Supporting Information

Nickel-Catalyzed Cross-Coupling of Allyl Alcohols with Aryl- or Alkenylzinc Reagents

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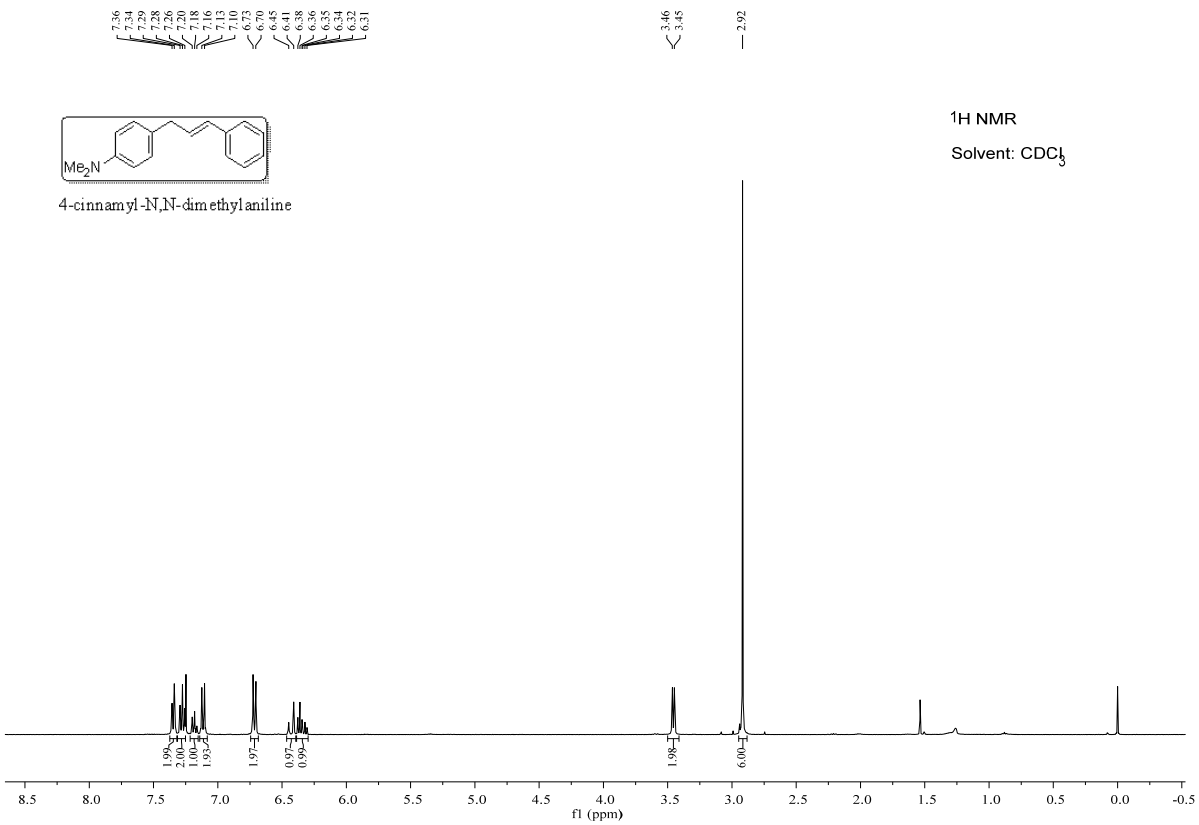
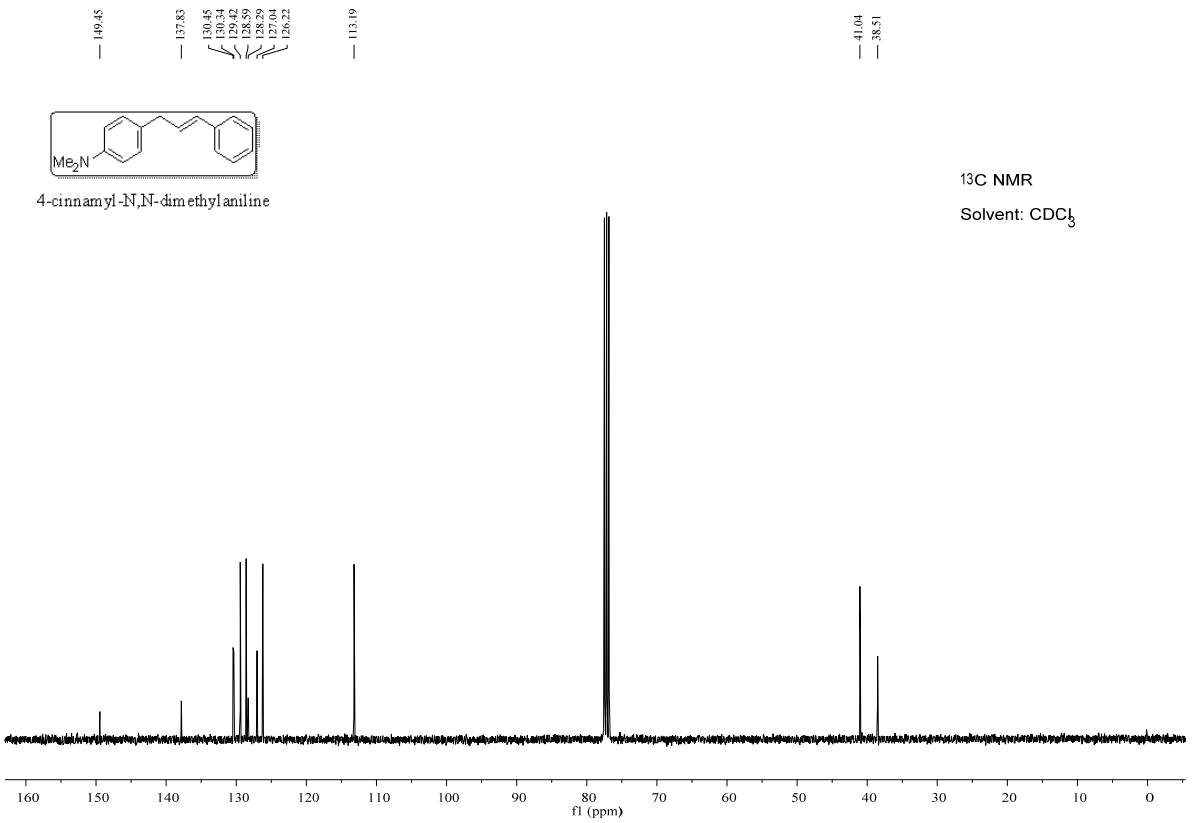
Contents

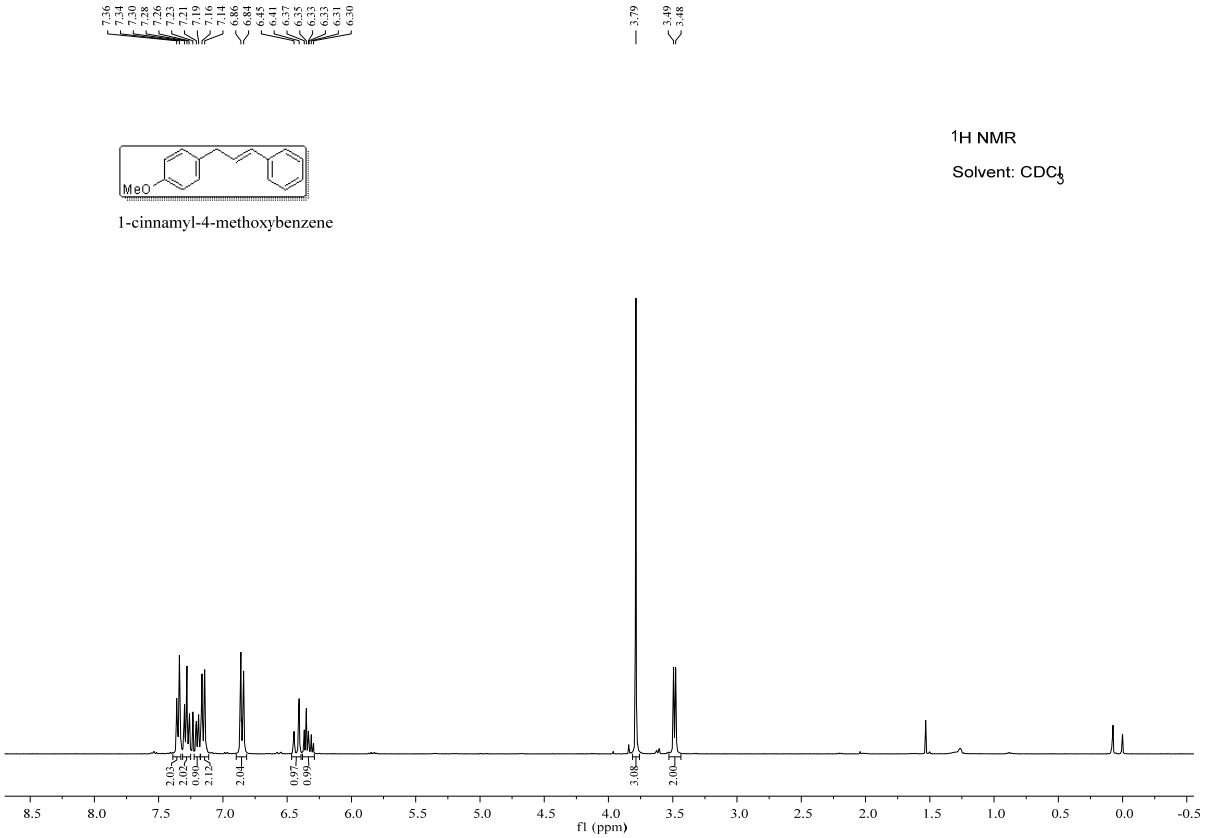
Copies of NMR spectra of the cross-coupling products

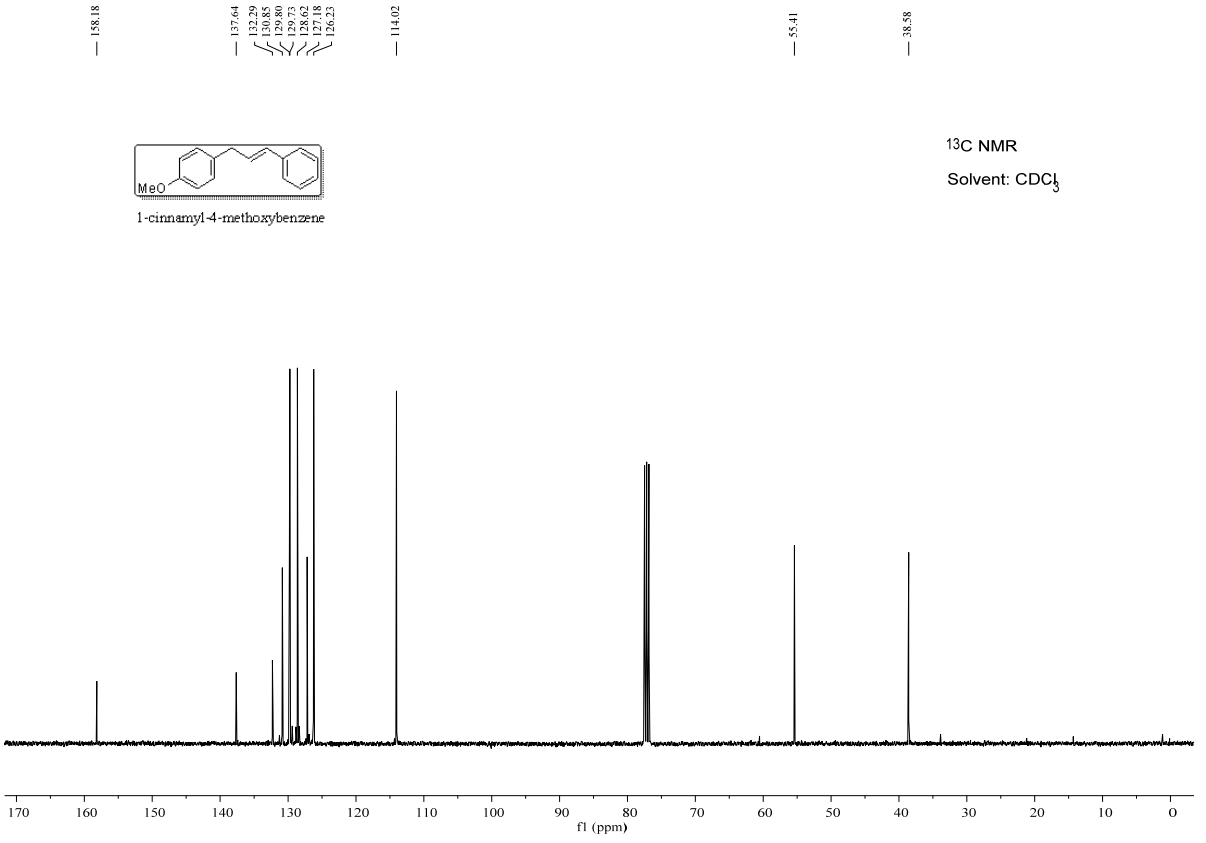
(1) 4-cinnamyl-*N*,*N*-dimethylaniline (**3a**)



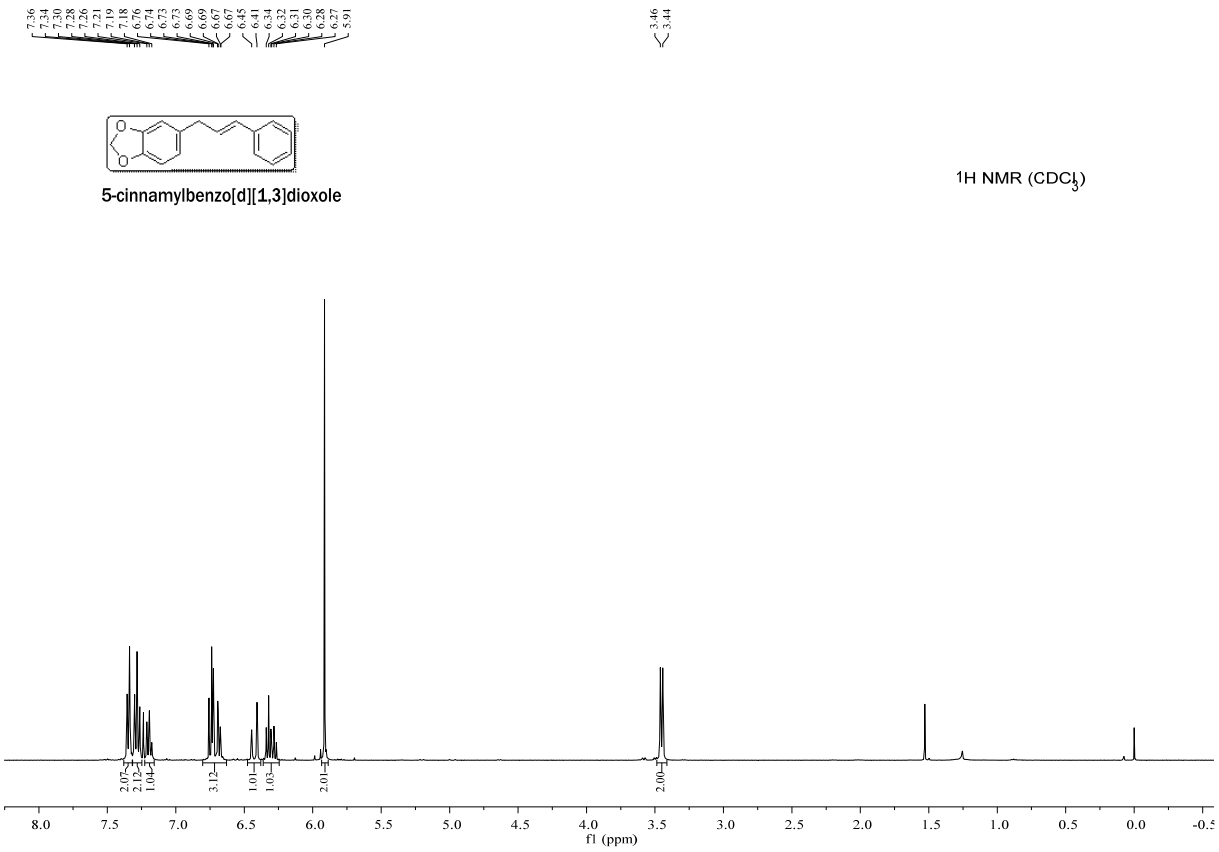


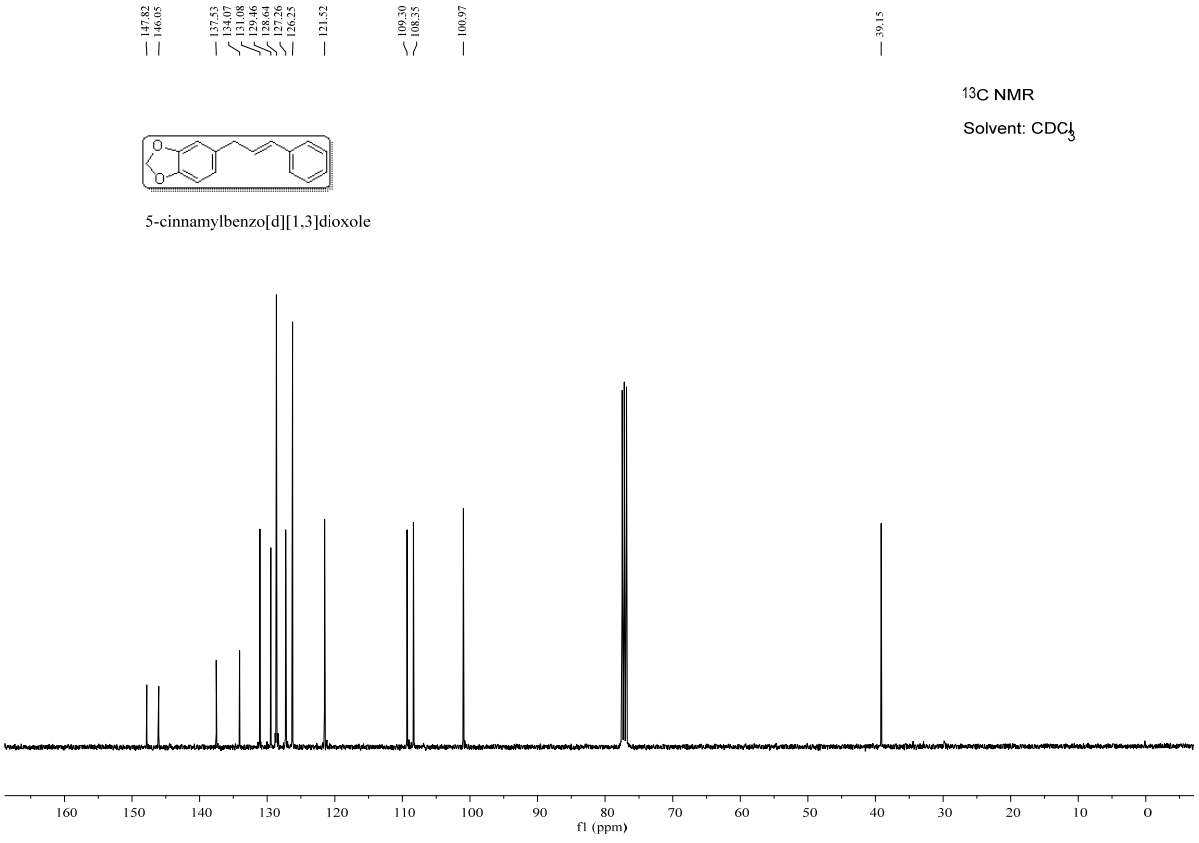
(2) 1-cinnamyl-4-methoxybenzene (**3b**)



