Electronic Supplementary Information

Nickel-catalyzed reductive coupling of arylcarboxylic acid 2-pyridyl esters with alkyl methanesulfonates: access to alkyl aryl ketones

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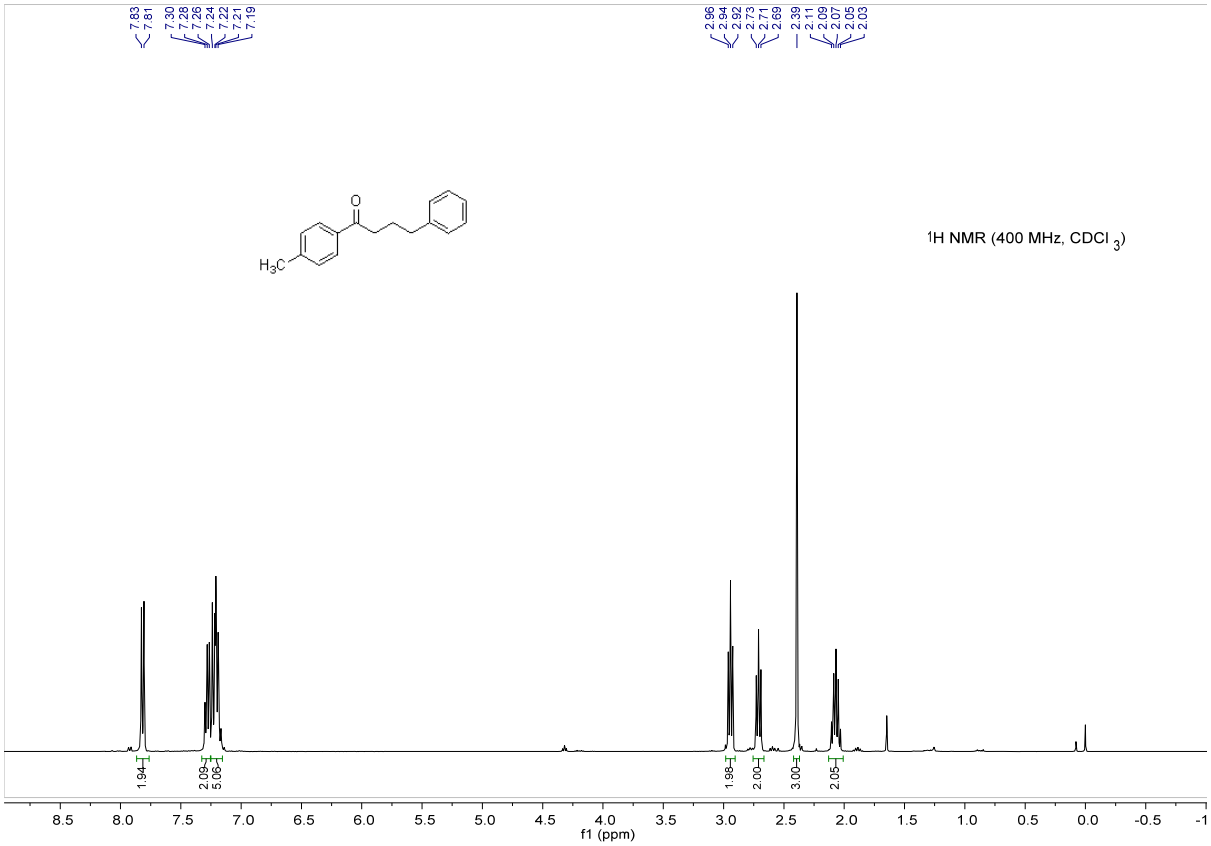
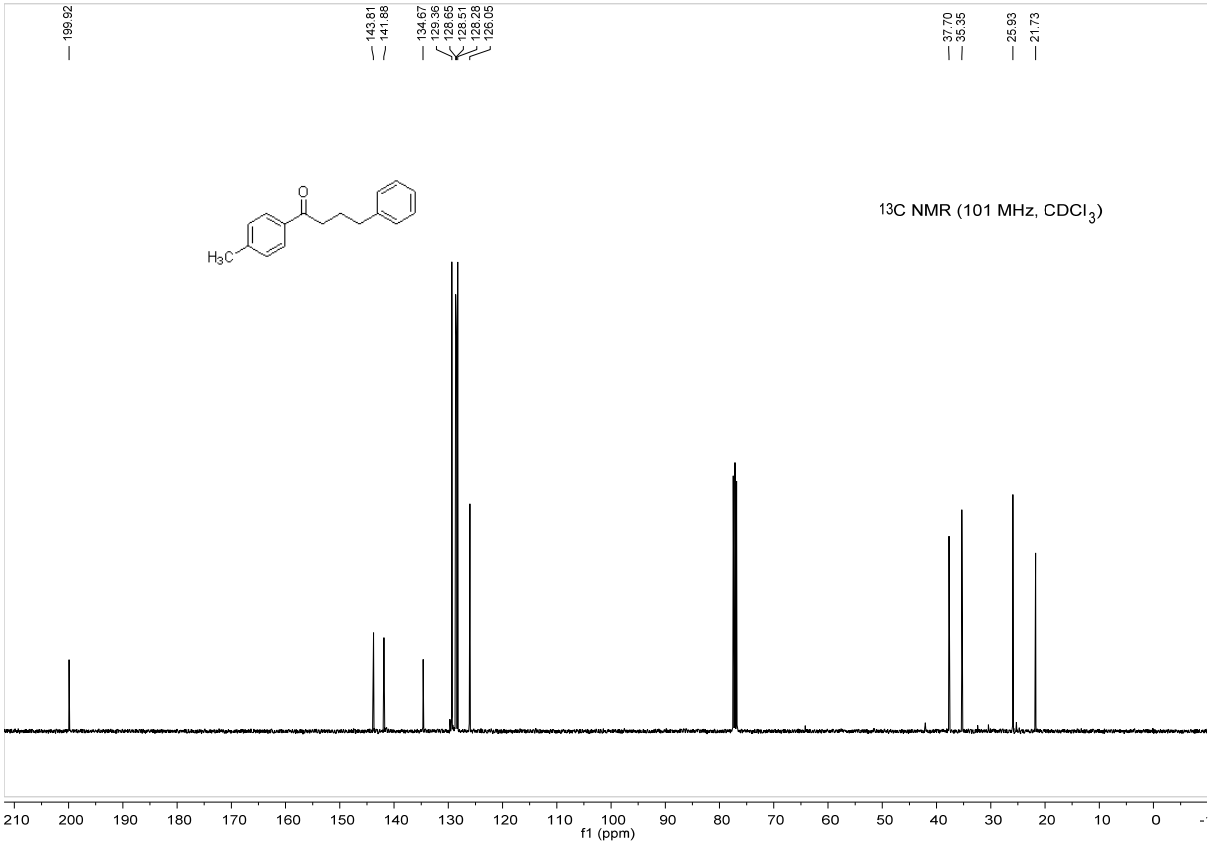
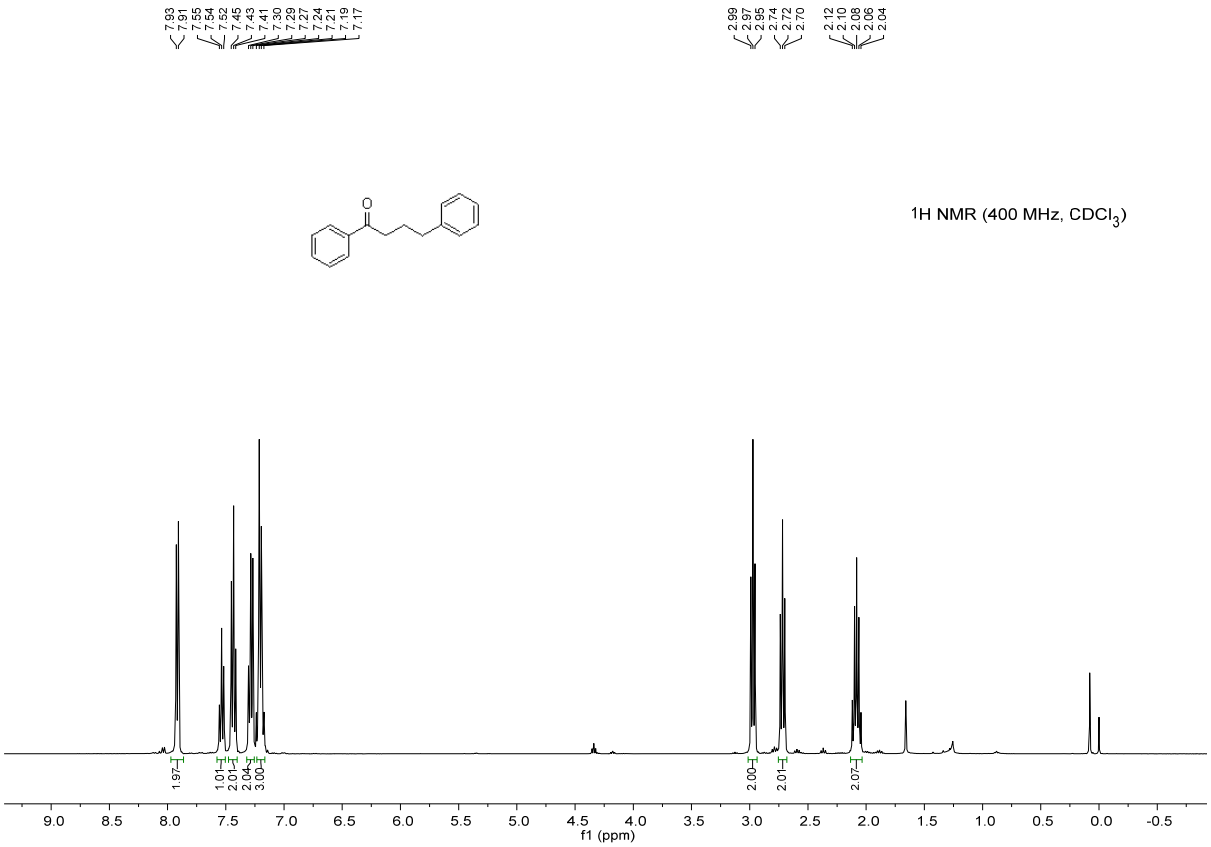
Copies of NMR spectra of the coupling products

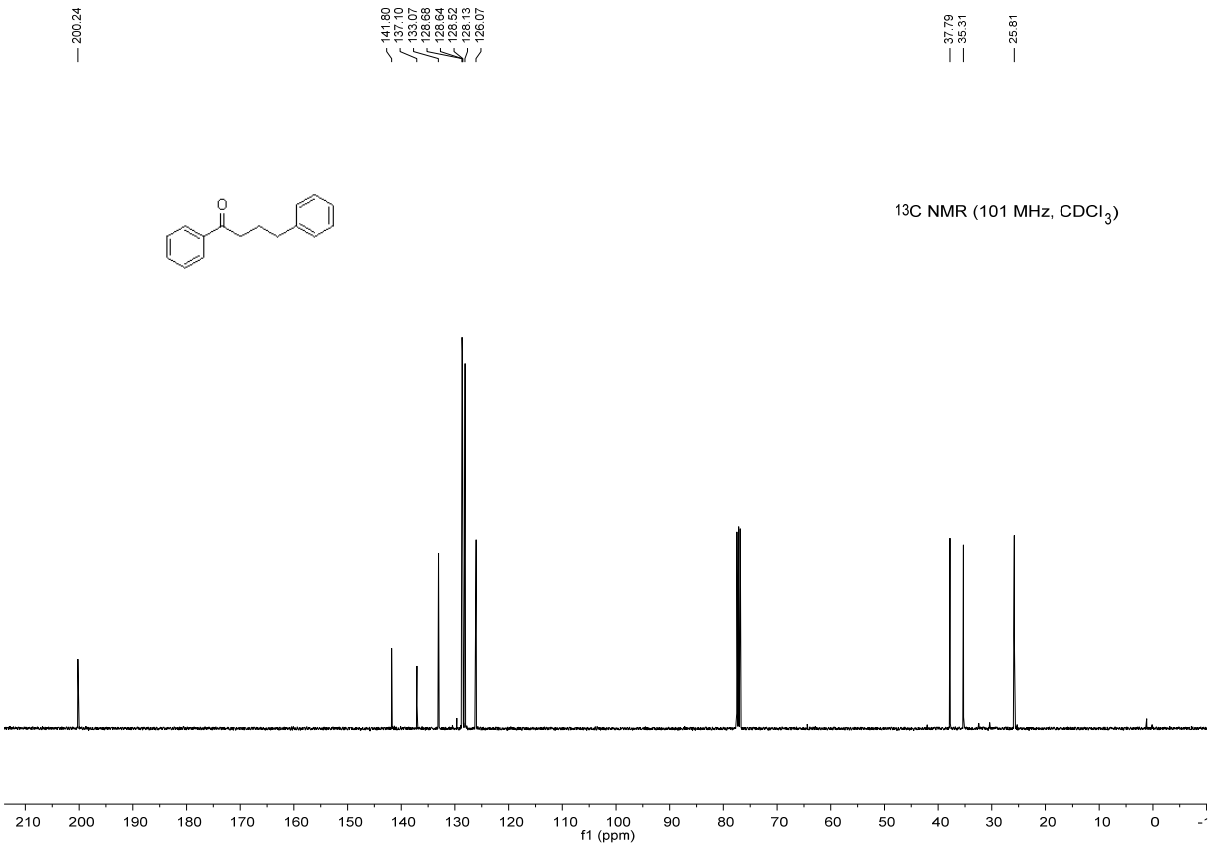
(1) 4-phenyl-1-(*p*-tolyl)butan-1-one (**3aa**)



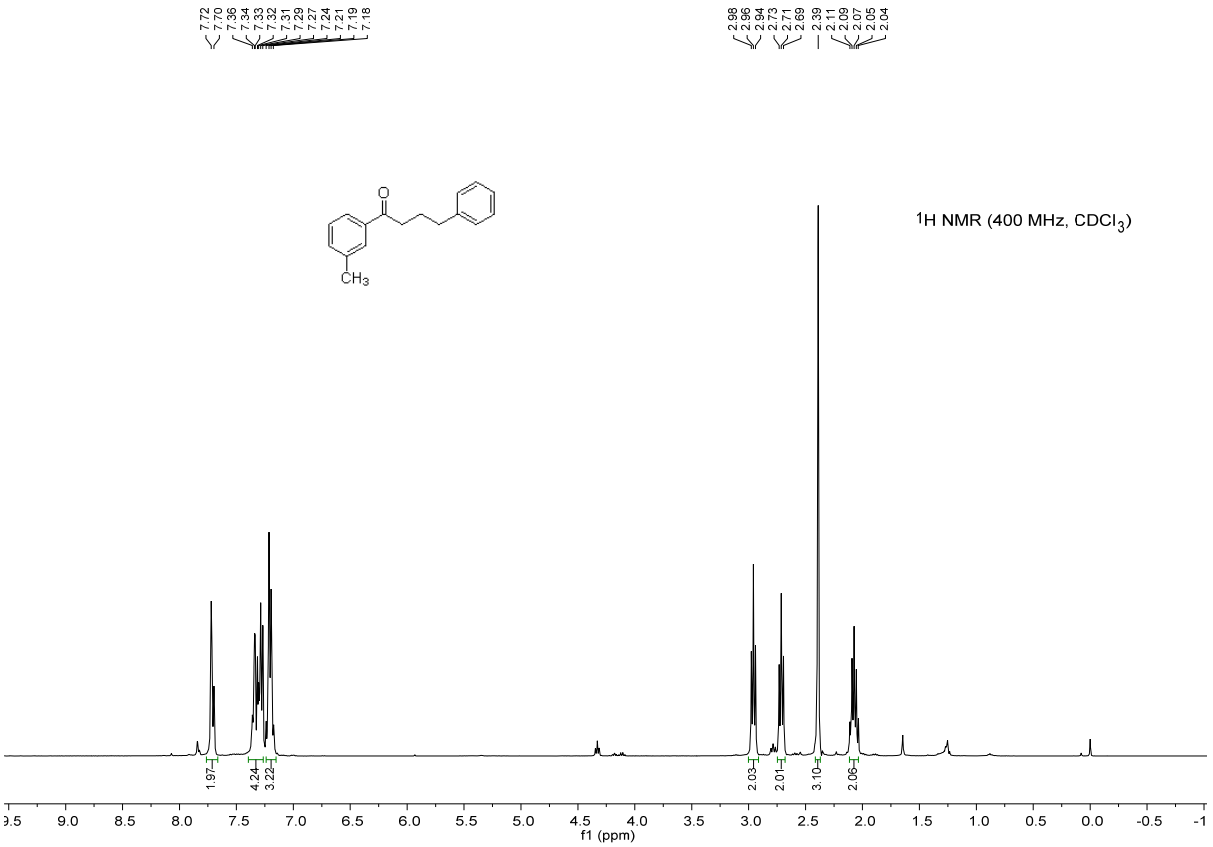


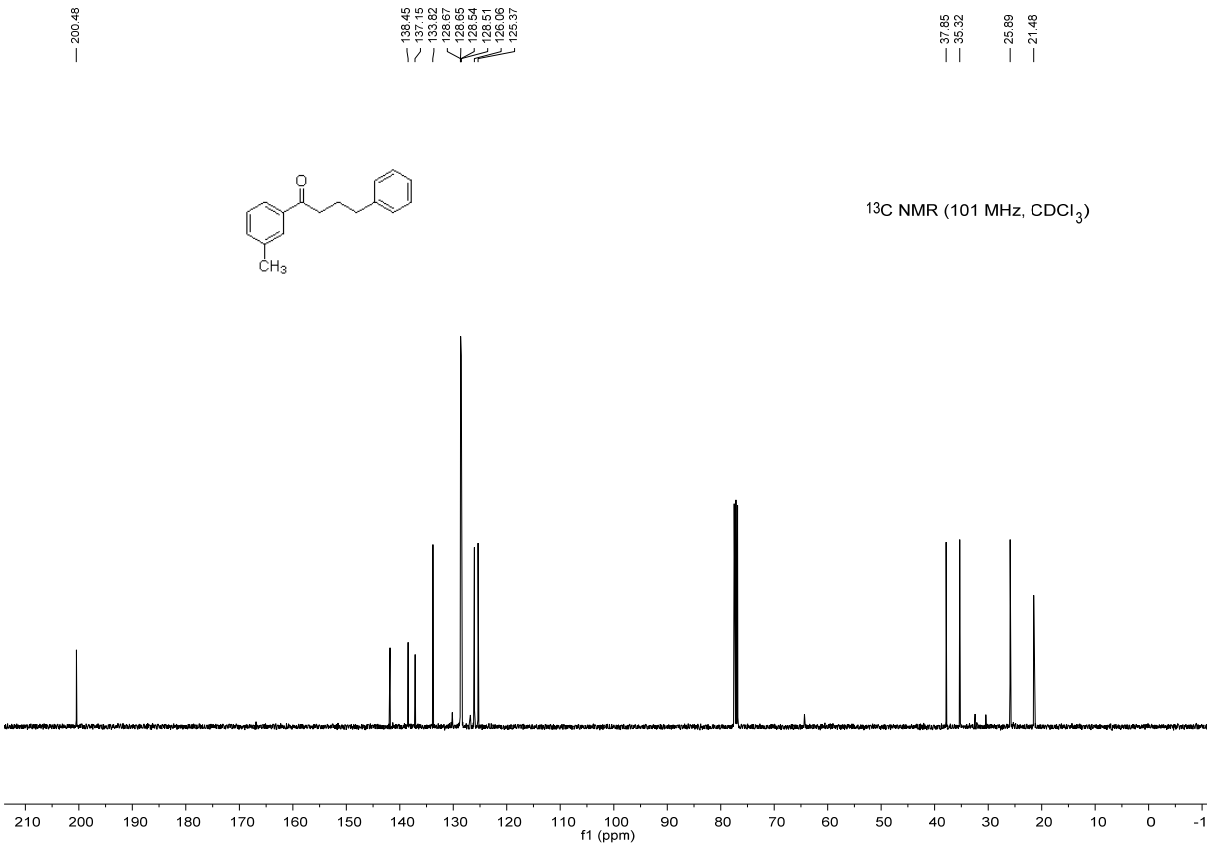
(2) 1,4-diphenylbutan-1-one (**3ab**)



