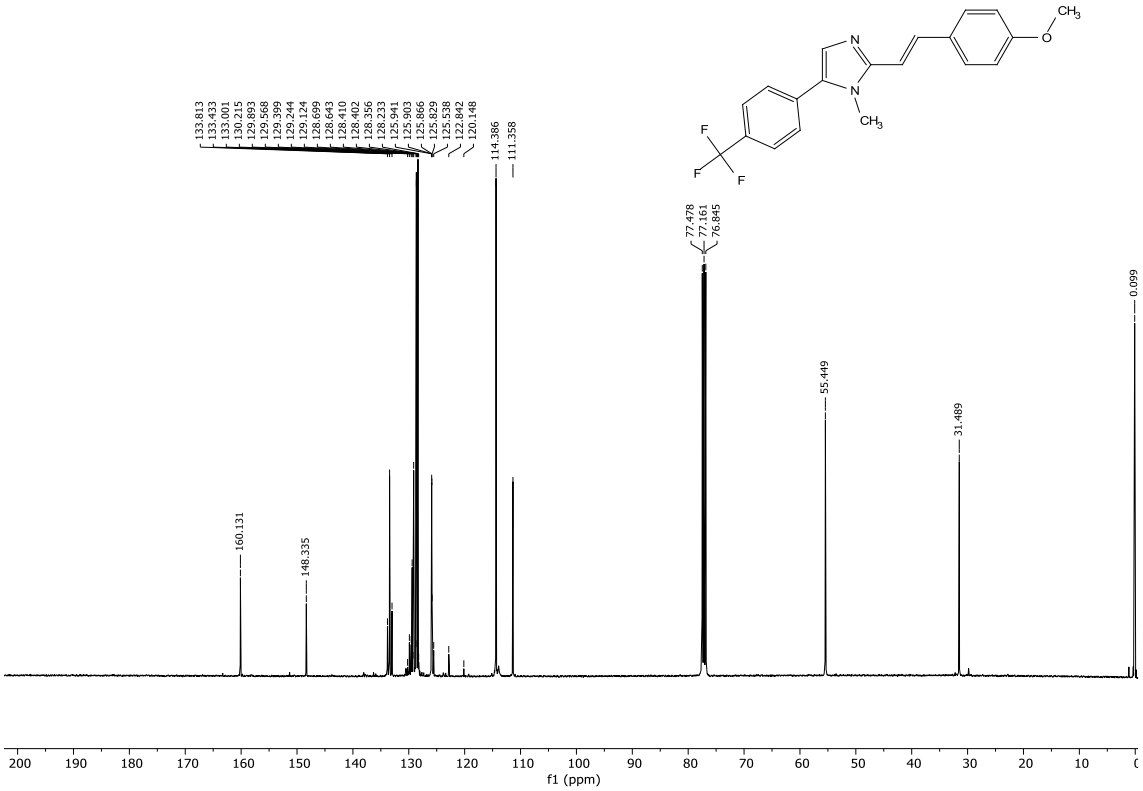


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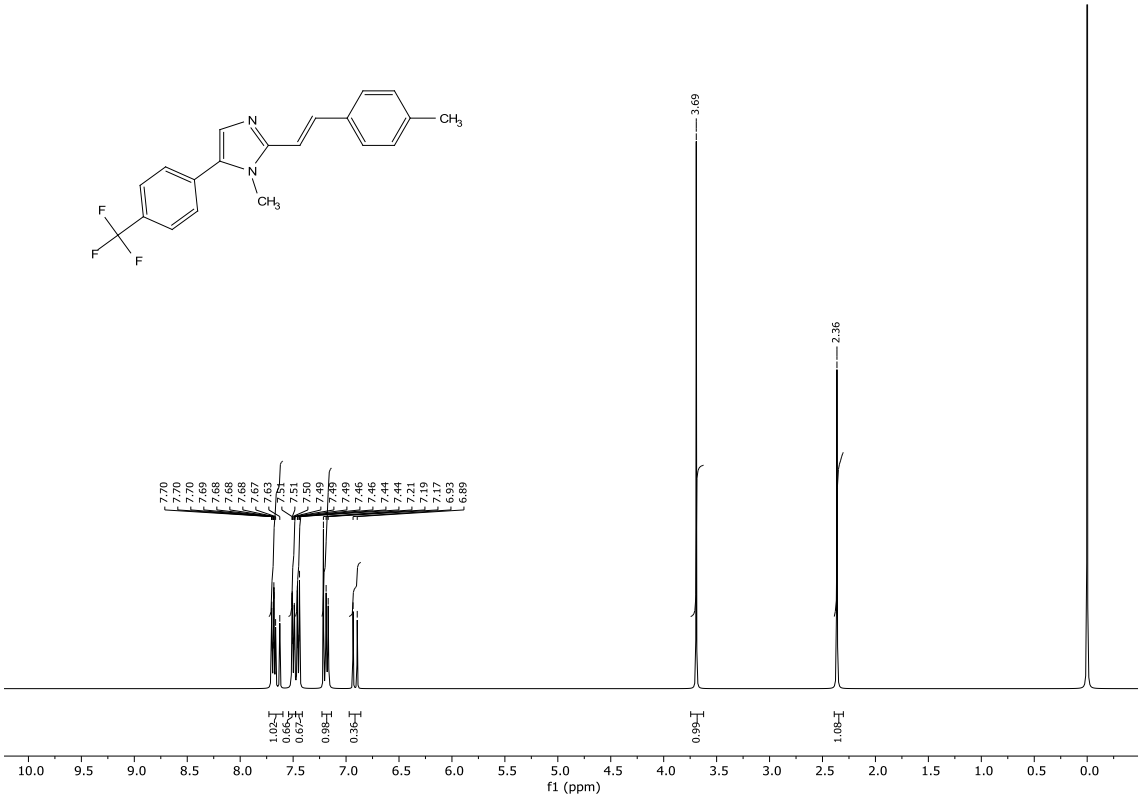


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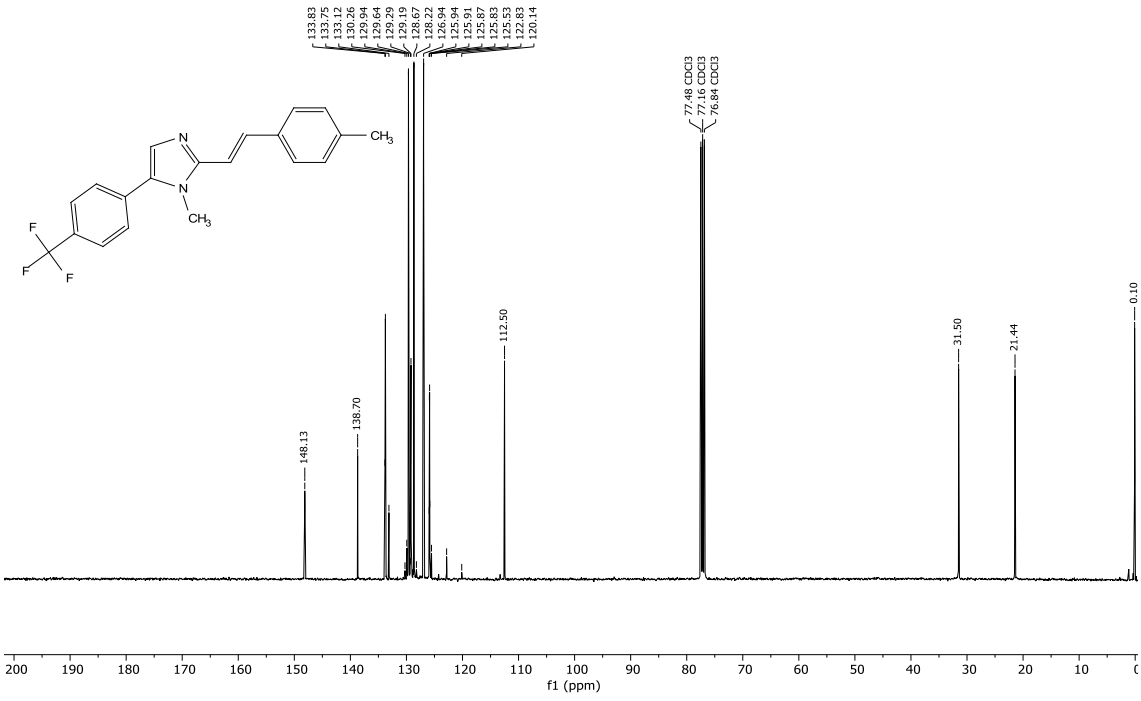


13C $CDCl_3$ 100MHz

(E)-1-methyl-2-(4-methylstyryl)-5-(4-(trifluoro-methyl)phenyl)-1H-imidazole (3i)