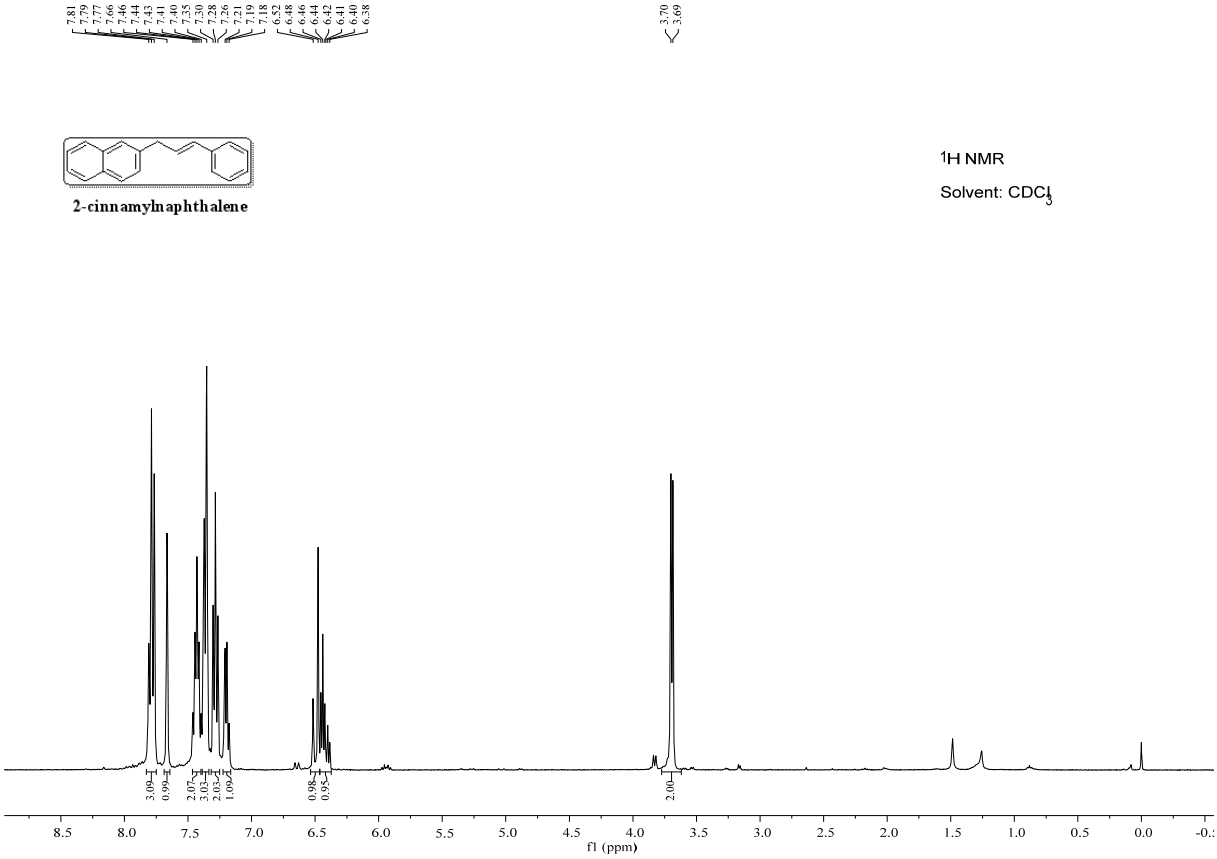


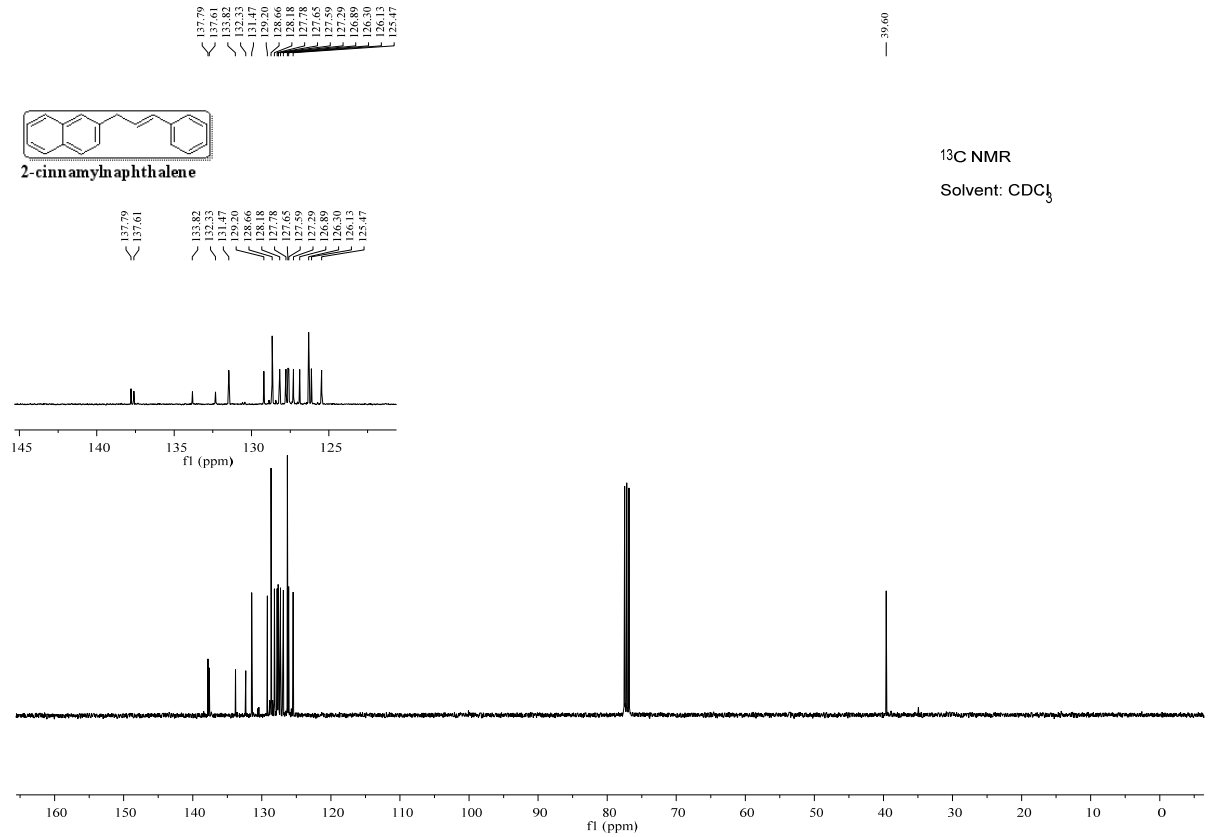
(3) 5-cinnamylbenzo[*d*][1,3]dioxole (**3c**)



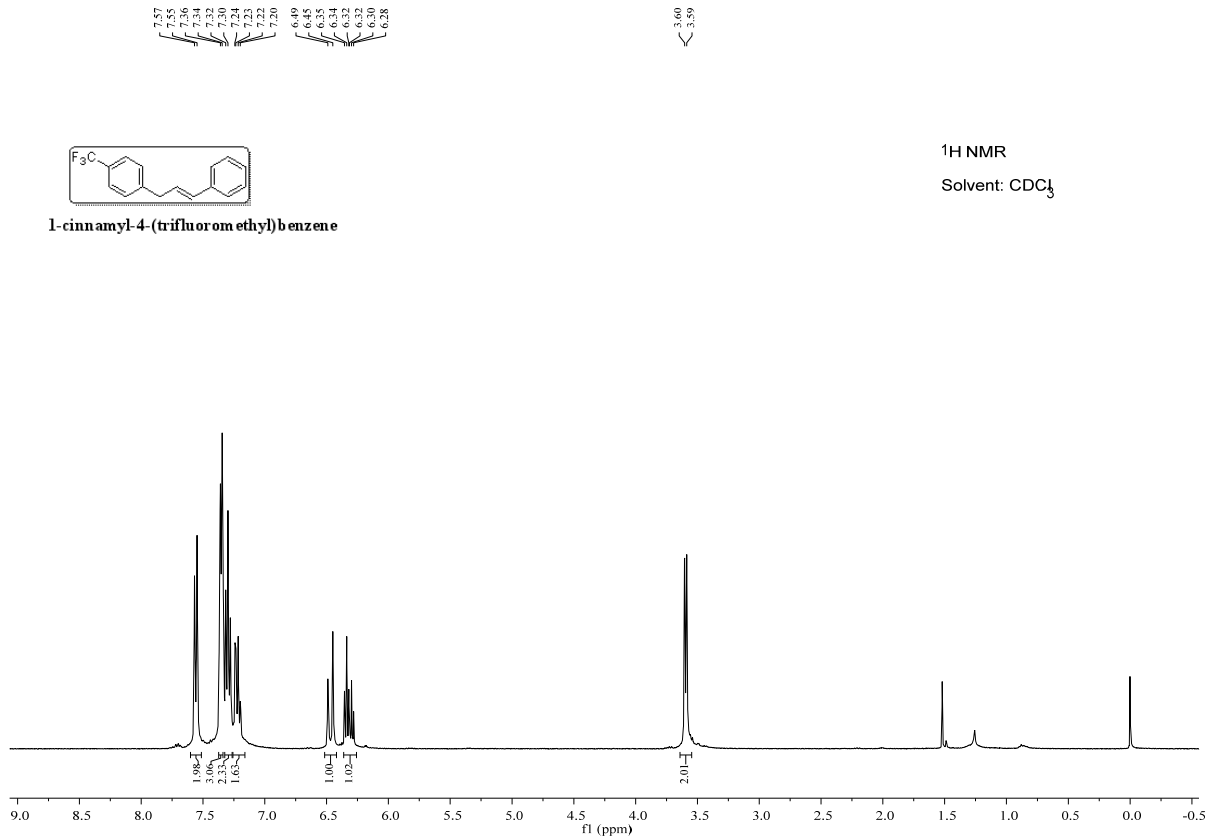


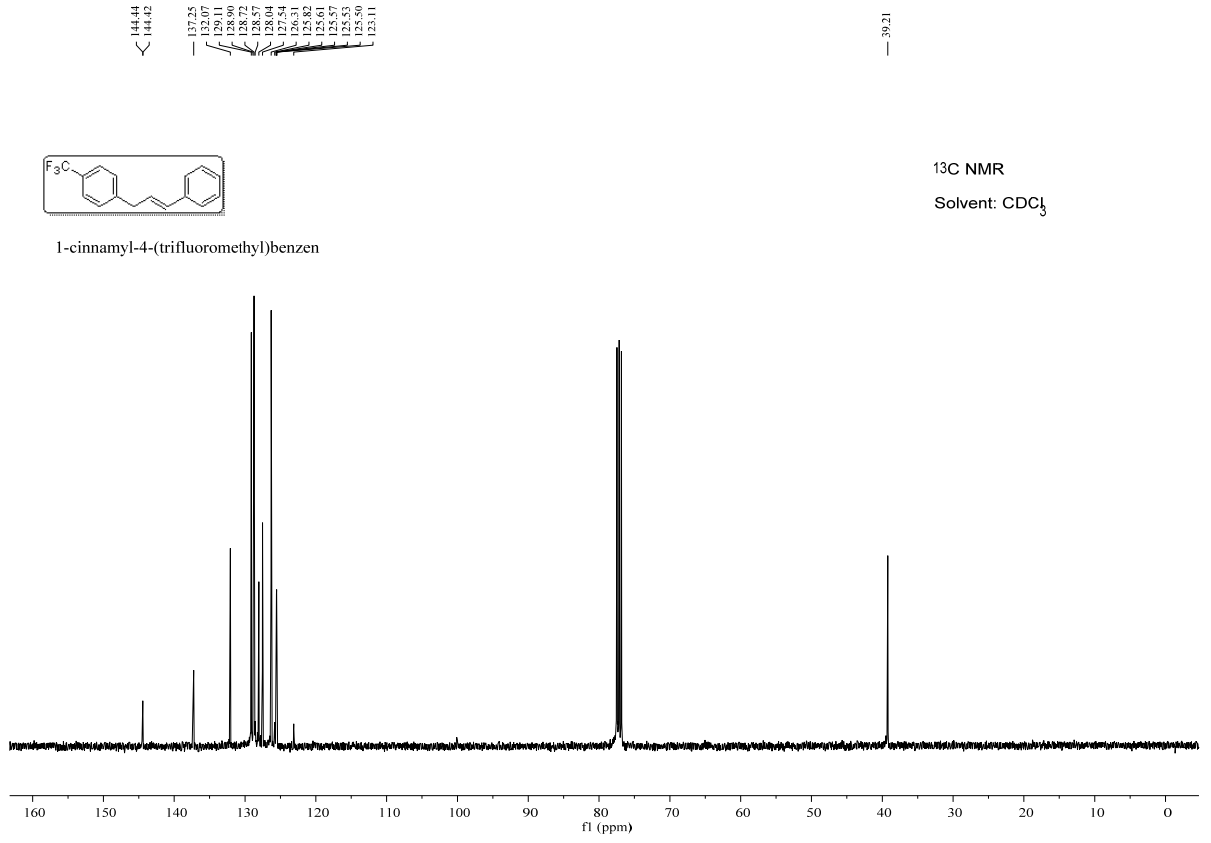
(4) 2-cinnamylnaphthalene (**3d**)

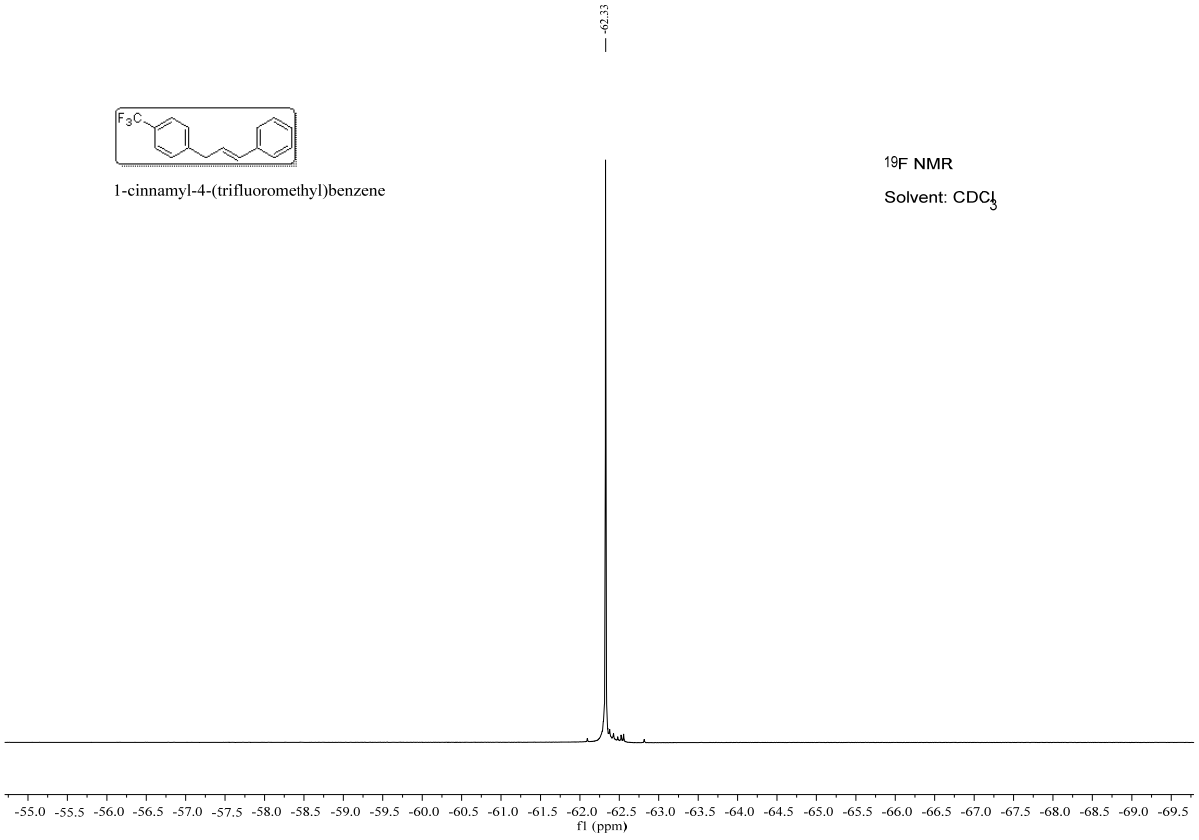




(5) 1-cinnamyl-4-(trifluoromethyl)benzene (**3e**)