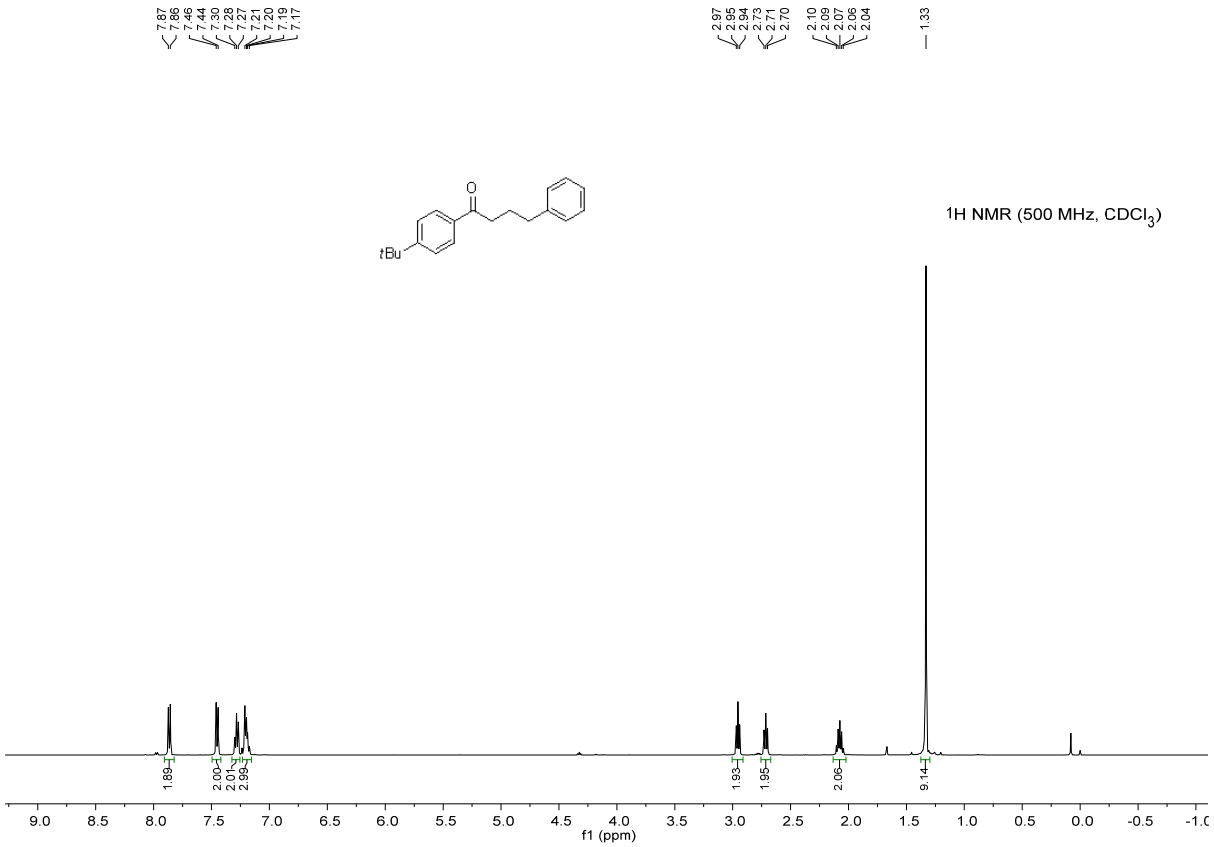


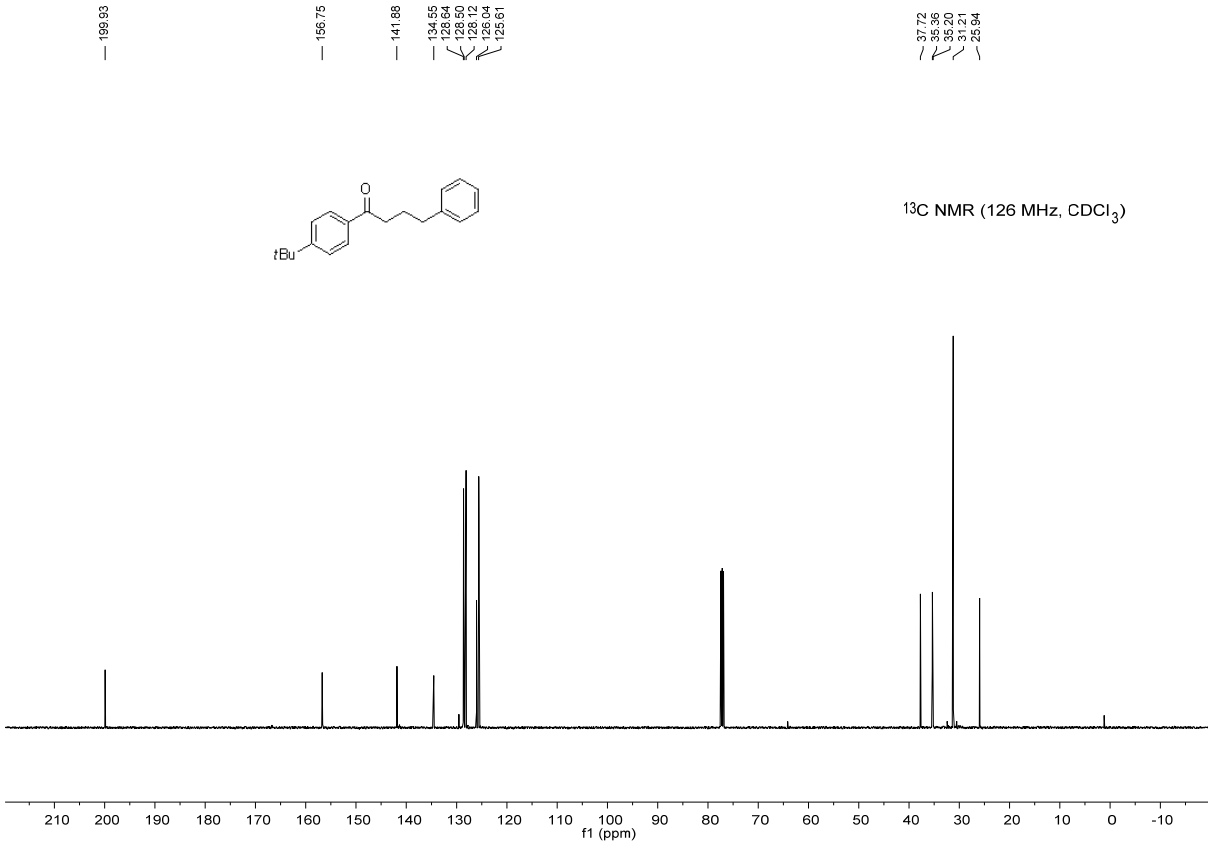
(3) 4-phenyl-1-(*m*-tolyl)butan-1-one (**3ac**)



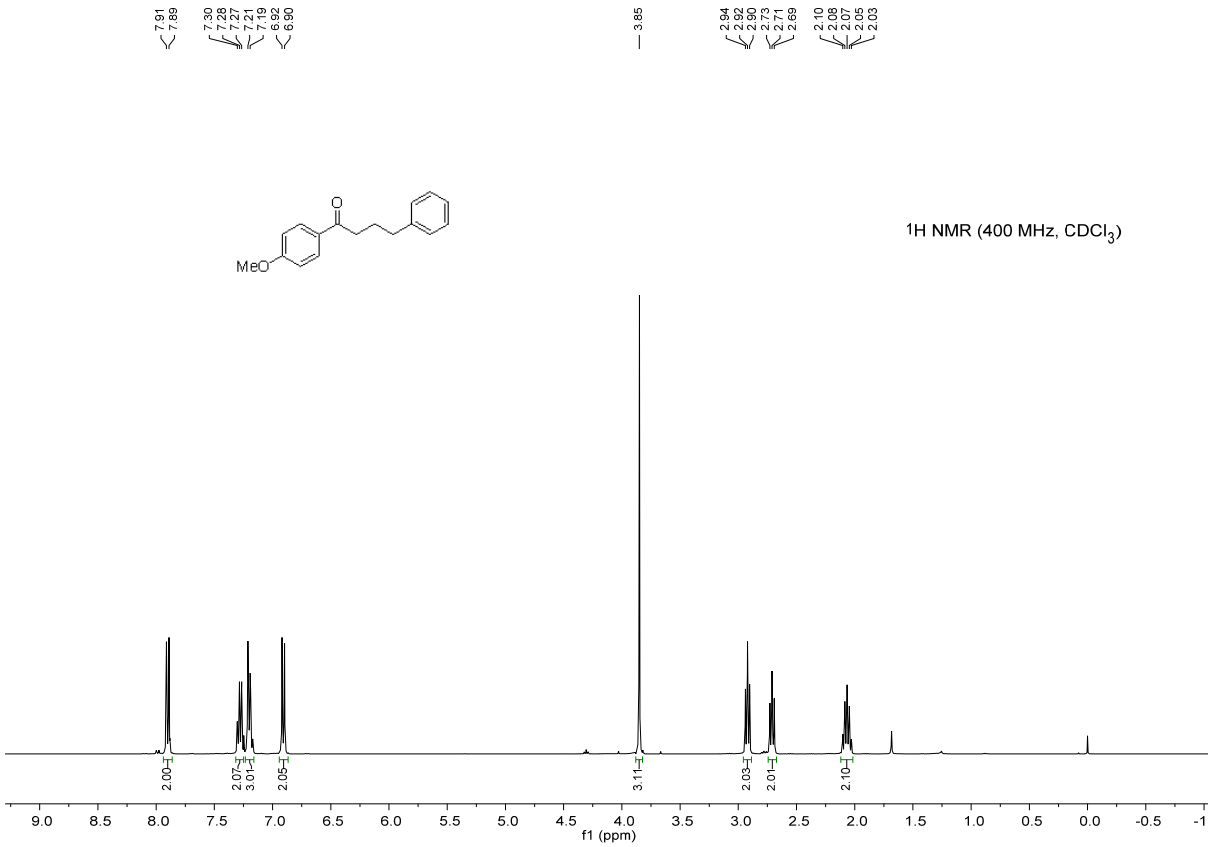


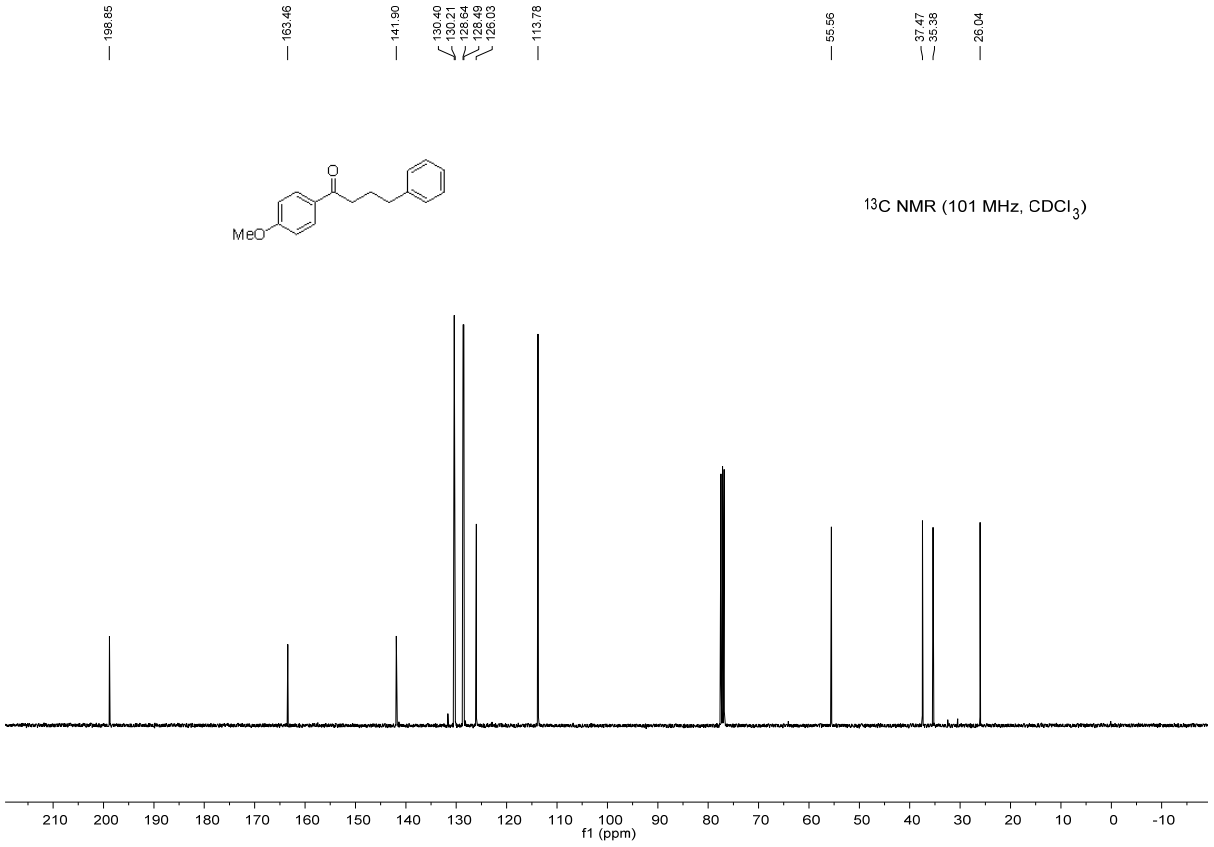
(4) 1-(4-(*tert*-butyl)phenyl)-4-phenylbutan-1-one (**3ad**)



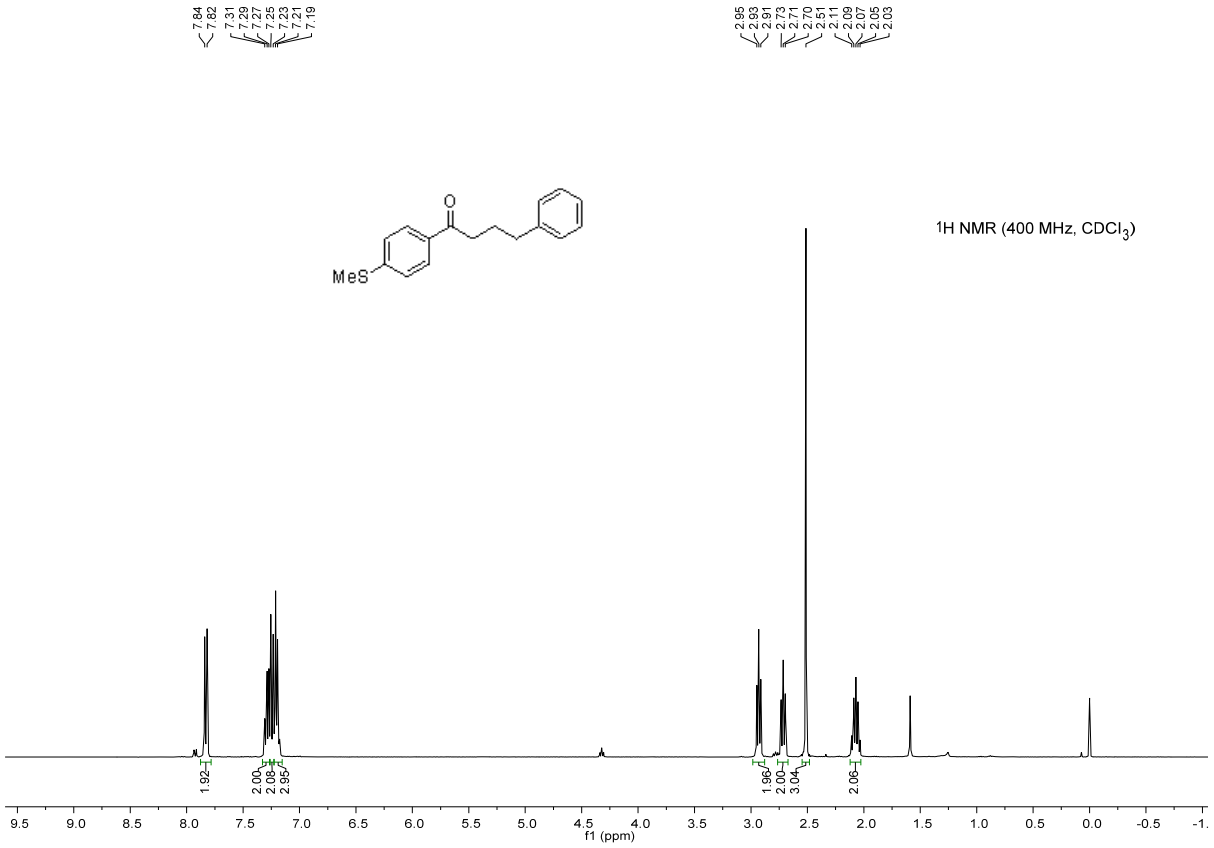


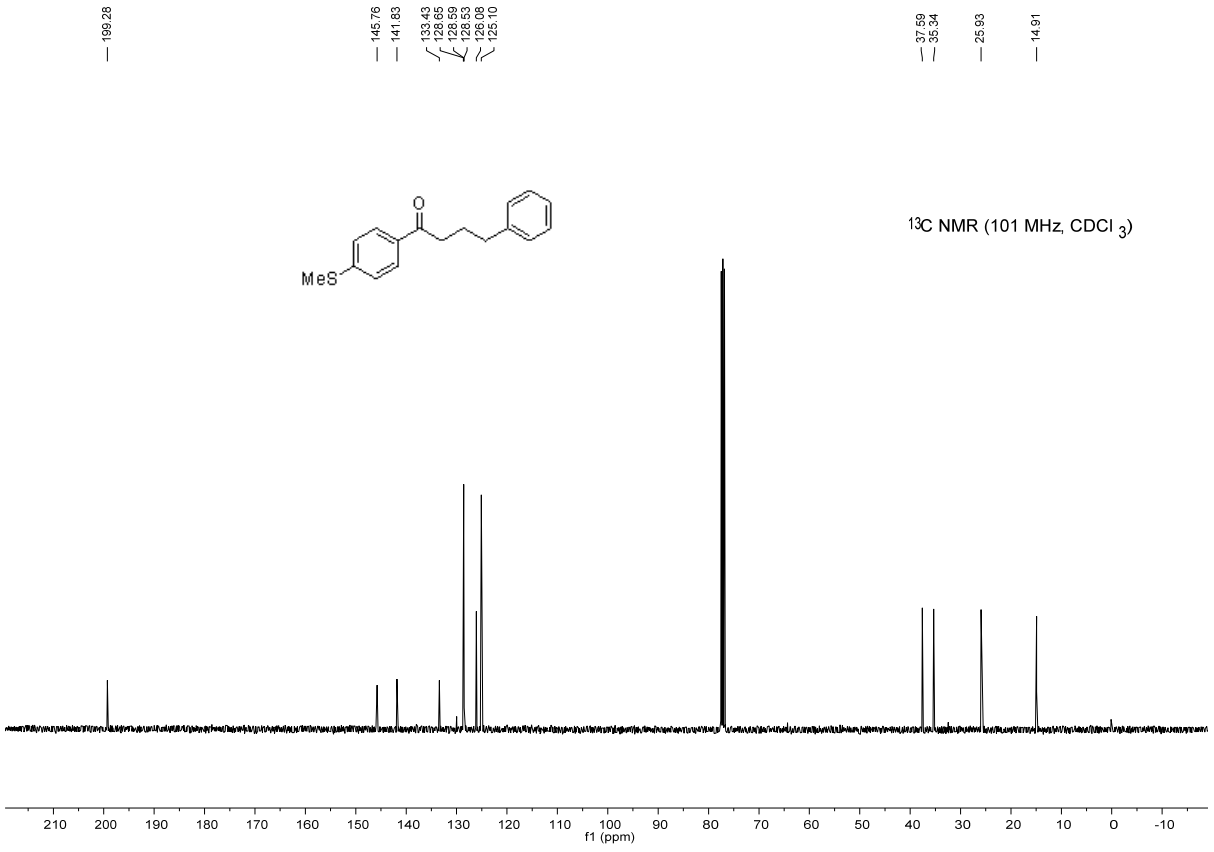
(5) 1-(4-methoxyphenyl)-4-phenylbutan-1-one (**3ae**)