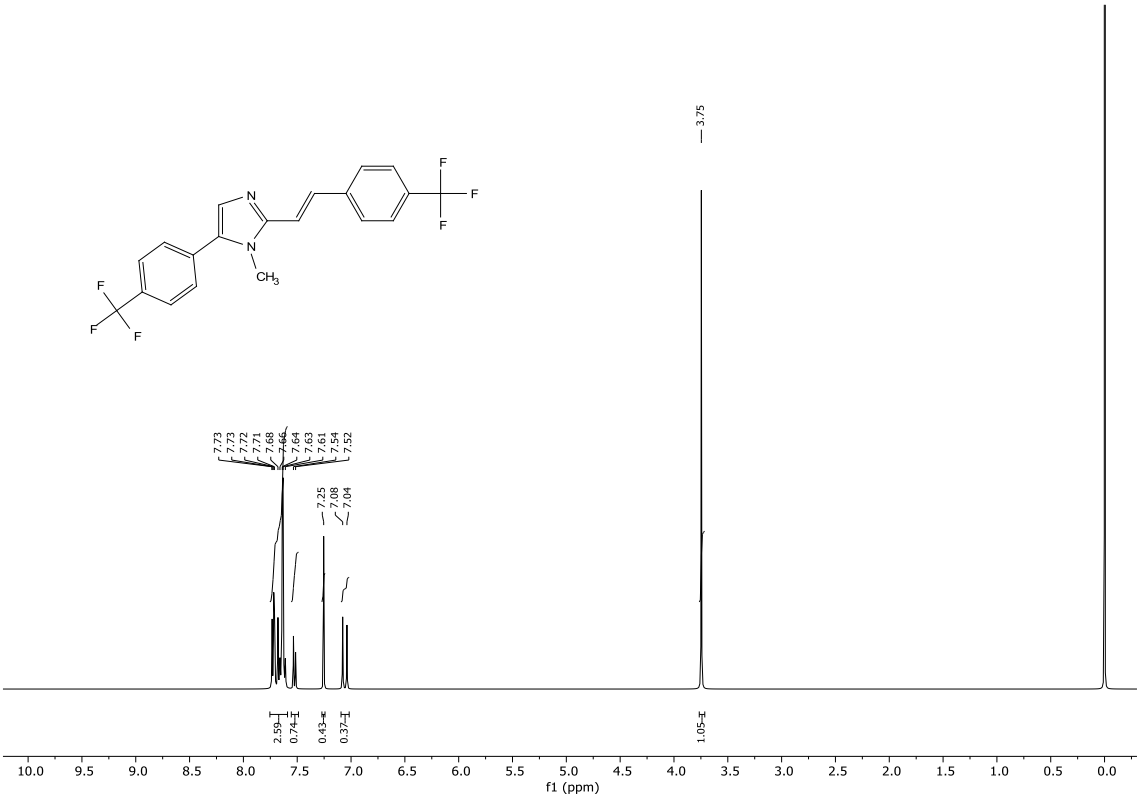


1H $CDCl_3$ 400MHz

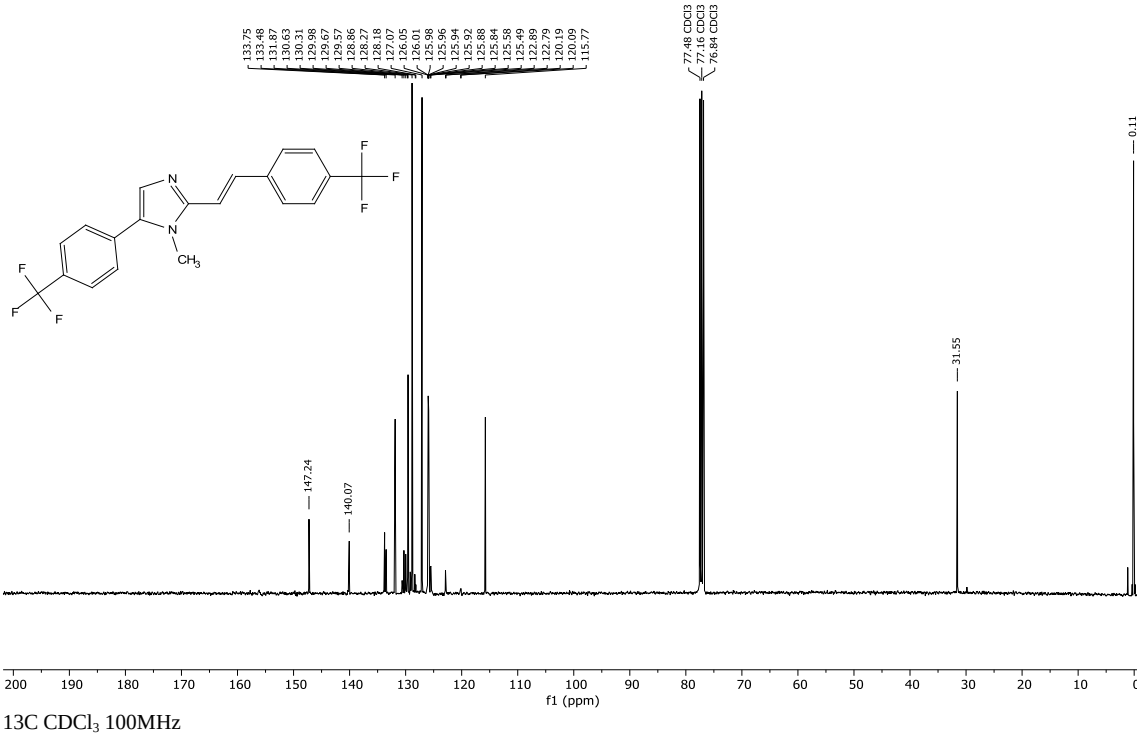


13C $CDCl_3$ 100MHz

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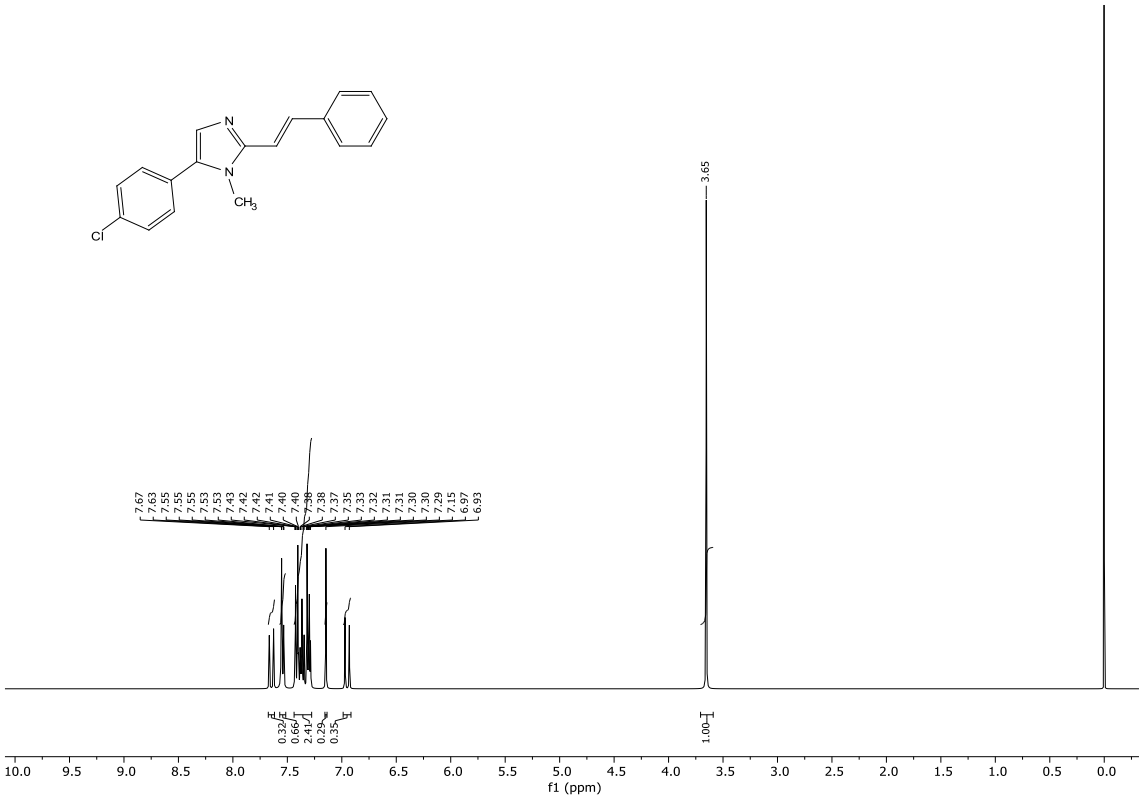


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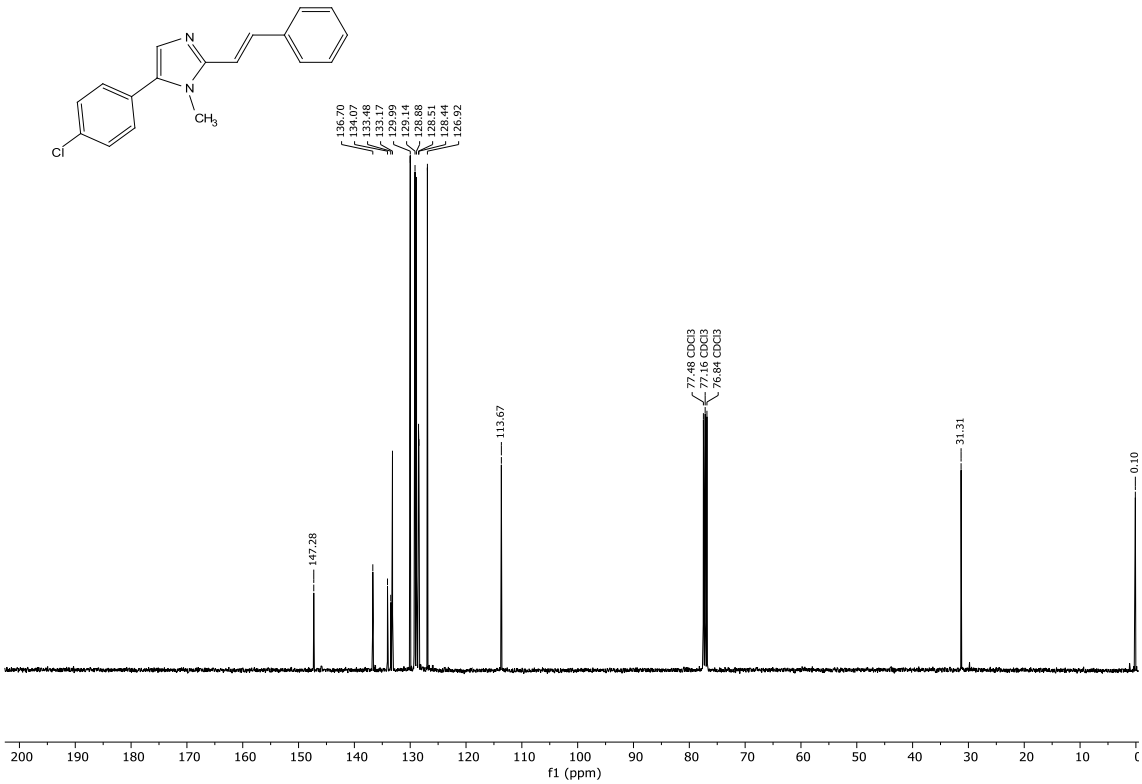


13C $CDCl_3$ 100MHz

(E)-5-(4-chlorophenyl)-1-methyl-2-styryl-1H-imidazole (3k)

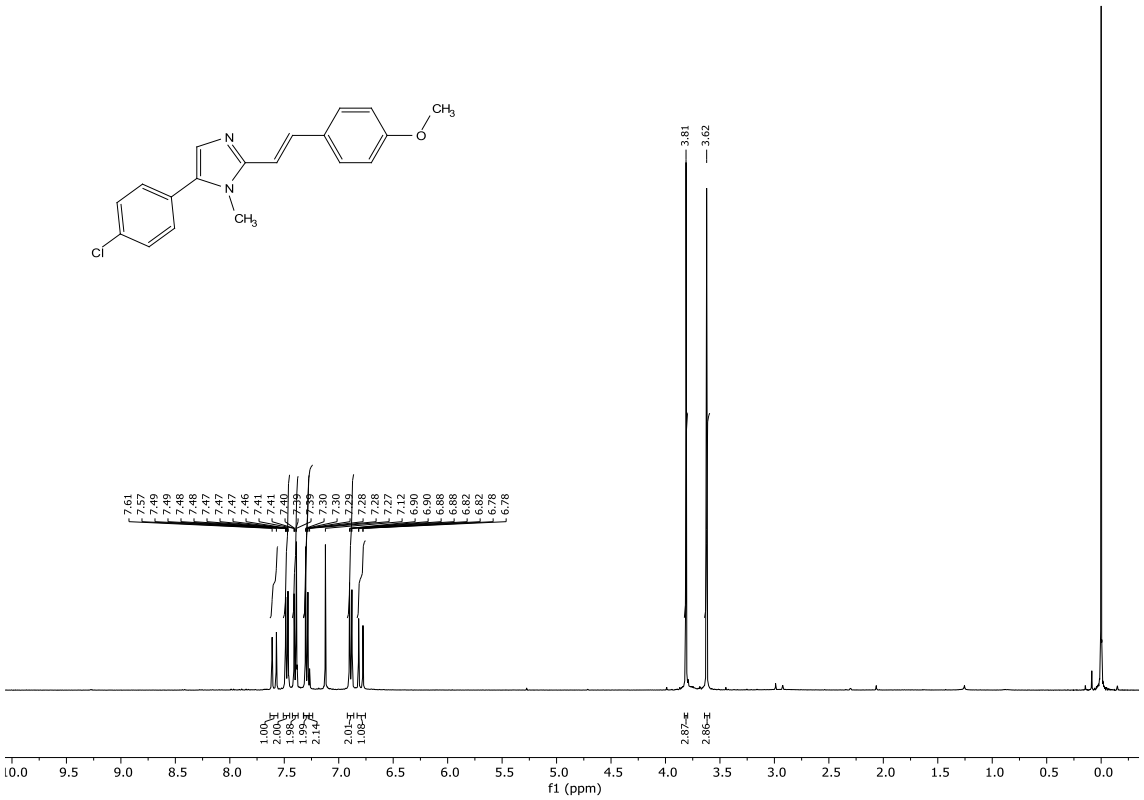


1H $CDCl_3$ 400MHz

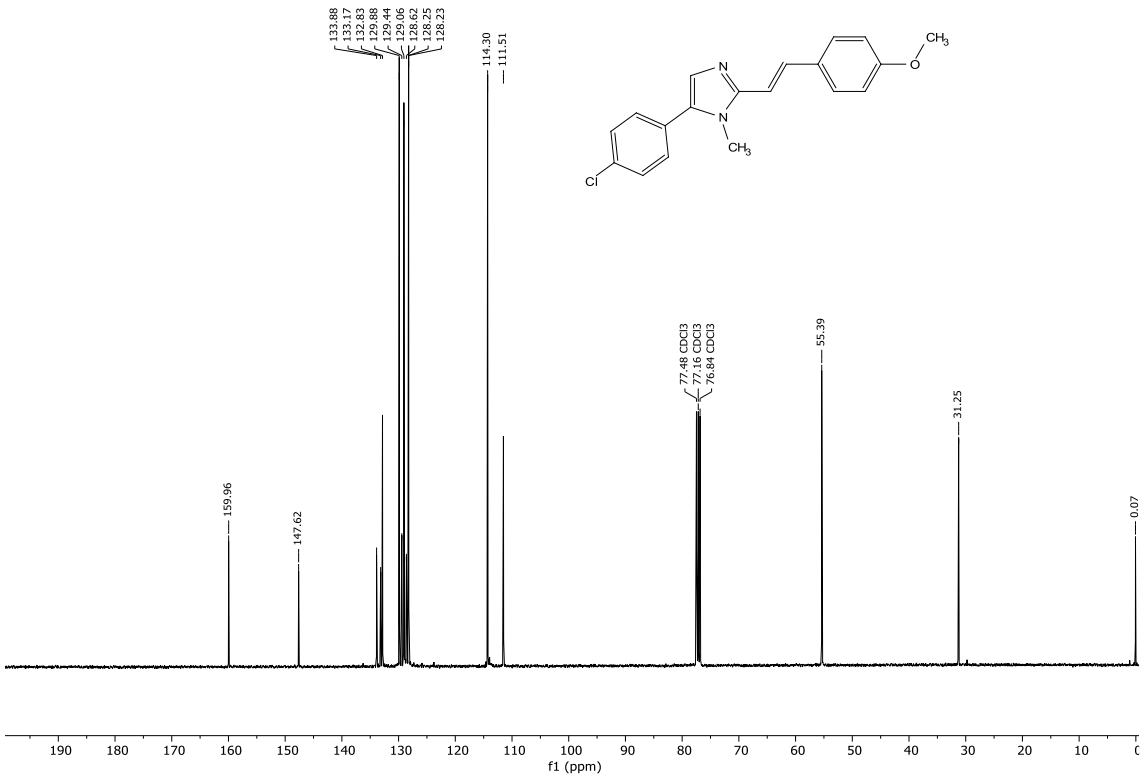


13C $CDCl_3$ 100MHz

(E)-5-(4-chlorophenyl)-2-(4-methoxystyryl)-1-methyl-1H-imidazole (3l)