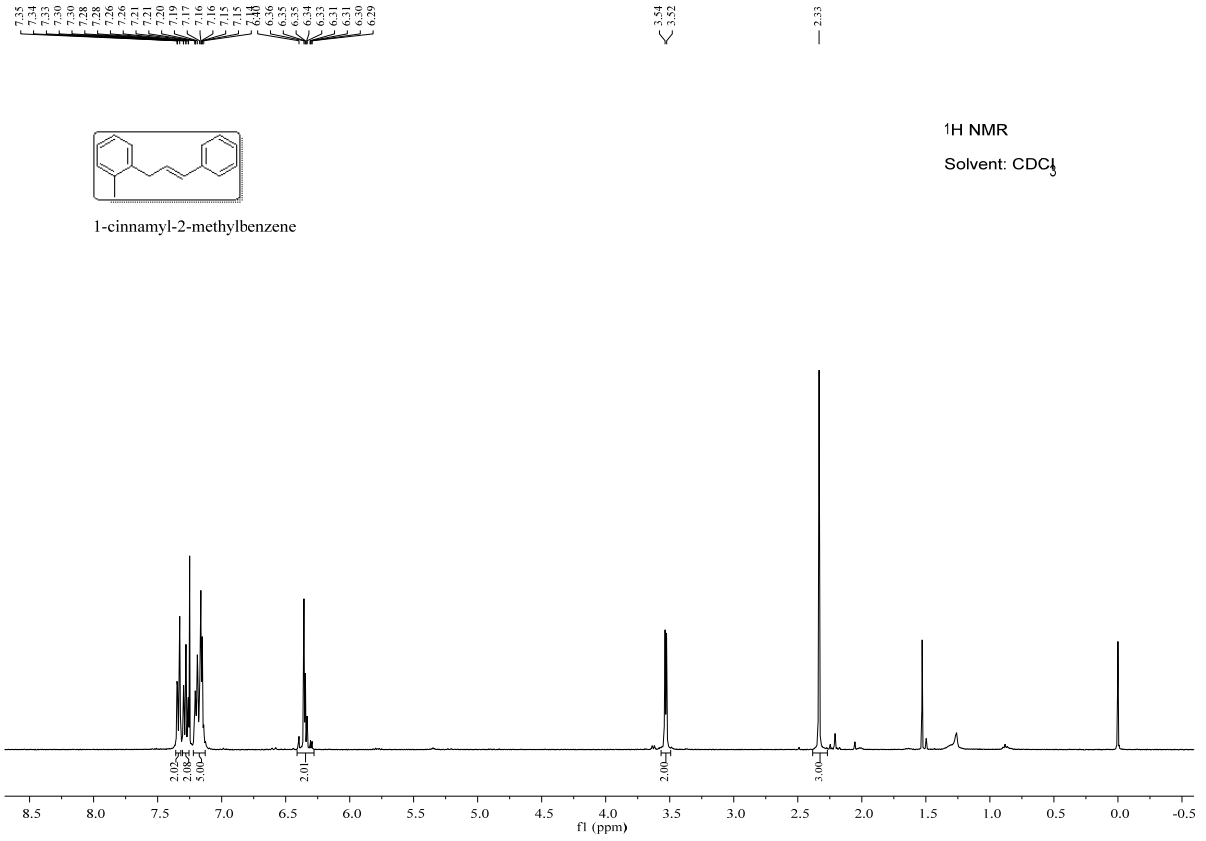


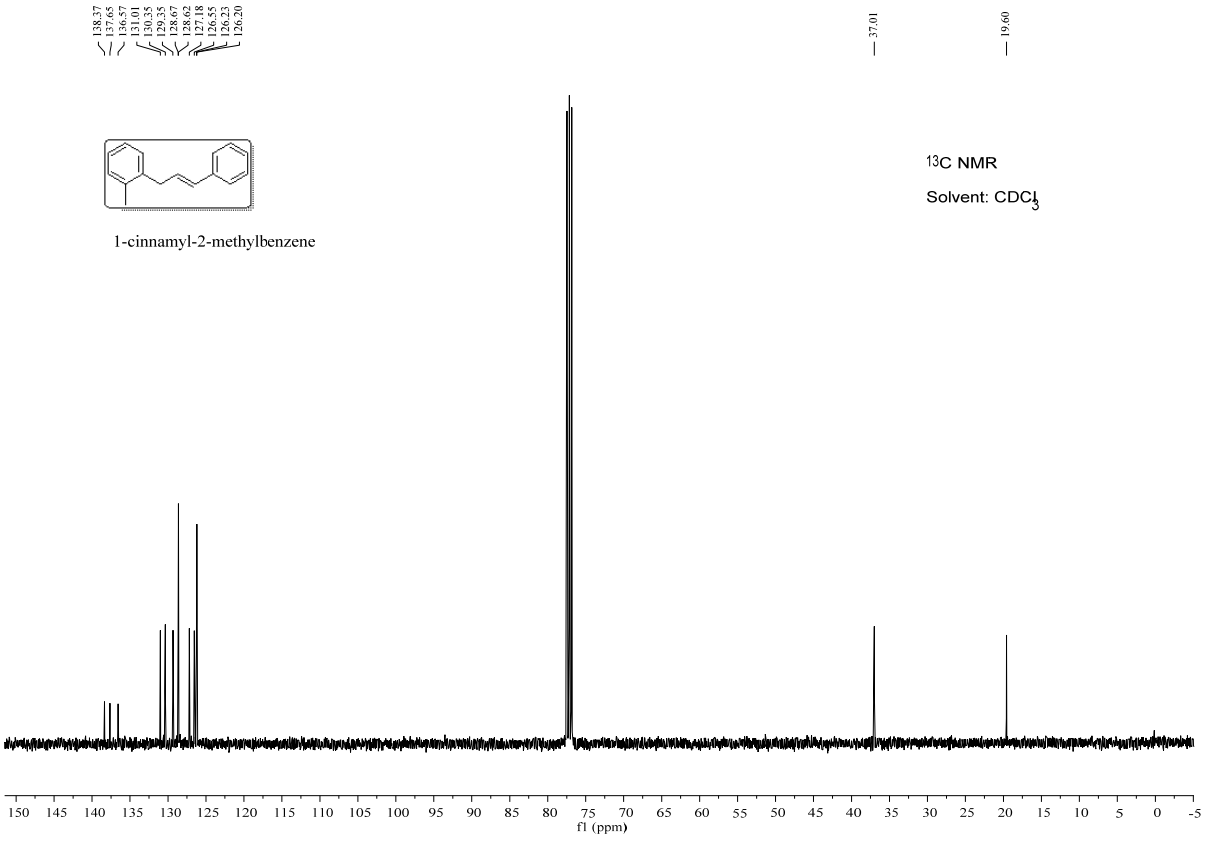




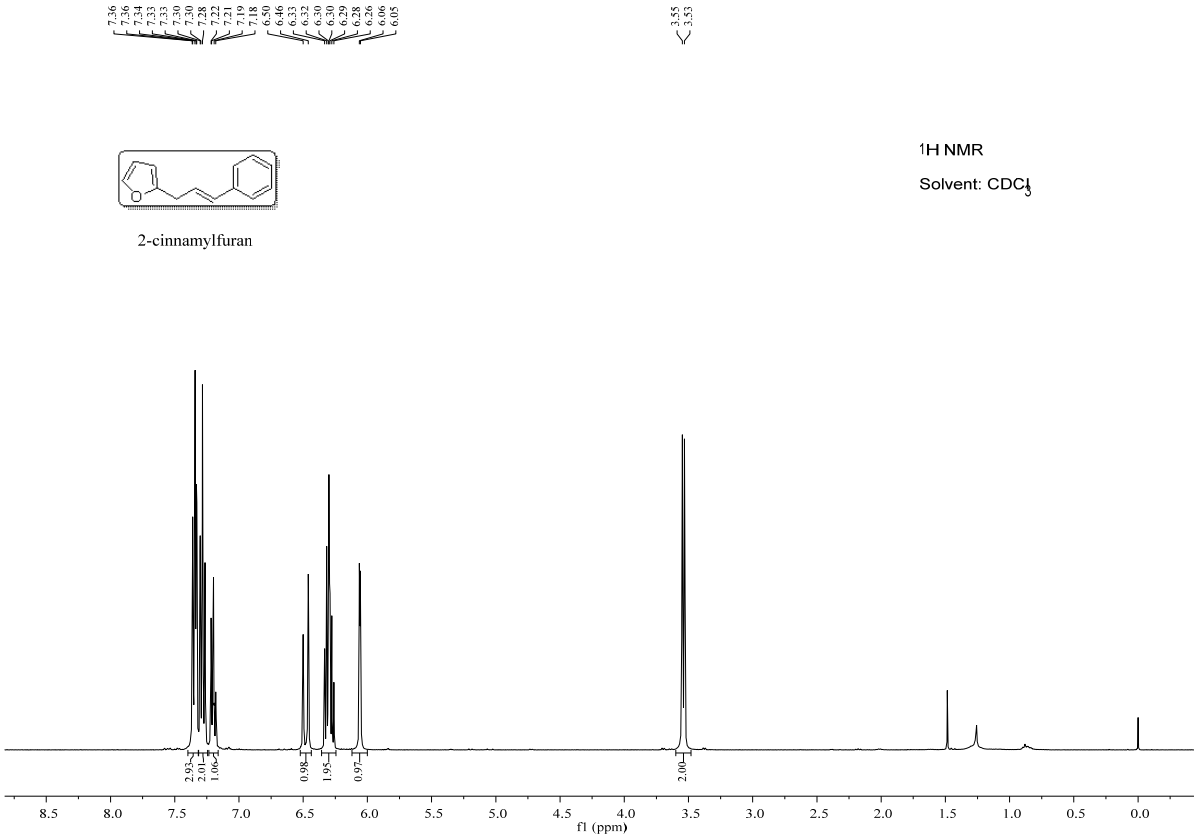
1-cinnamyl-4-(trifluoromethyl)benzene

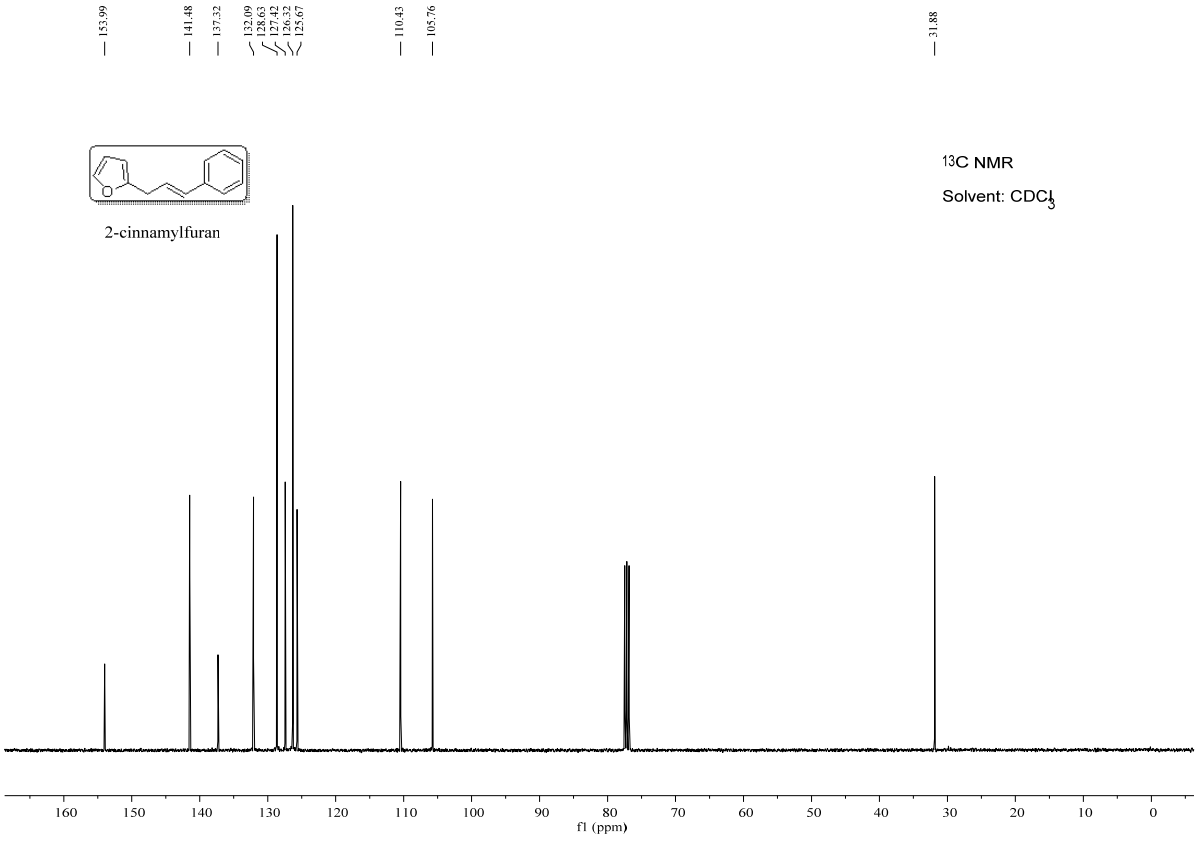
(6) 1-cinnamyl-2-methylbenzene (**3f**)



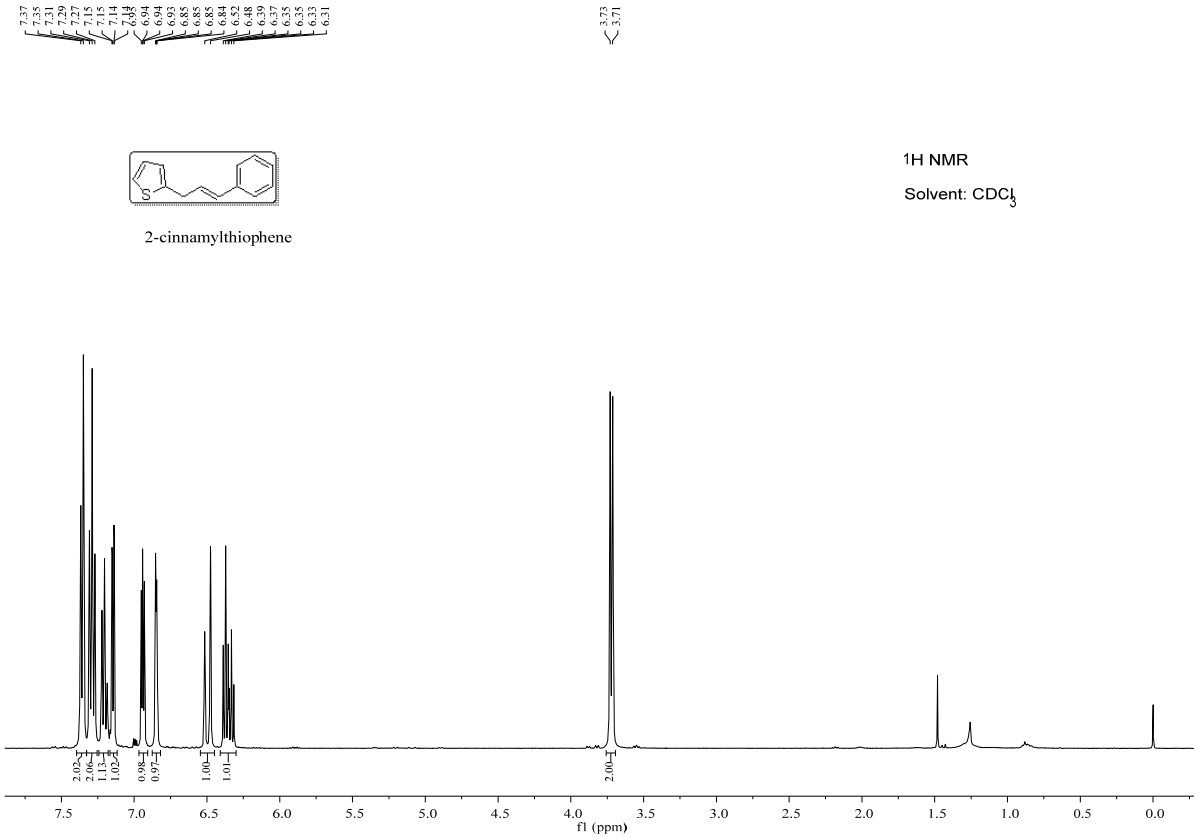


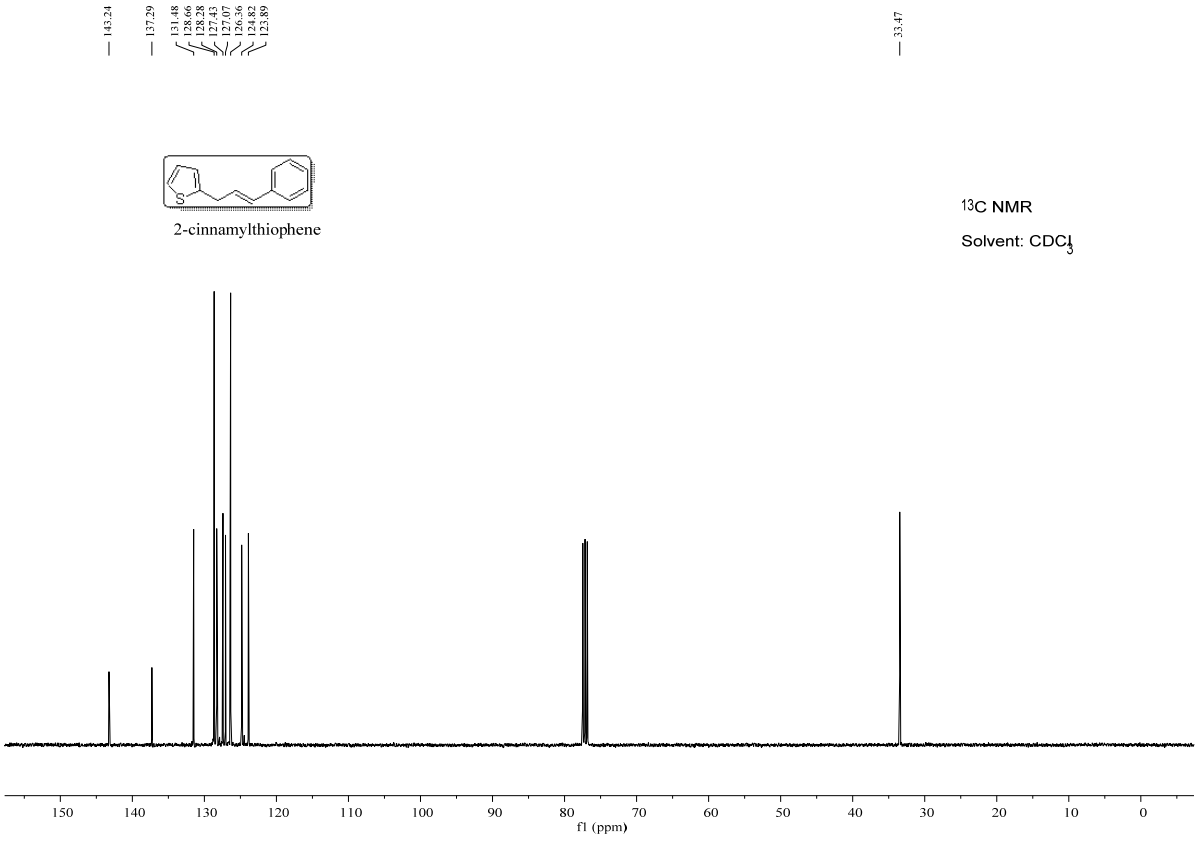
(7) 2-cinnamylfuran (**3g**)



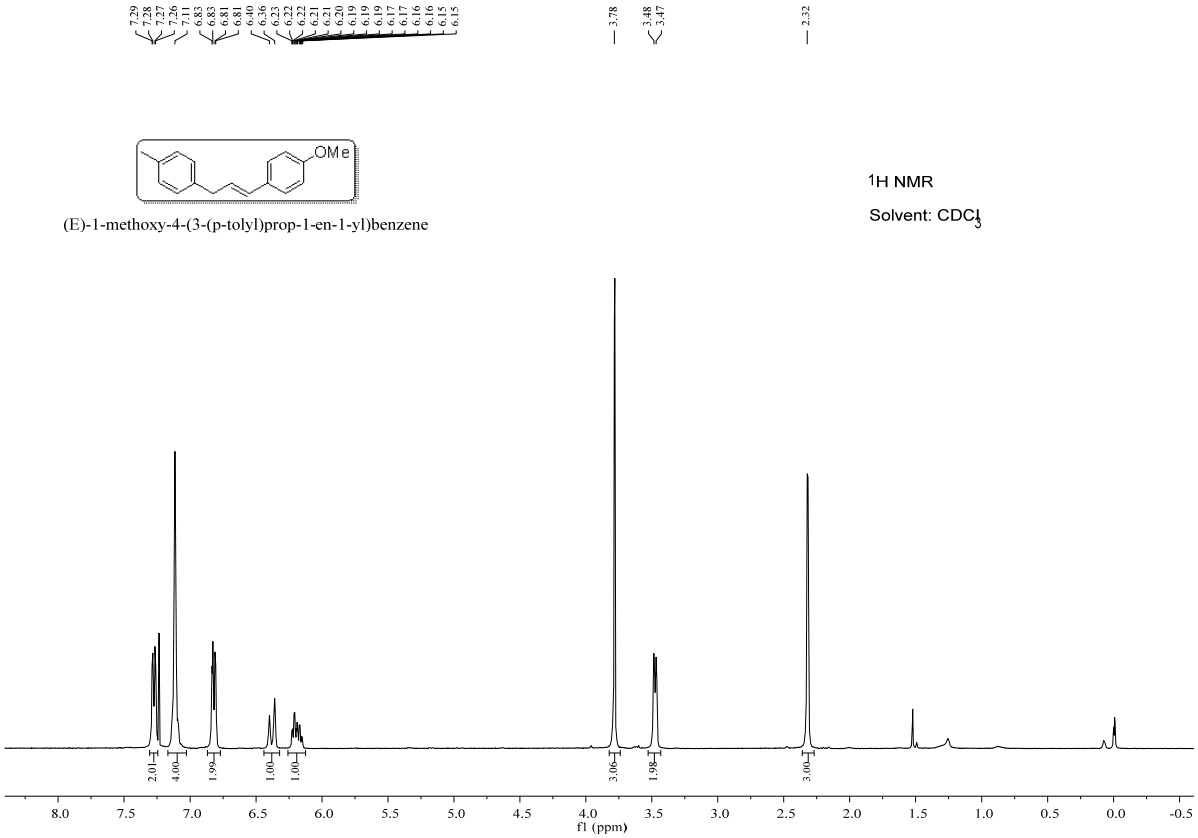


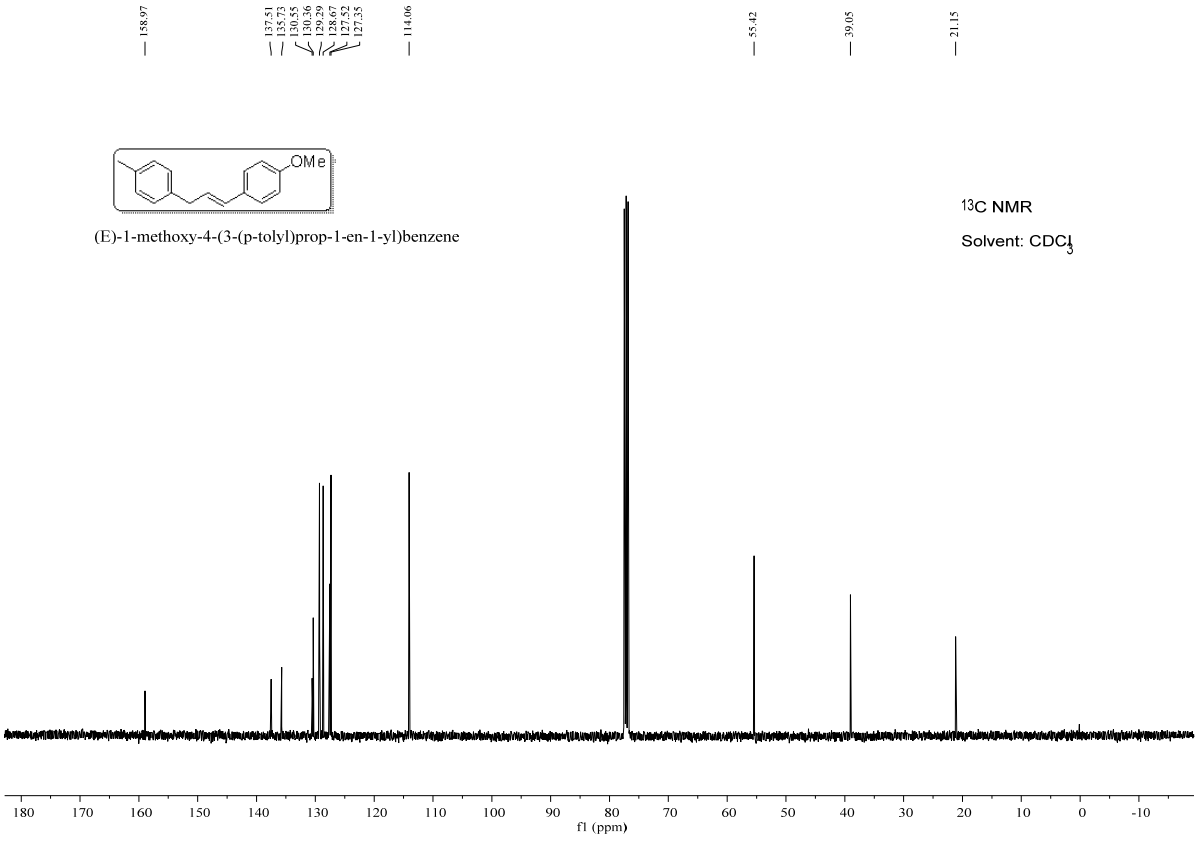
(8) 2-cinnamylthiophene (**3h**)



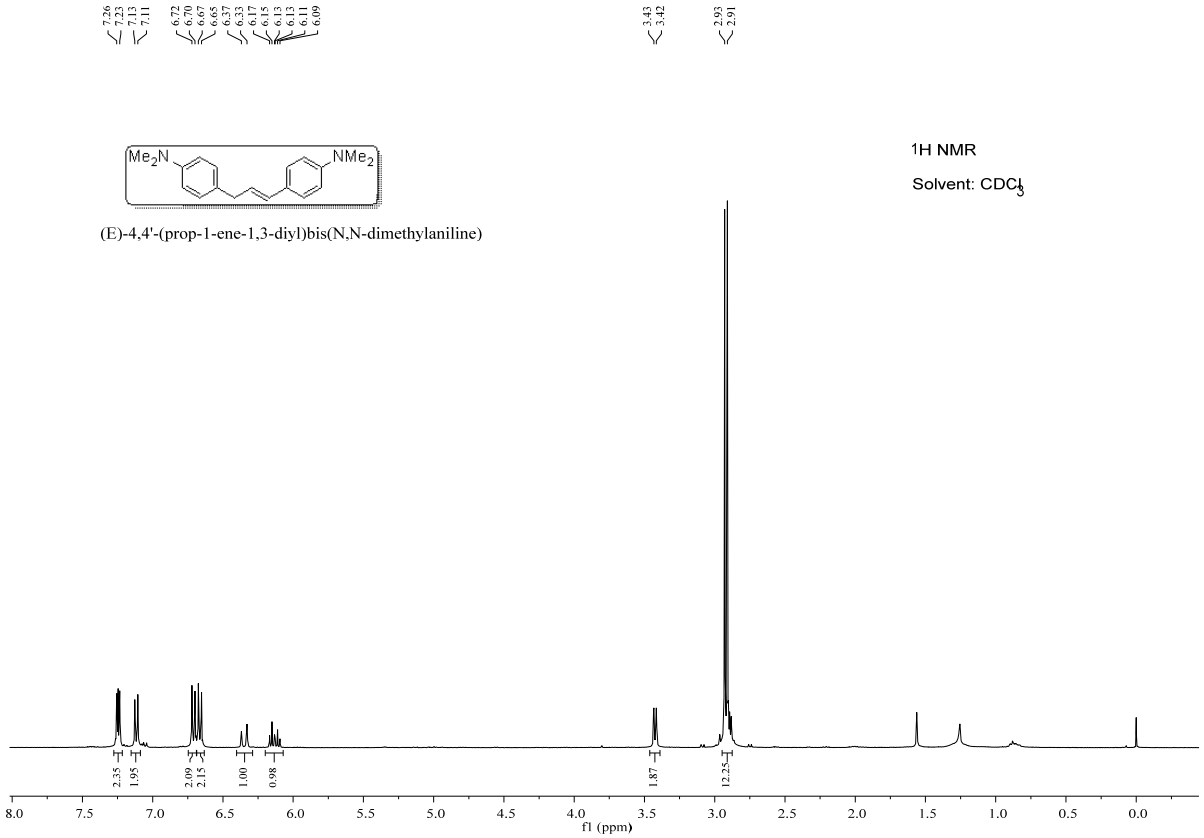


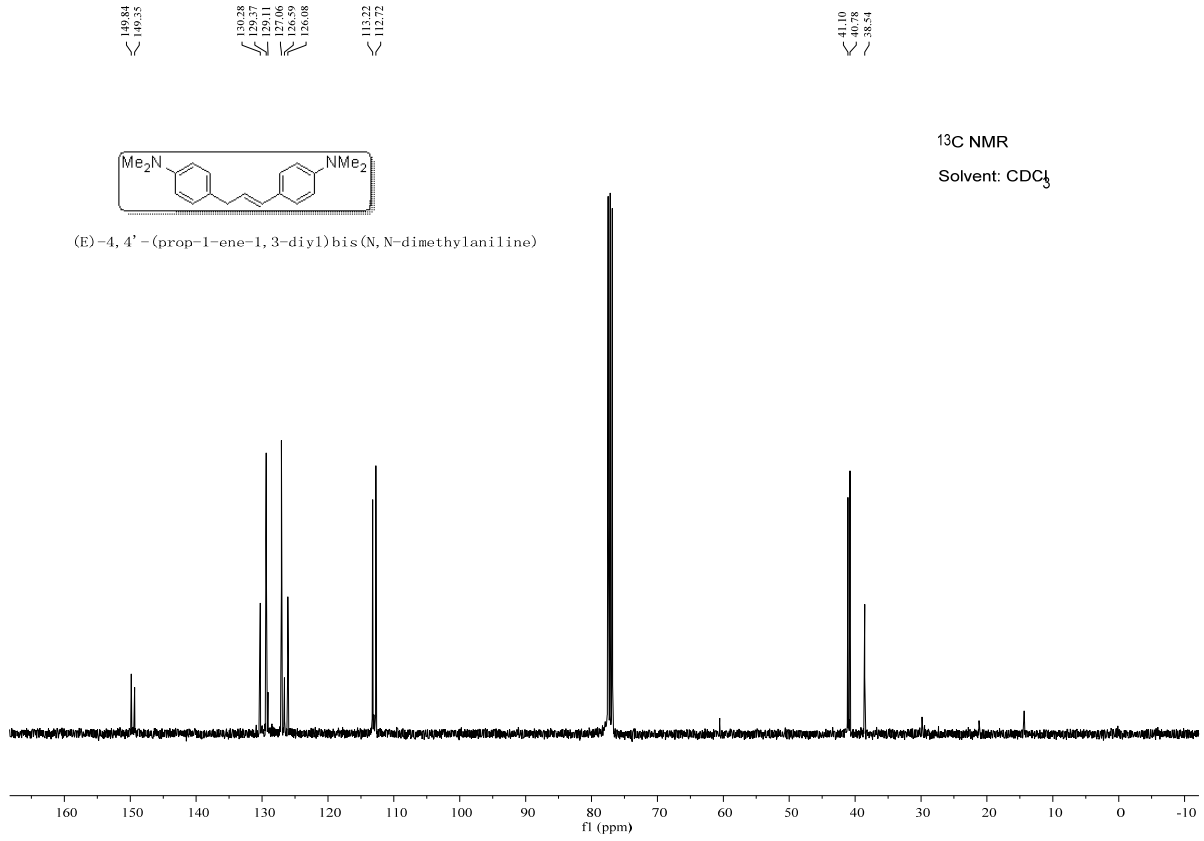
(9) (*E*)-1-methoxy-4-(3-(*p*-tolyl)prop-1-en-1-yl)benzene (**3i**)