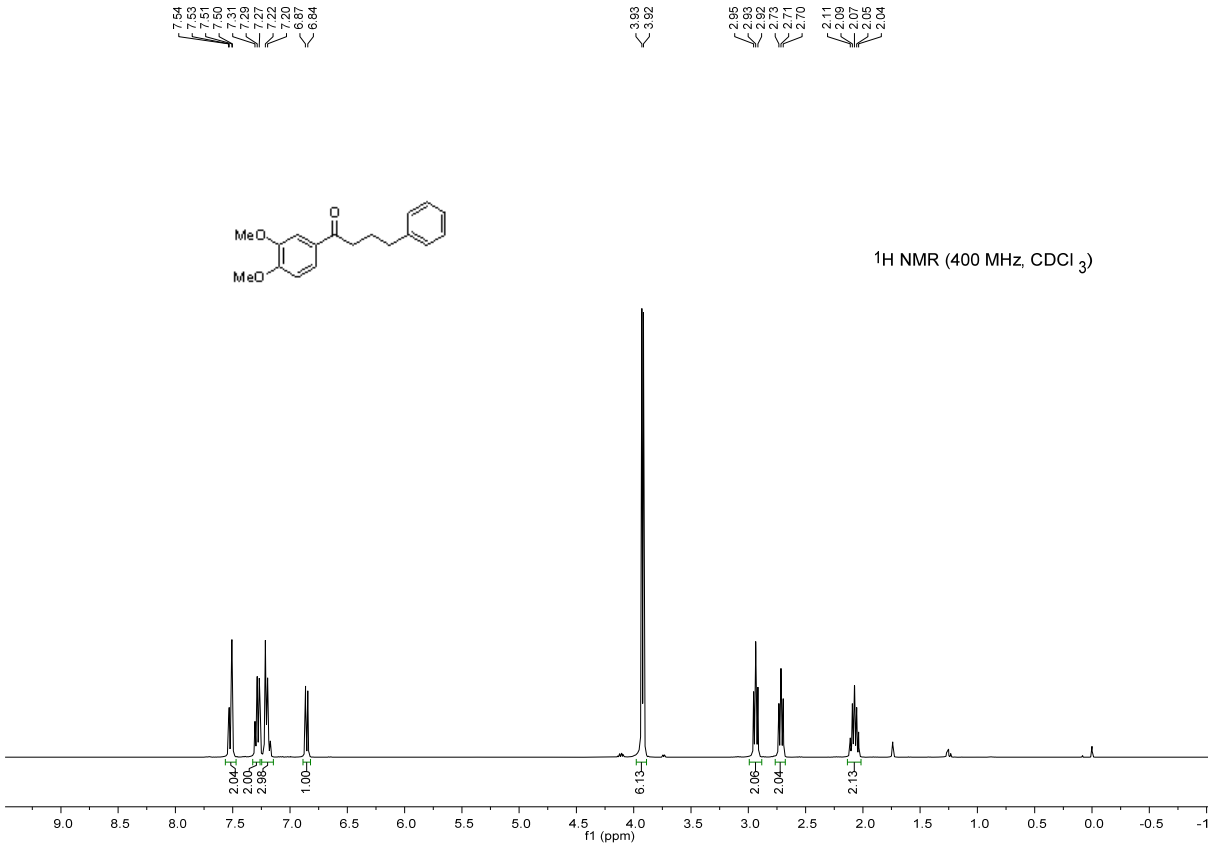


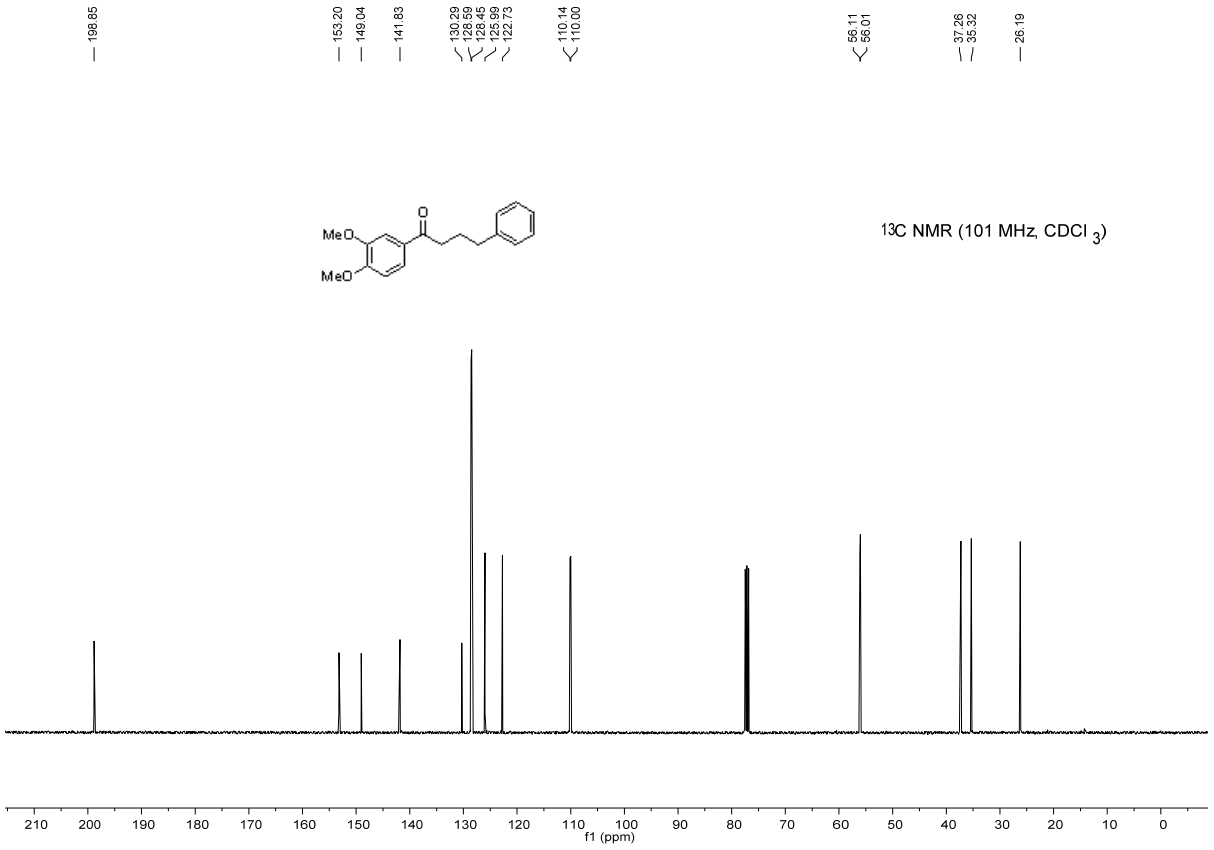
(6) 1-(4-(methylthio)phenyl)-4-phenylbutan-1-one (**3af**)



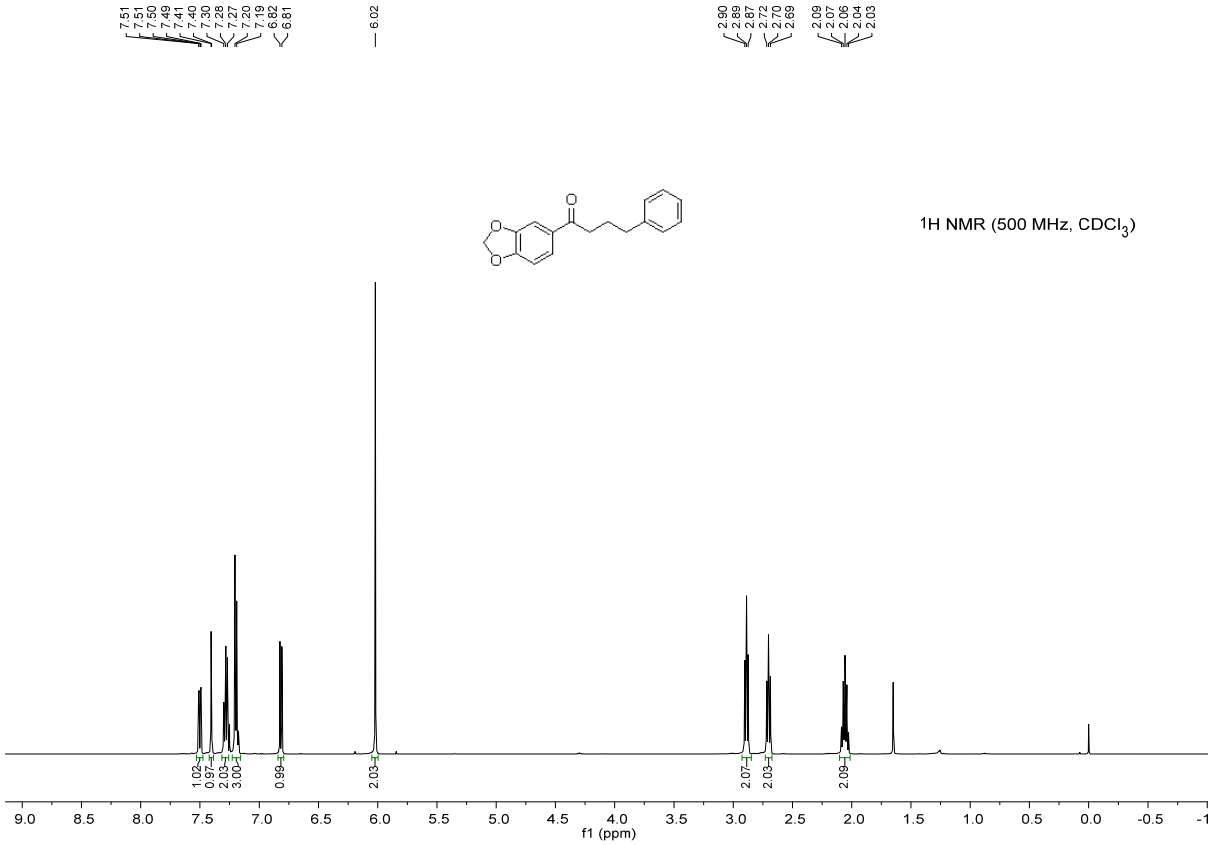


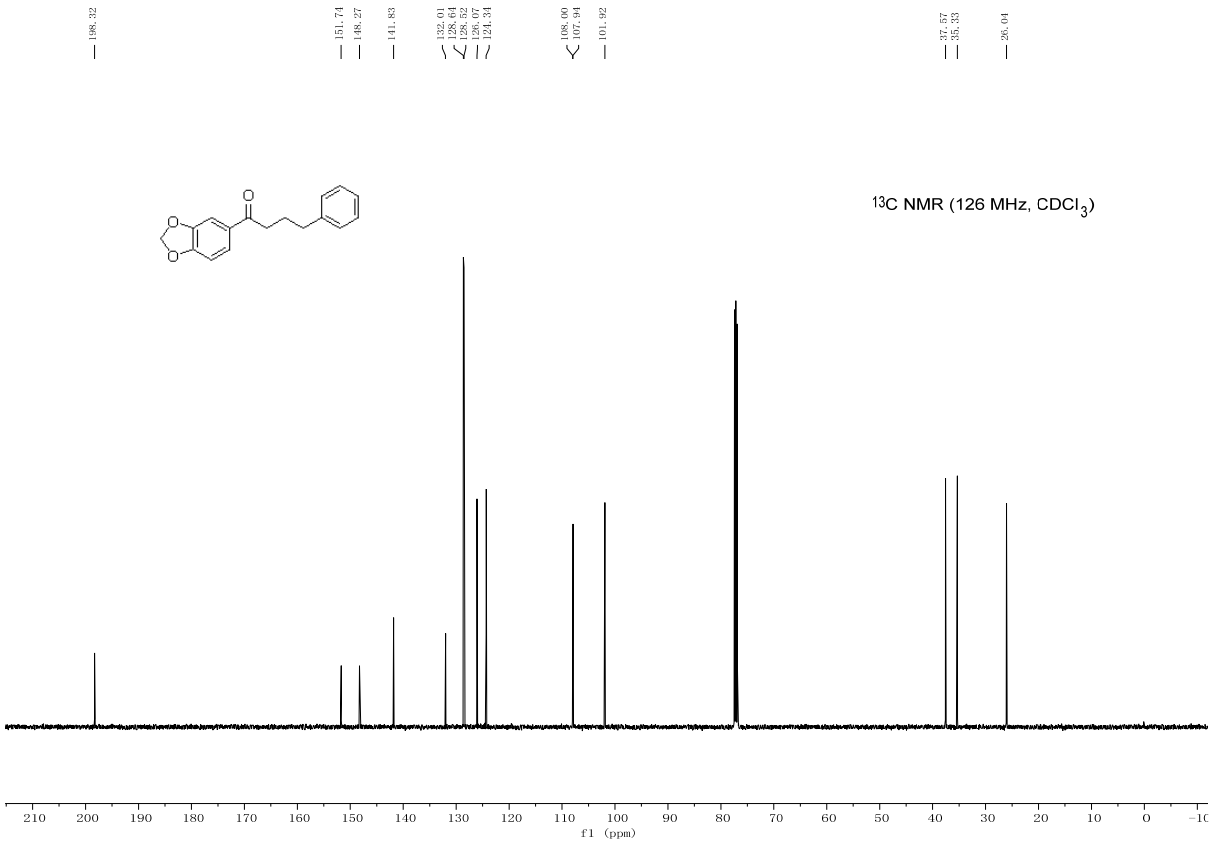
(7) 1-(3,4-dimethoxyphenyl)-4-phenylbutan-1-one (**3ag**)



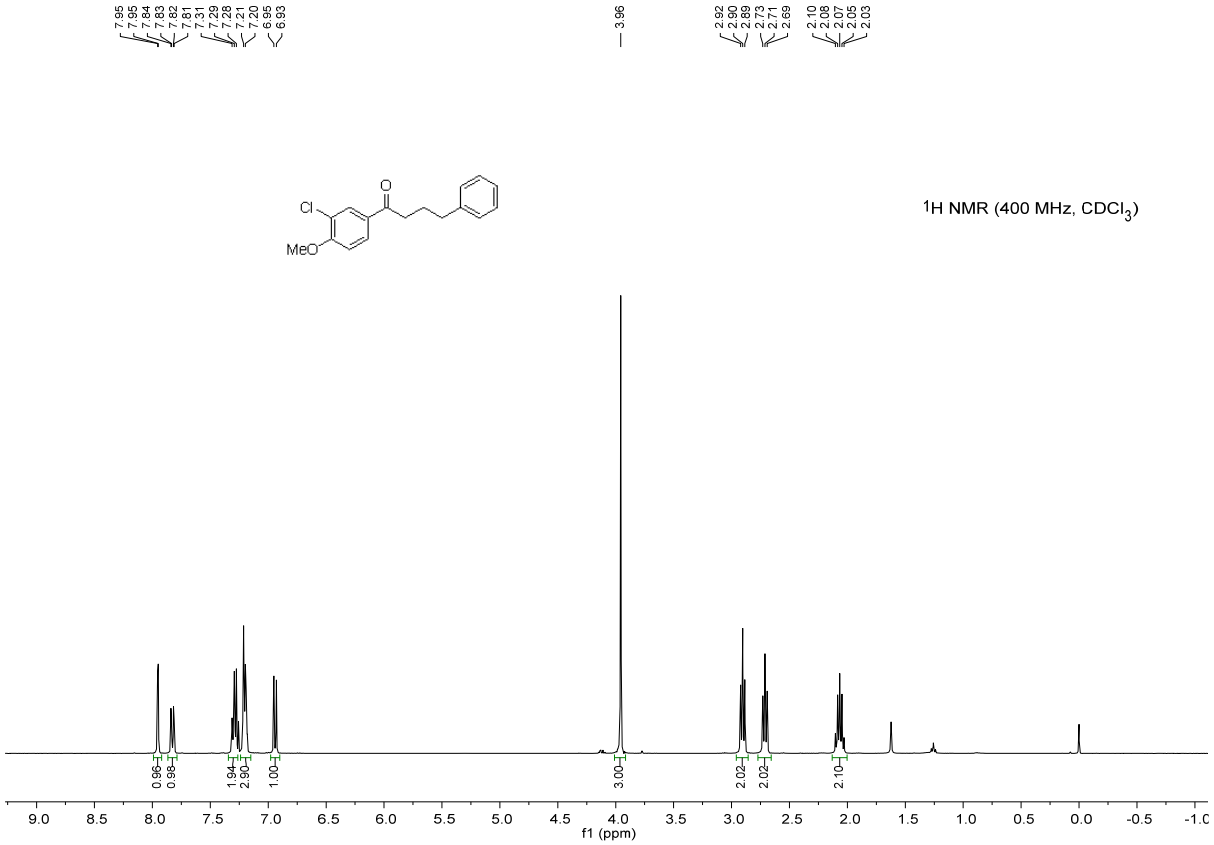


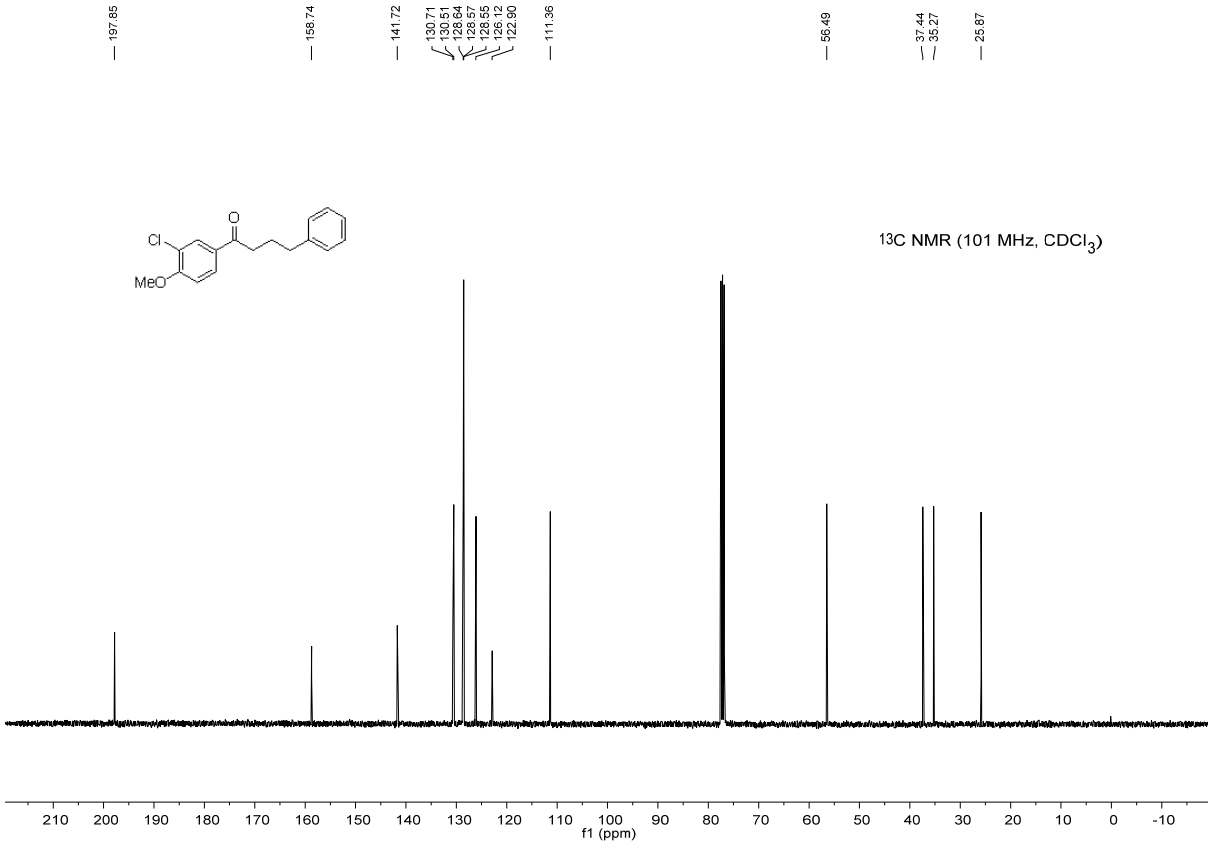
(8) 1-(benzo[*d*][1,3]dioxol-5-yl)-4-phenylbutan-1-one (**3ah**)