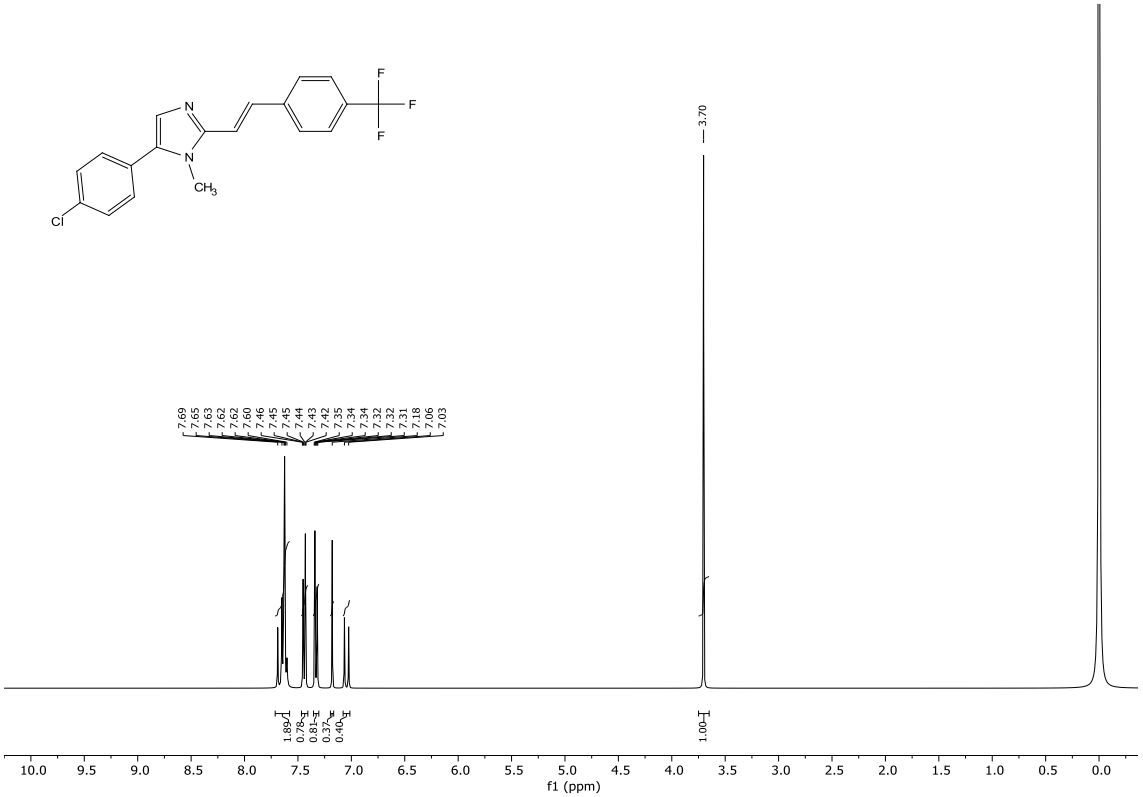


1H $CDCl_3$ 400MHz

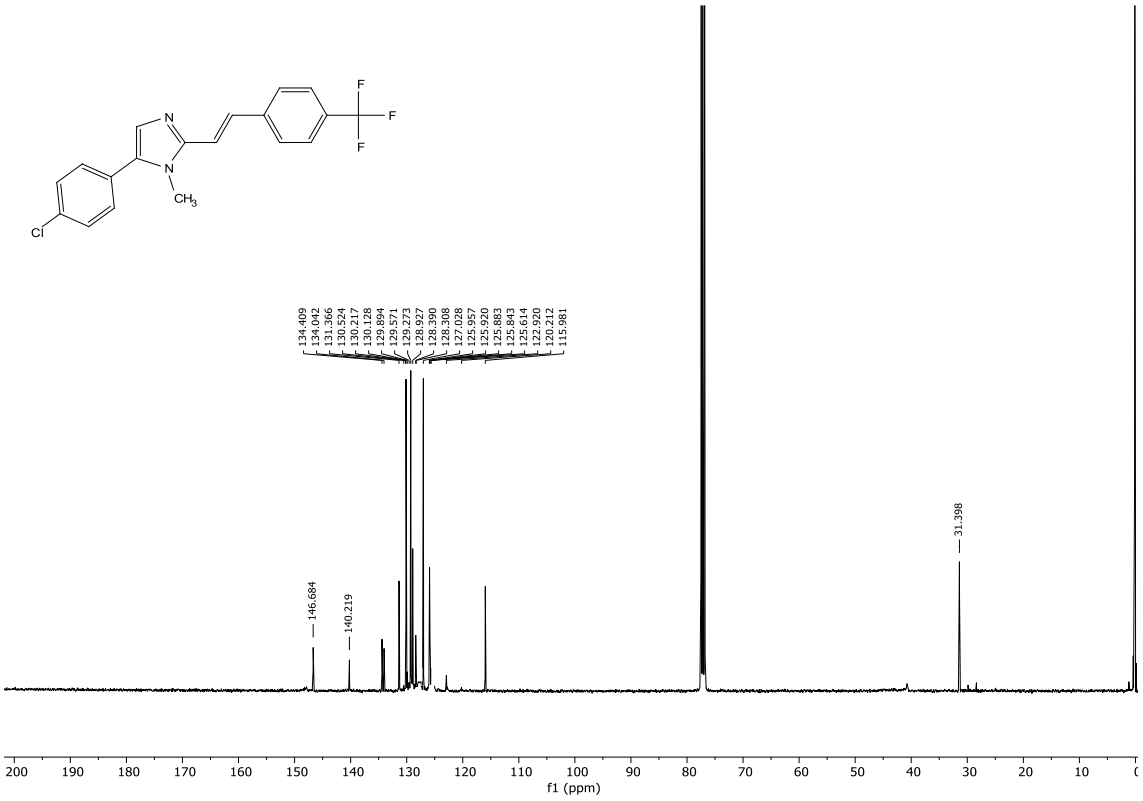


13C $CDCl_3$ 100MHz

(E)-5-(4-chlorophenyl)-1-methyl-2-(4-(trifluoromethyl)styryl)-1H-imidazole (3m)

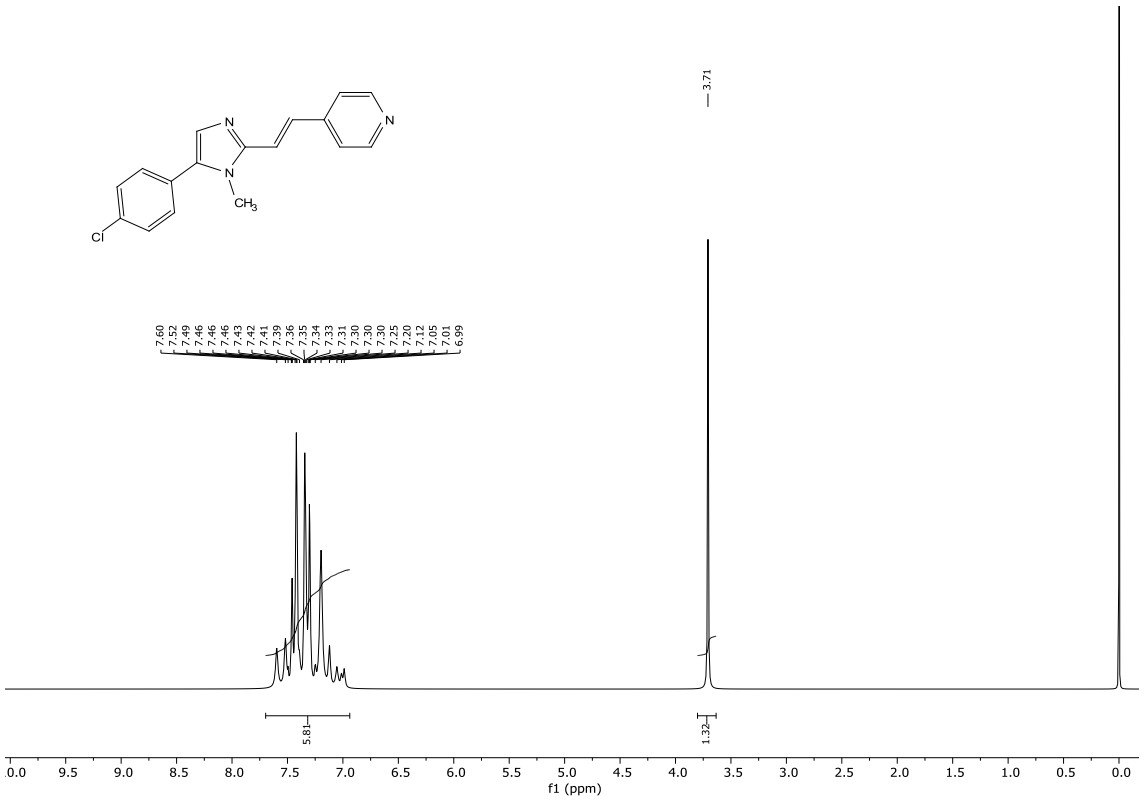


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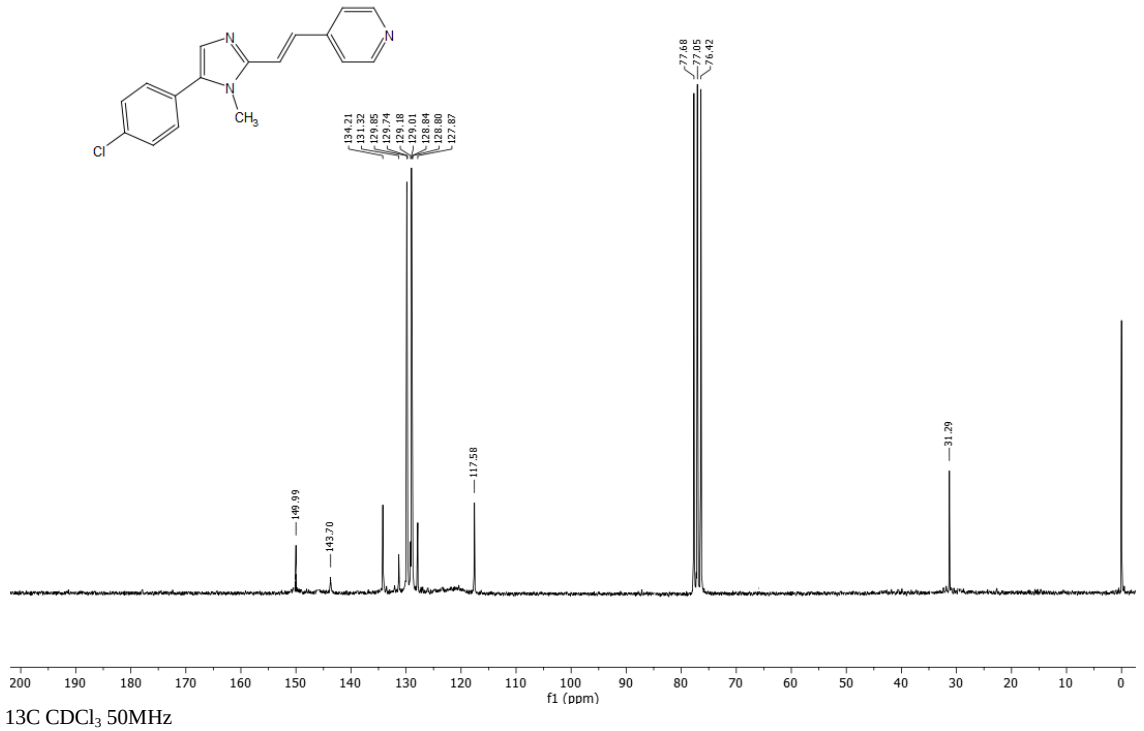