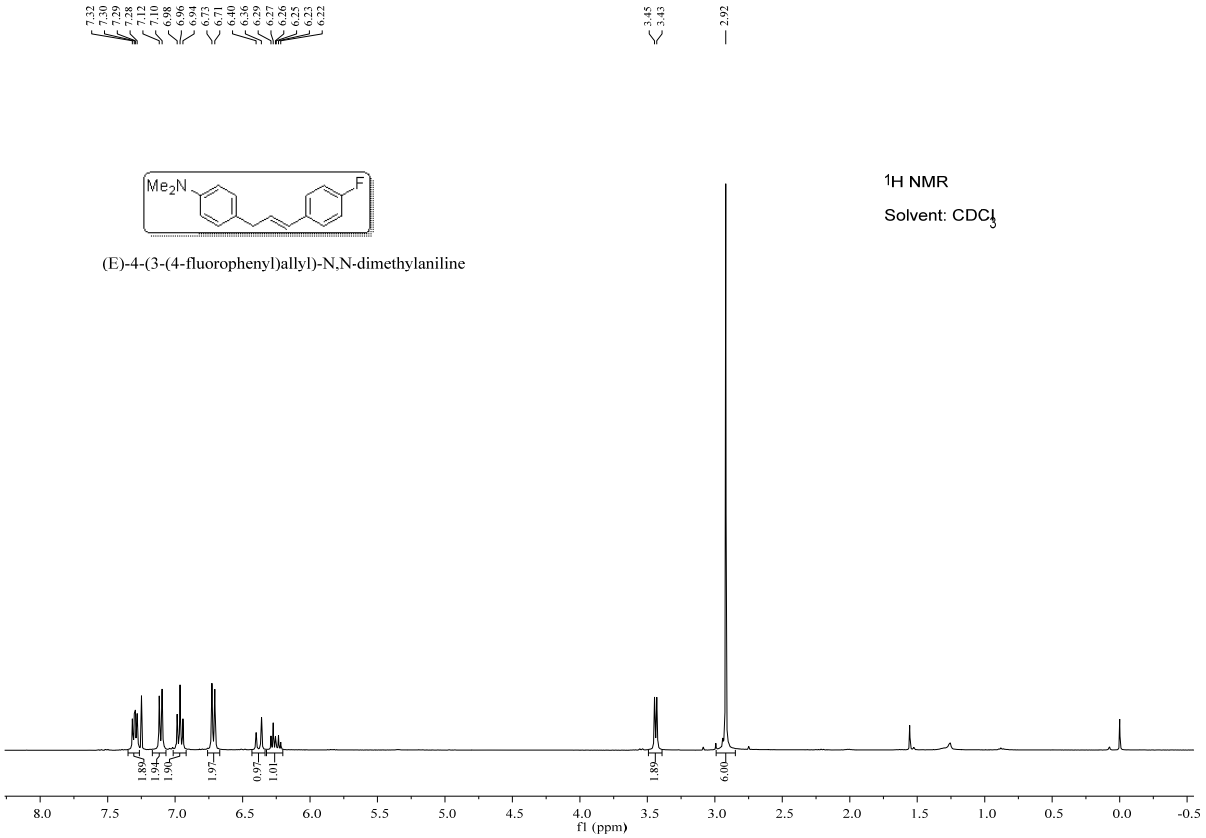


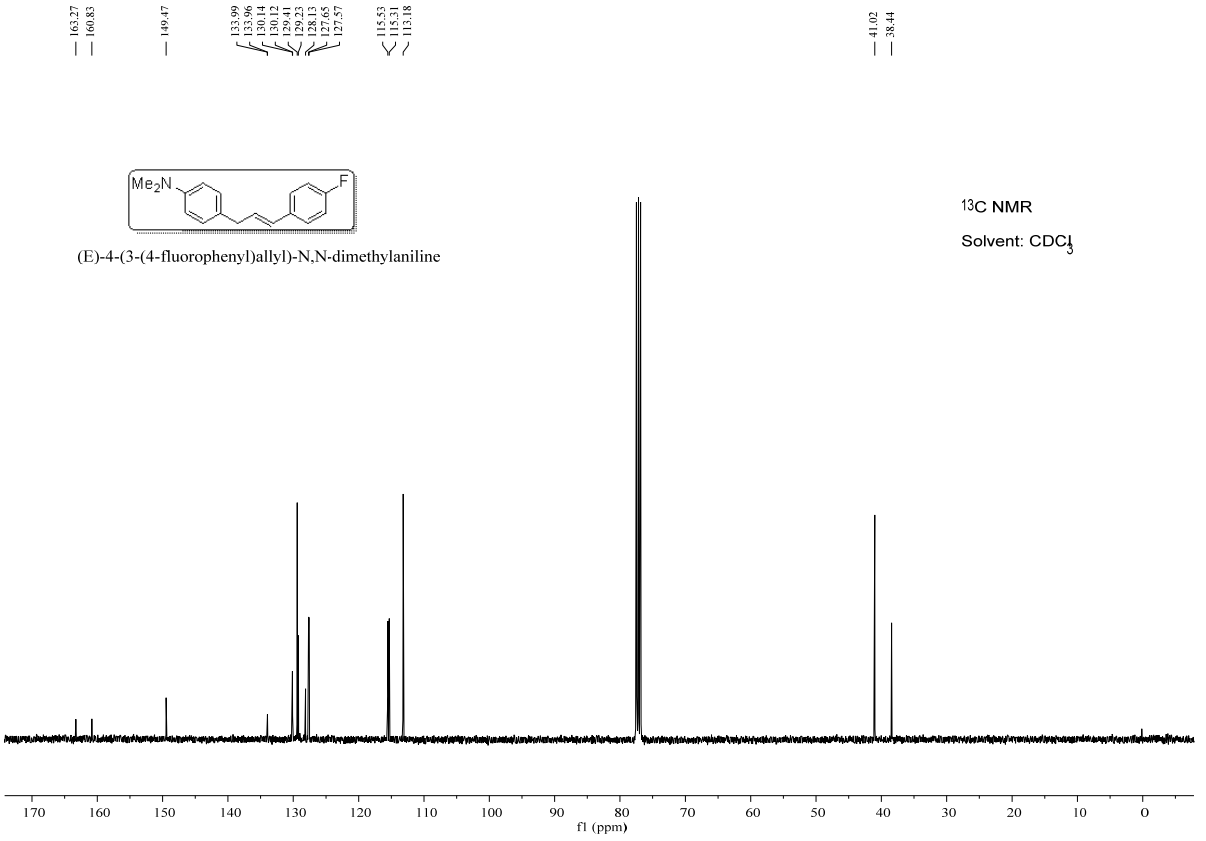
(10) (*E*)-4,4'-(prop-1-ene-1,3-diyl)bis(*N*,*N*-dimethylaniline) (**3j**)



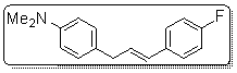


(11) (*E*)-4-(3-(4-fluorophenyl)allyl)-*N*,*N*-dimethylaniline (**3k**)



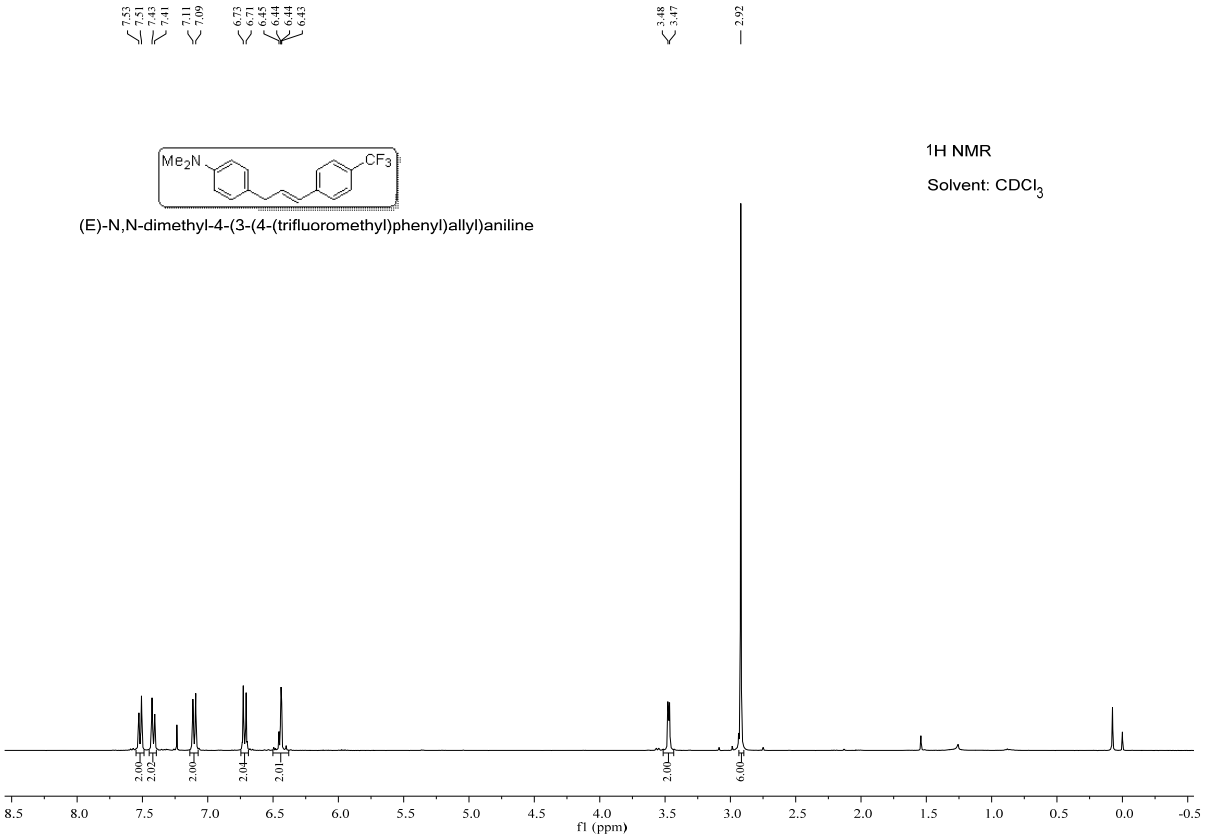


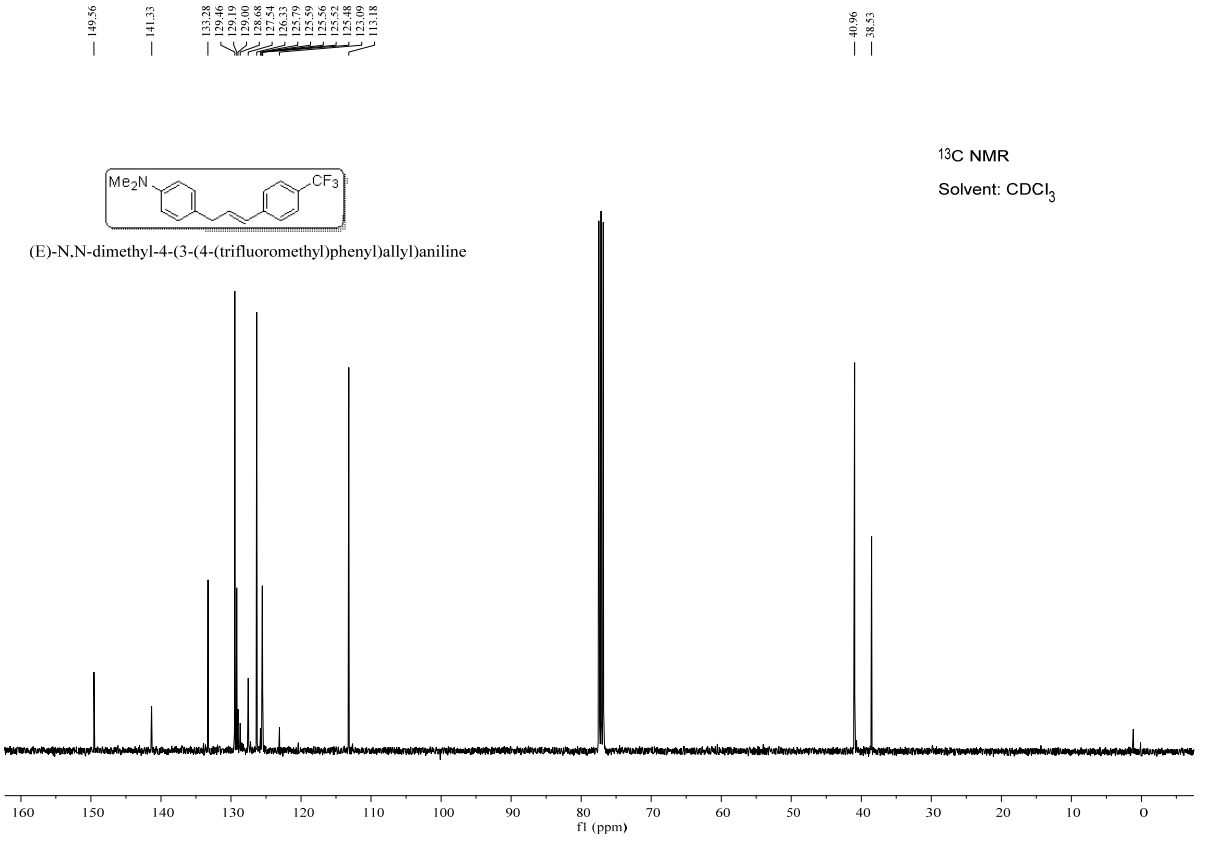
^{19}F NMR (376 MHz, CD_3OD) δ -115.65.

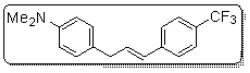


(E)-4-(3-(4-fluorophenyl)allyl)-N,N-dimethylaniline

(12) (*E*)-*N*,*N*-dimethyl-4-(3-(4-(trifluoromethyl)phenyl)allyl)aniline (**3l**)





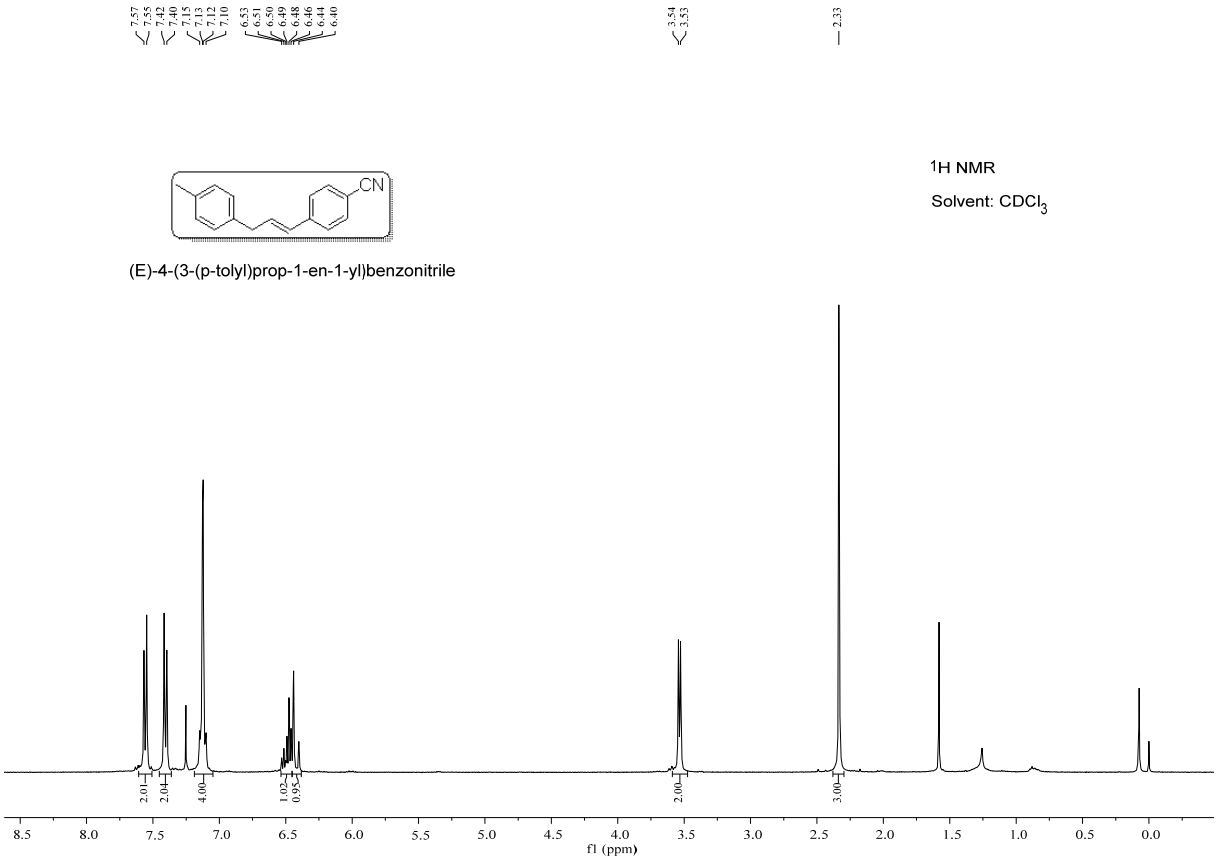


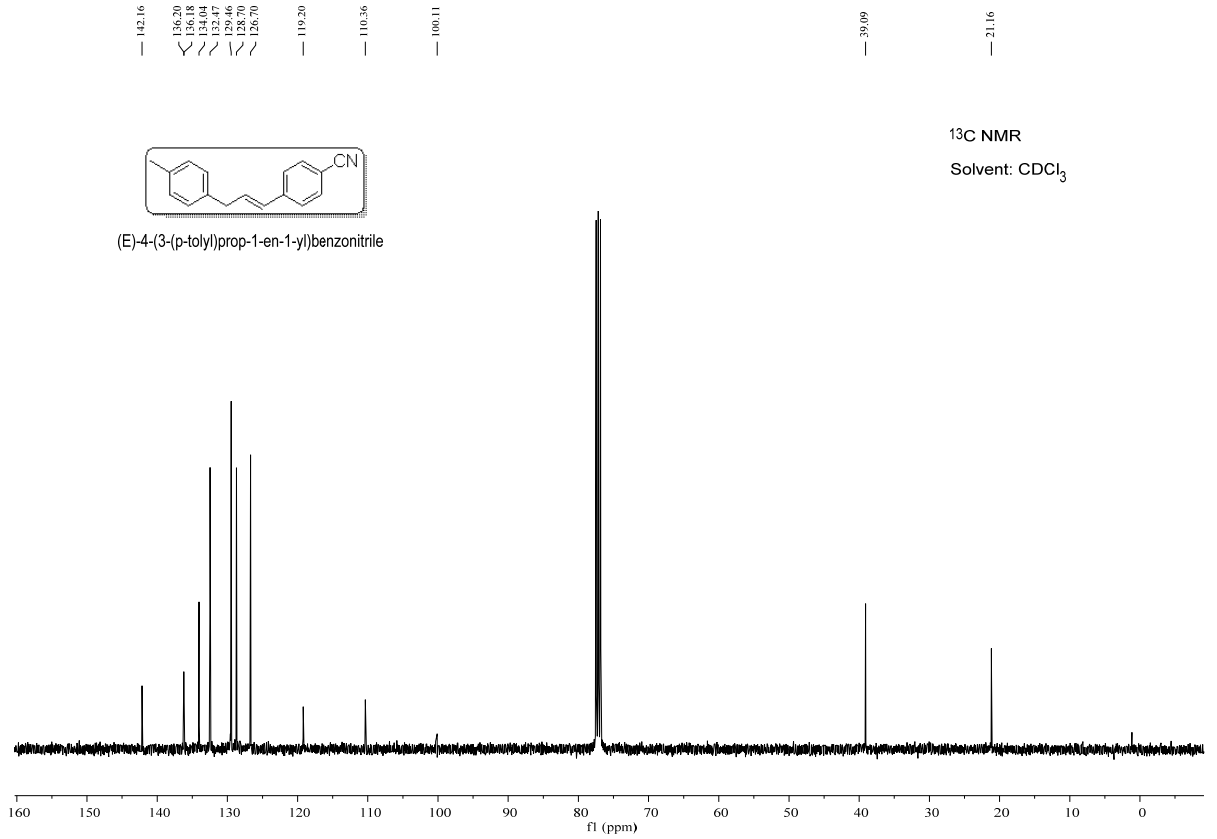
(E)-N,N-dimethyl-4-(3-(4-(trifluoromethyl)phenyl)allyl)aniline