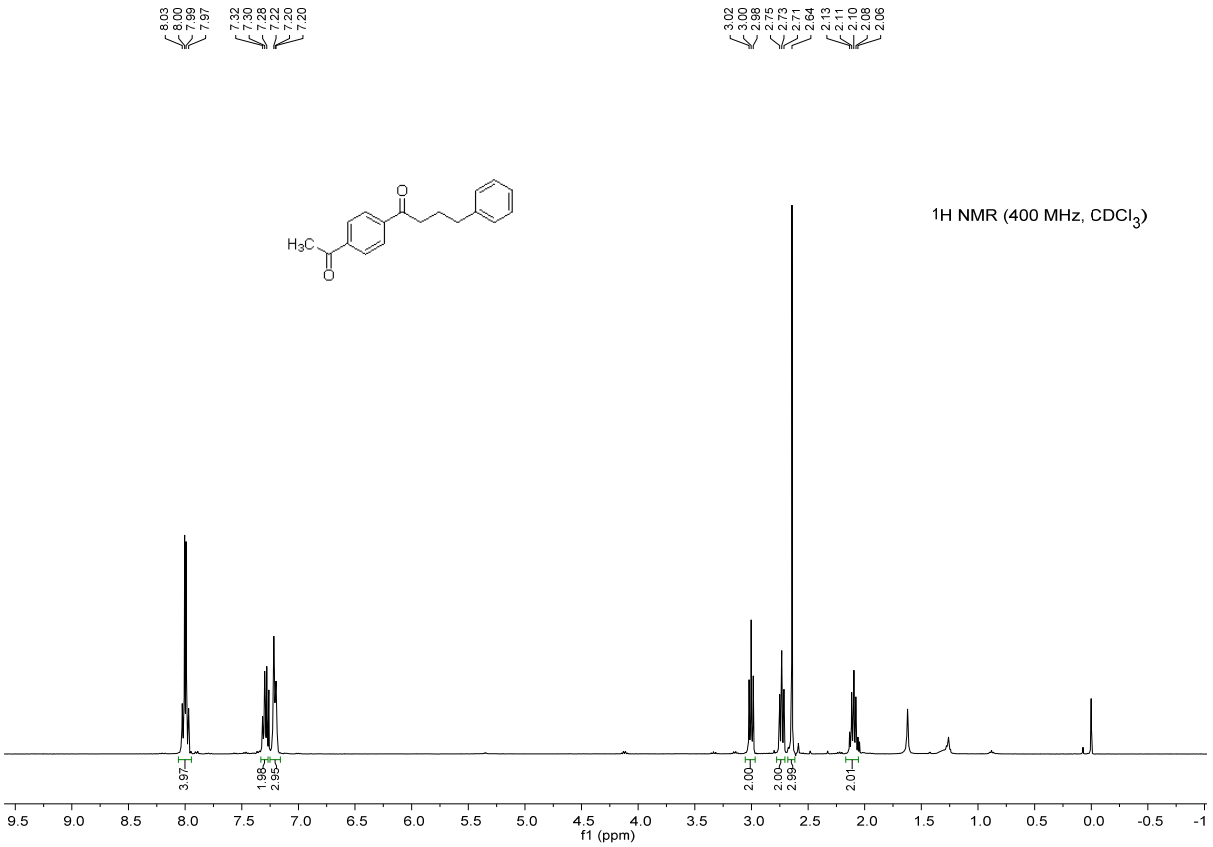


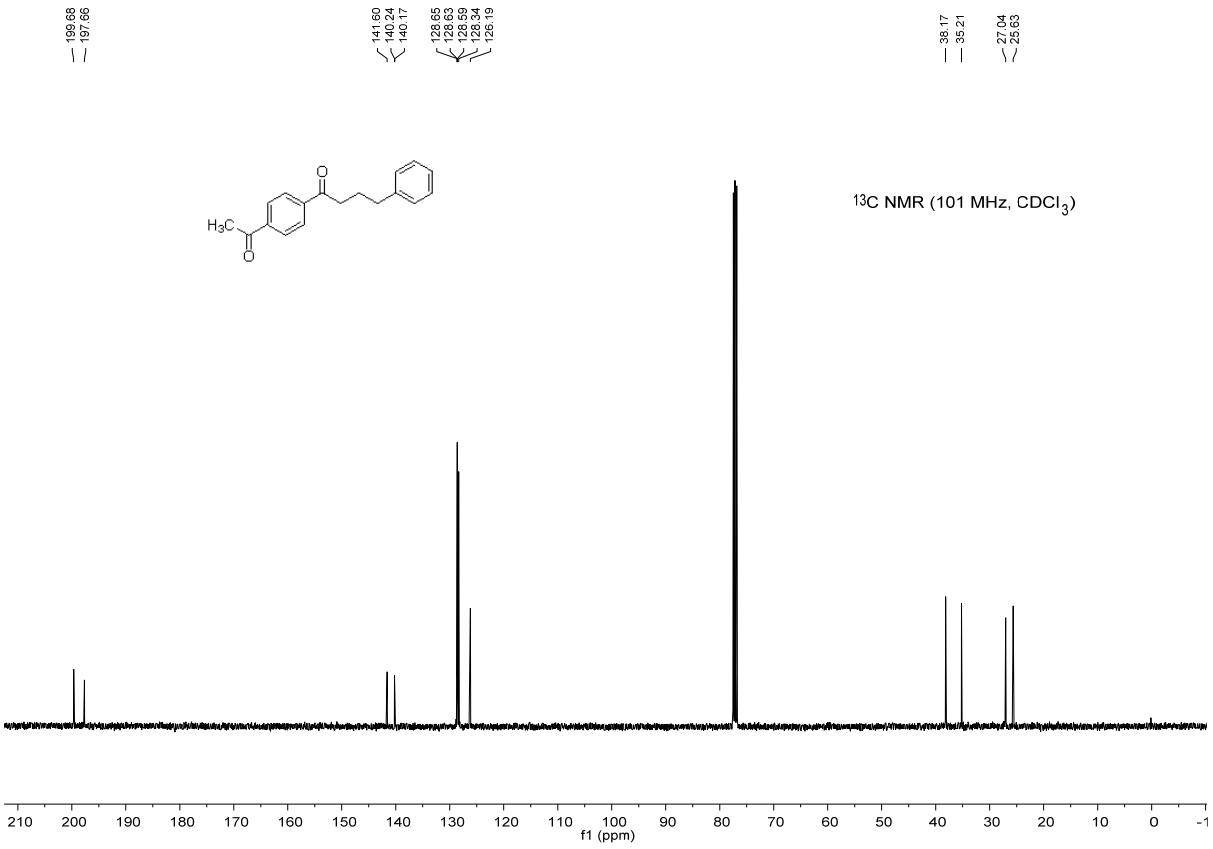
(9) 1-(3-chloro-4-methoxyphenyl)-4-phenylbutan-1-one (**3ai**)



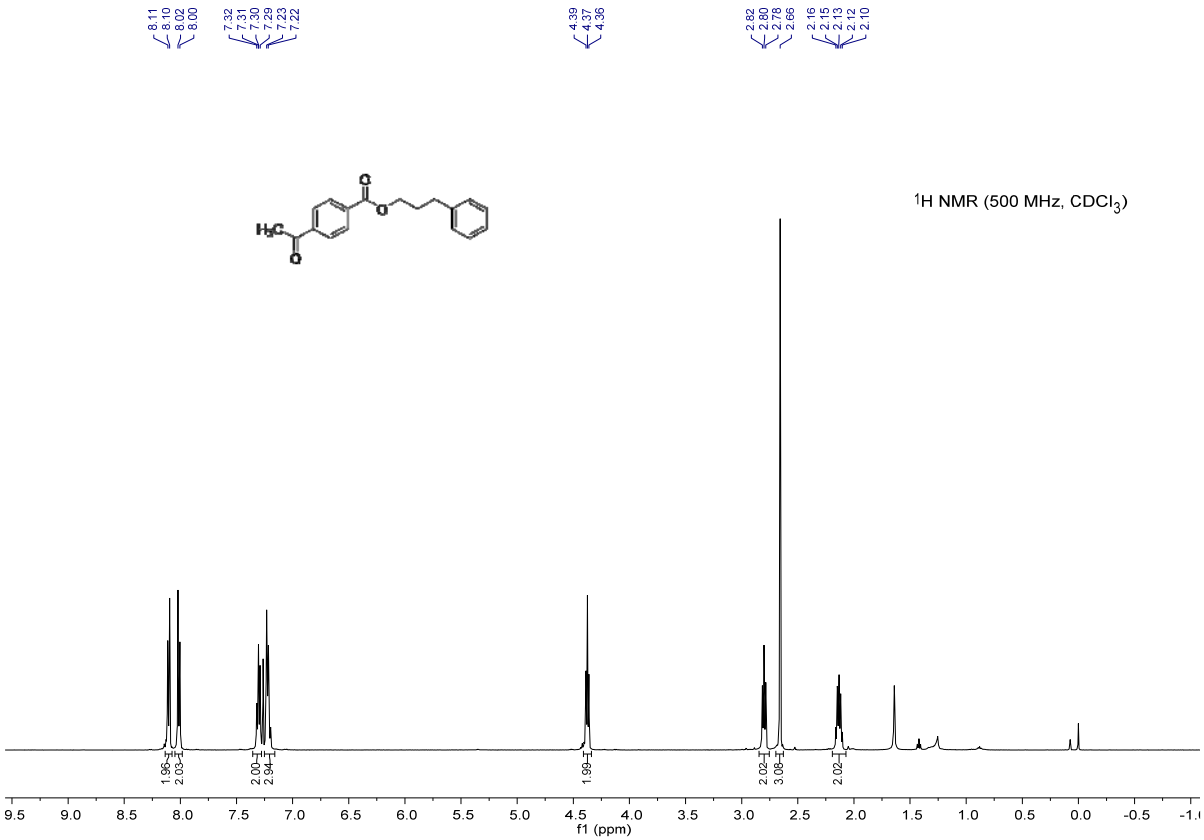


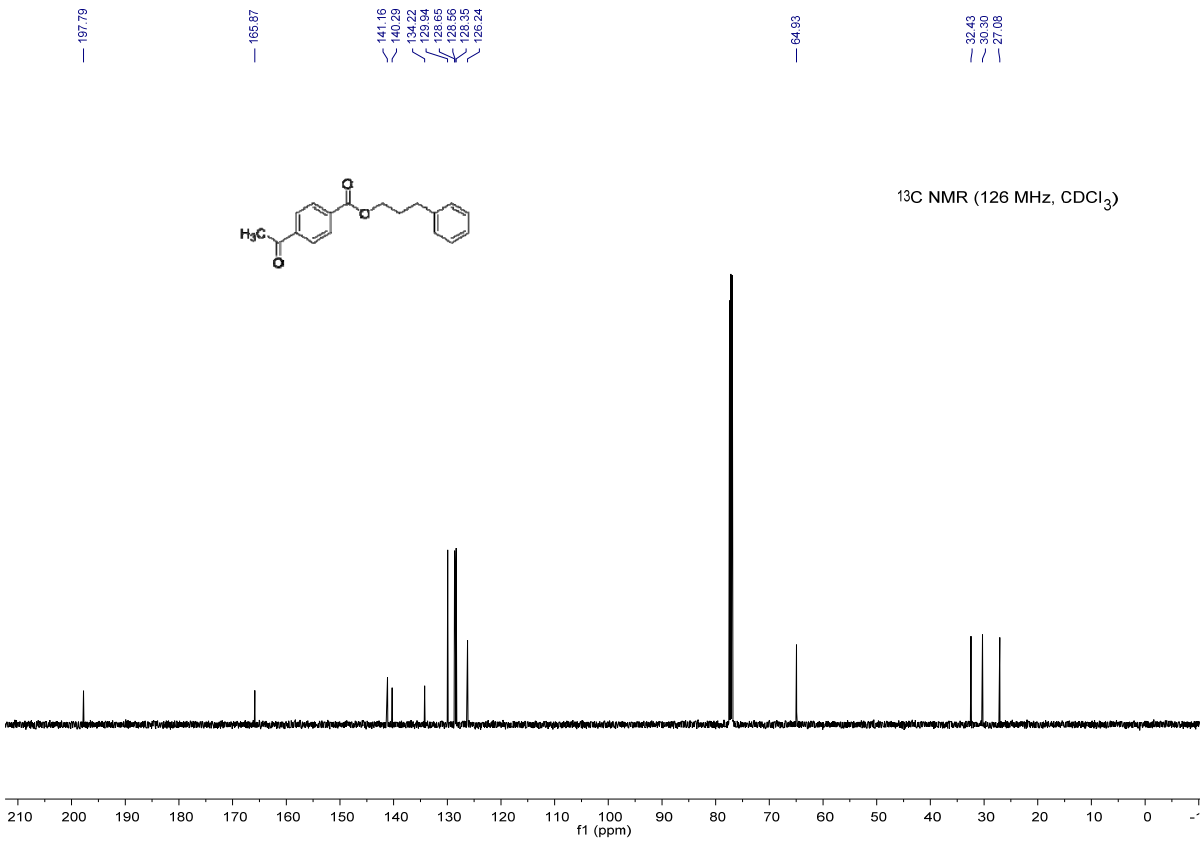
(10) (i) 1-(4-acetylphenyl)-4-phenylbutan-1-one (**3al**)



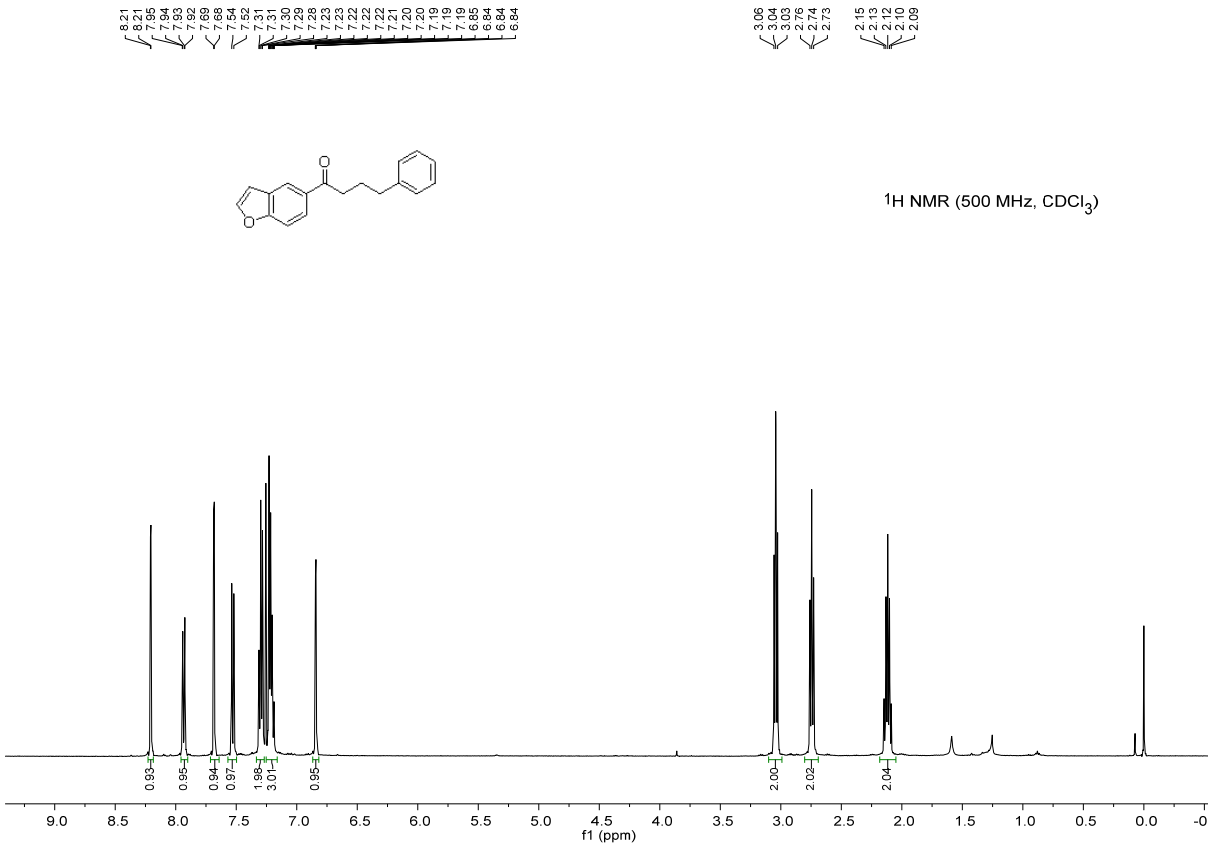


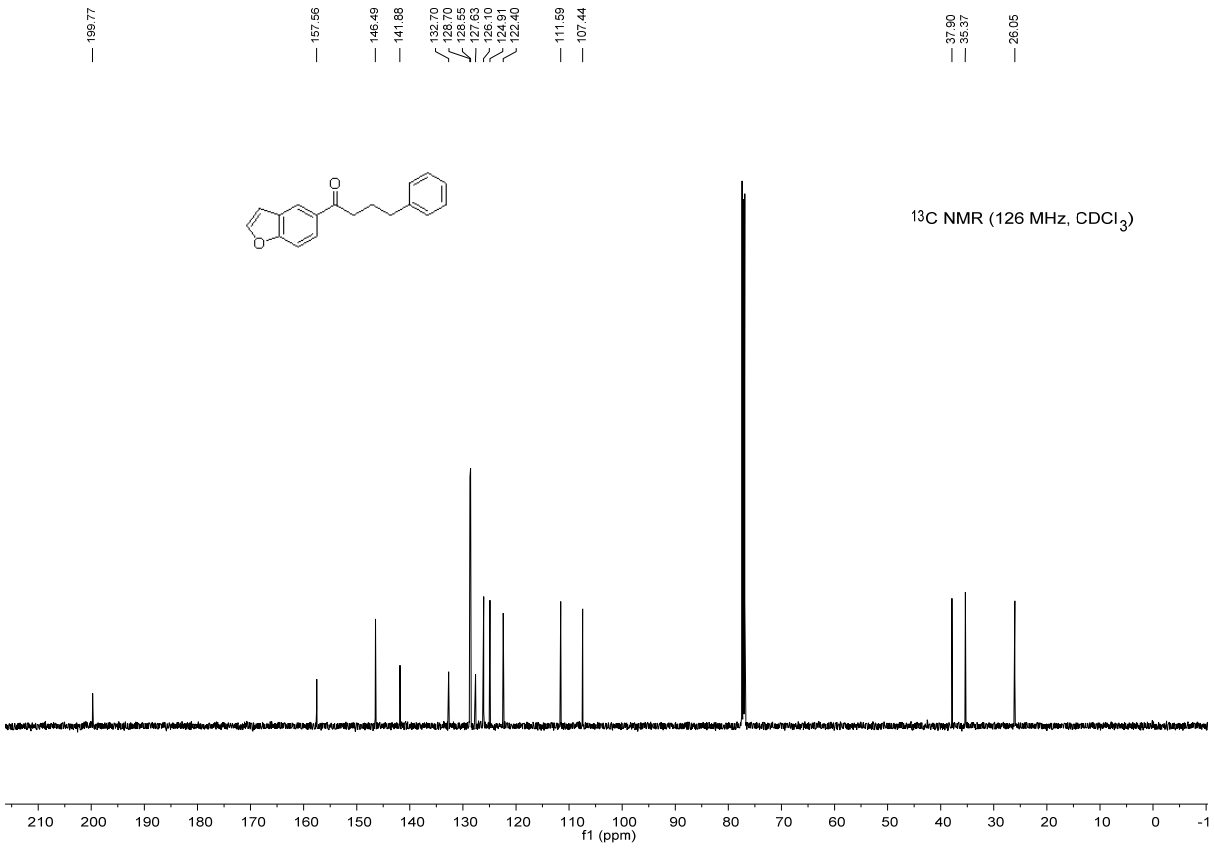
(10) (ii) 3-phenylpropyl 4-acetylbenzoate (**3al′**)