13C $CDCl_3$ 100MHz

(E)-4-(2-(5-(4-chlorophenyl)-1-methyl-1H-imidazol-2-yl)vinyl)-pyridine (3n)

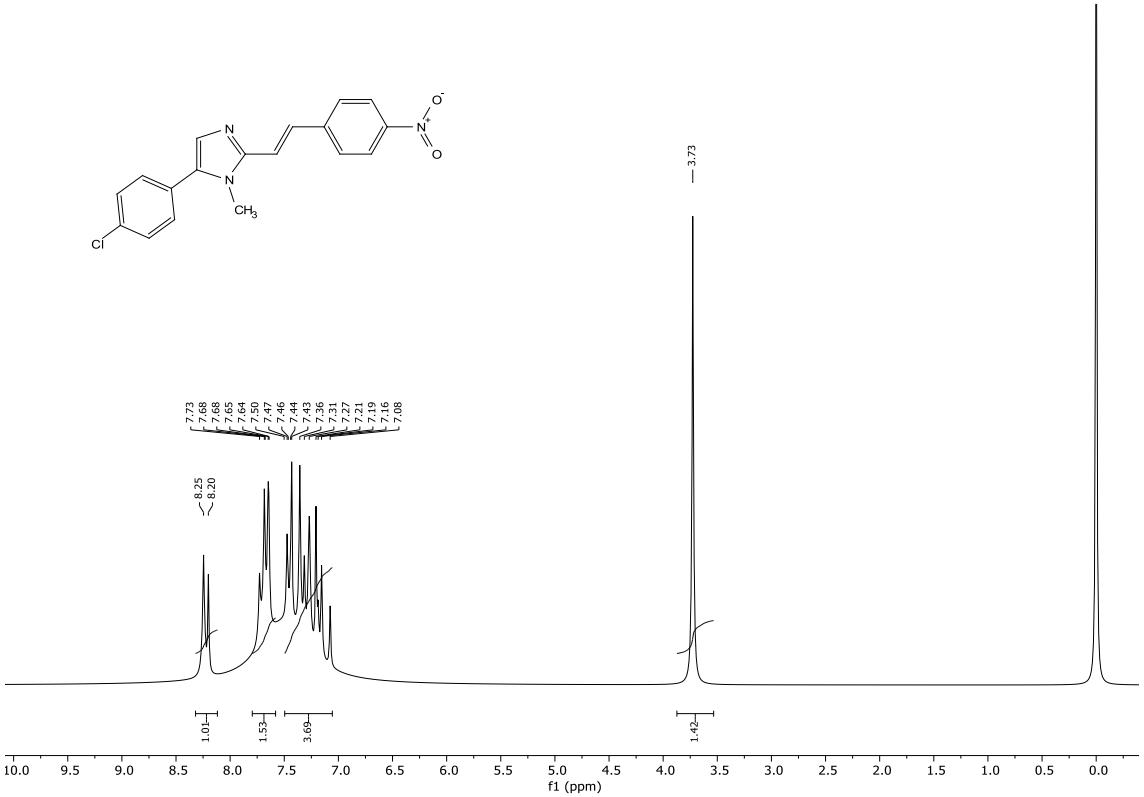


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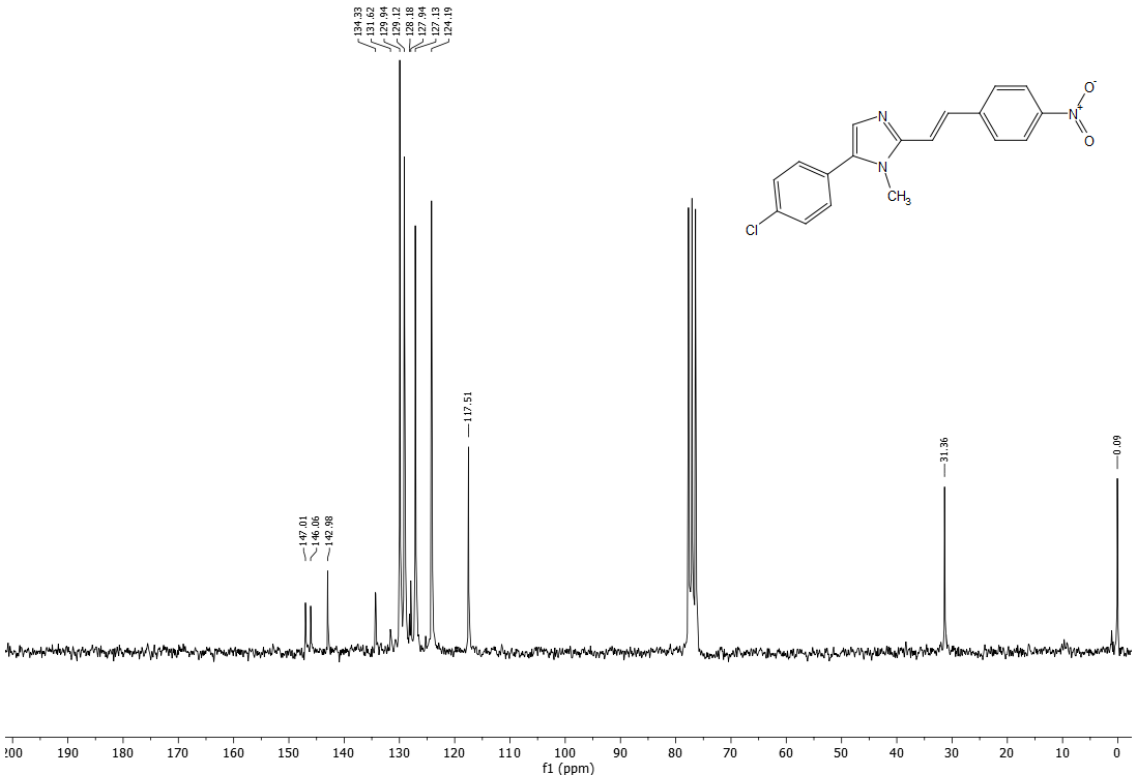


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(E)-5-(4-chlorophenyl)-1-methyl-2-(4-nitrostyryl)-1H-imidazole (3o)