^{19}F NMR

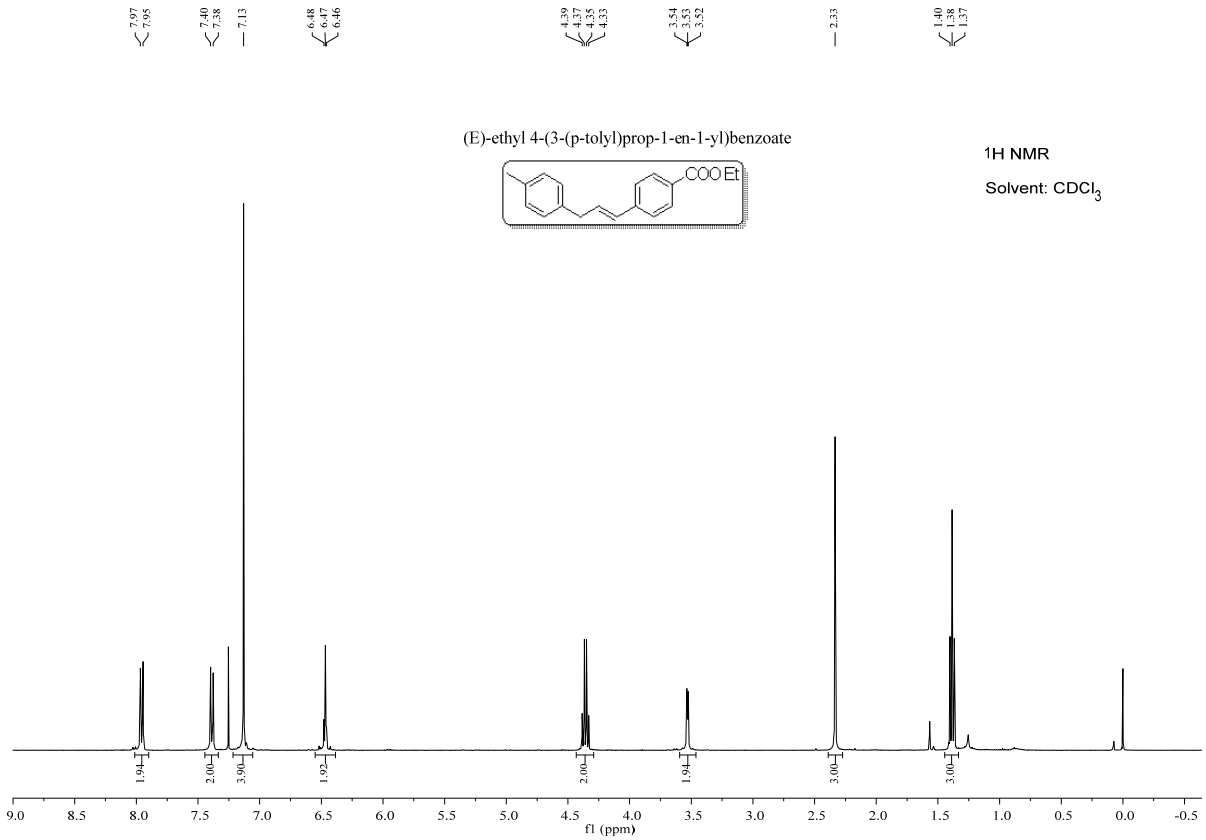
Solvent: $CDCl_3$

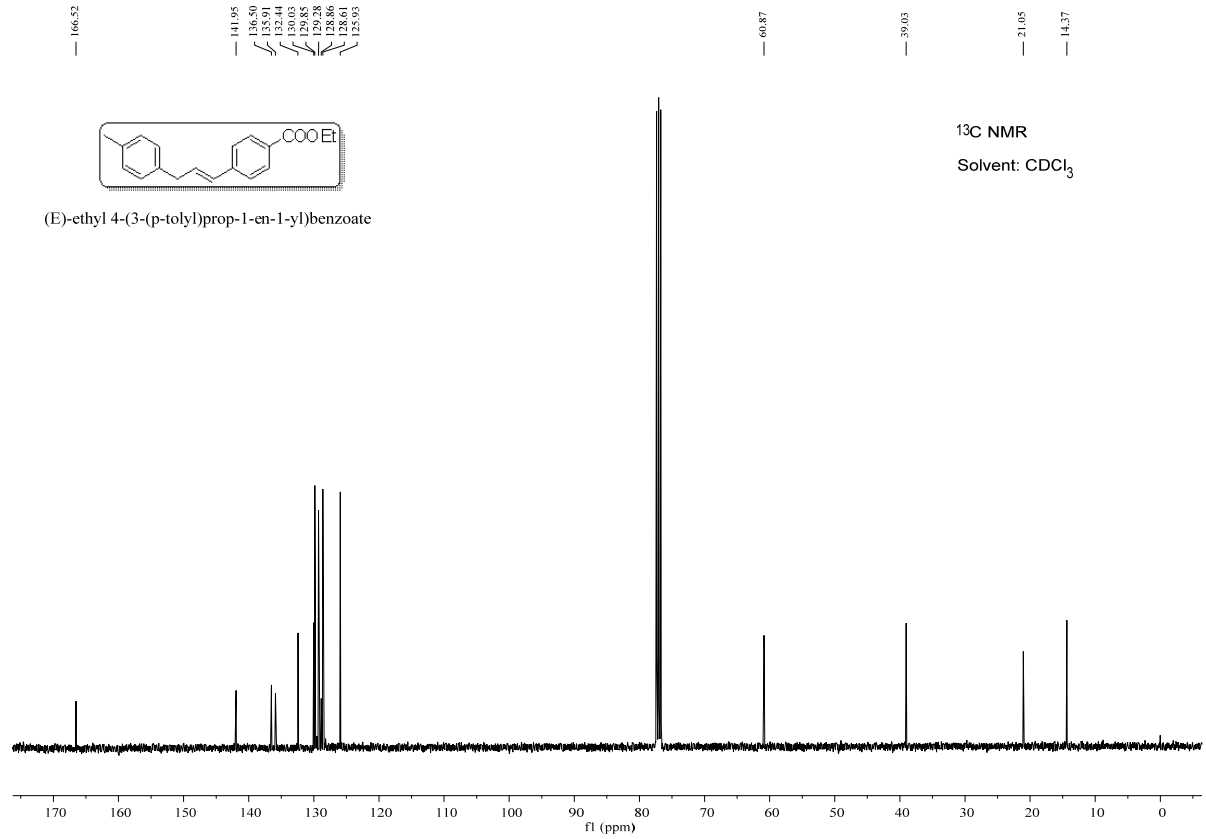
(13) (*E*)-4-(3-(*p*-tolyl)prop-1-en-1-yl)benzonitrile (**3m**)



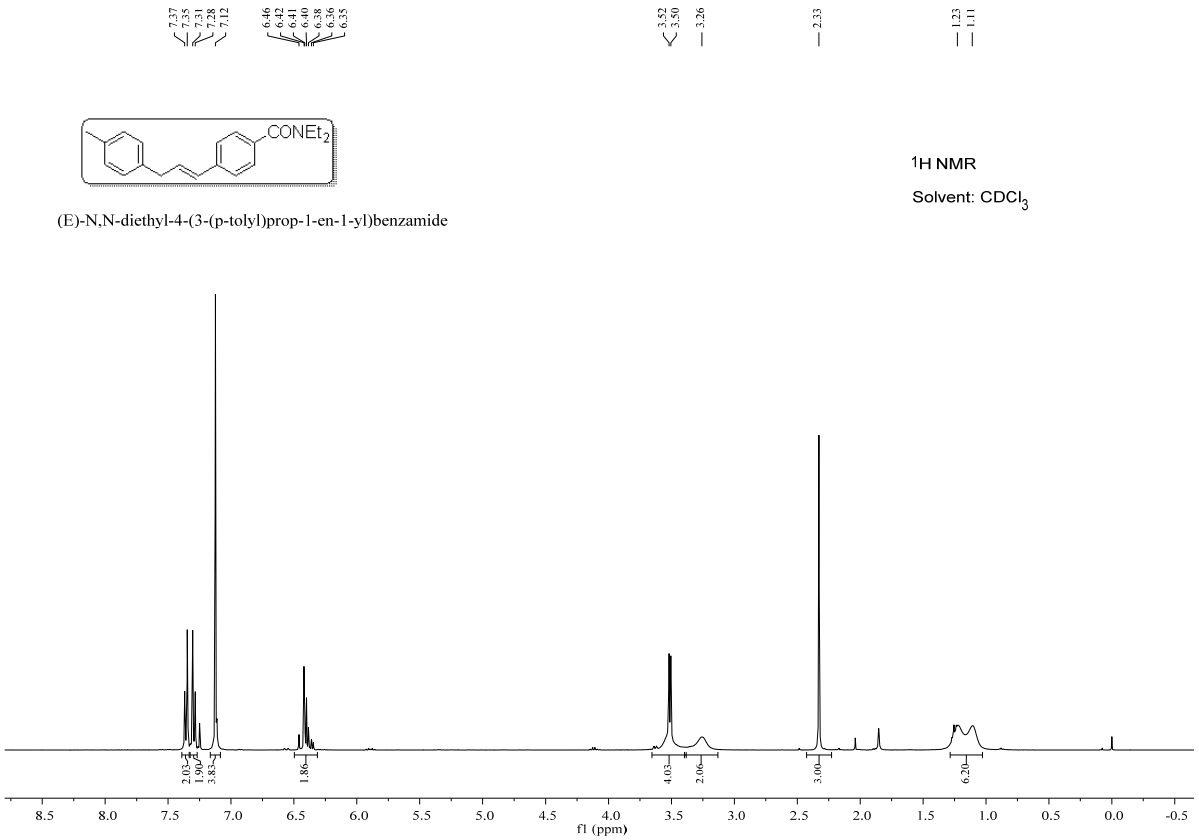


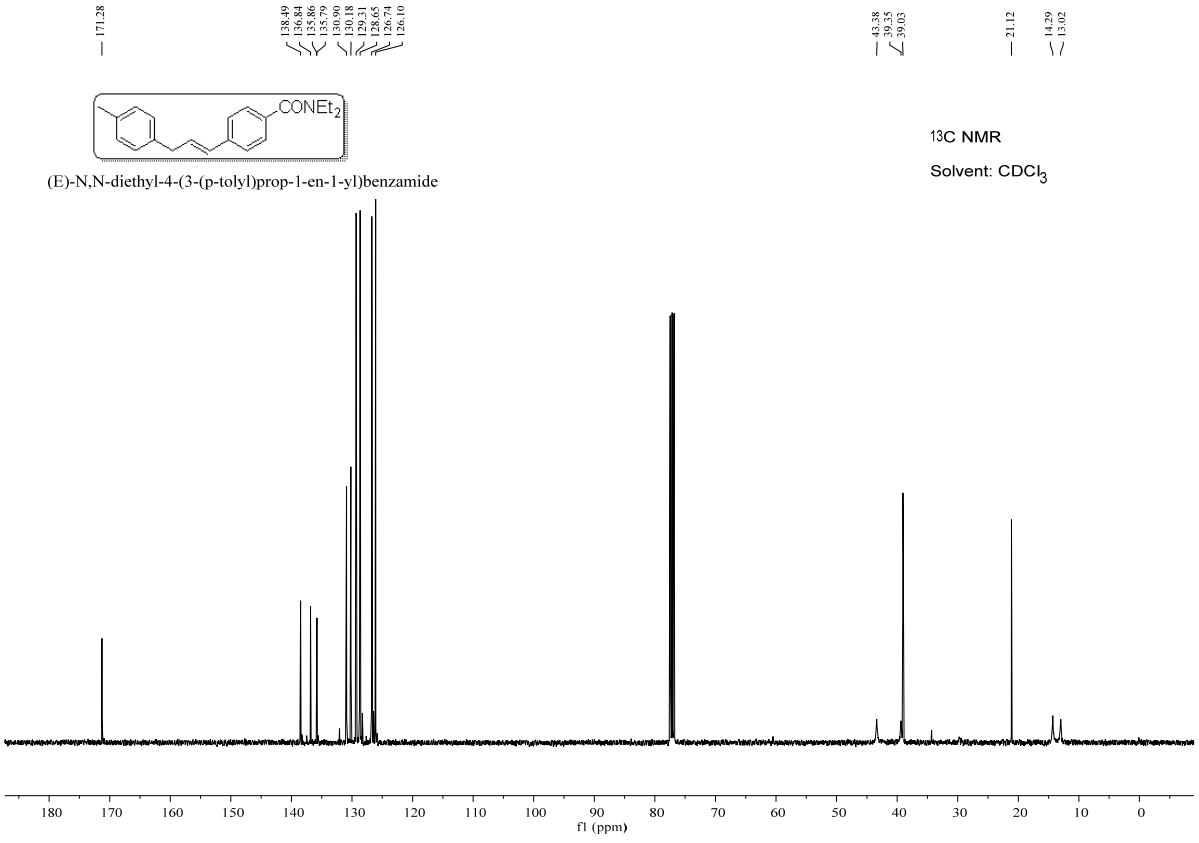
(14) (*E*)-ethyl 4-(3-(*p*-tolyl)prop-1-en-1-yl)benzoate (**3n**)



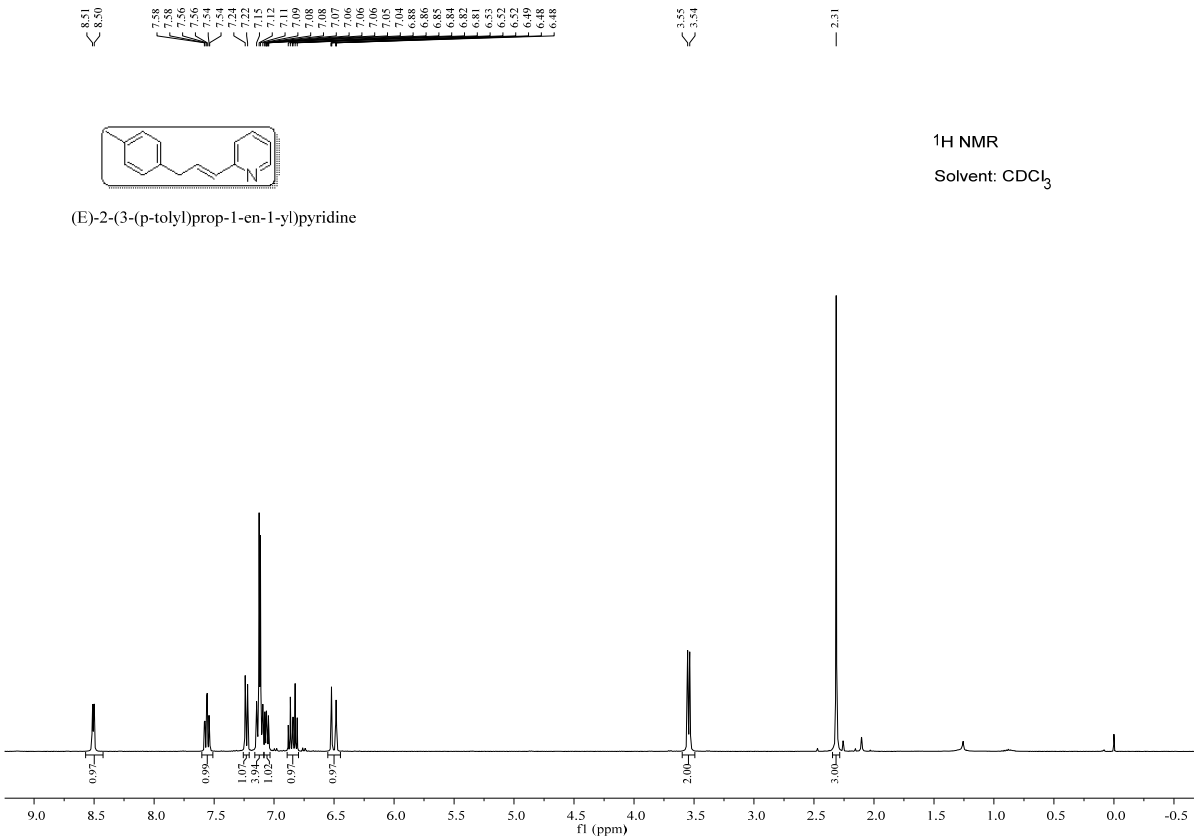


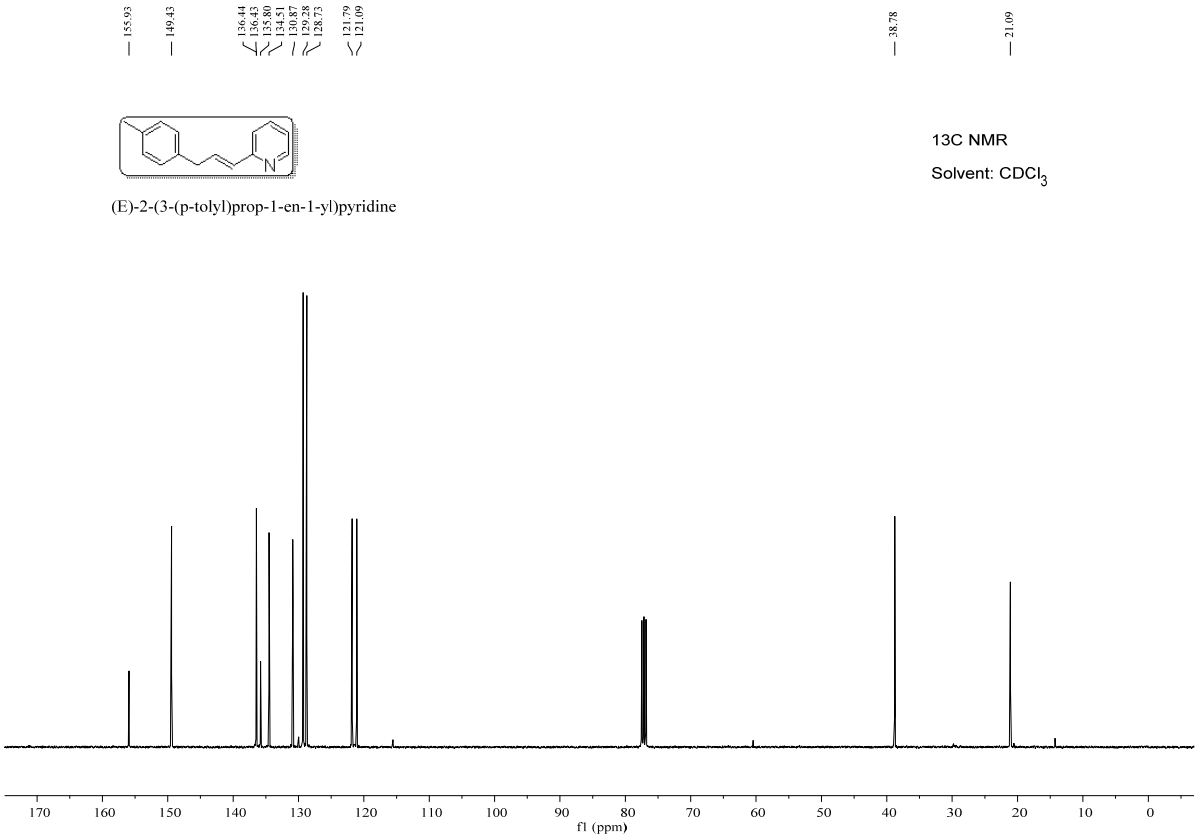
(15) (*E*)-*N*,*N*-diethyl-4-(3-(*p*-tolyl)prop-1-en-1-yl)benzamide (**3o**)



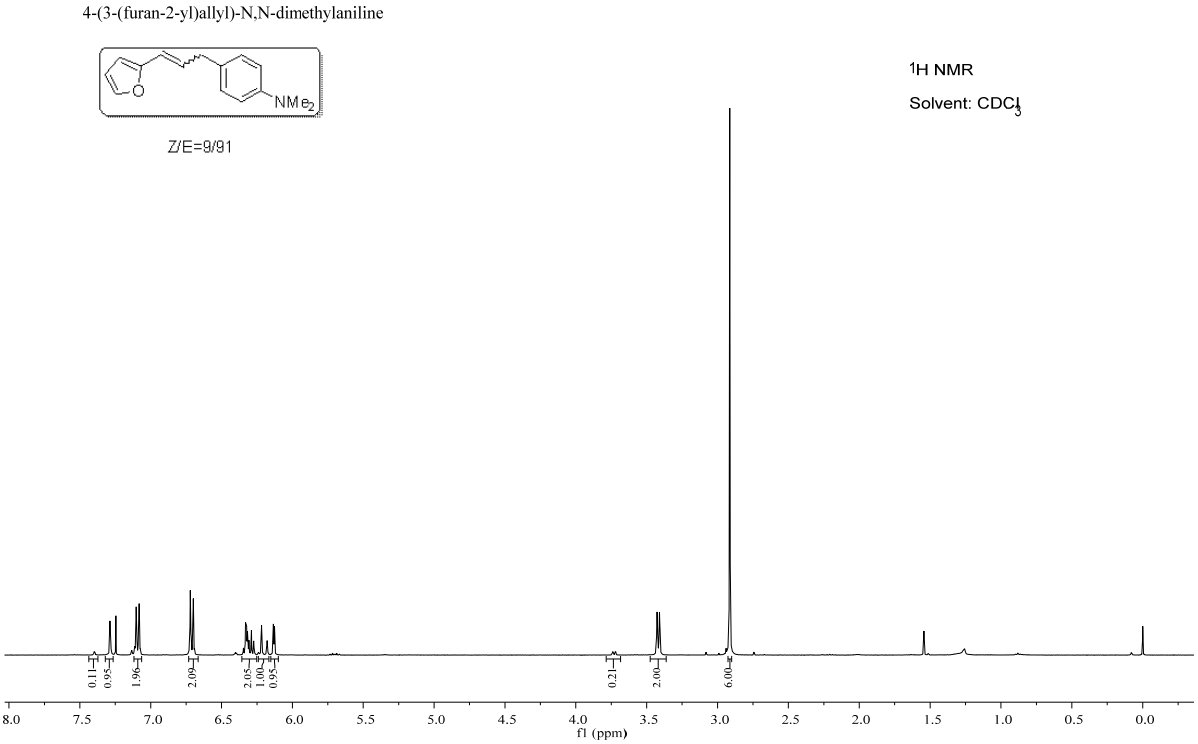


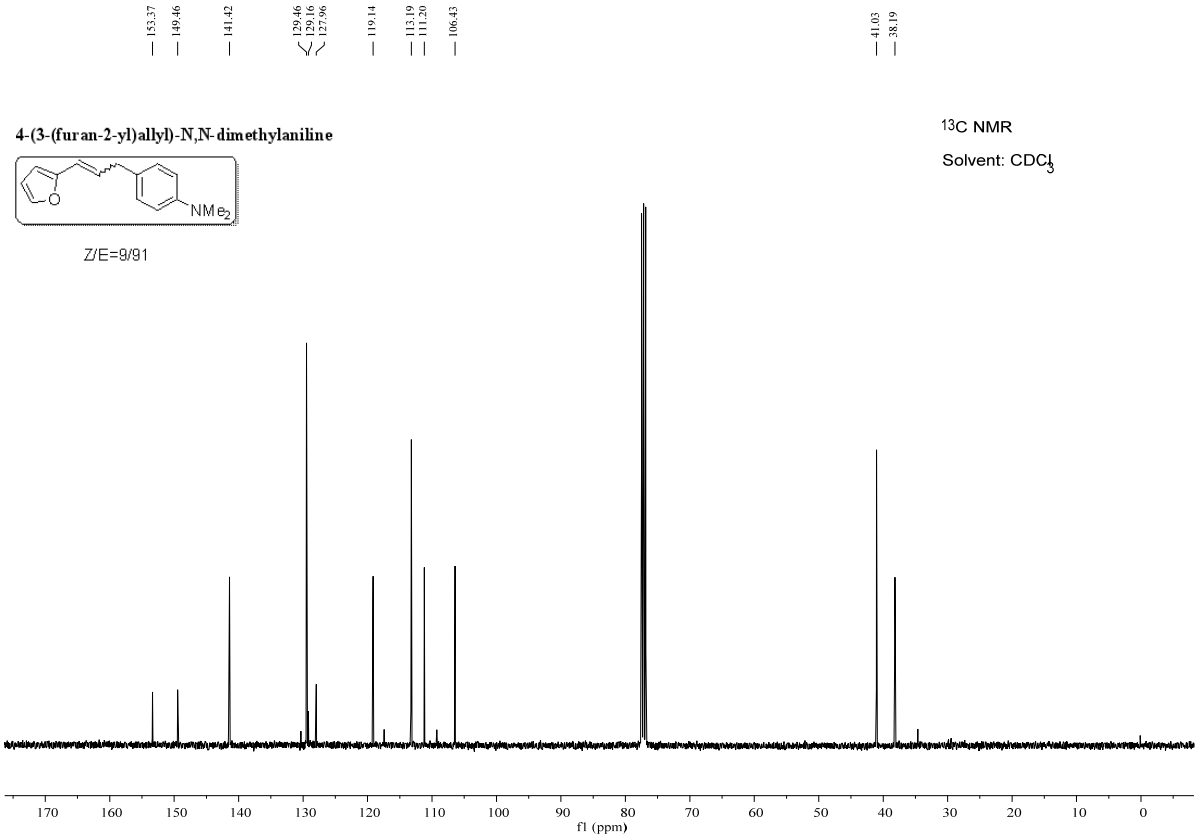
(16) (*E*)-2-(3-(*p*-tolyl)prop-1-en-1-yl)pyridine (**3p**)