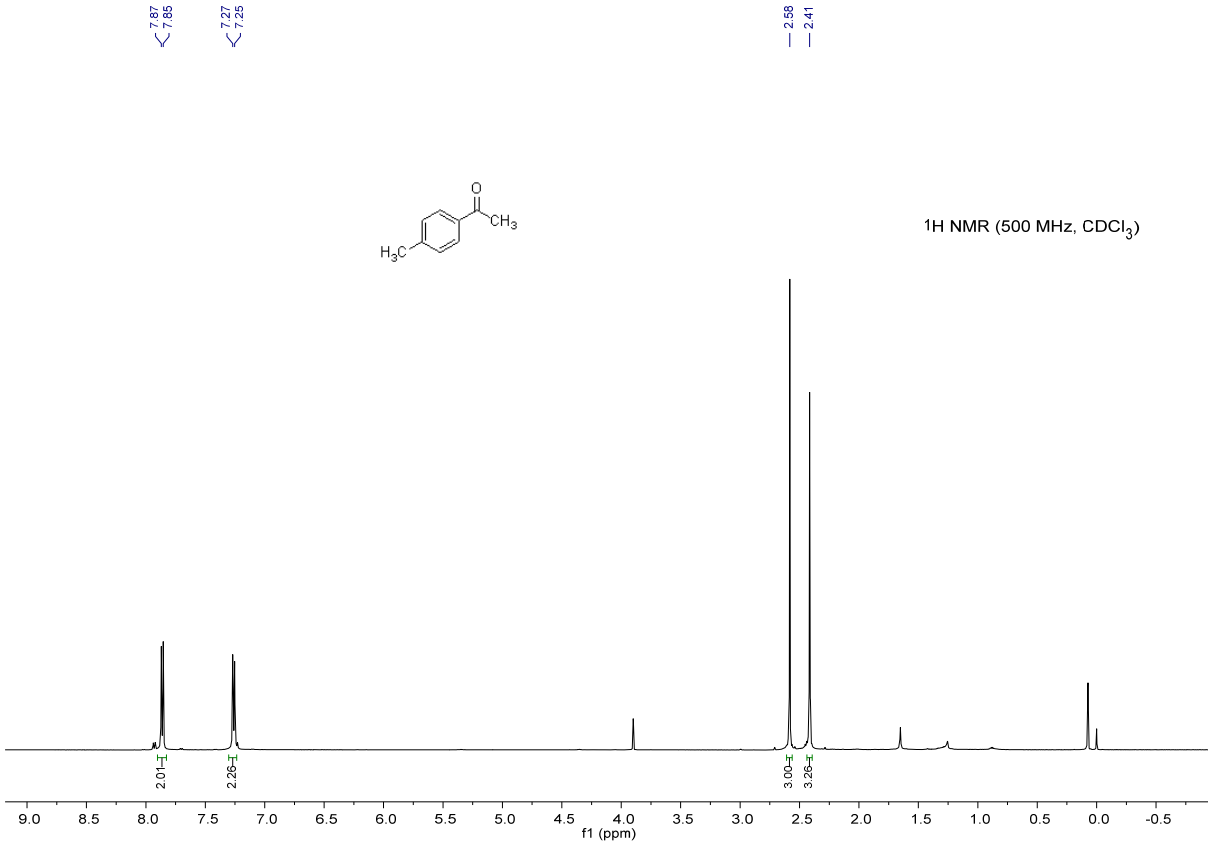


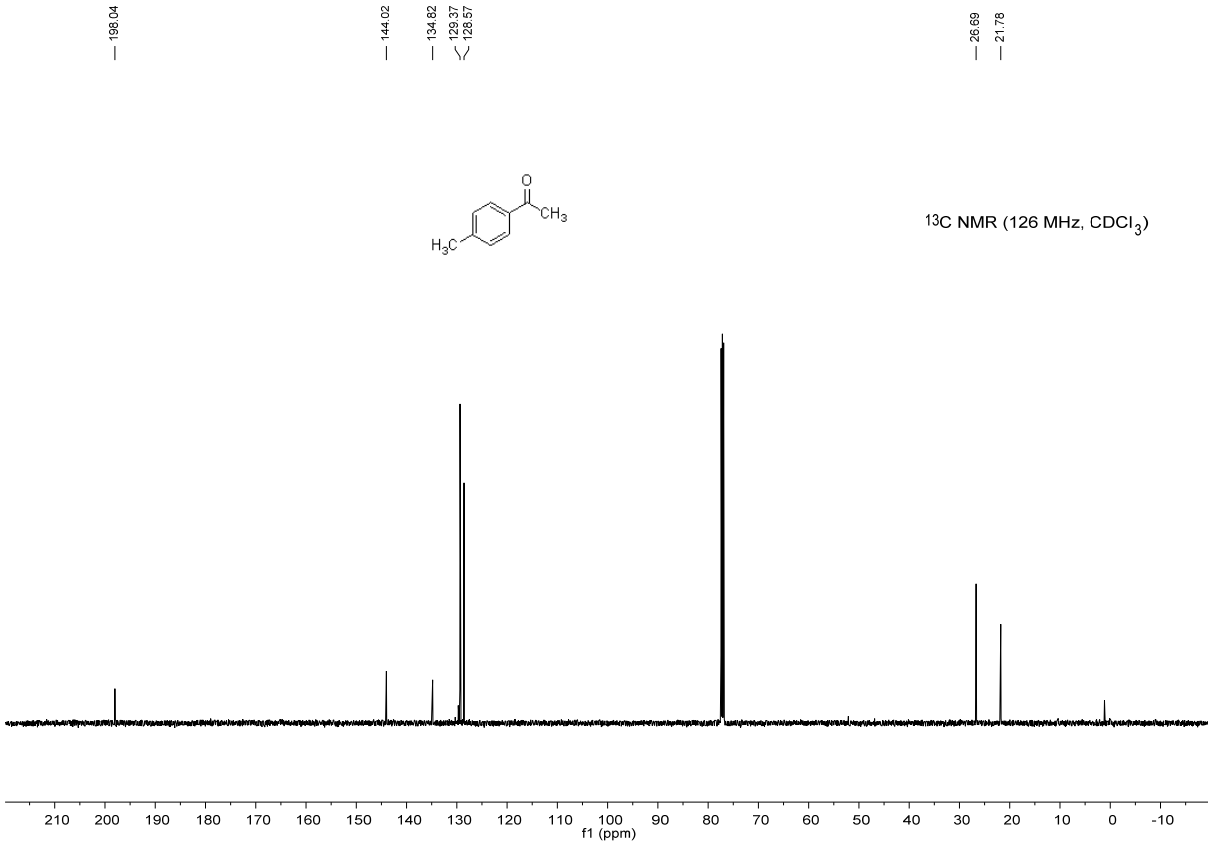
(11) 1-(benzofuran-5-yl)-4-phenylbutan-1-one (**3am**)



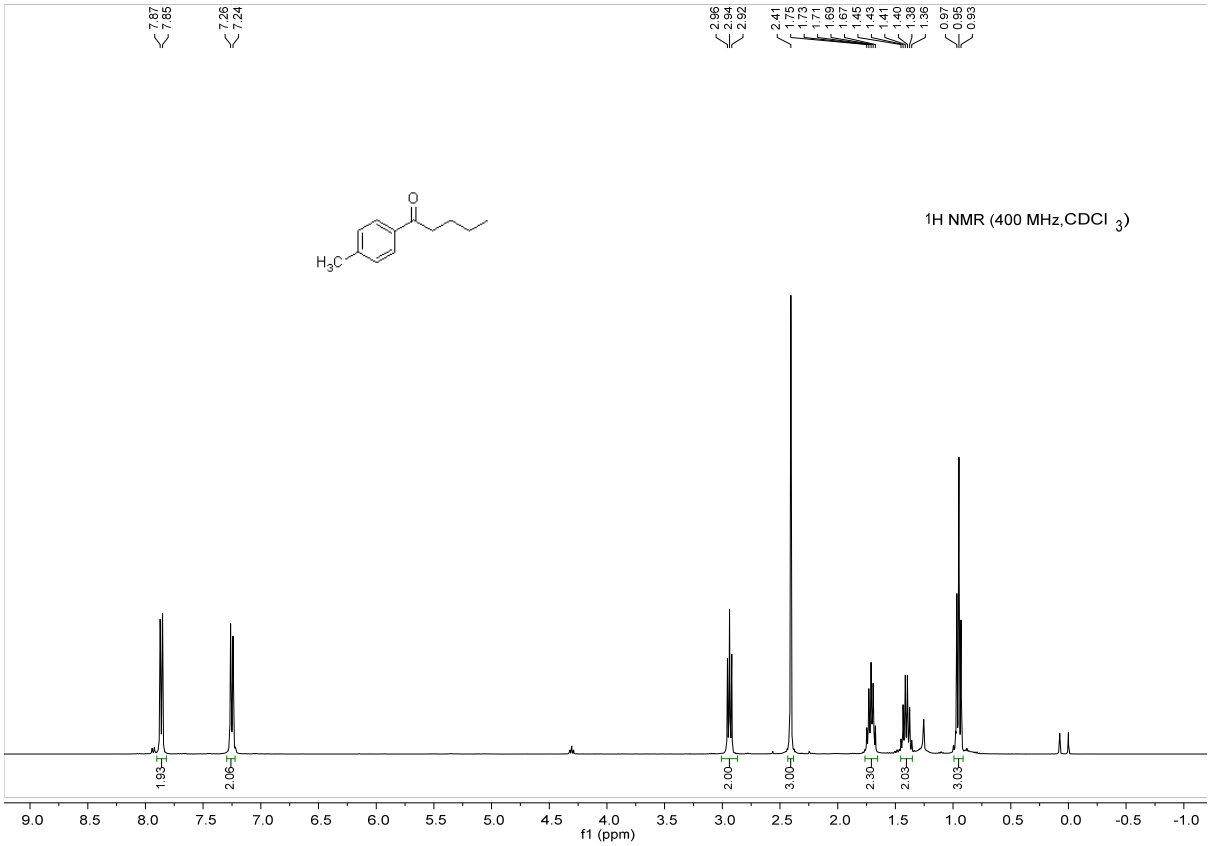


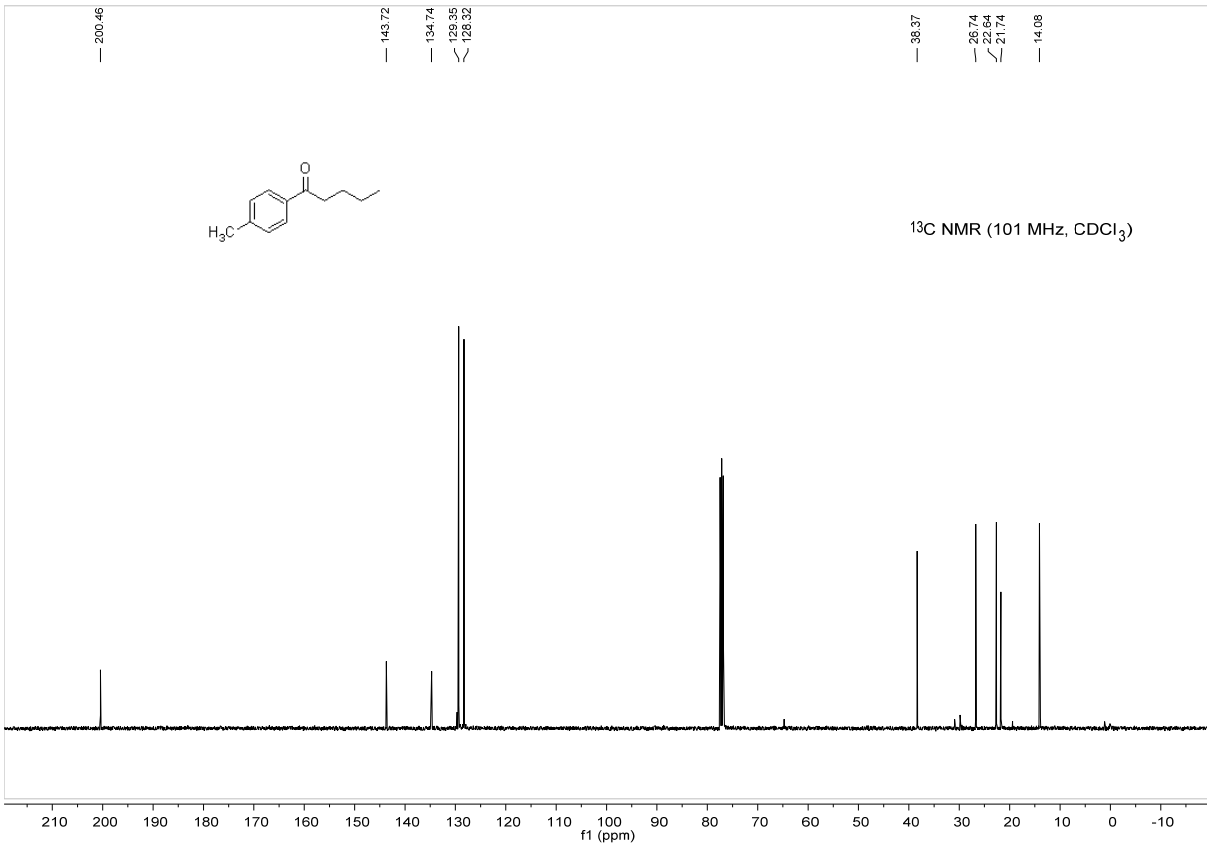
(12) 1-(*p*-tolyl)ethan-1-one (**3ba**)



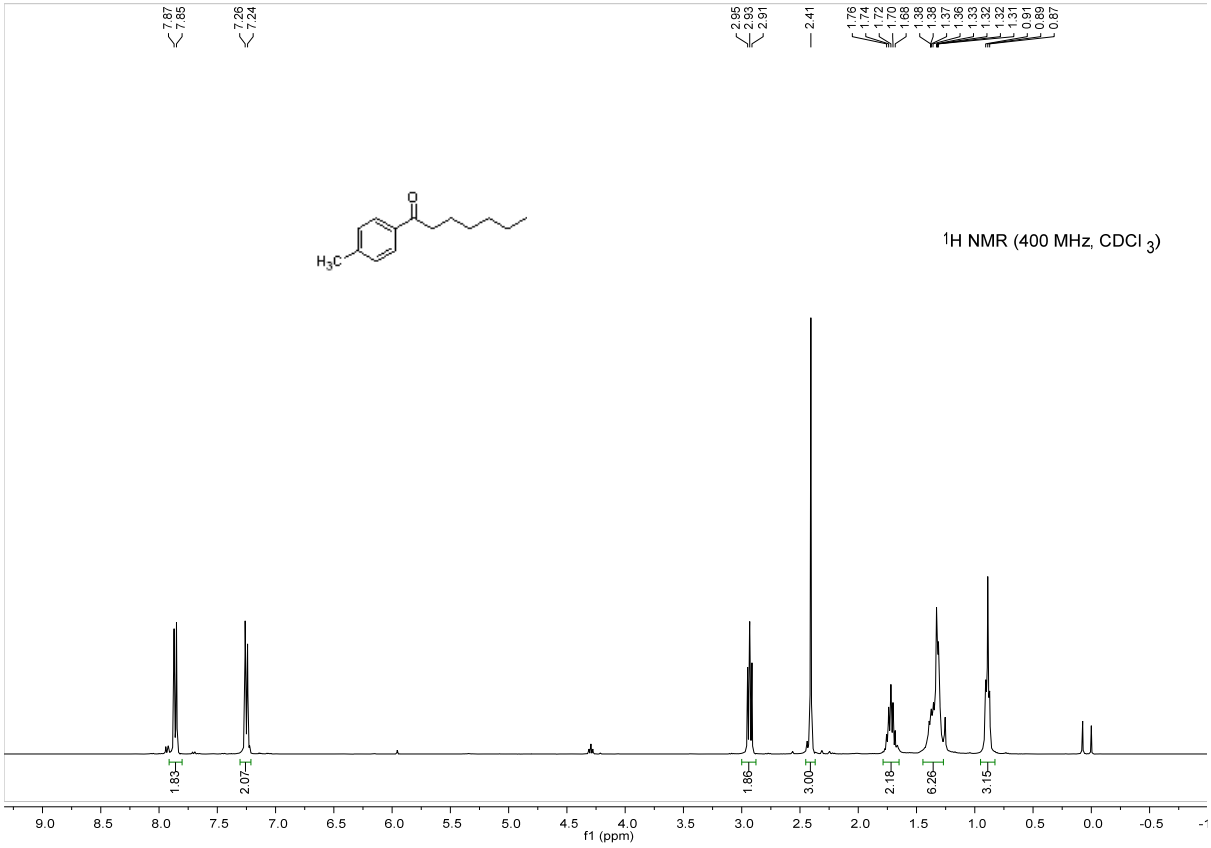


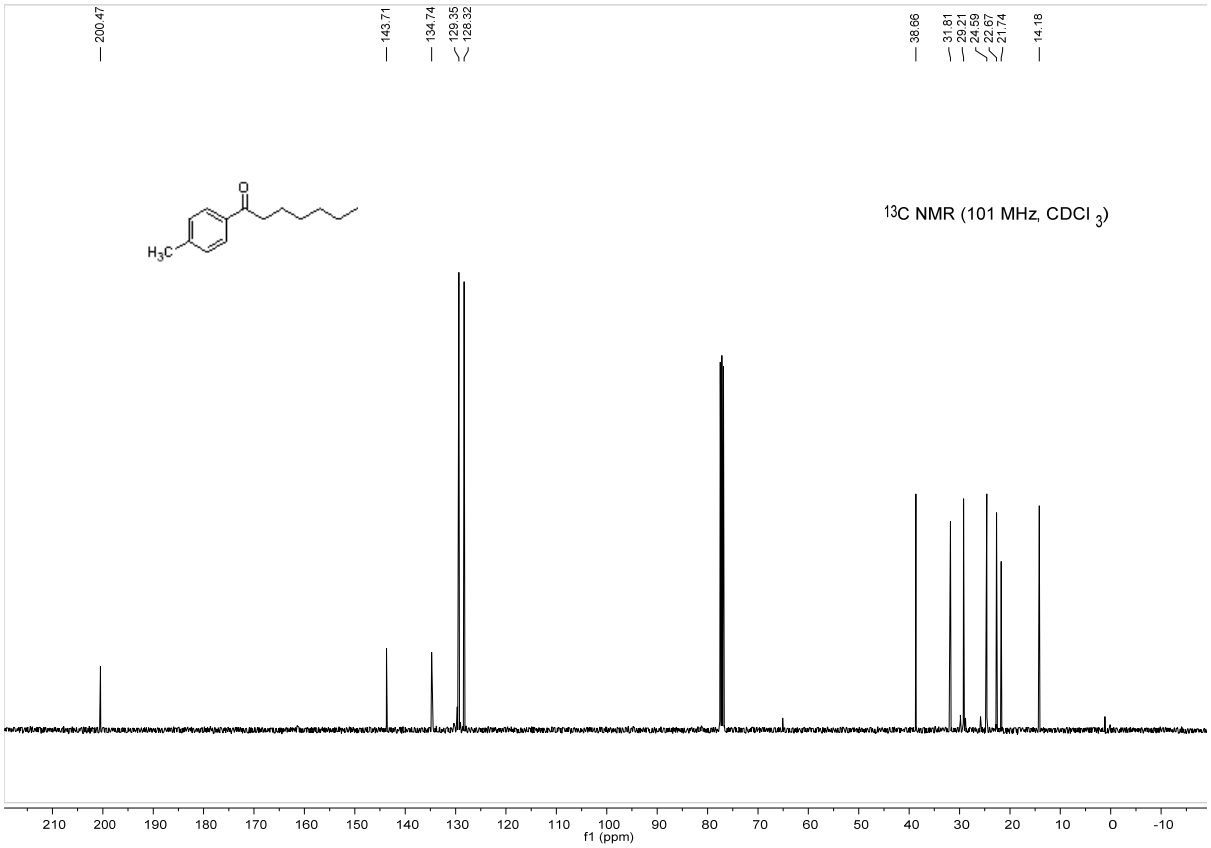
(13) 1-(*p*-tolyl)pentan-1-one (**3bb**)



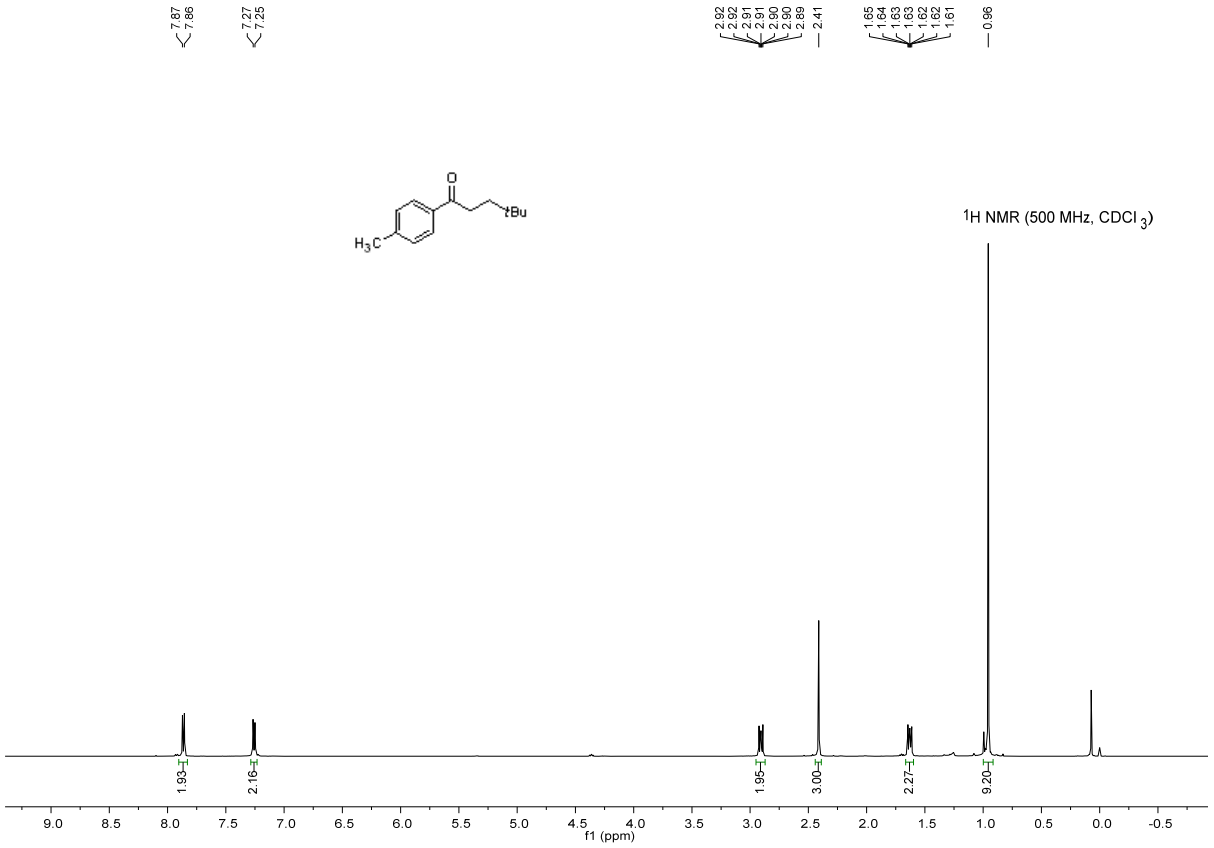


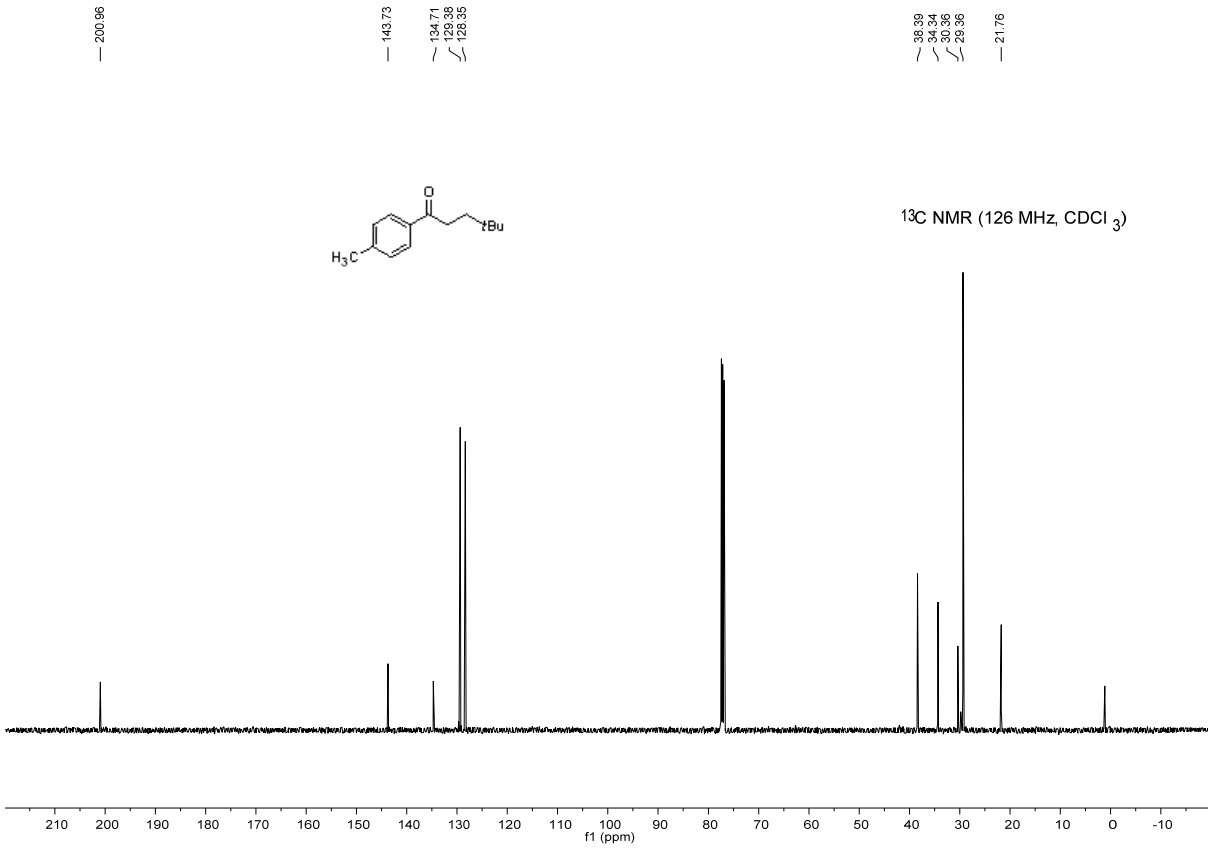
(14) 1-(*p*-tolyl)heptan-1-one (**3bc)**