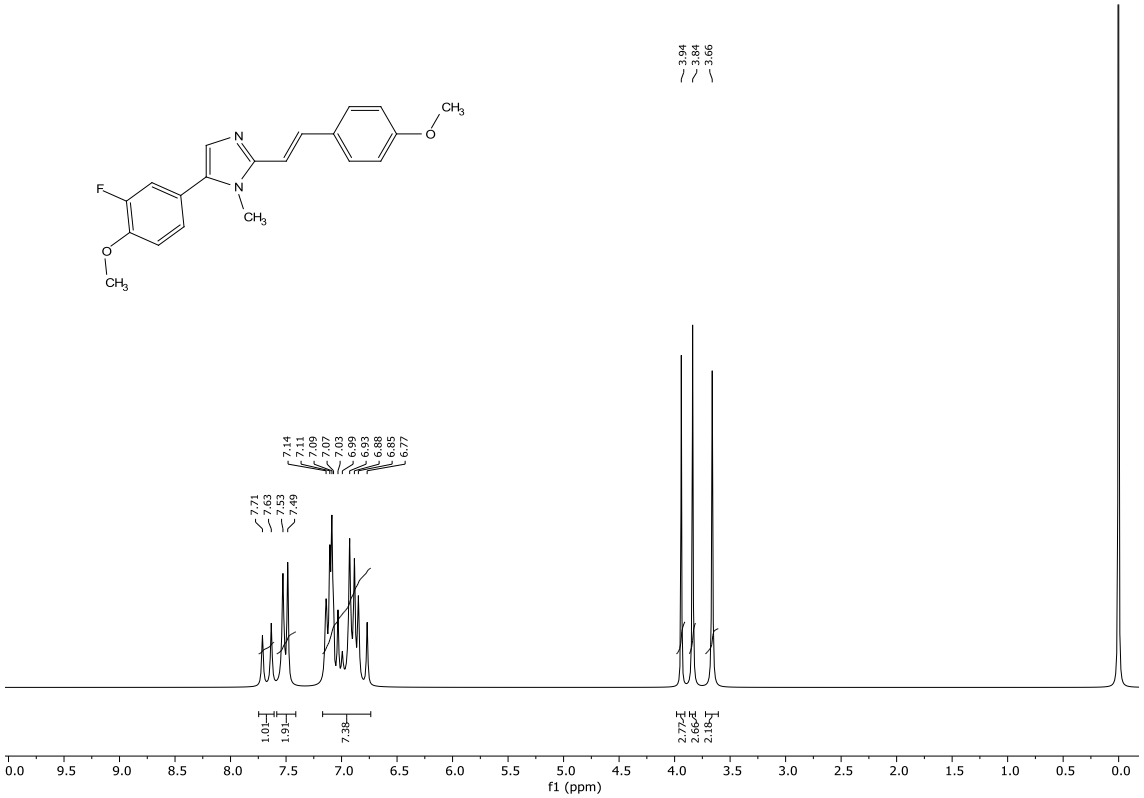


1H $CDCl_3$ 200MHz

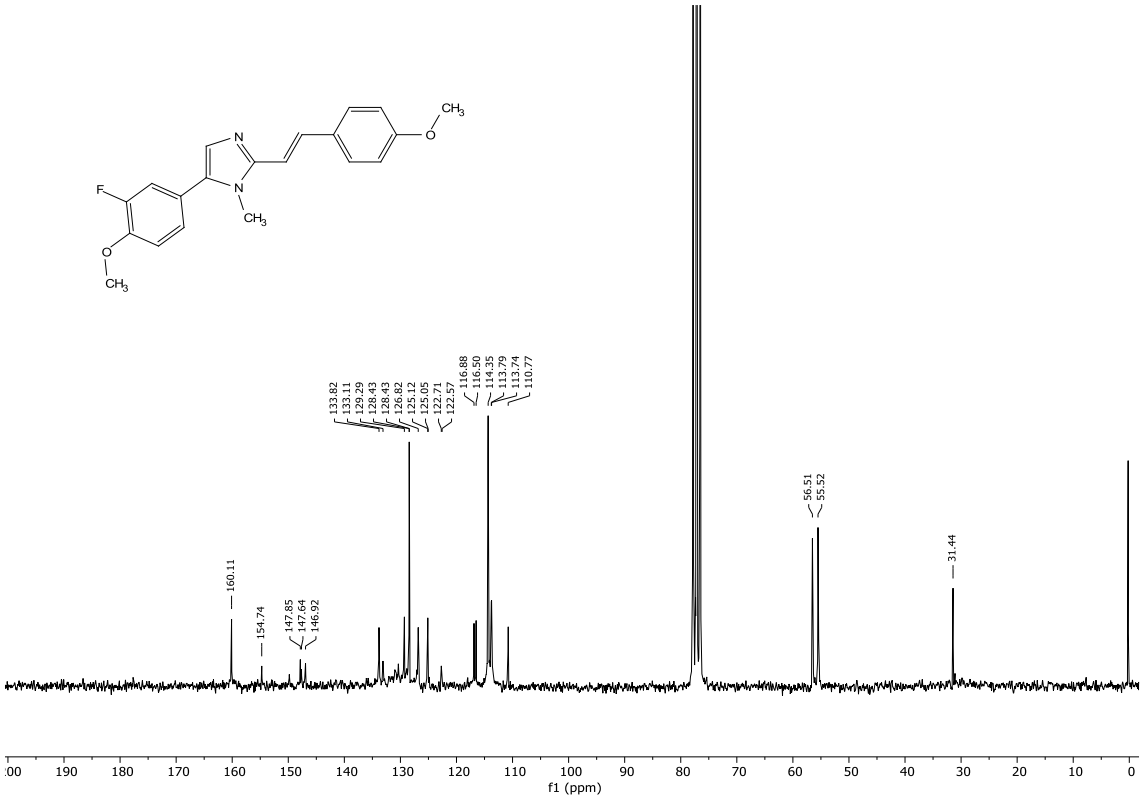


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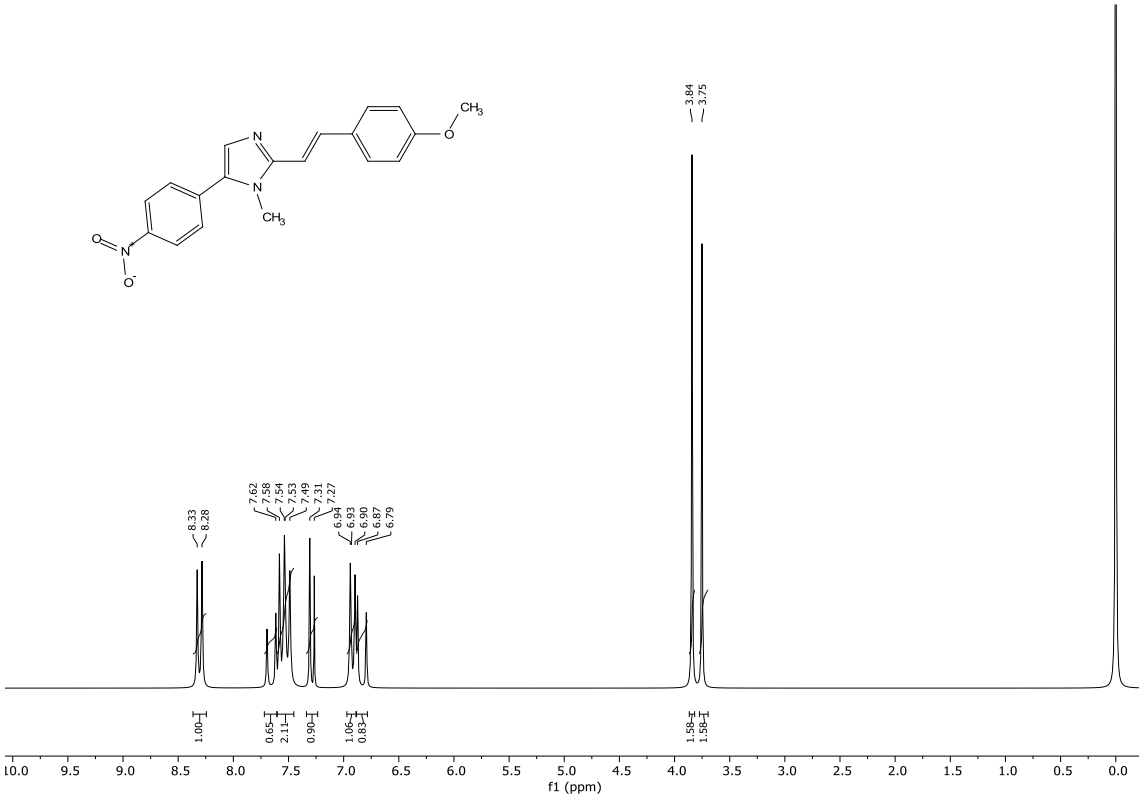


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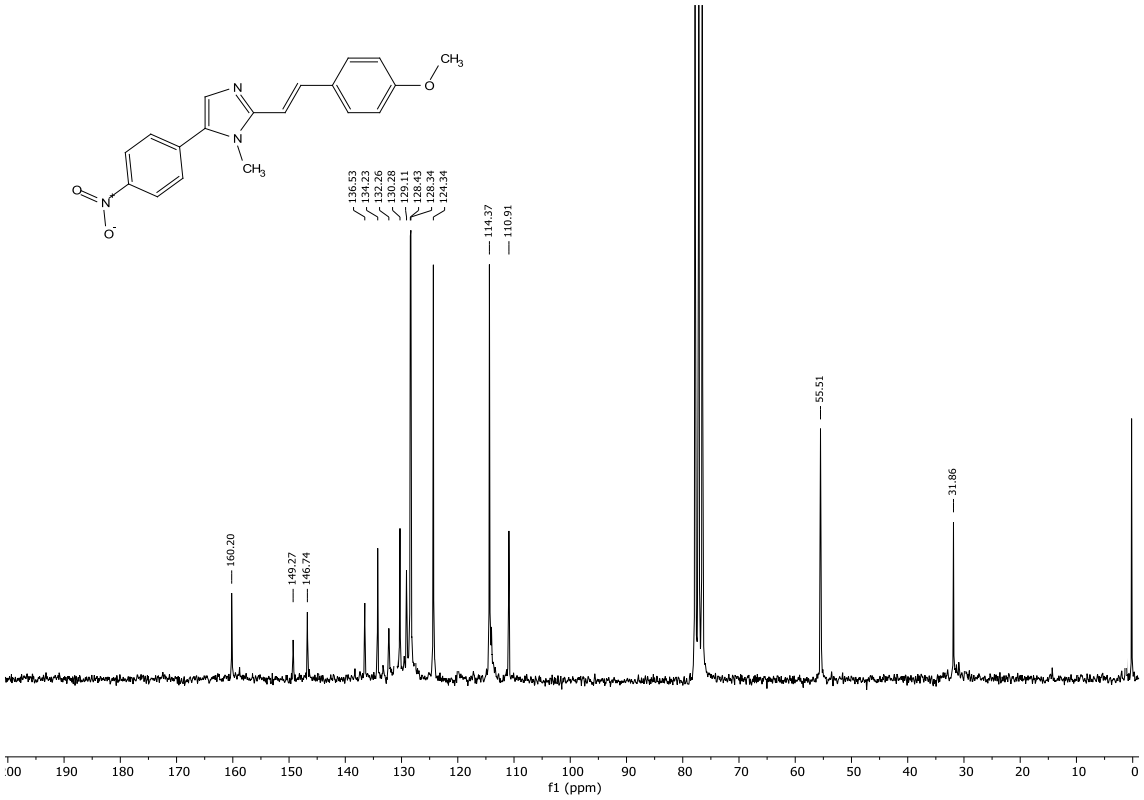


13C $CDCl_3$ 50MHz

(E)-2-(4-methoxystyryl)-1-methyl-5-(4-nitrophenyl)-1H-imidazole (3q)

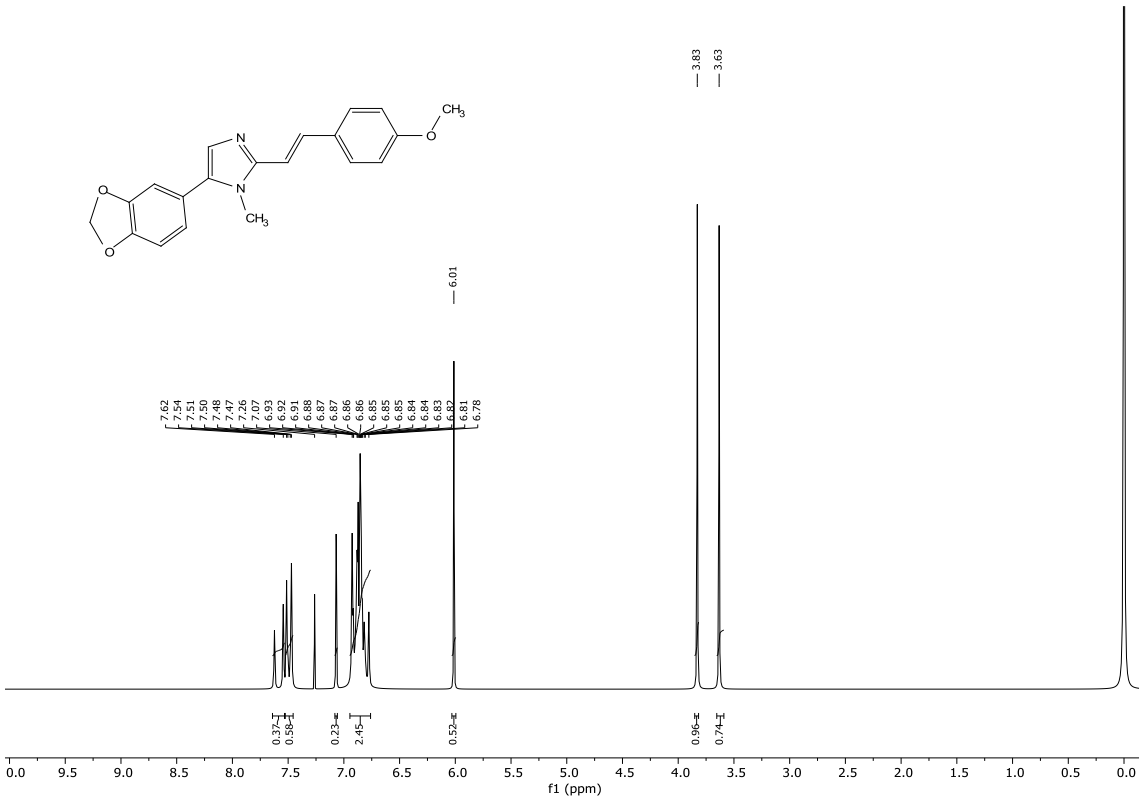


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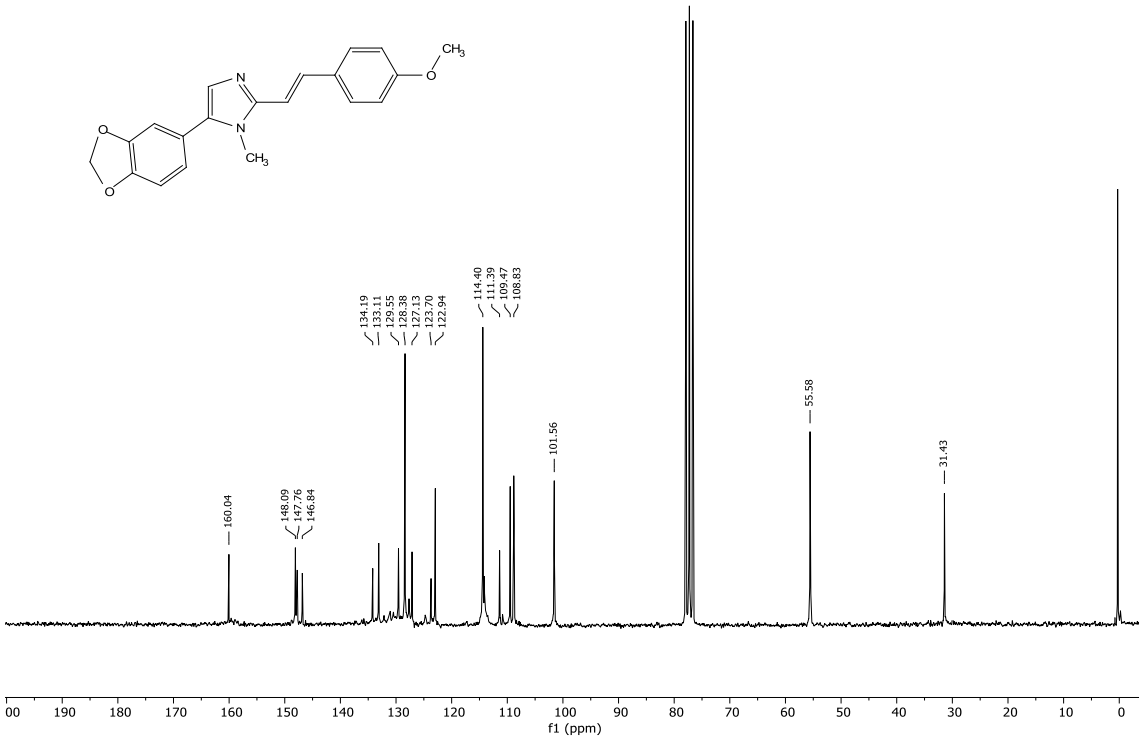