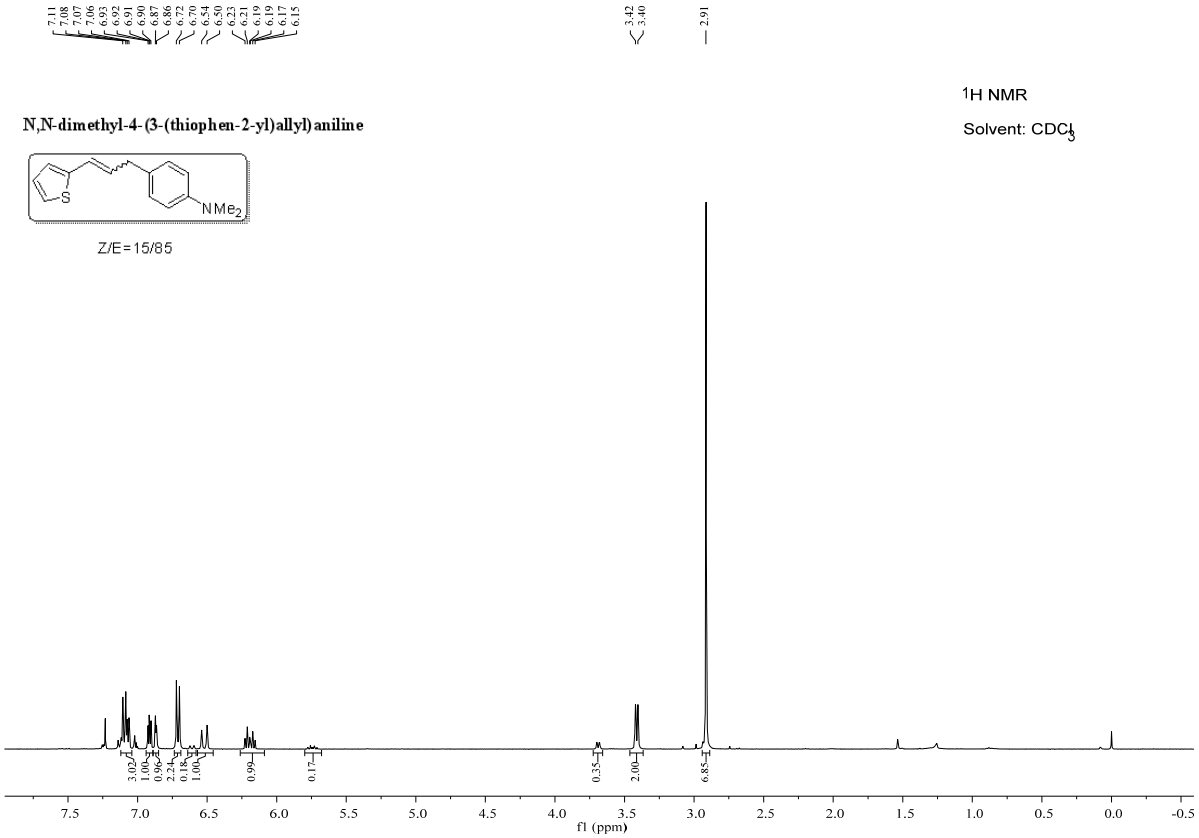


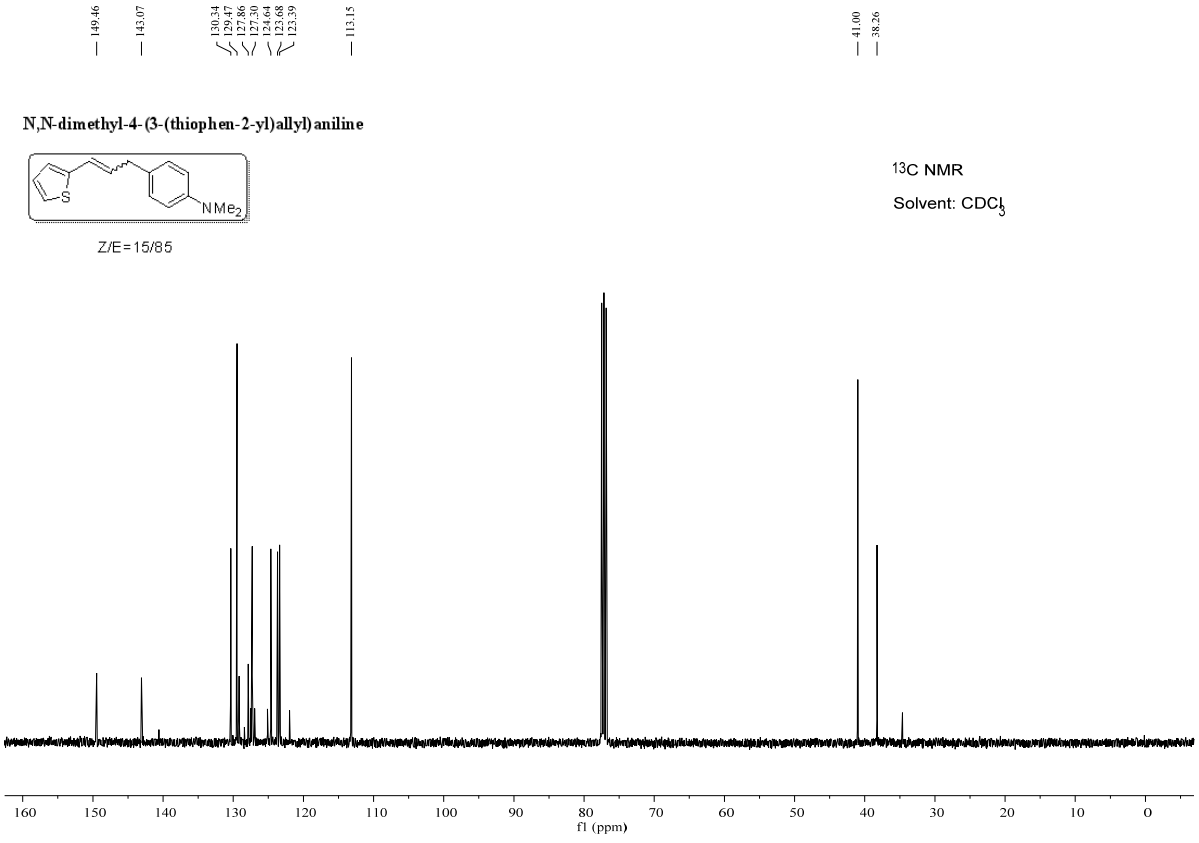
(17) 4-(3-(furan-2-yl)allyl)-*N*,*N*-dimethylaniline (**3q**)





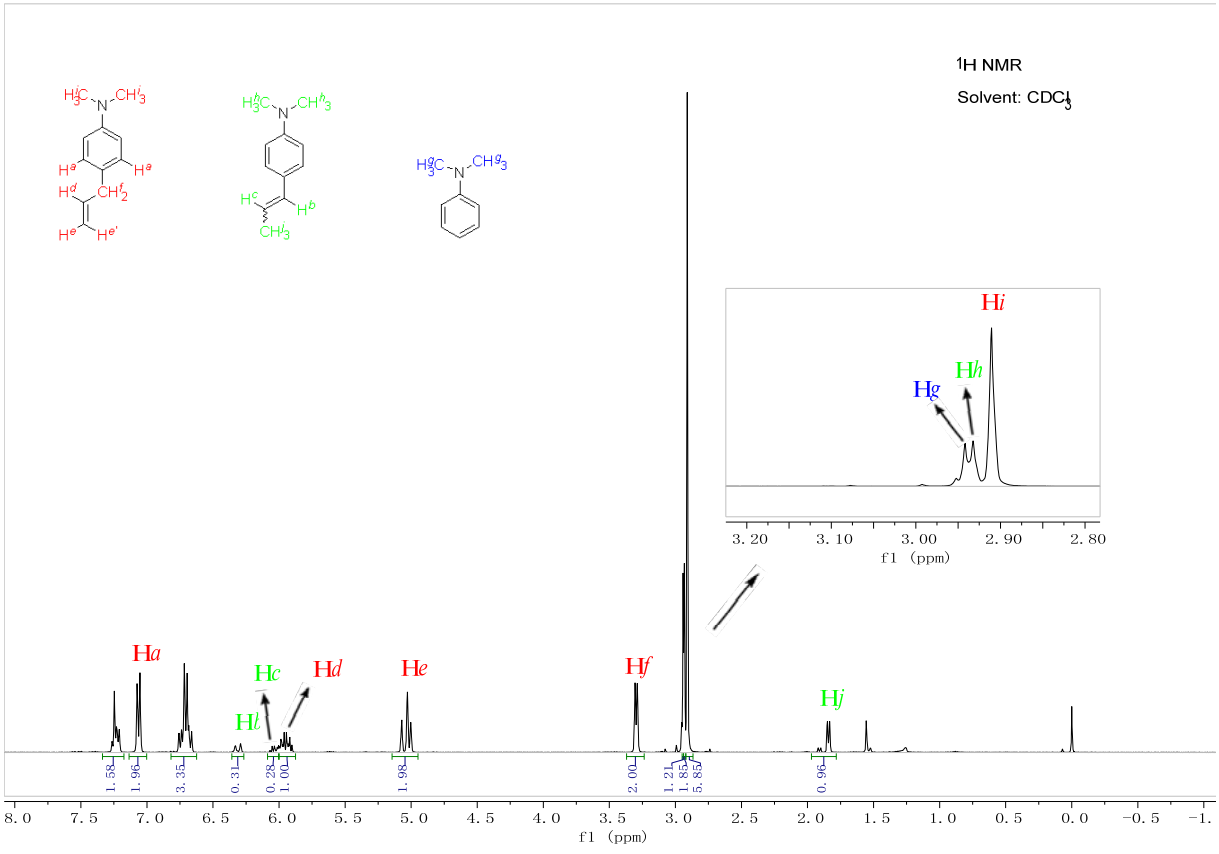
(18) *N,N*-dimethyl-4-(3-(thiophen-2-yl)allyl)aniline (**3r**)



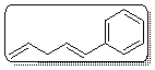


(19) A mixture of 4-allyl-*N*,*N*-dimethylaniline (**3s**), *N*,*N*-dimethyl-4-(prop-1-en-1-yl) aniline (**3t),** and *N*,*N*-dimethylaniline

After the reaction completed, a mixture of 4-allyl-*N*,*N*-dimethylaniline (**3s**), *N*,*N*-dimethyl-4-(prop-1-en-1-yl) aniline (**3t),** and *N*,*N*-dimethylaniline was isolated by column chromatography. *N*,*N*-Dimethylaniline was formed by hydrolysis of excess (4-(dimethylamino)phenyl)zinc chloride. The proportion of the components was calculated through the integration of the ^{1}H NMR spectrum.



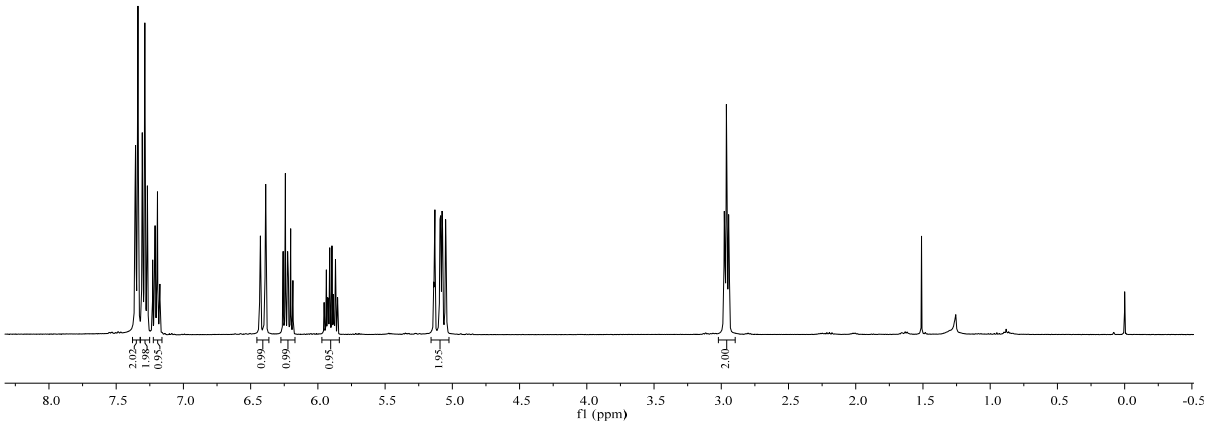
(20) (*E*)-penta-1,4-dien-1-ylbenzene (**5a**)

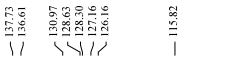


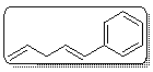
(E)-penta-1,4-dien-1-ylbenzene

^{1}H NMR

Solvent: $CDCl_3$



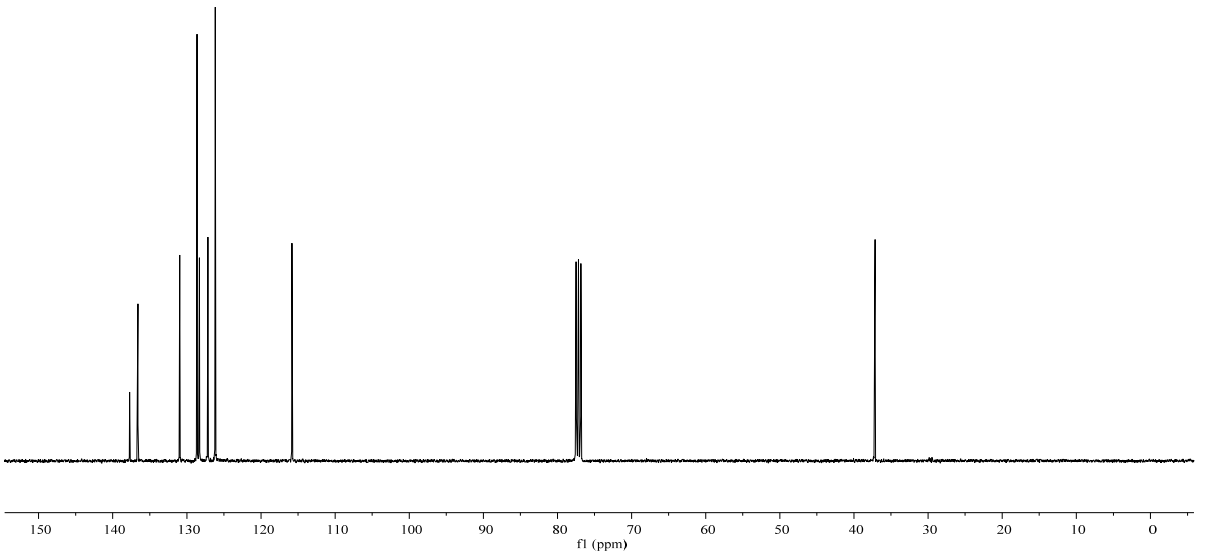




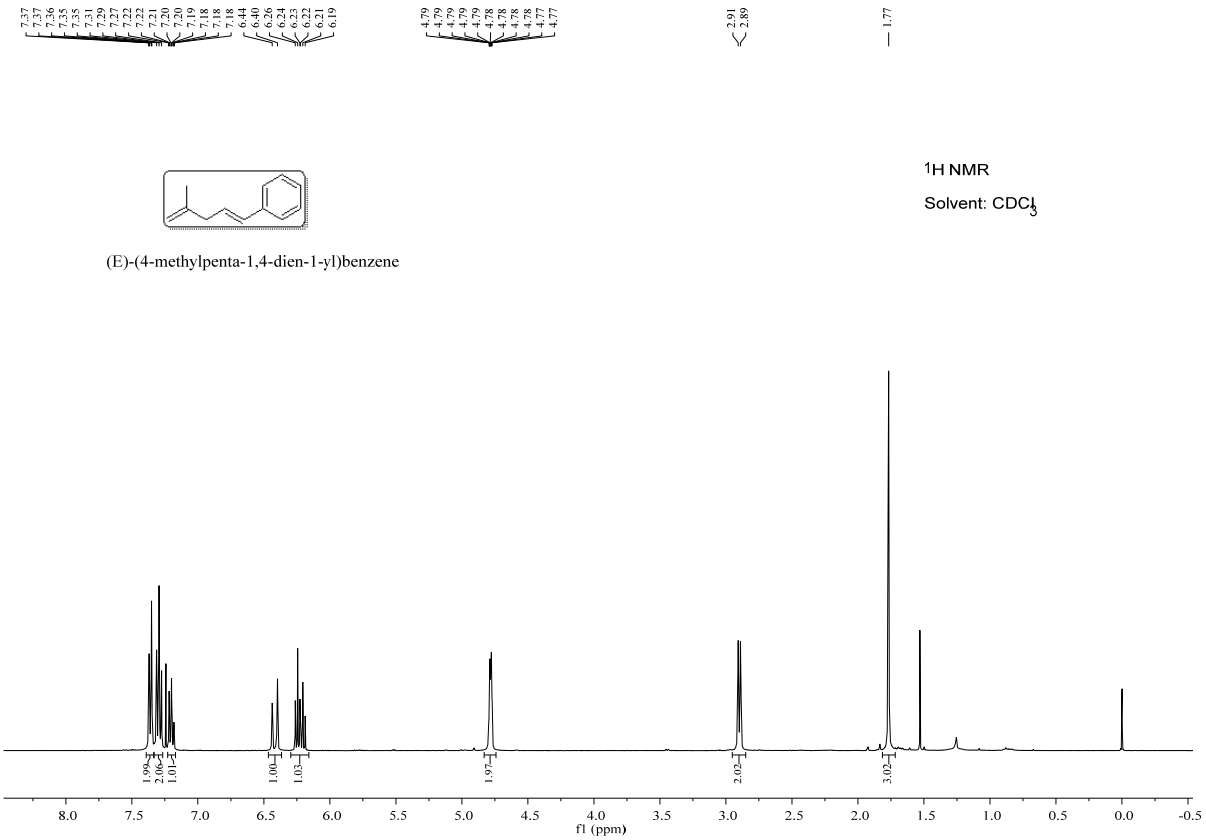
(E)-penta-1,4-dien-1-ylbenzene

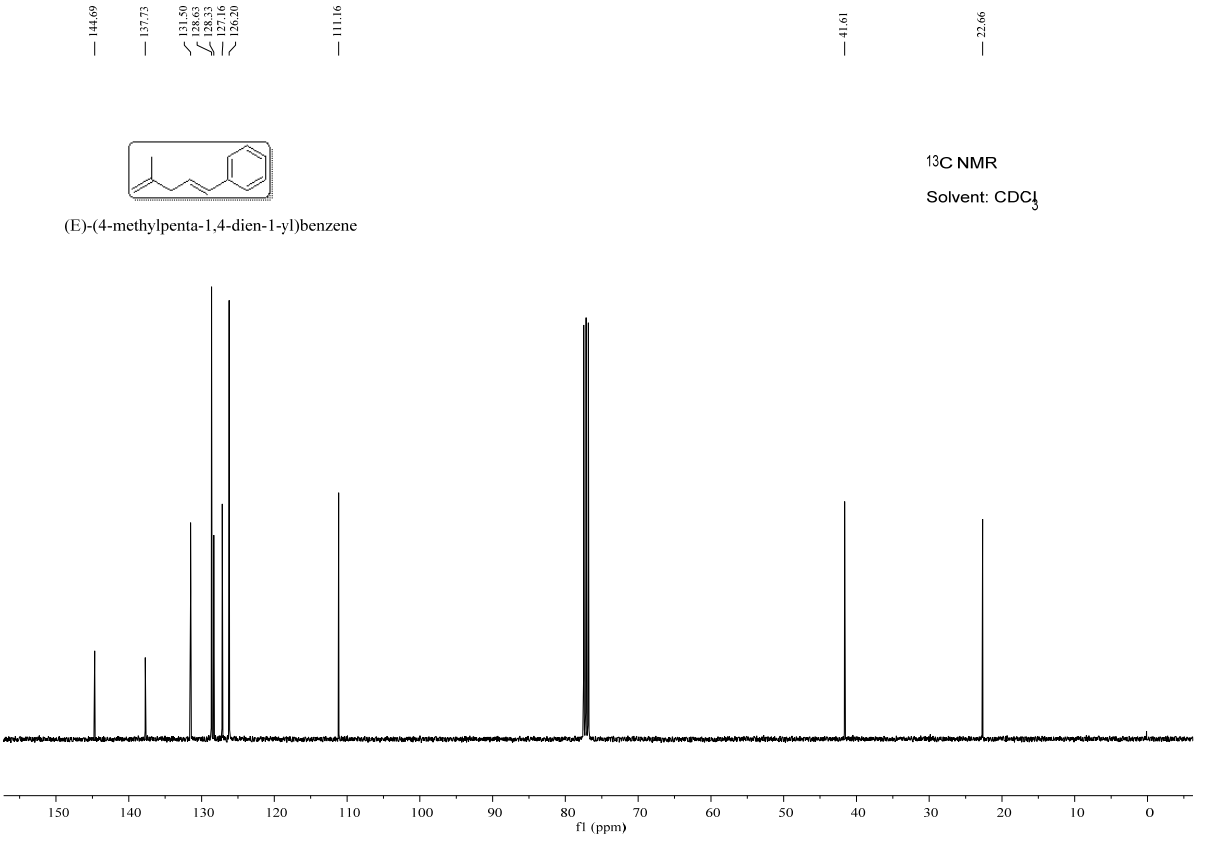
^{13}C NMR

Solvent: $CDCl_3$

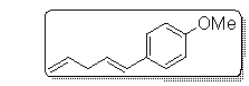


(21) (*E*)-(4-methylpenta-1,4-dien-1-yl)benzene (**5b**)