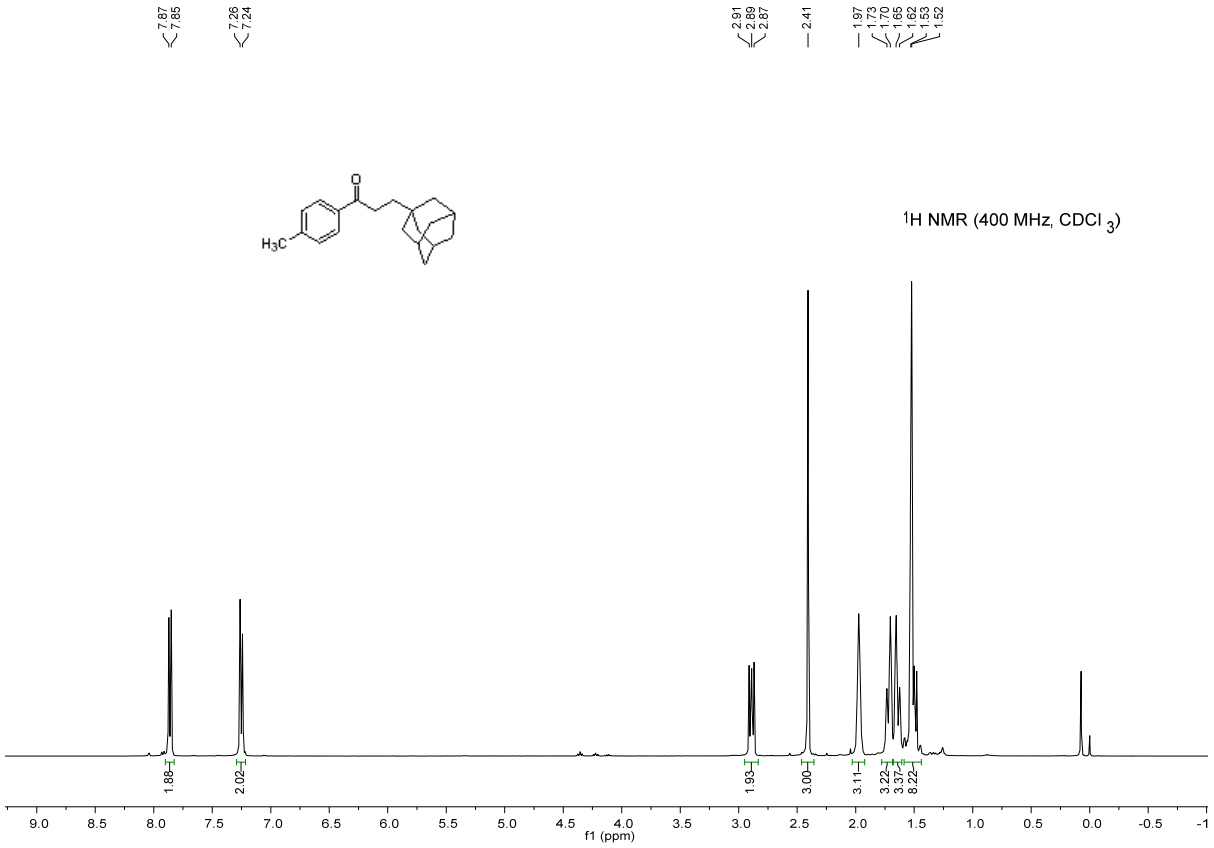


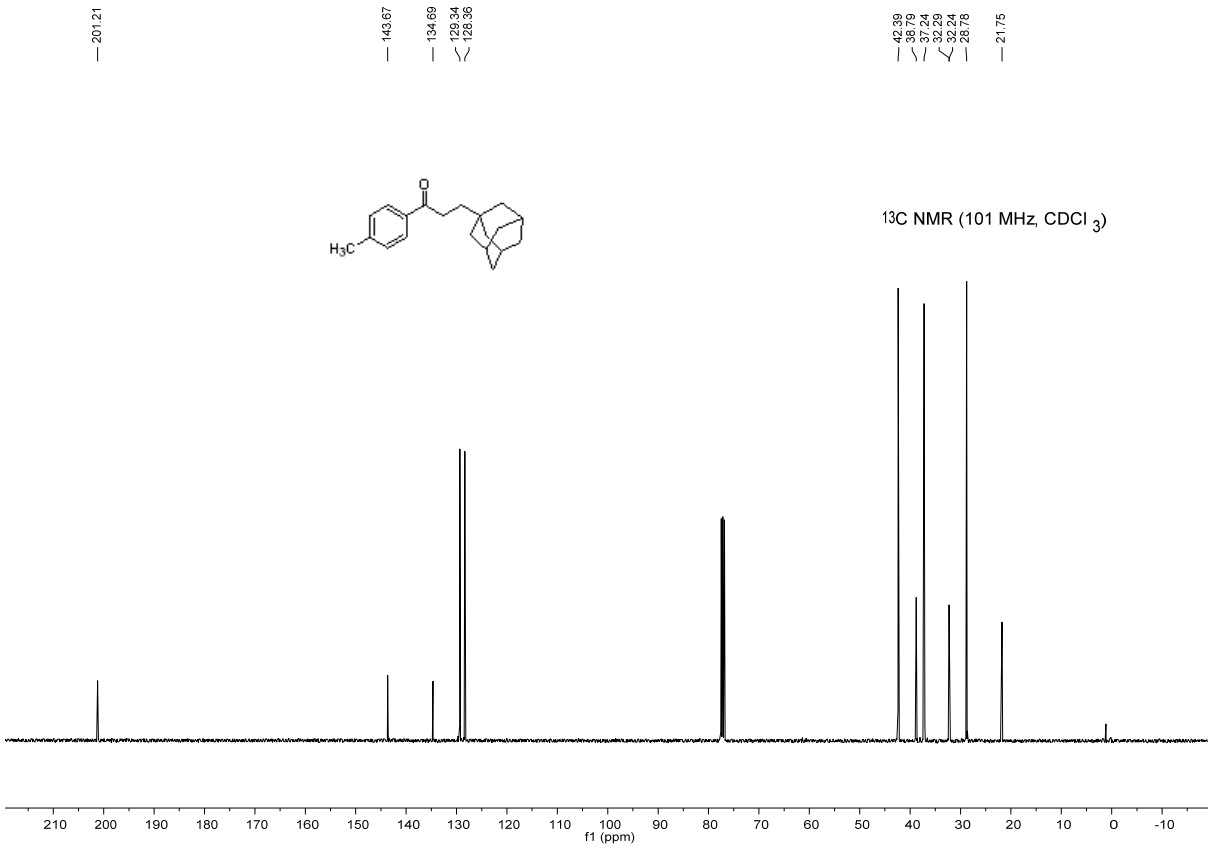
(15) 4,4-dimethyl-1-(*p*-tolyl)pentan-1-one (**3bd**)



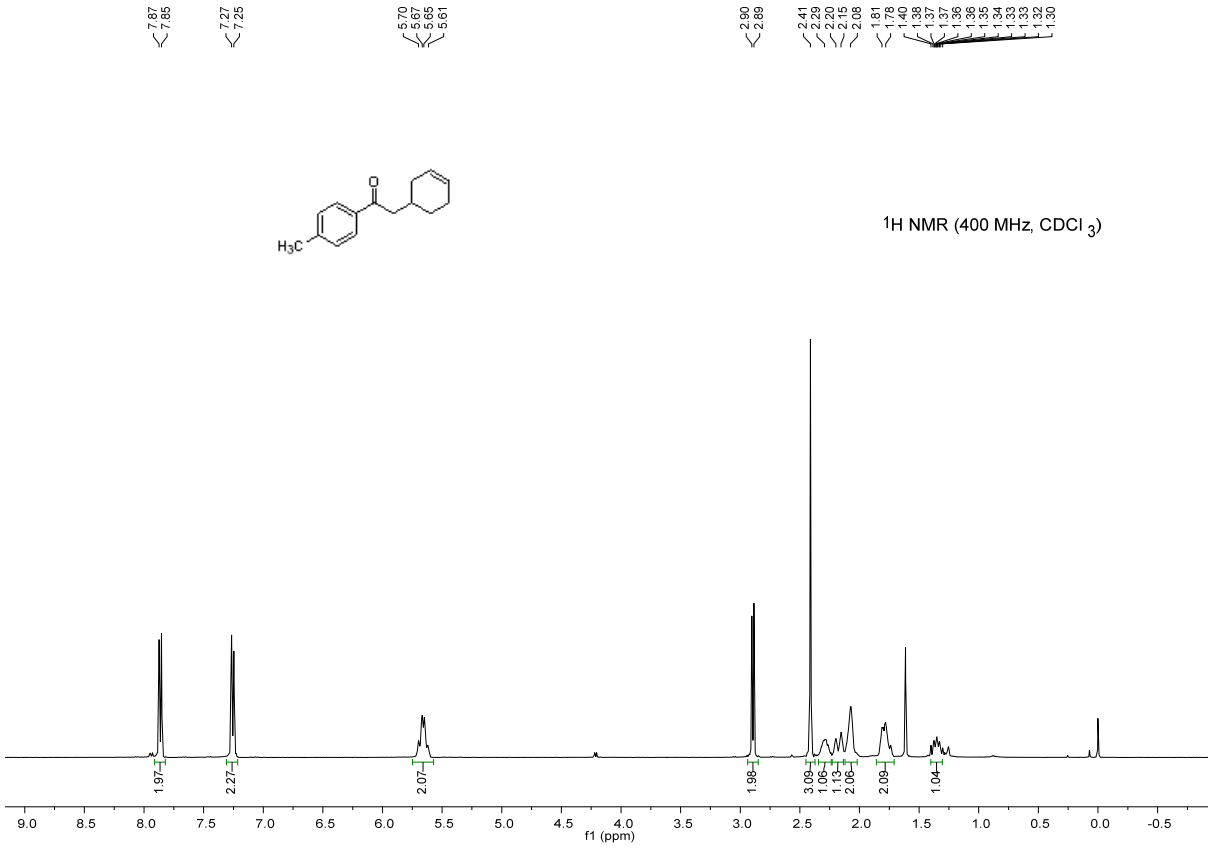


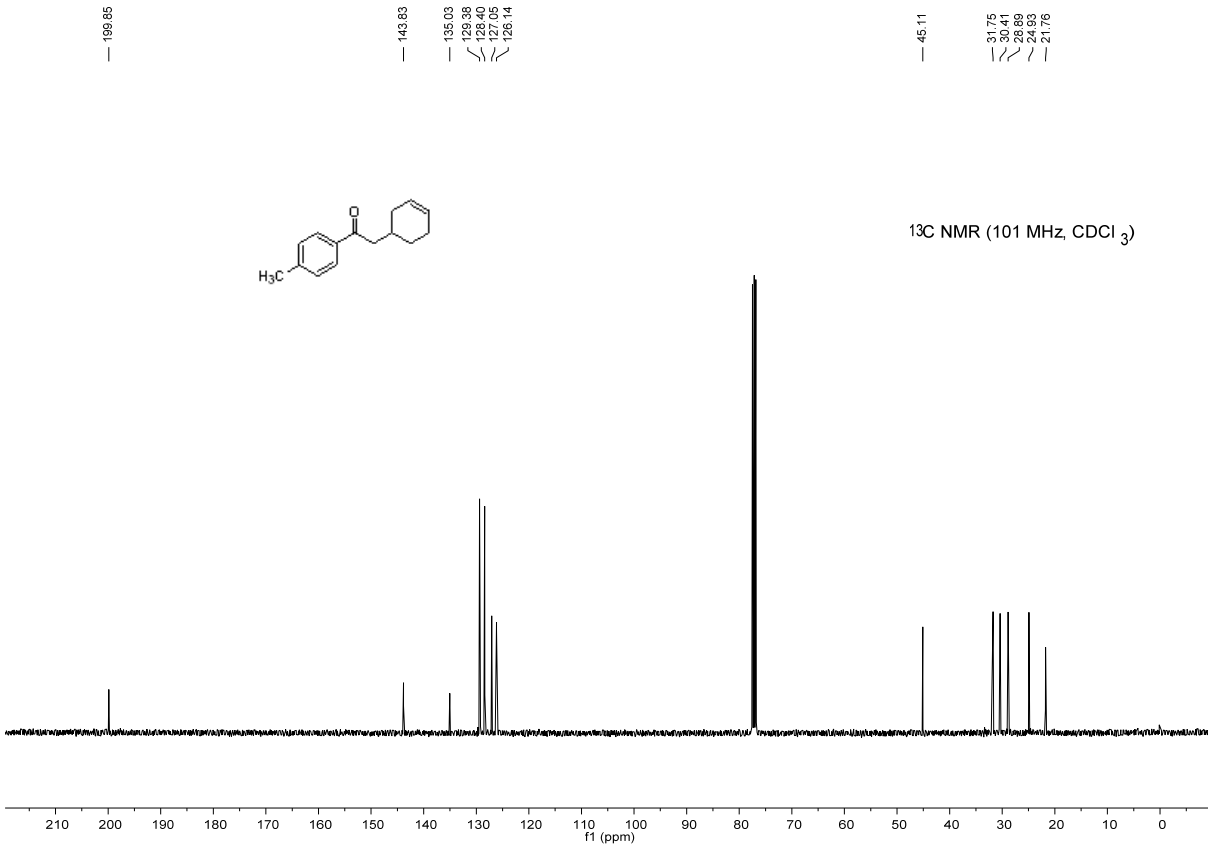
(16) 3-(1-adamantyl)-1-(*p*-tolyl)propan-1-one (**3be**)



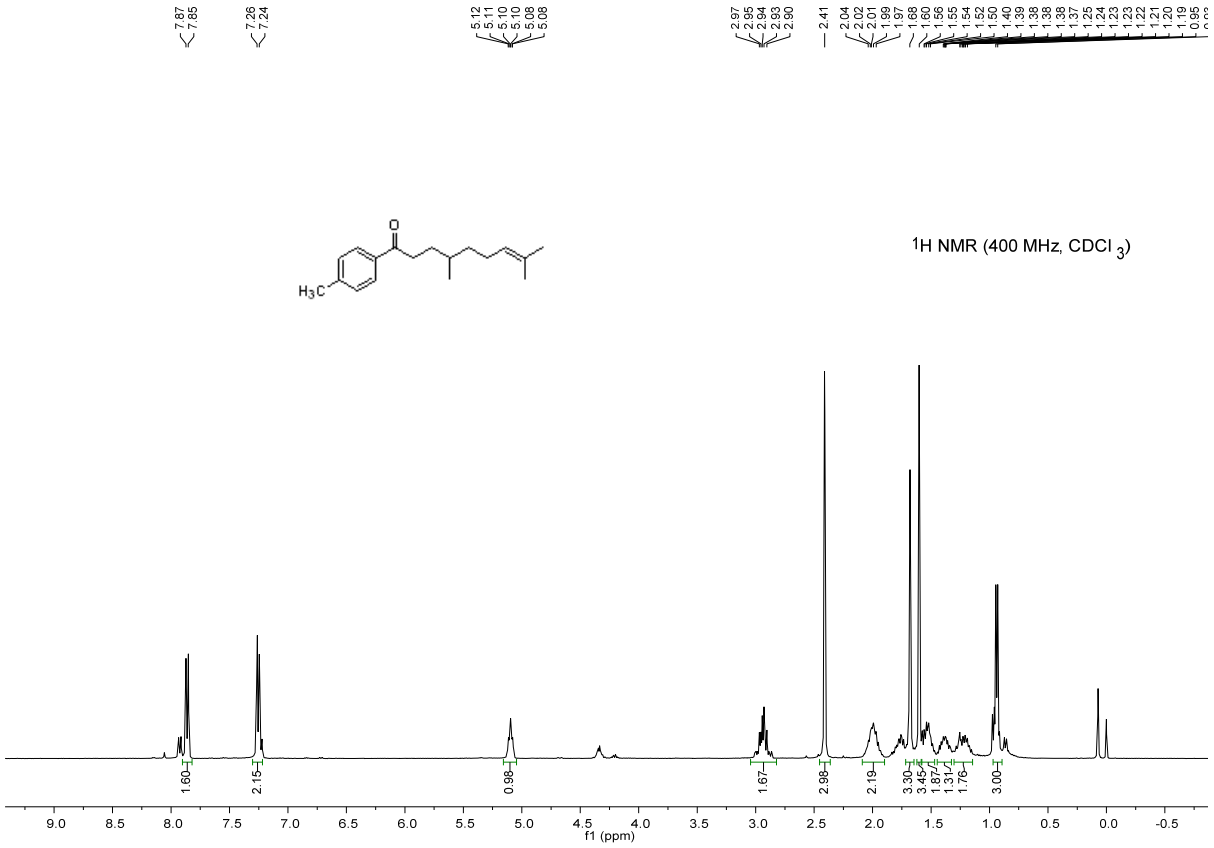


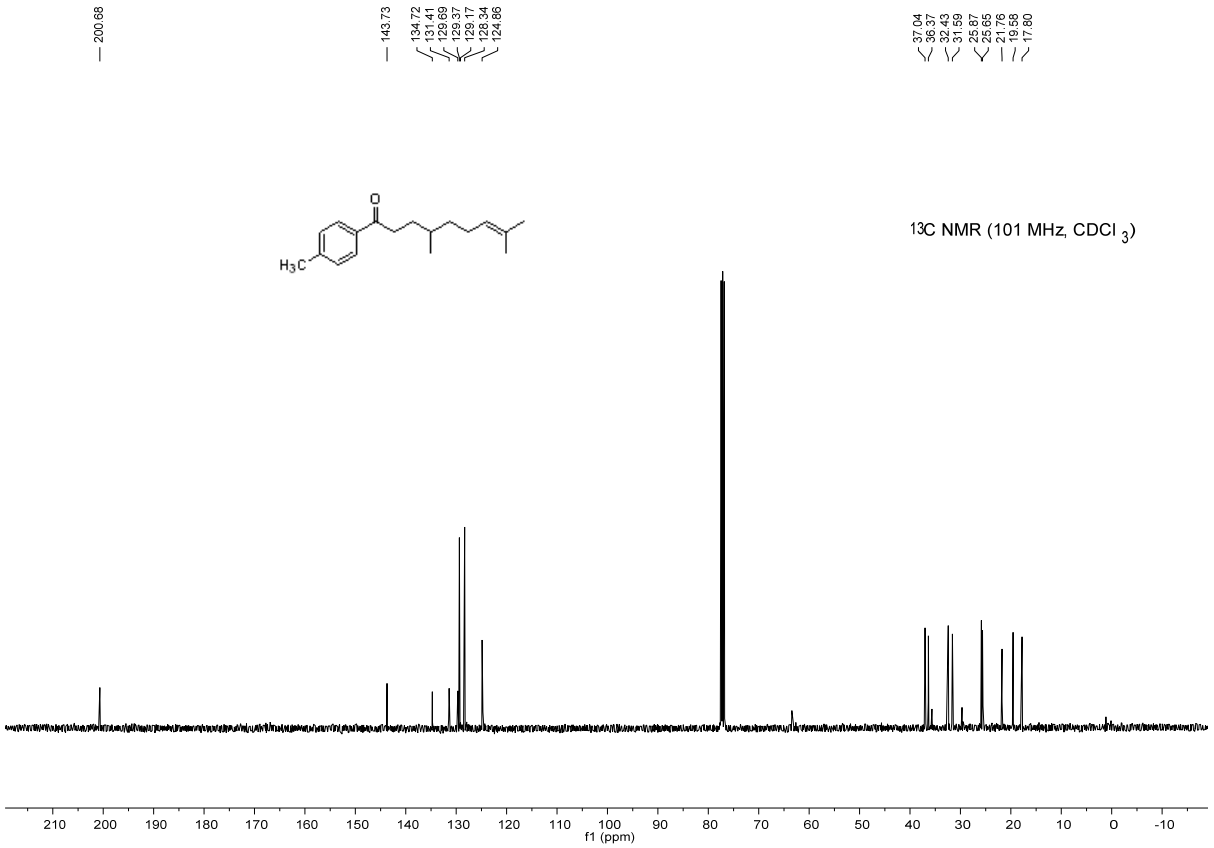
(17) 2-(cyclohex-3-en-1-yl)-1-(*p*-tolyl)ethan-1-one (**3bf**)