13C $CDCl_3$ 50MHz

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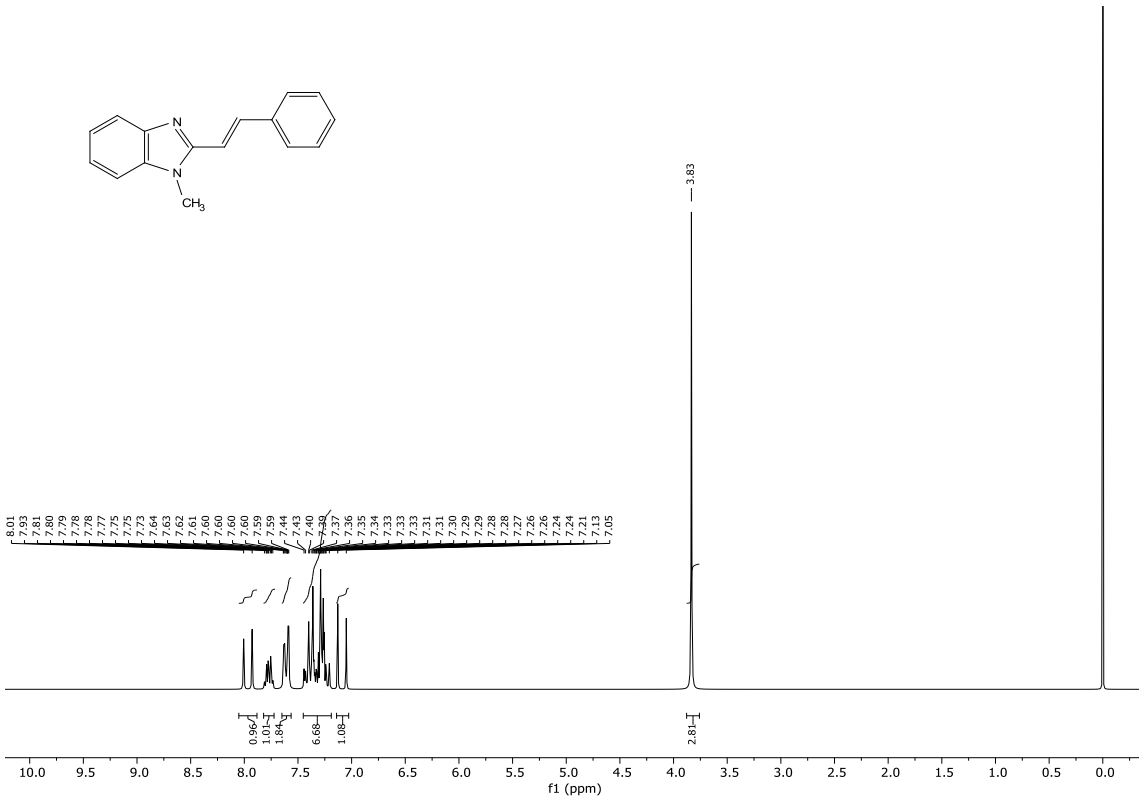


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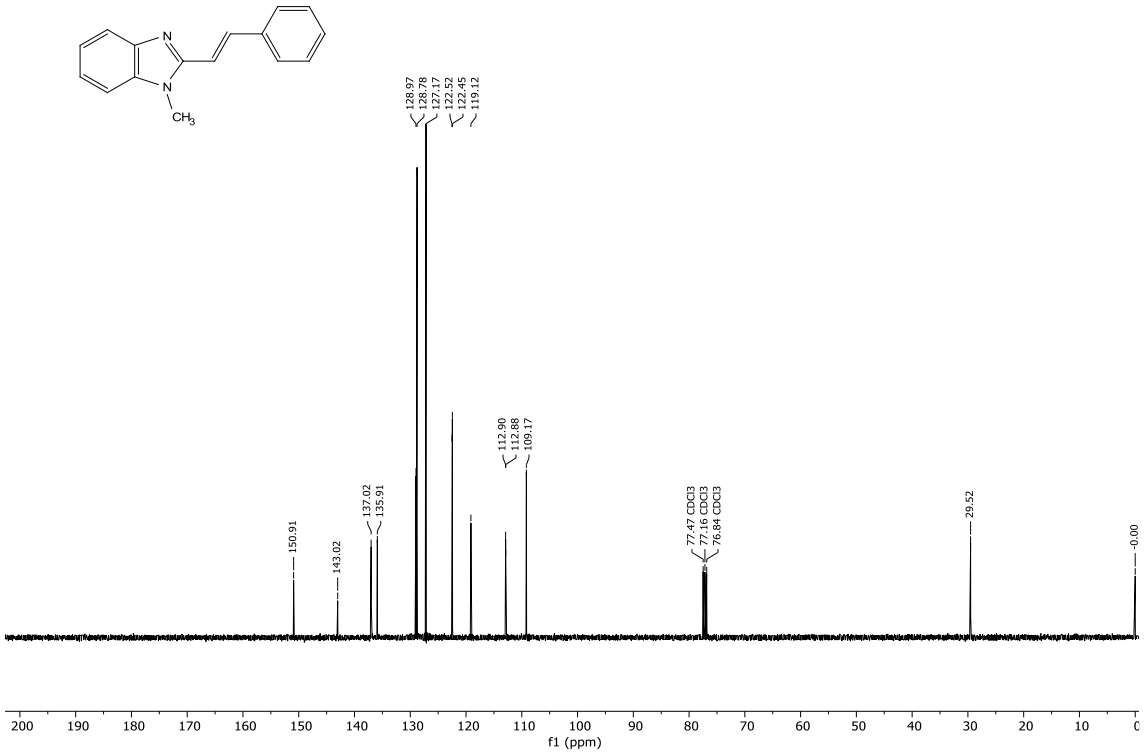


13C $CDCl_3$ 50MHz

(E)-1-methyl-2-styryl-1H-benzo[d]imidazole (8)

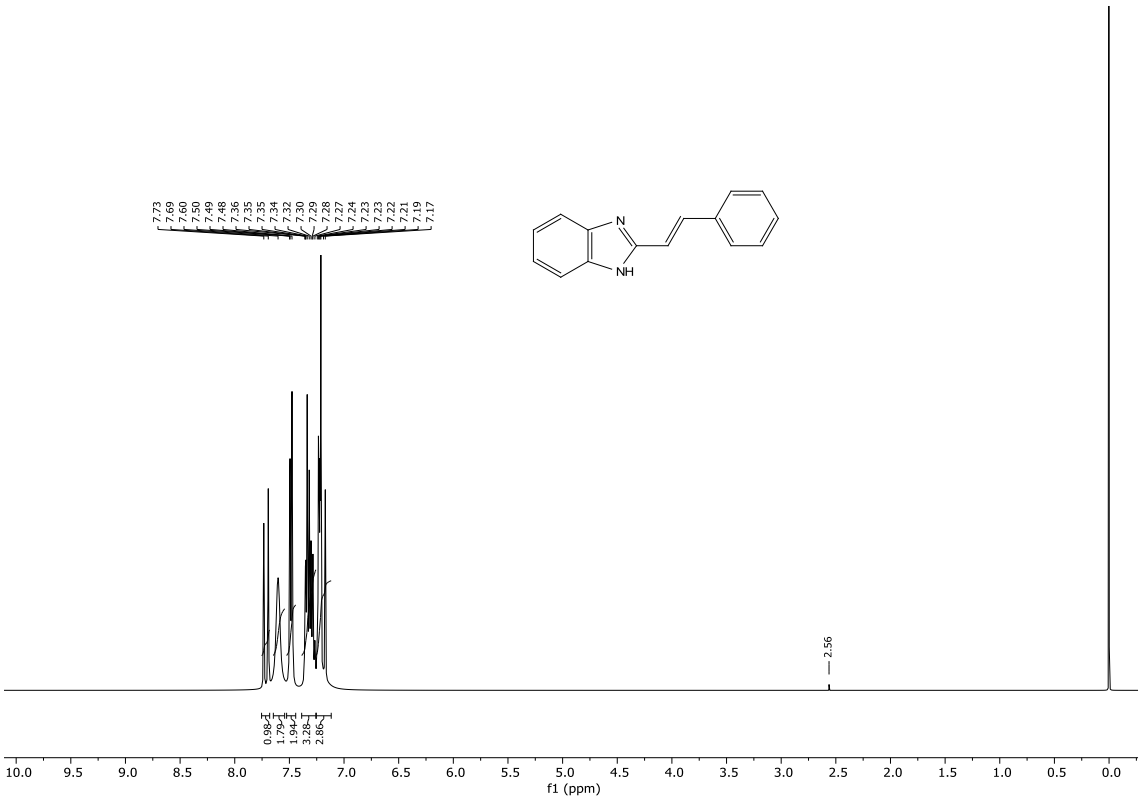


1H $CDCl_3$ 200MHz

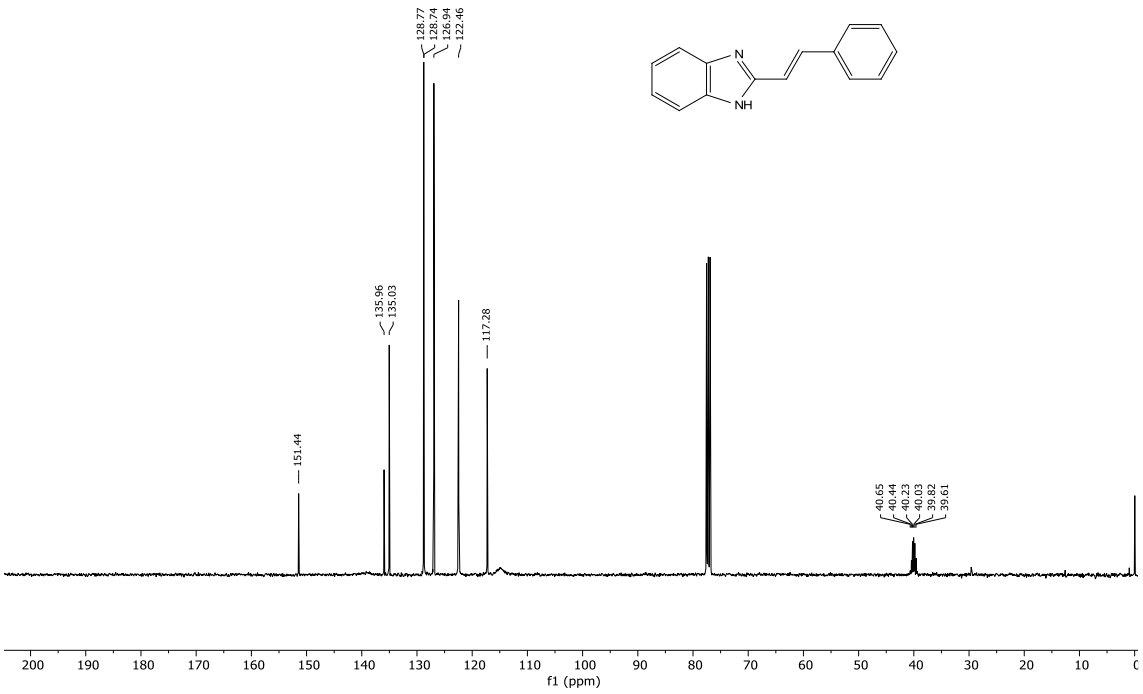


13C $CDCl_3$ 50MHz

(E)-2-Styryl-1H-benzo[d]imidazole (9)