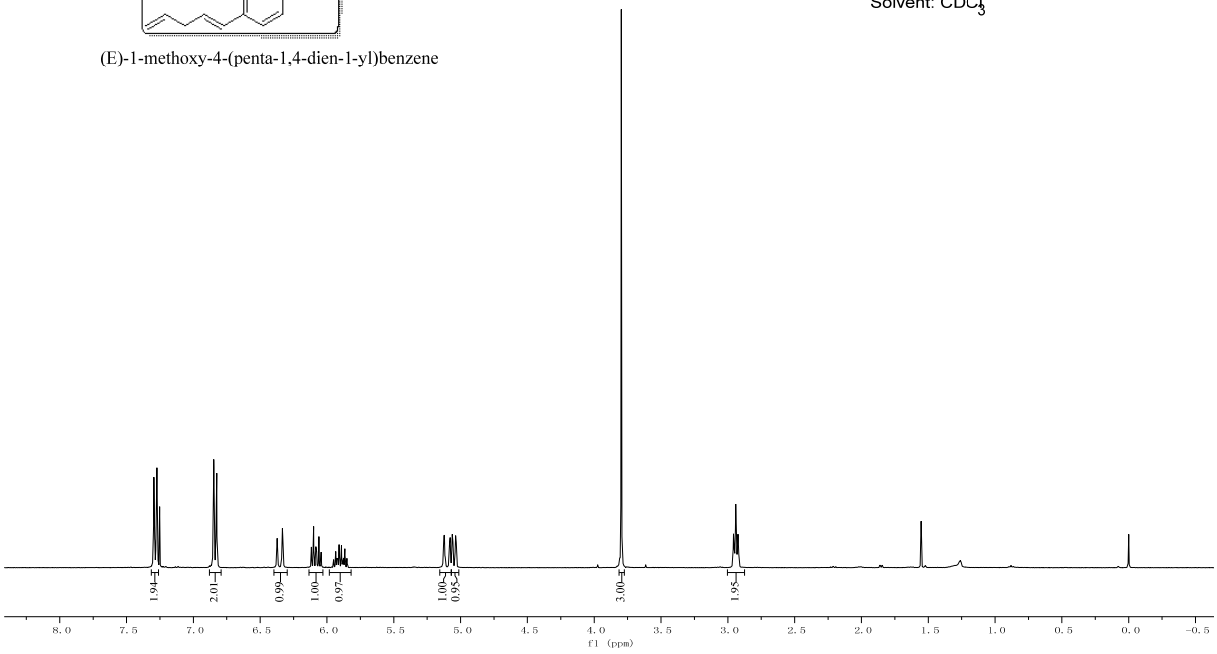
(22) (*E*)-1-methoxy-4-(penta-1,4-dien-1-yl)benzene (**5c**)

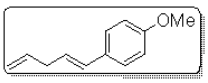


(E)-1-methoxy-4-(penta-1,4-dien-1-yl)benzene

^{1}H NMR

Solvent: $CDCl_3$

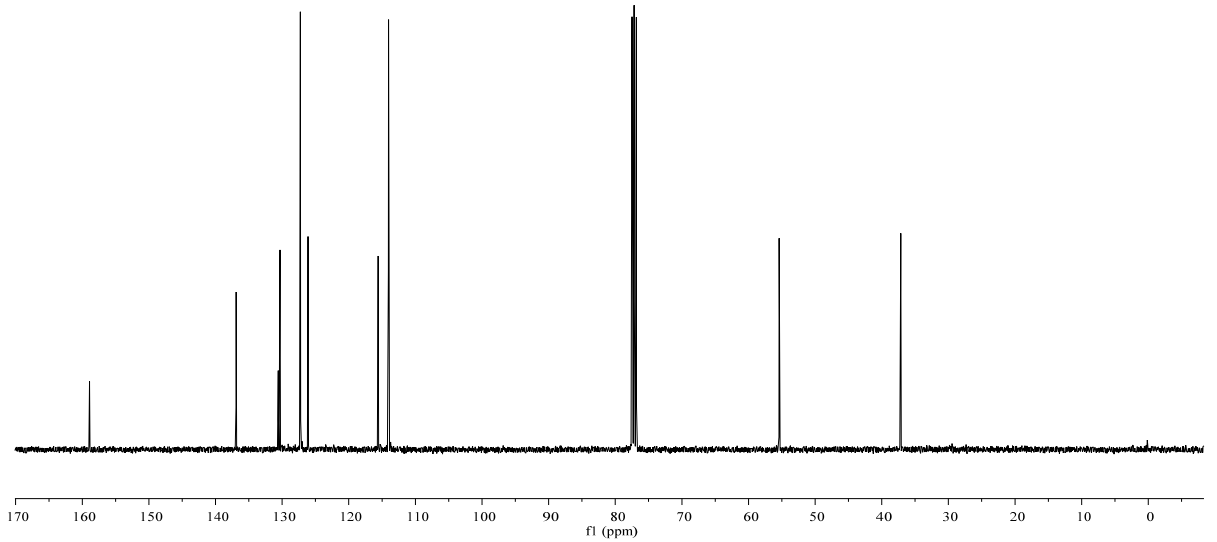




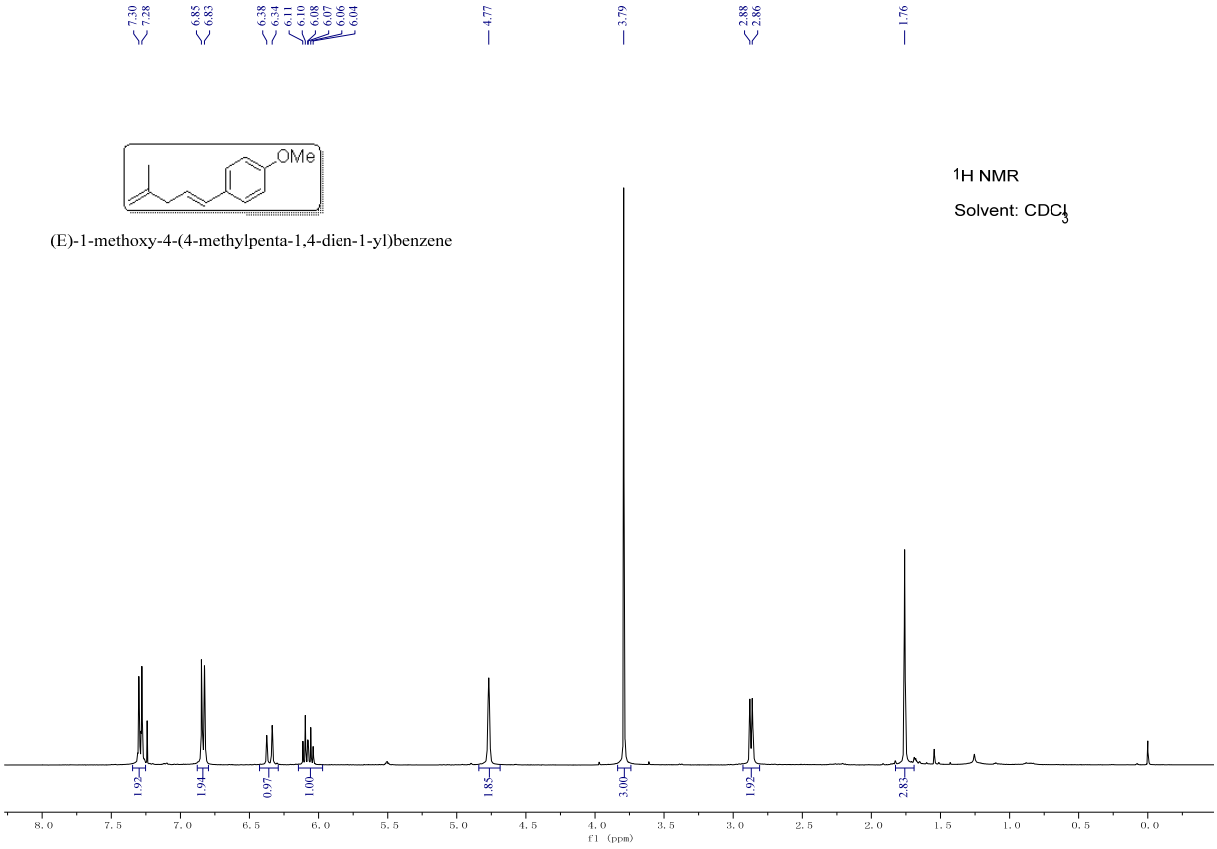
(E)-1-methoxy-4-(penta-1,4-dien-1-yl)benzene

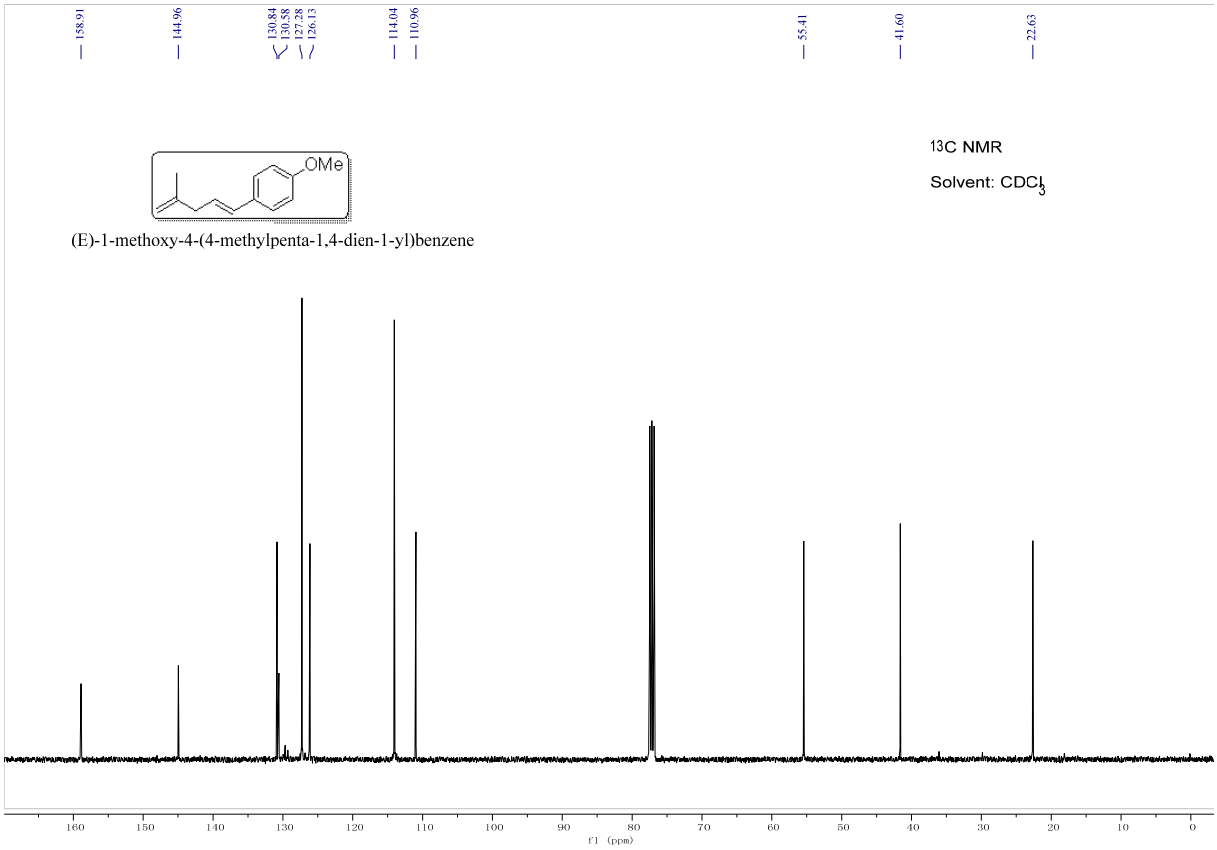
^{13}C NMR

Solvent: $CDCl_3$

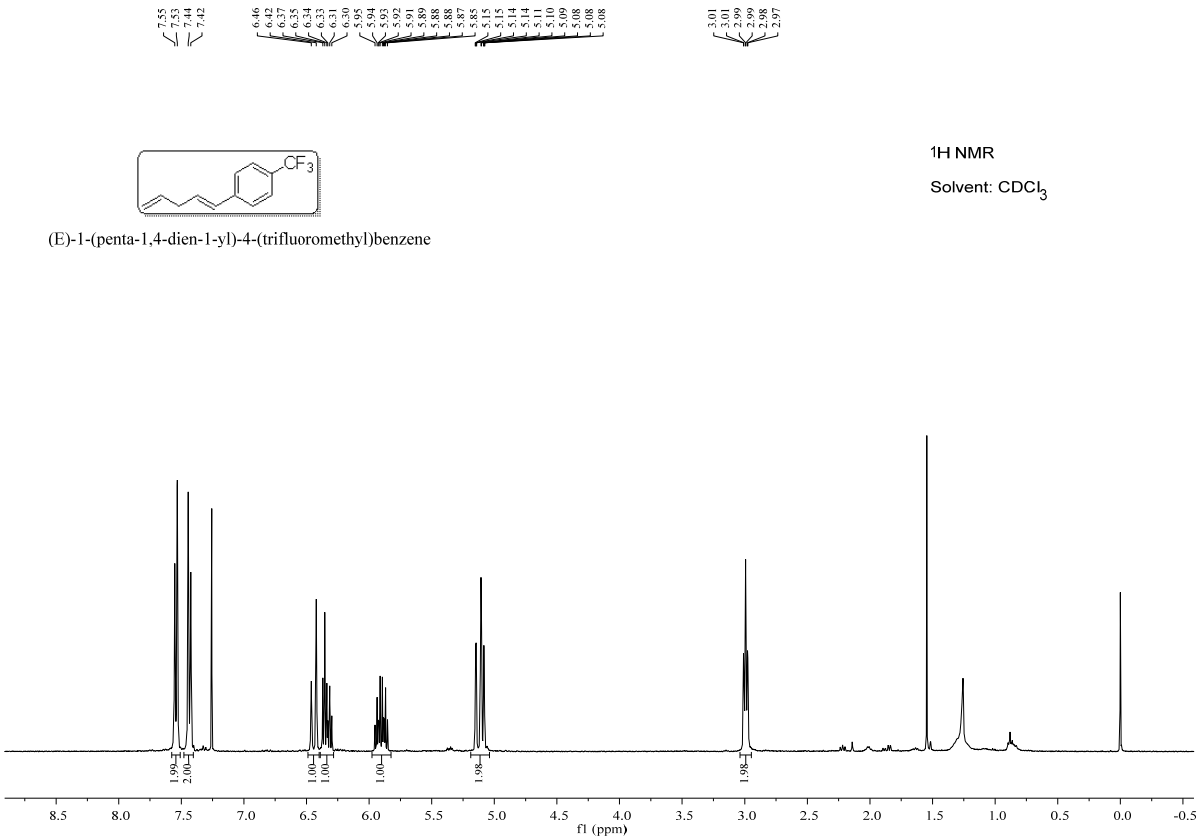


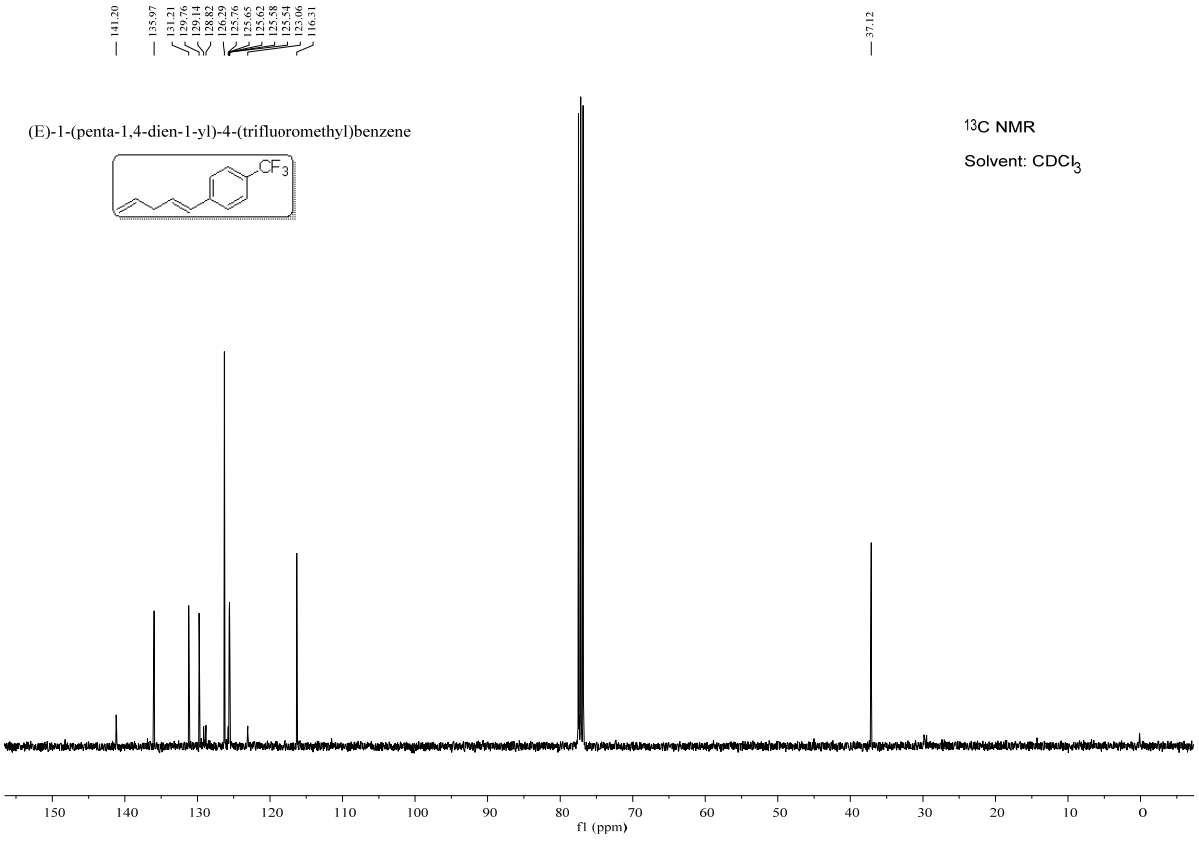
(23) (*E*)-1-methoxy-4-(4-methylpenta-1,4-dien-1-yl)benzene (**5d**)



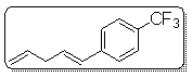


(24) (*E*)-1-(penta-1,4-dien-1-yl)-4-(trifluoromethyl)benzene (**5e**)





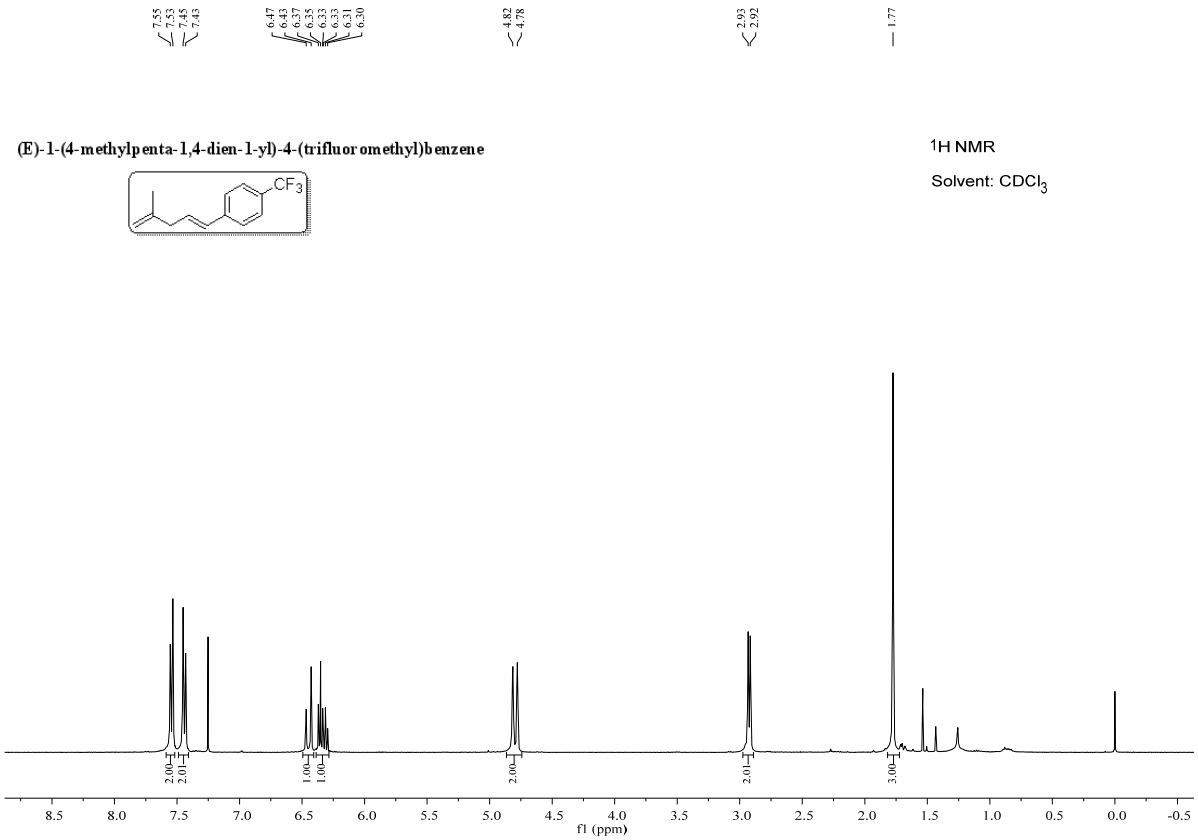
(E)-1-(penta-1,4-dien-1-yl)-4-(trifluoromethyl)benzene