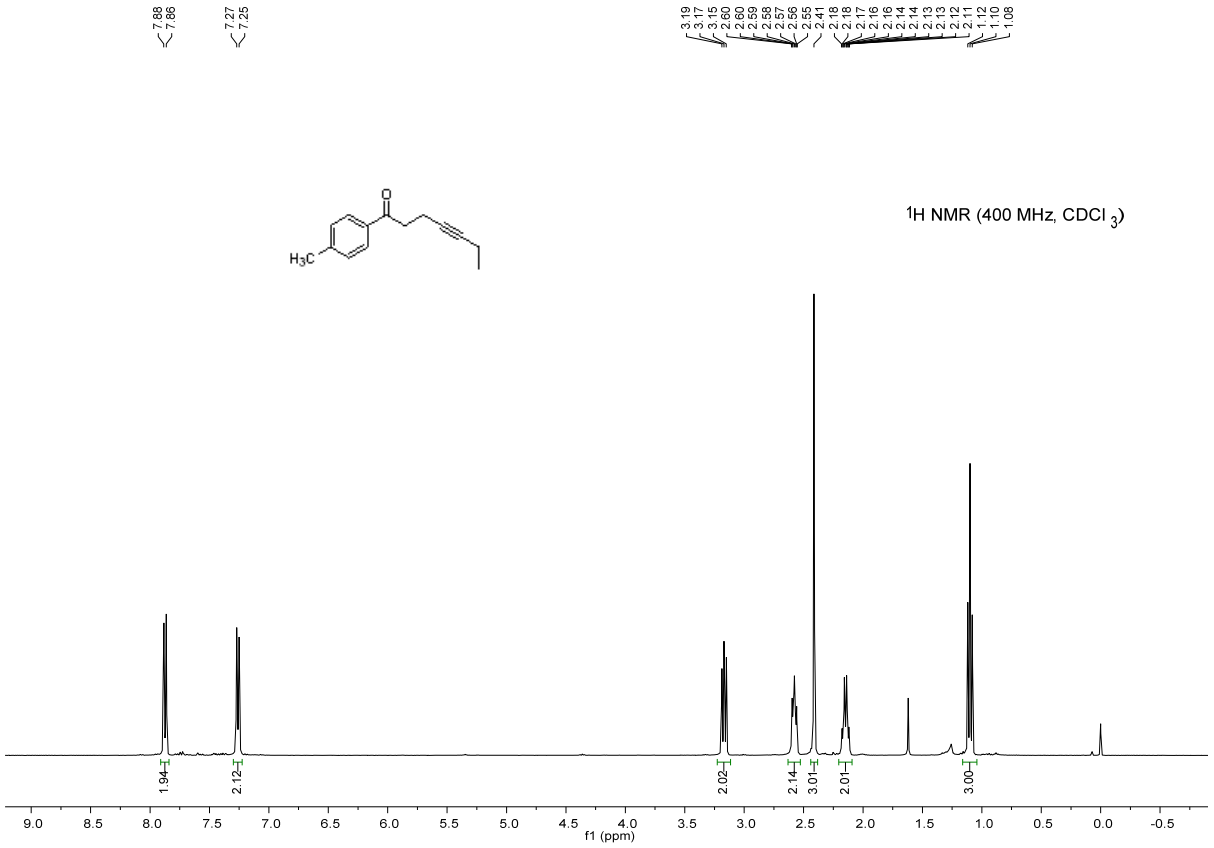


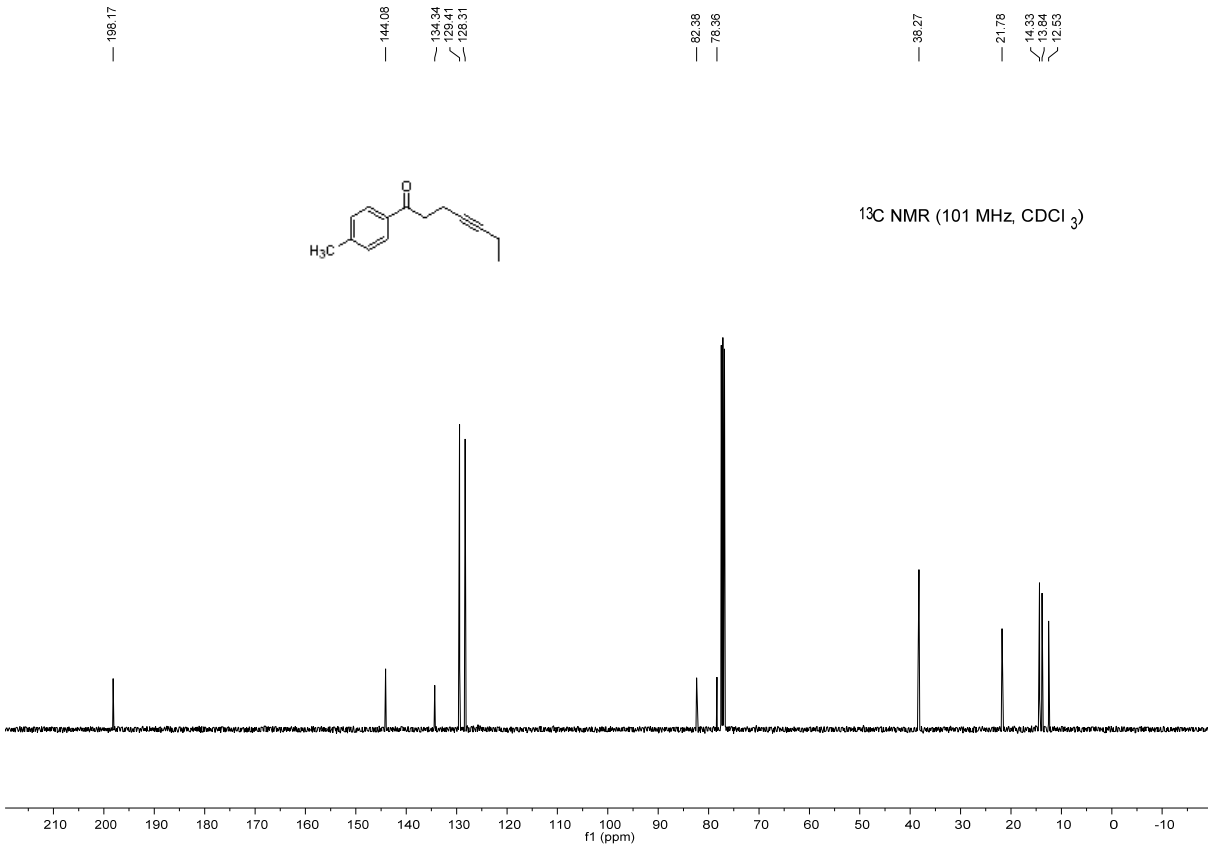
(18) 4,8-dimethyl-1-(*p*-tolyl)non-7-en-1-one (**3bg**)



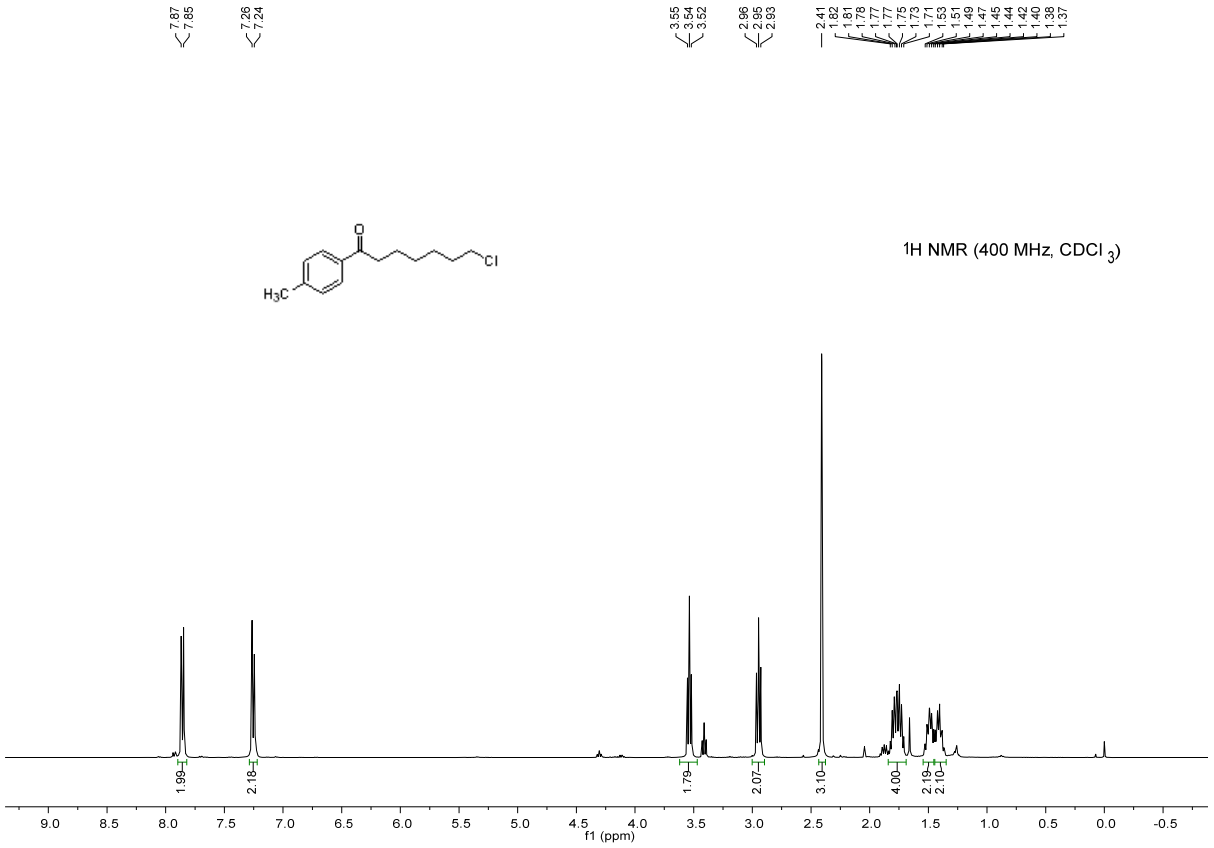


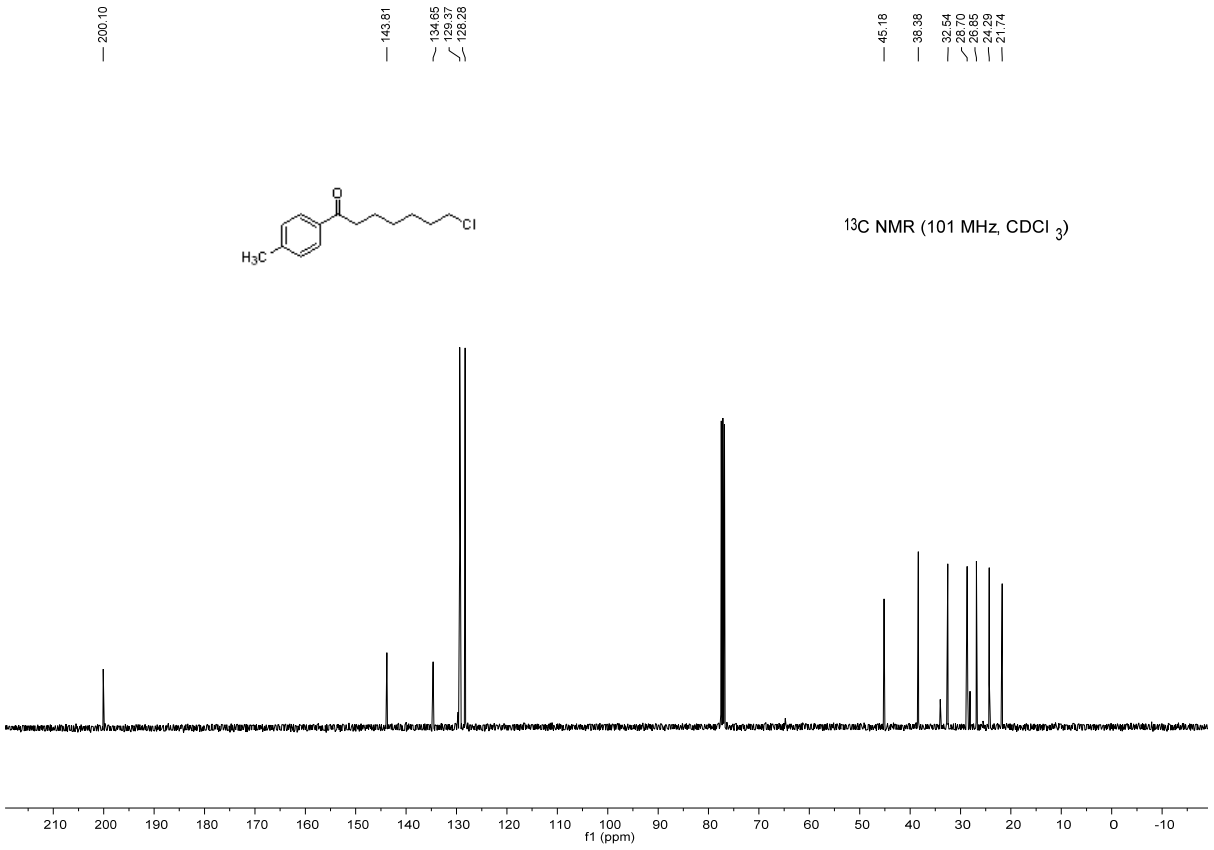
(19) 1-(*p*-tolyl)hept-4-yn-1-one (**3bh**)



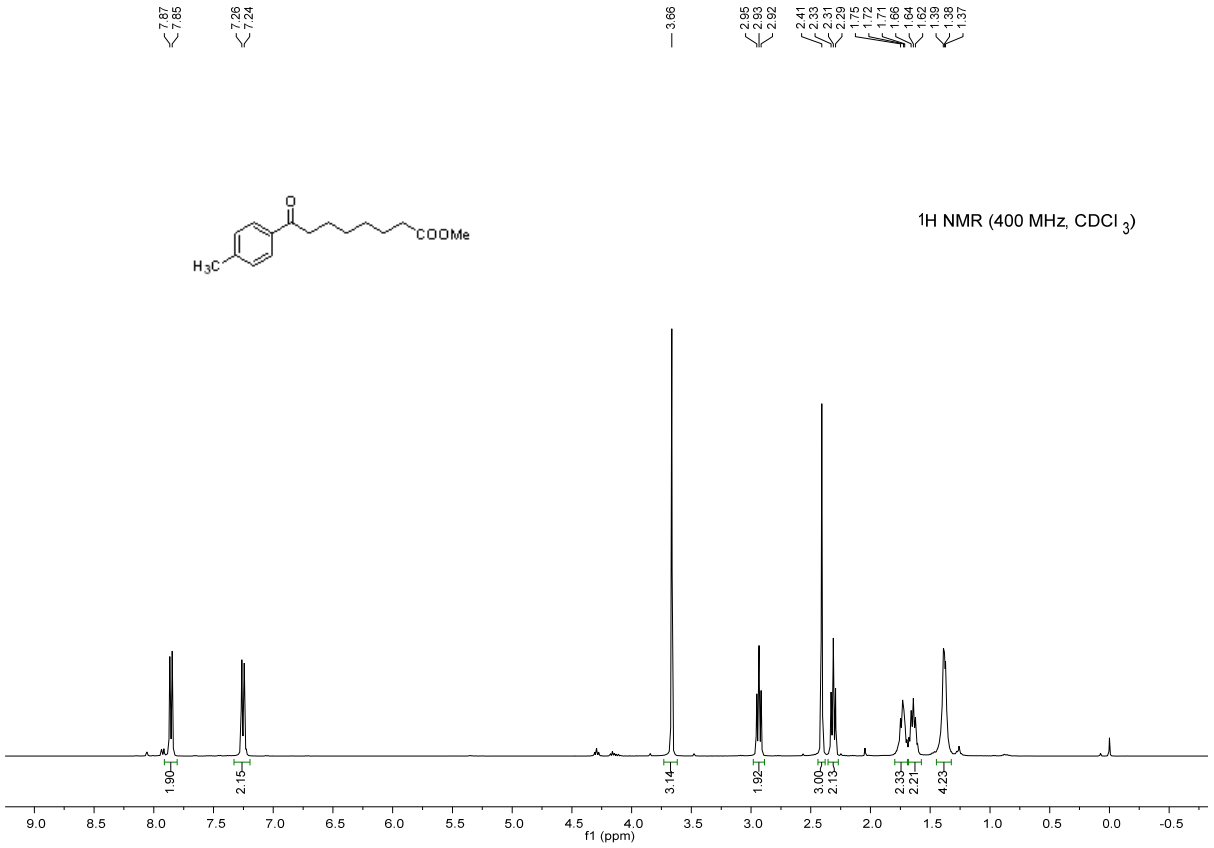


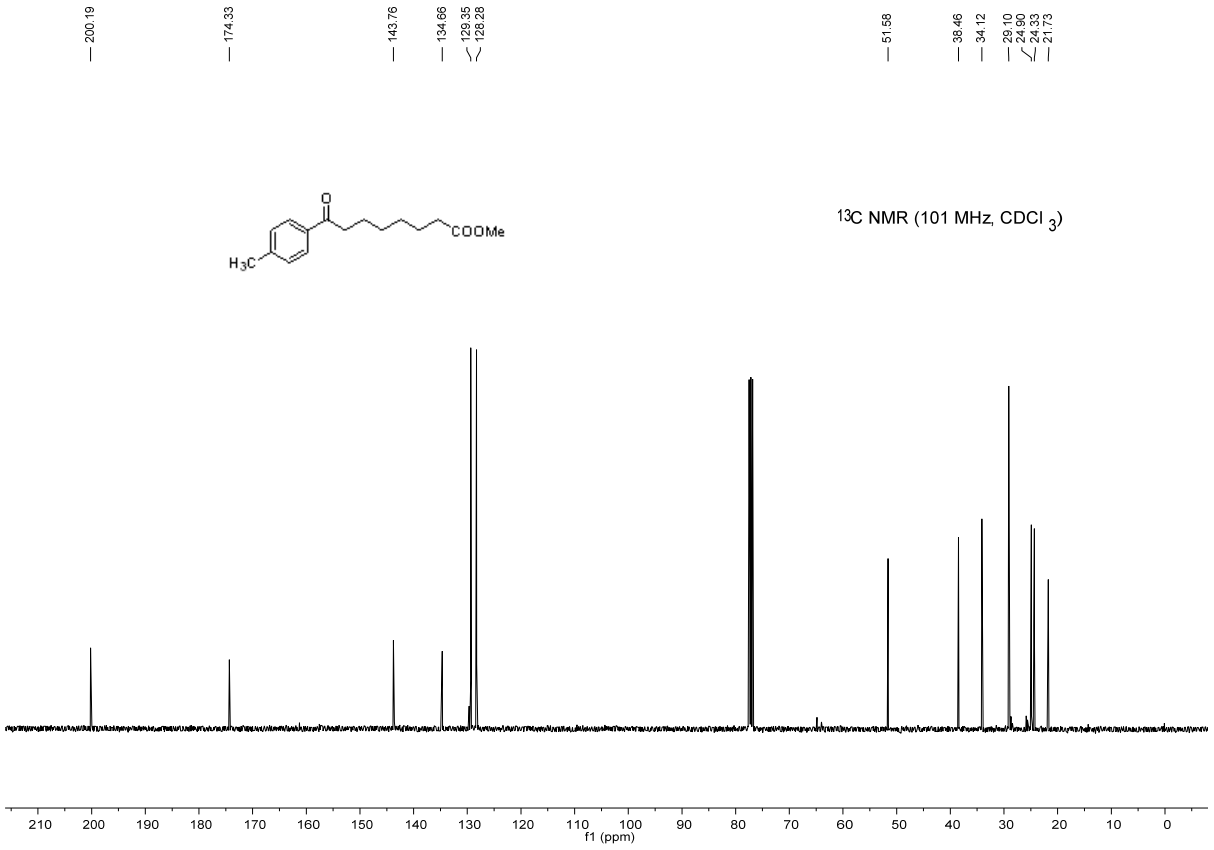
(20) 7-chloro-1-(*p*-tolyl)heptan-1-one (**3bi**)