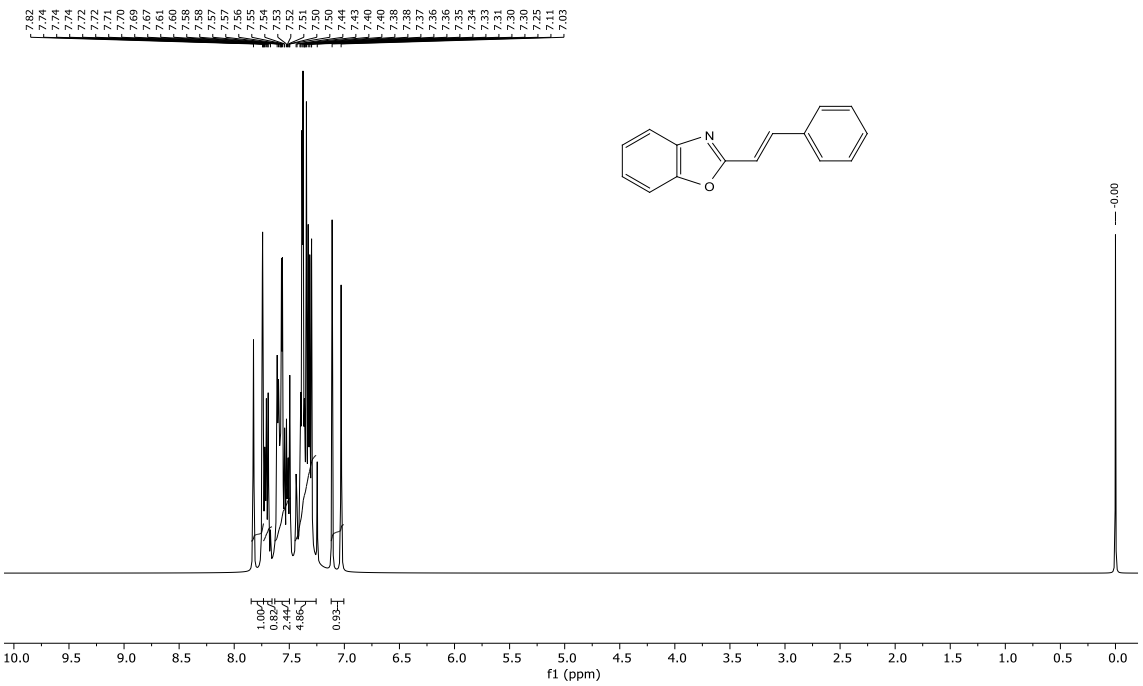


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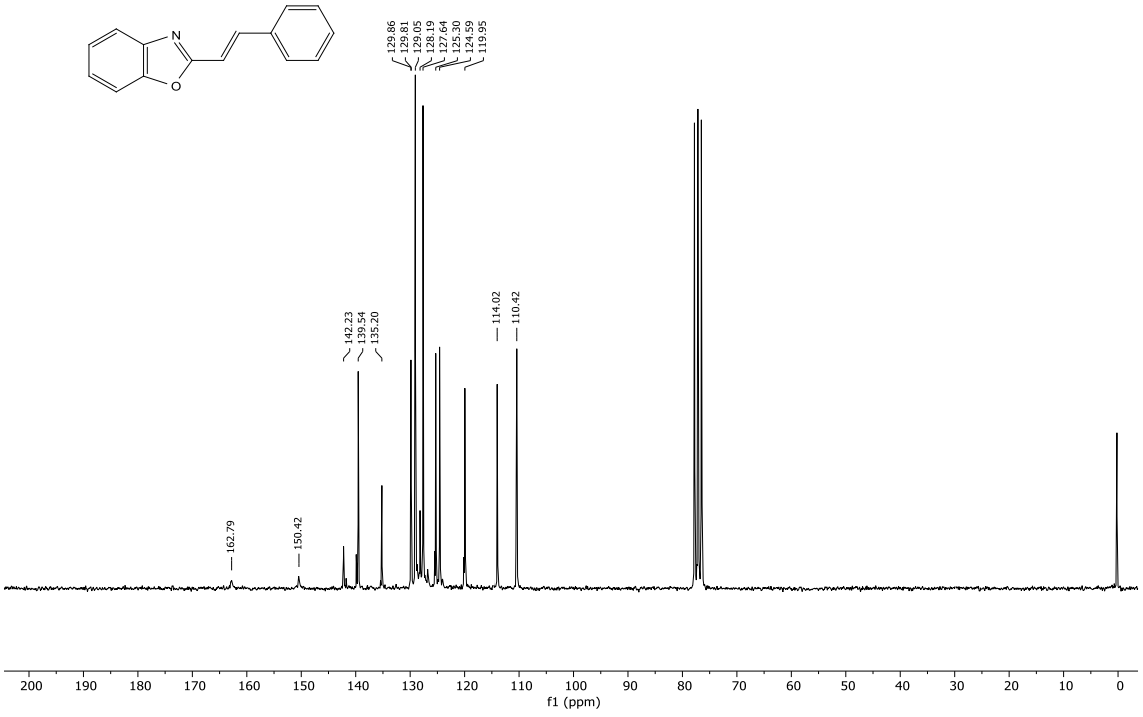


13C $CDCl_3$+DMSO-*d6* 100MHz

(E)-2-Styrylbenzo[d]oxazole (11)

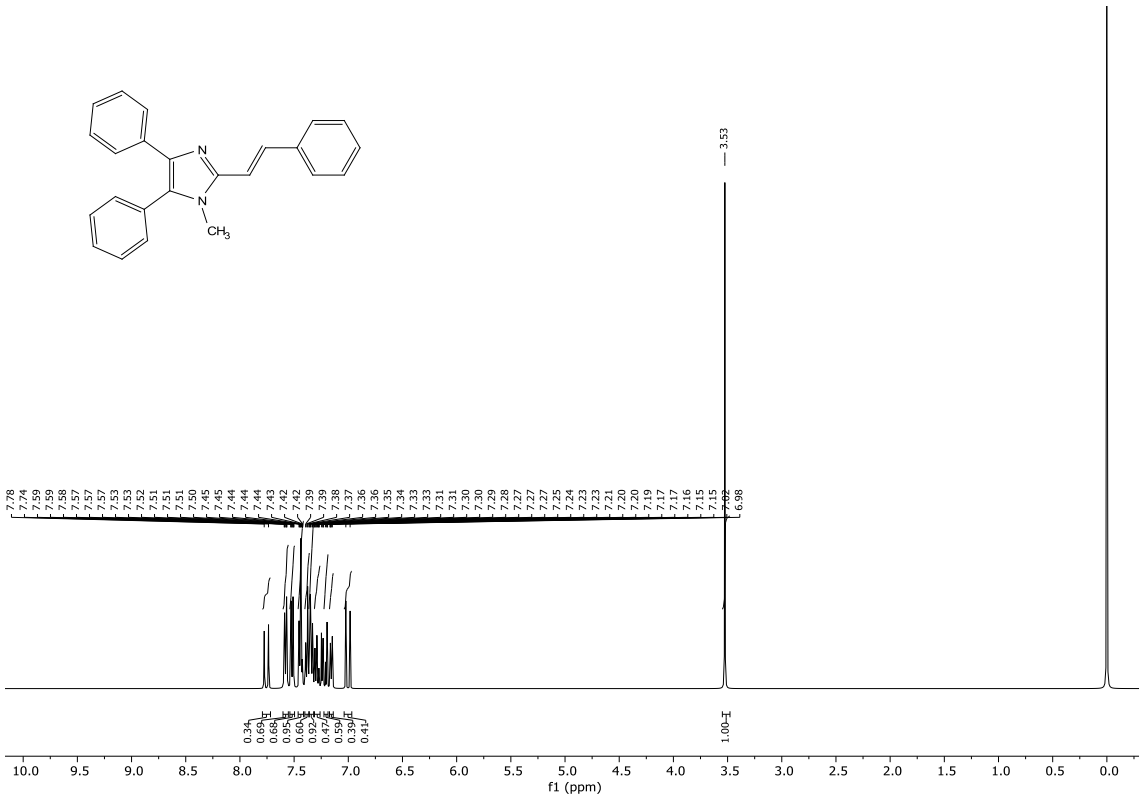


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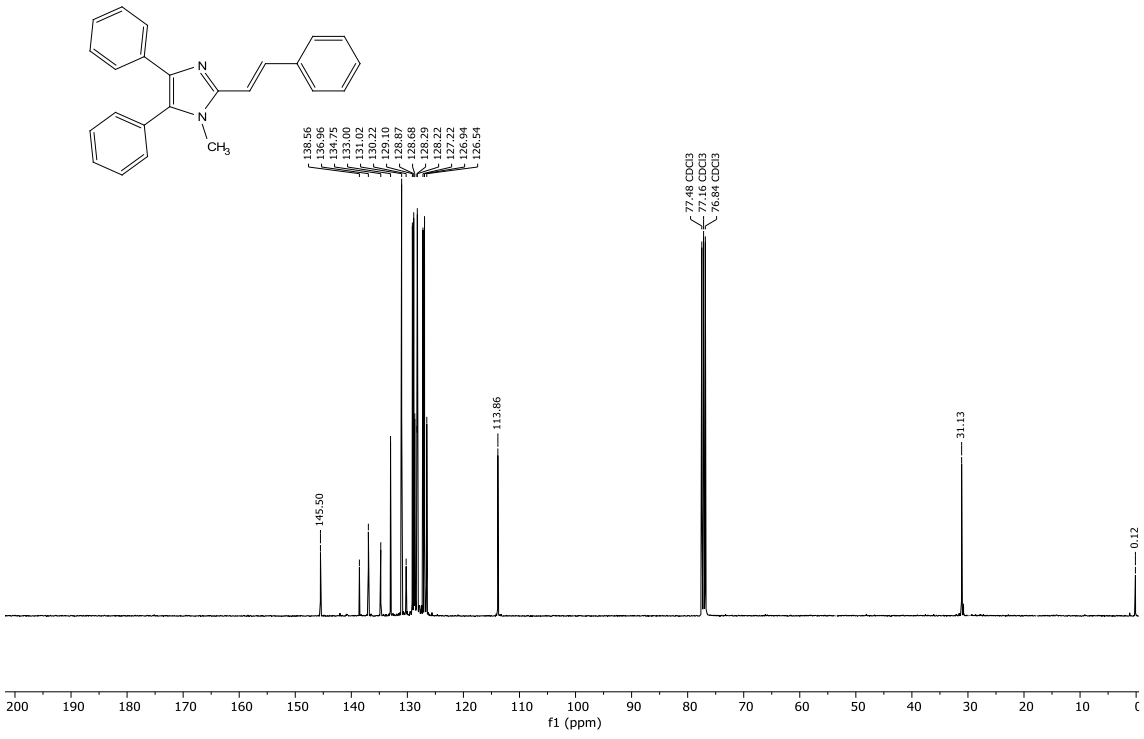


13C $CDCl_3$ 50MHz

(E)-1-Methyl-4,5-diphenyl-2-styryl-1H-imidazole (13)