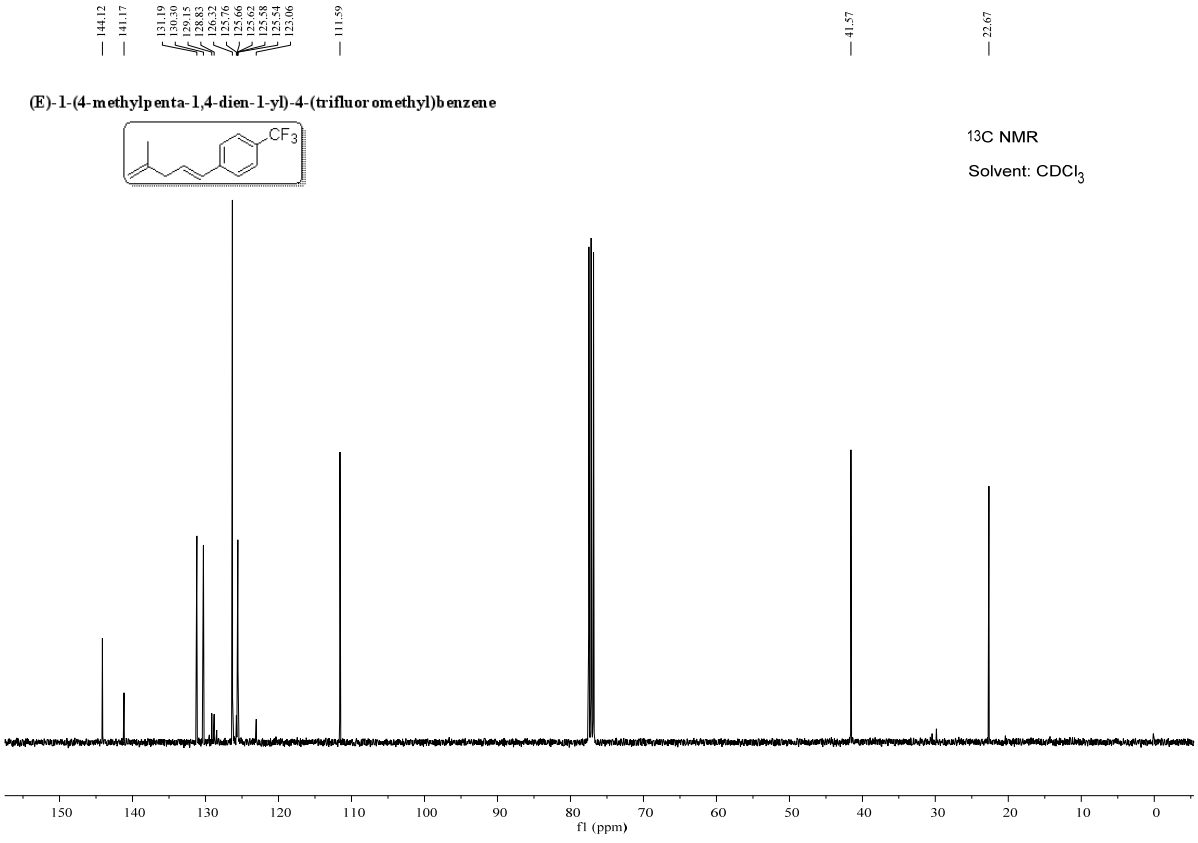


^{19}F NMR

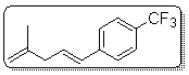
Solvent: $CDCl_3$

(25) (*E*)-1-(4-methylpenta-1,4-dien-1-yl)-4-(trifluoromethyl)benzene (**5f**)





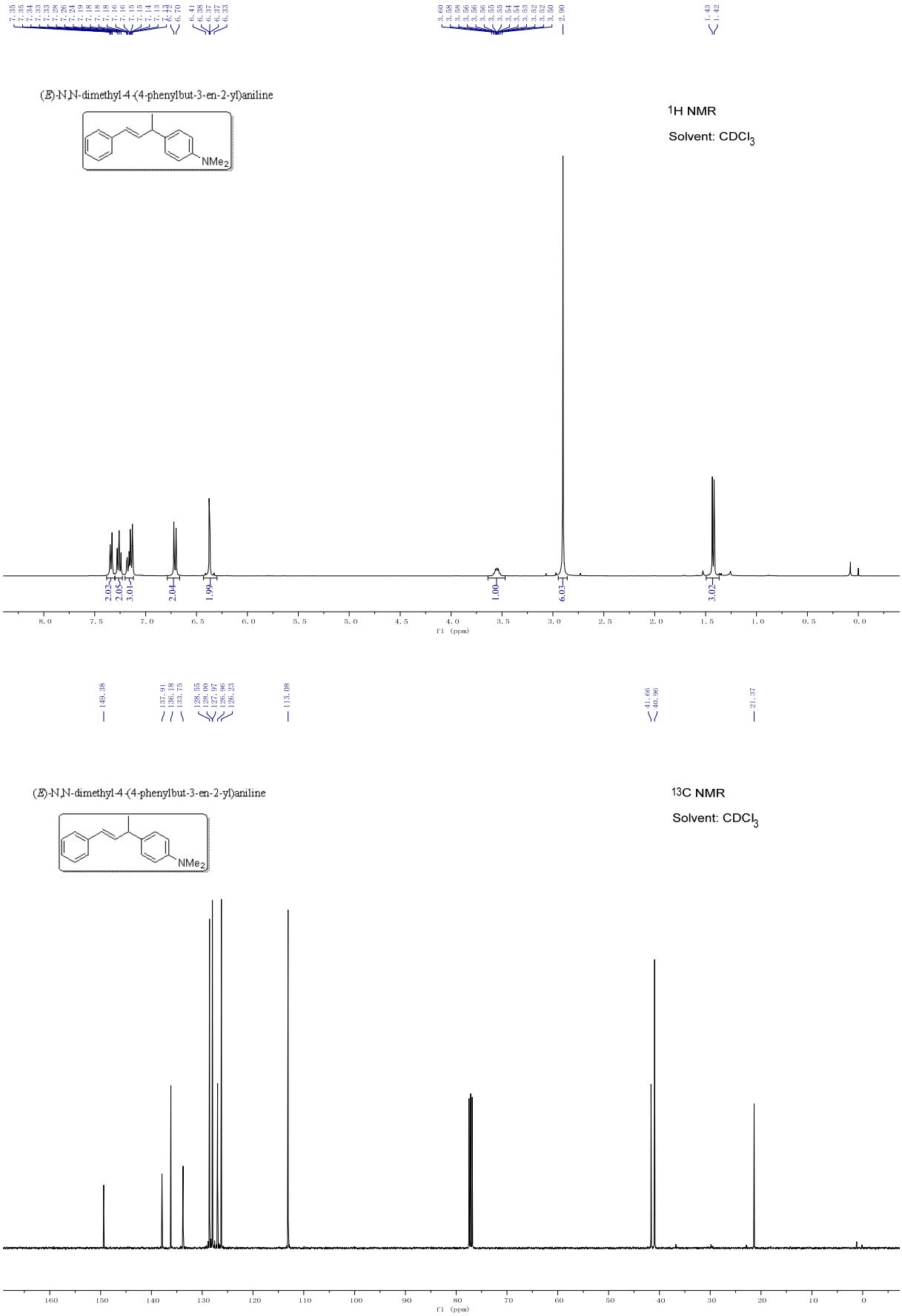
(E)-1-(4-methylpenta-1,4-dien-1-yl)-4-(trifluoromethyl)benzene



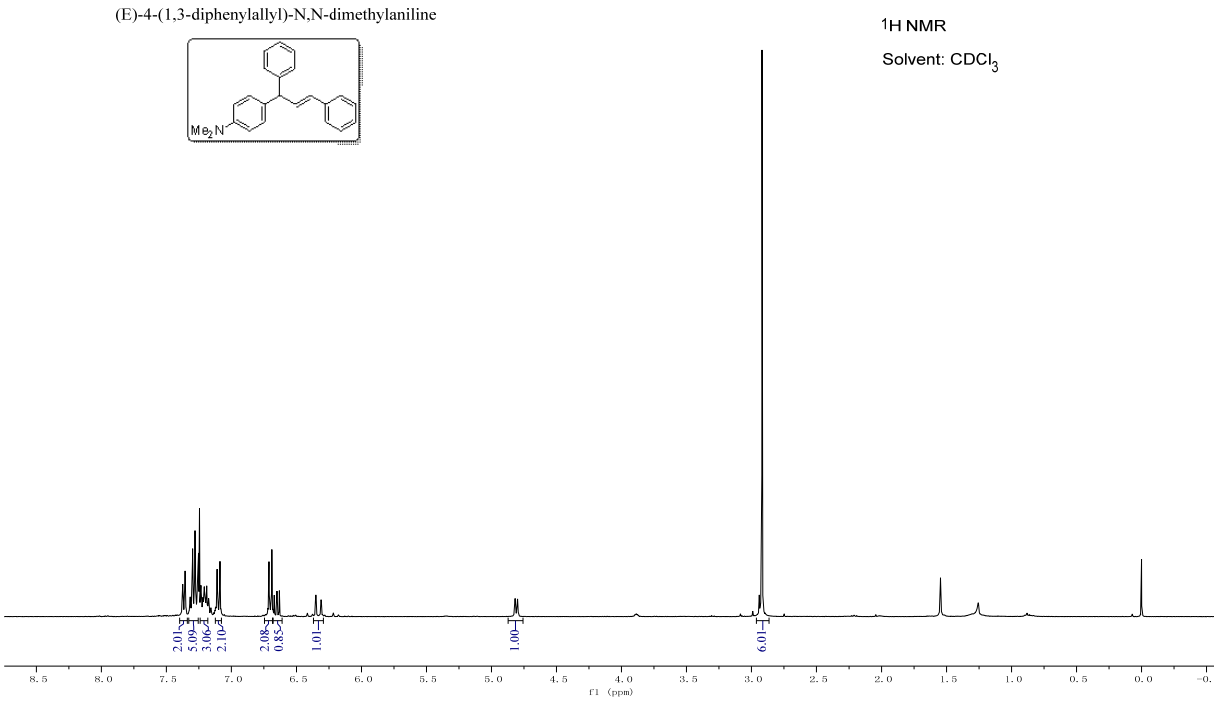
^{19}F NMR

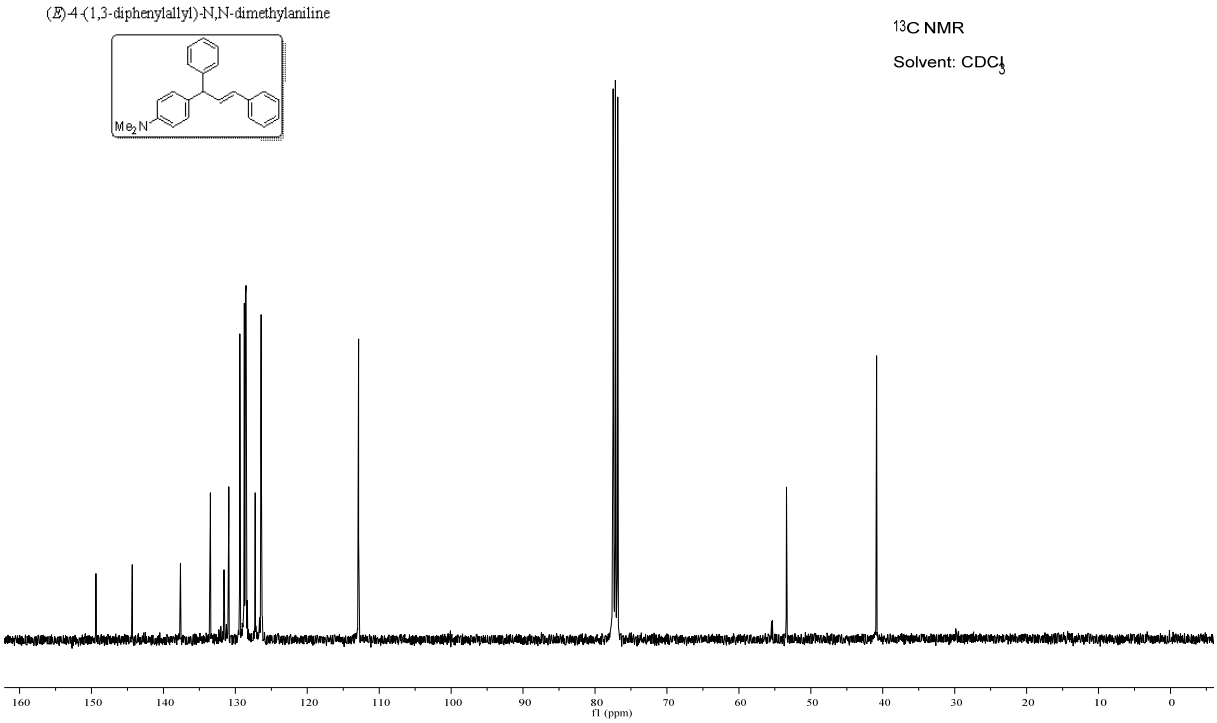
Solvent: $CDCl_3$

(26) (*E*)-*N*,*N*-dimethyl-4-(4-phenylbut-3-en-2-yl)aniline (**3u**)

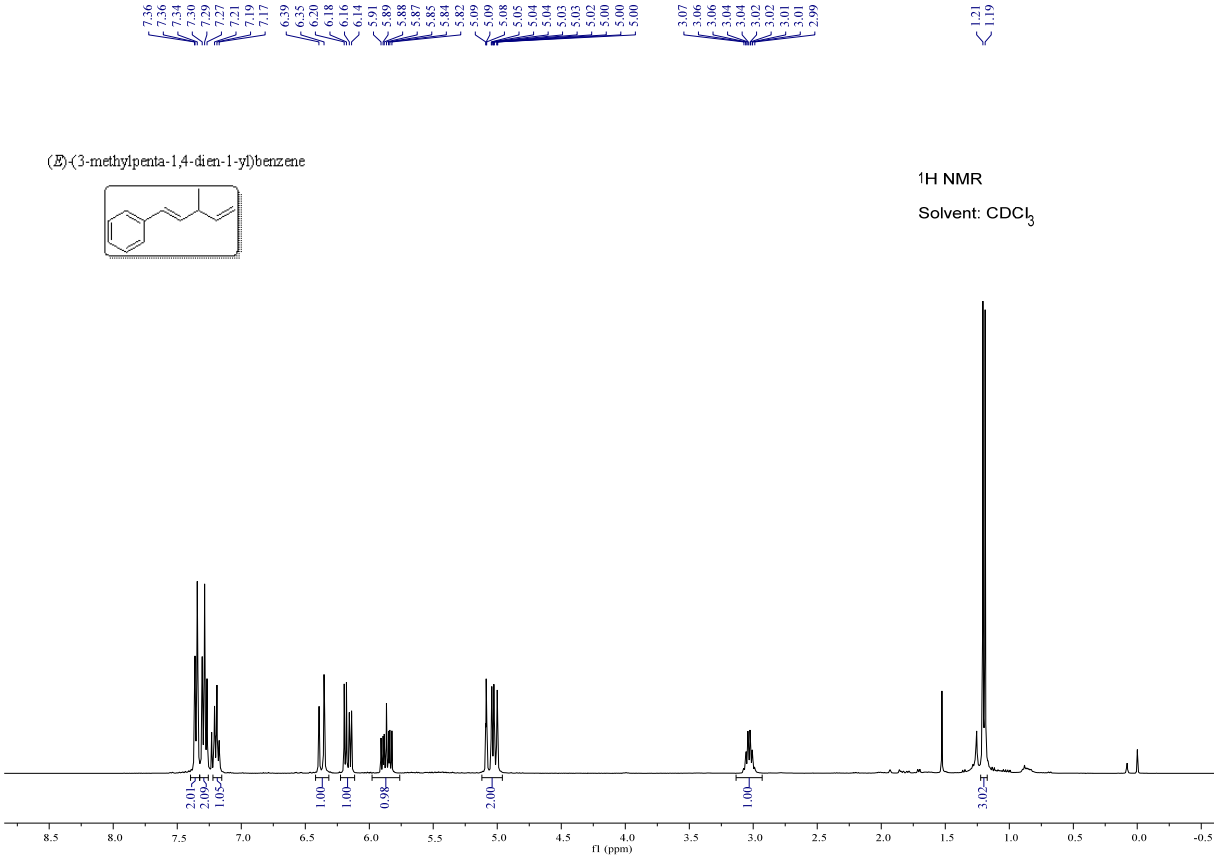


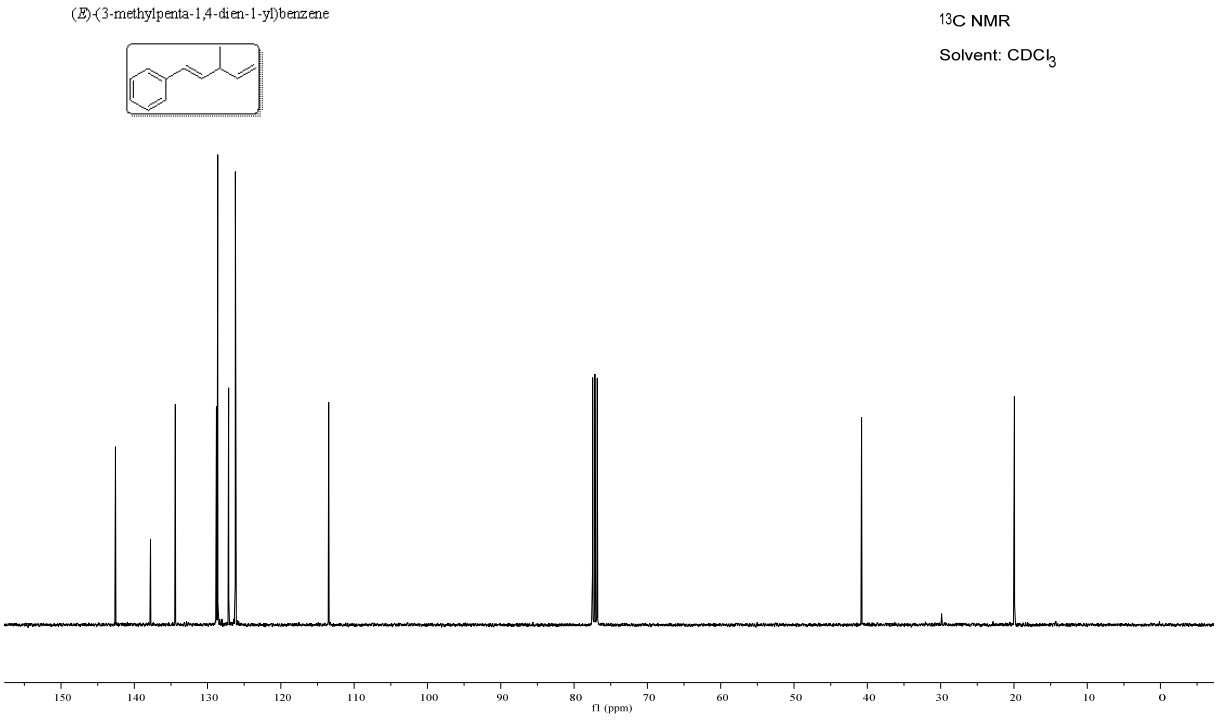
(27) (*E*)-4-(1,3-diphenylallyl)-*N*,*N*-dimethylaniline (**3v**)





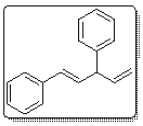
(28) (*E*)-(3-methylpenta-1,4-dien-1-yl)benzene (**5g**)





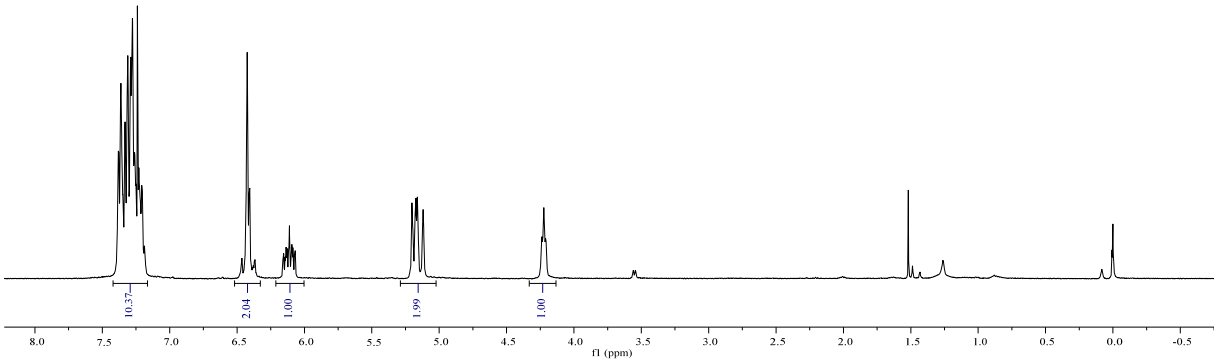
(29) (*E*)-penta-1,4-diene-1,3-diyldibenzene (**5h**)

(*E*)-penta-1,4-diene-1,3-diyldibenzene

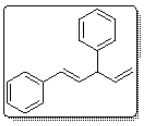


^{1}H NMR

Solvent: $CDCl_3$



(*E*)-penta-1,4-diene-1,3-diyldibenzene



^{13}C NMR

Solvent: $CDCl_3$