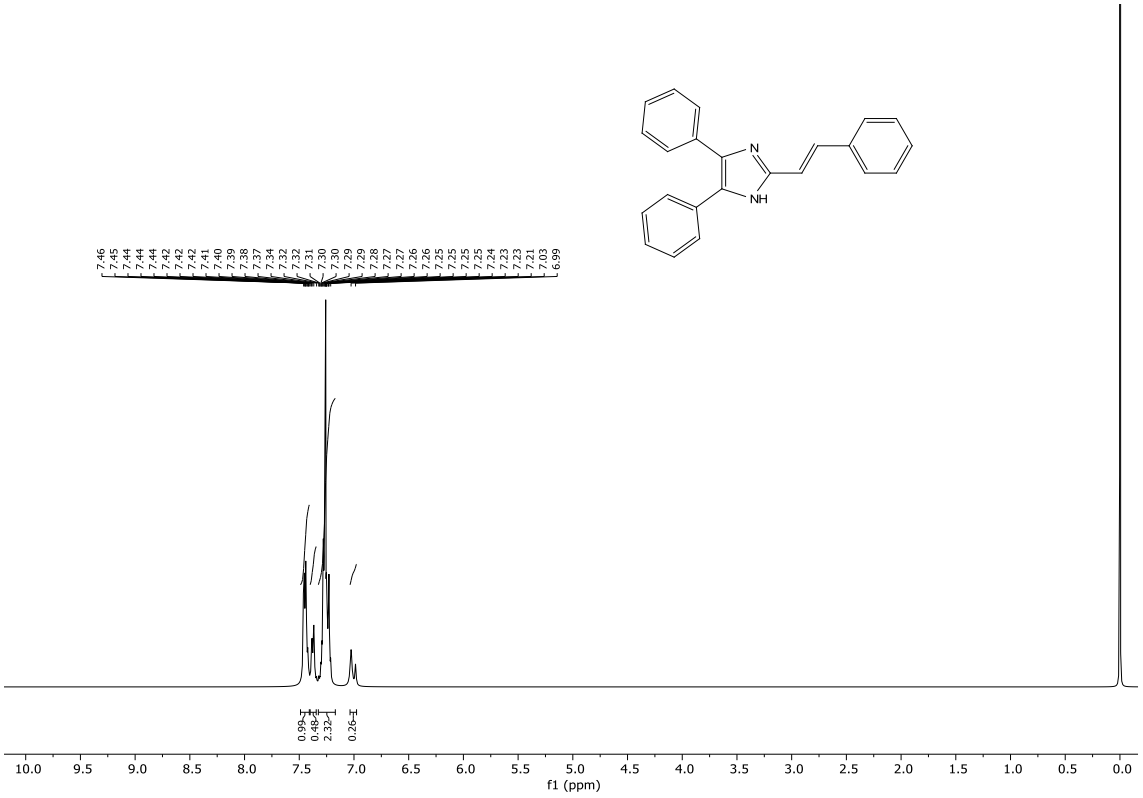


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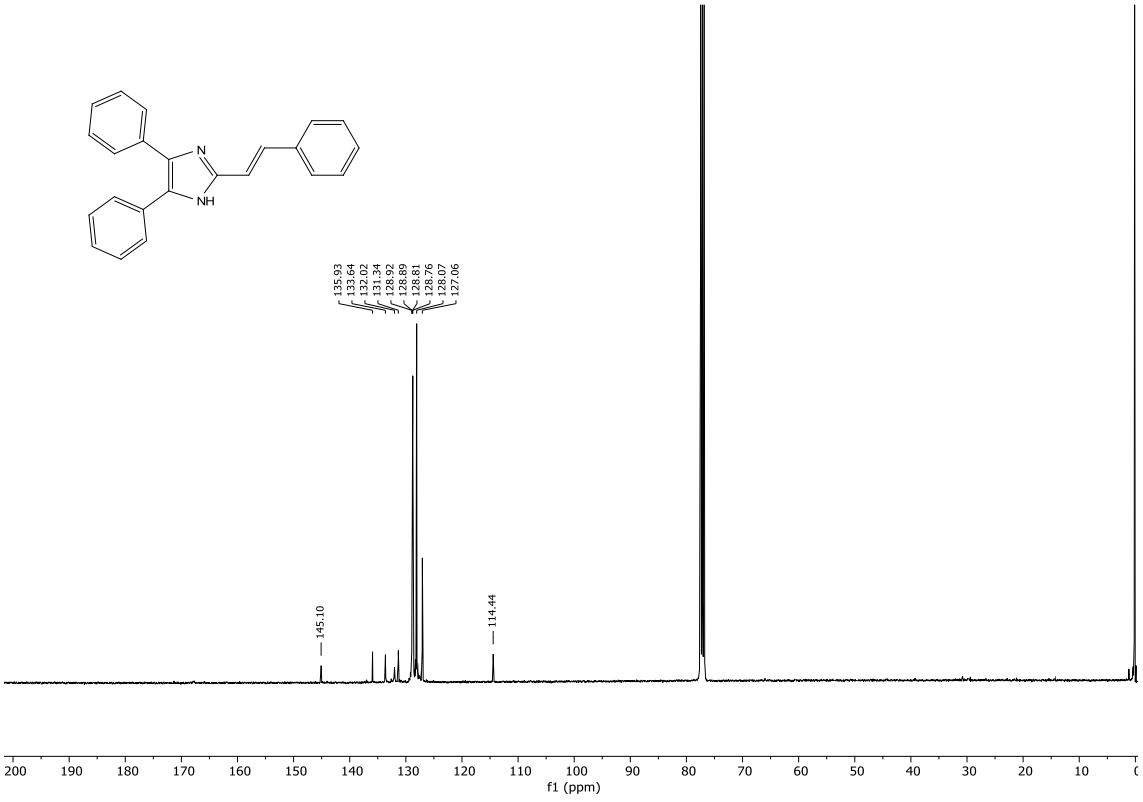


13C $CDCl_3$ 100MHz

(E)-4,5-Diphenyl-2-styryl-1H-imidazole (15)

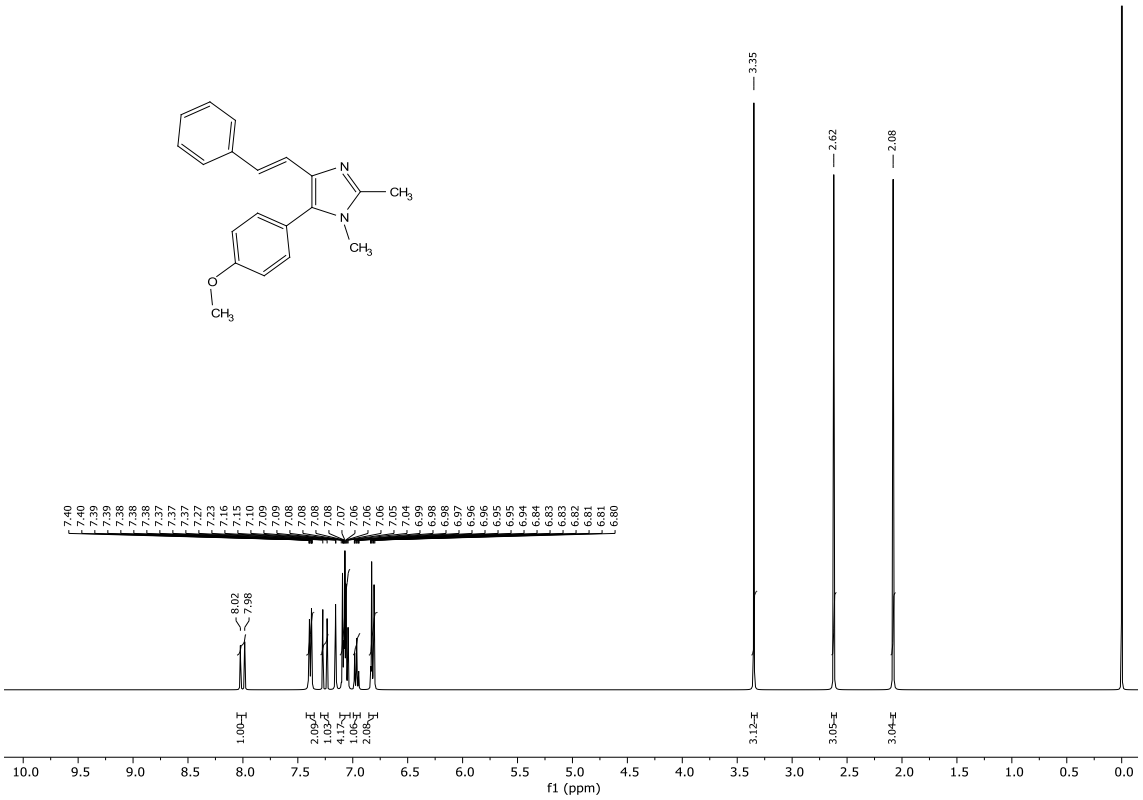


1H $CDCl_3$ 400MHz

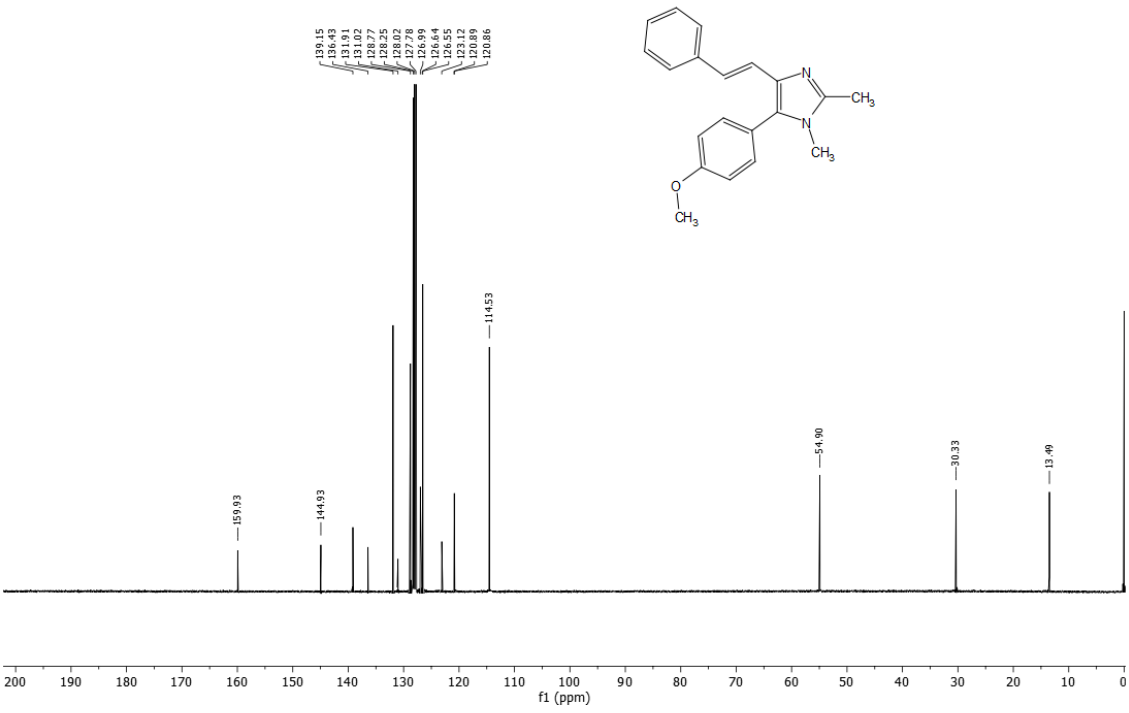


13C $CDCl_3$ 100MHz

(E)-5-(4-Methoxyphenyl)-1,2-dimethyl-4-styryl-1H-imidazole (17)

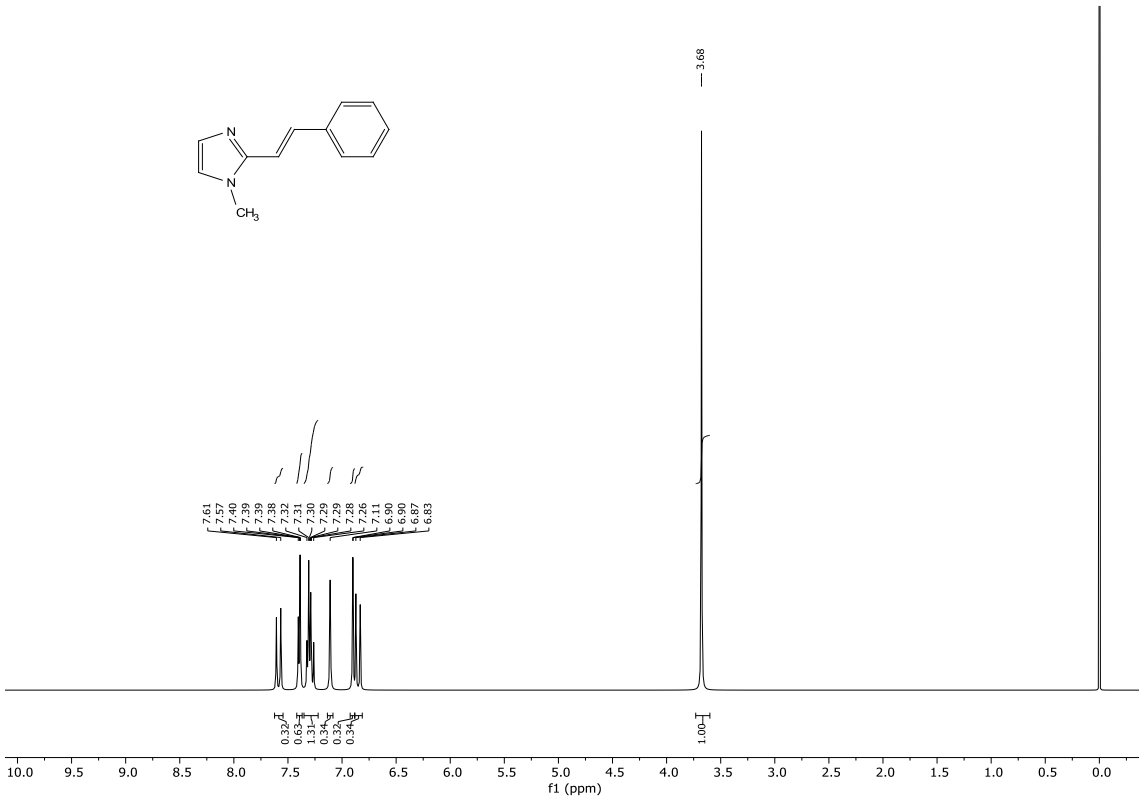


1H C_6D_6 400MHz



13 C_6D_6 100MHz

(E)-1-methyl-2-styryl-1H-imidazole



1H $CDCl_3$ 400MHz