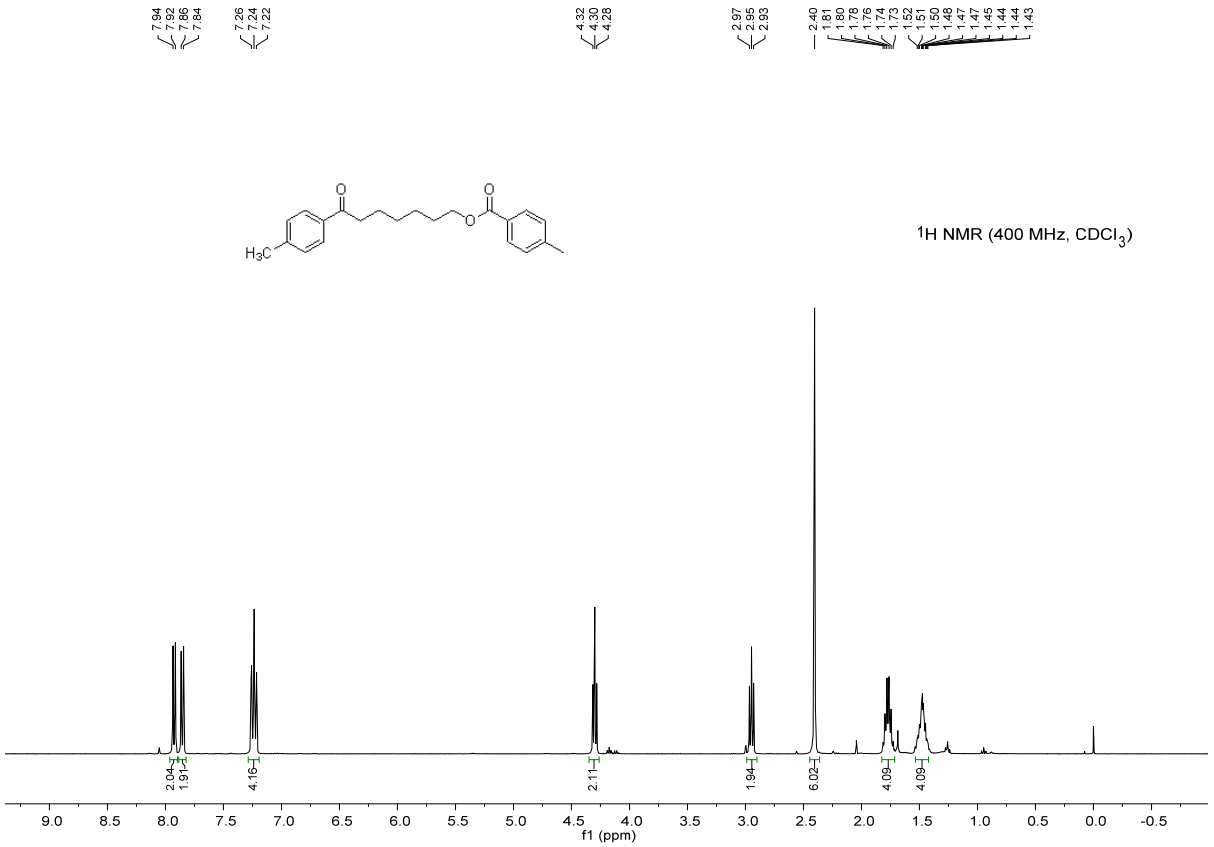


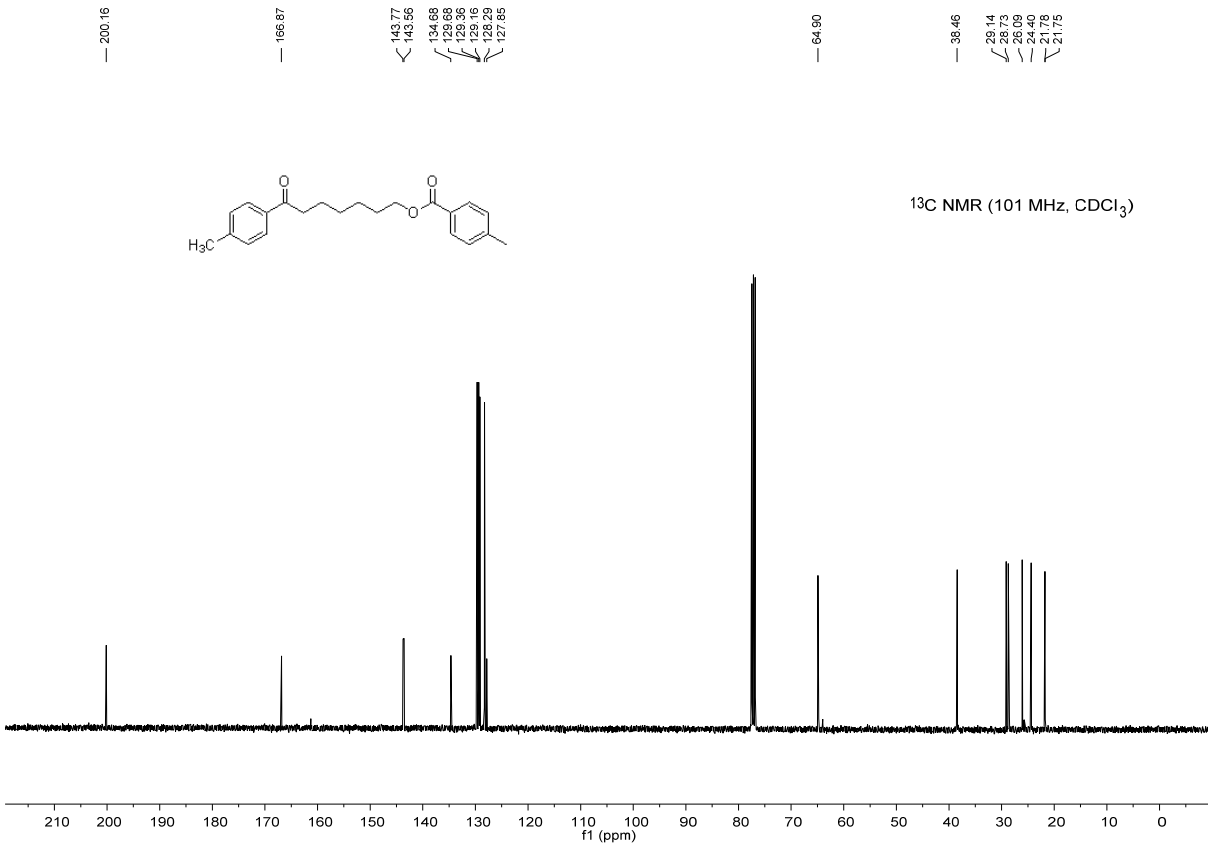
(21) methyl 8-oxo-8-(*p*-tolyl)octanoate (**3bj**)



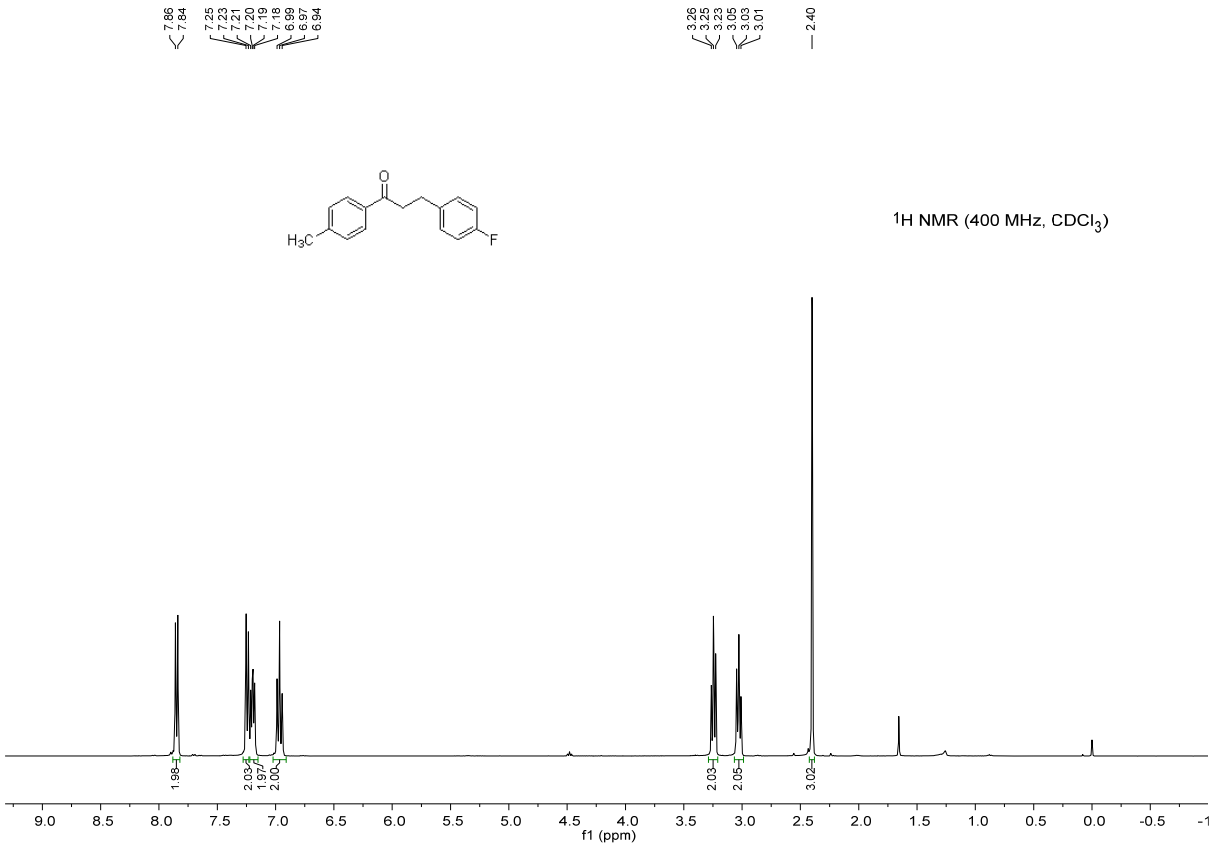


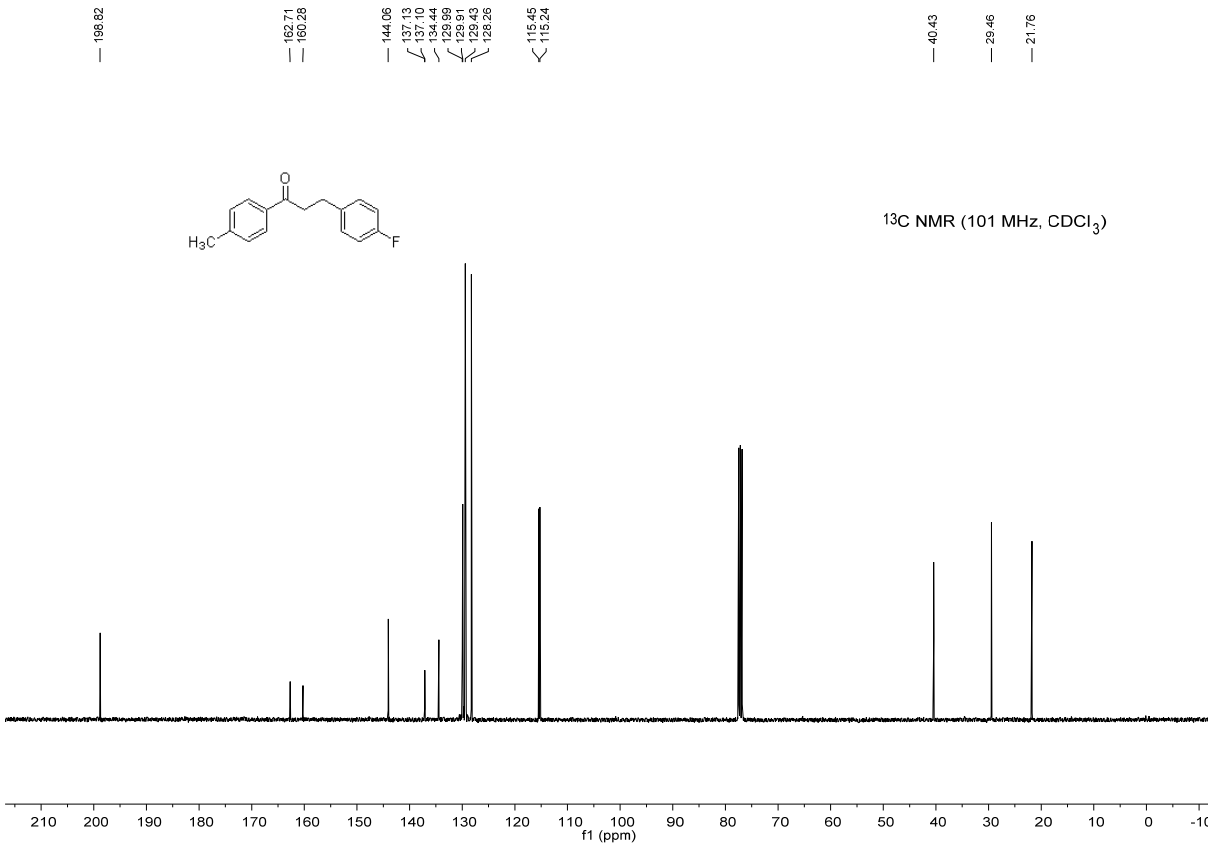
(22) 7-oxo-7-(*p*-tolyl)heptyl 4-methylbenzoate (**3bk**)

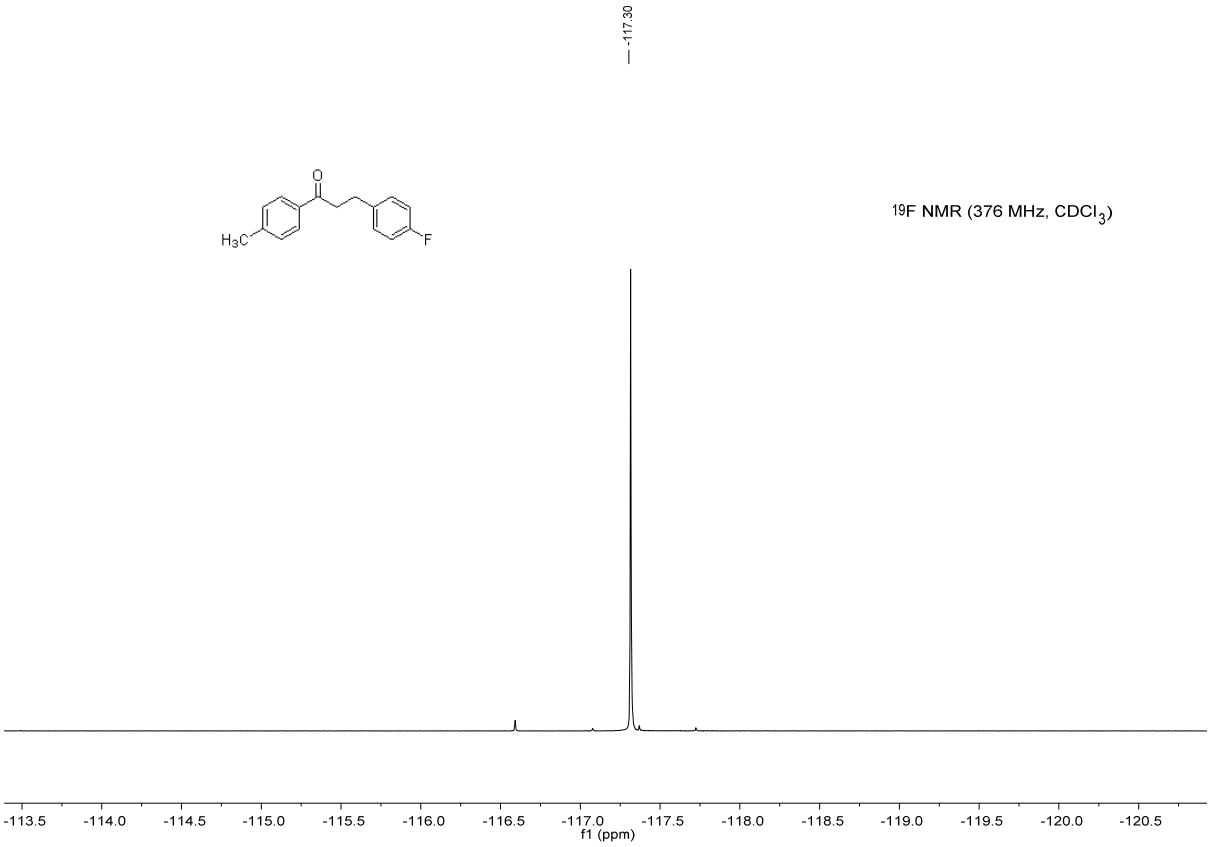




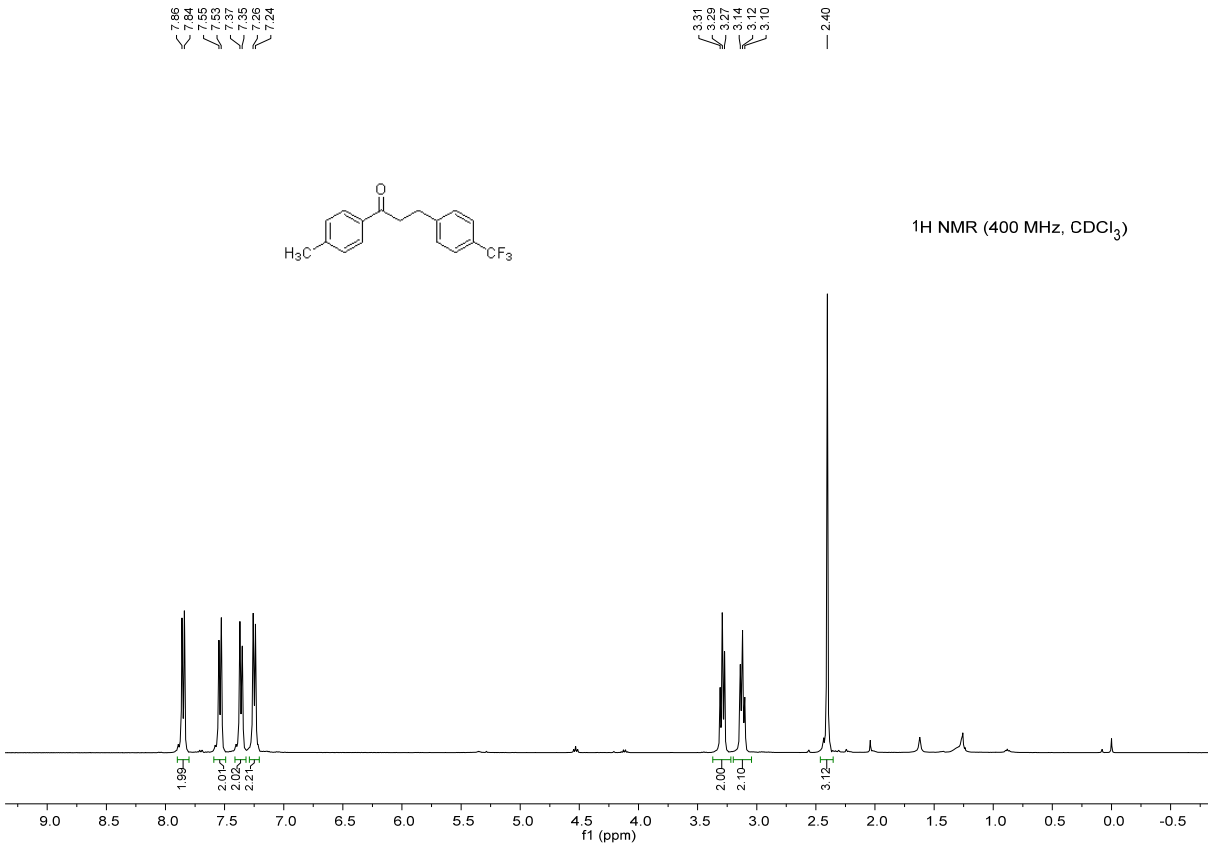
(23) 3-(4-fluorophenyl)-1-(*p*-tolyl)propan-1-one (**3bl**)

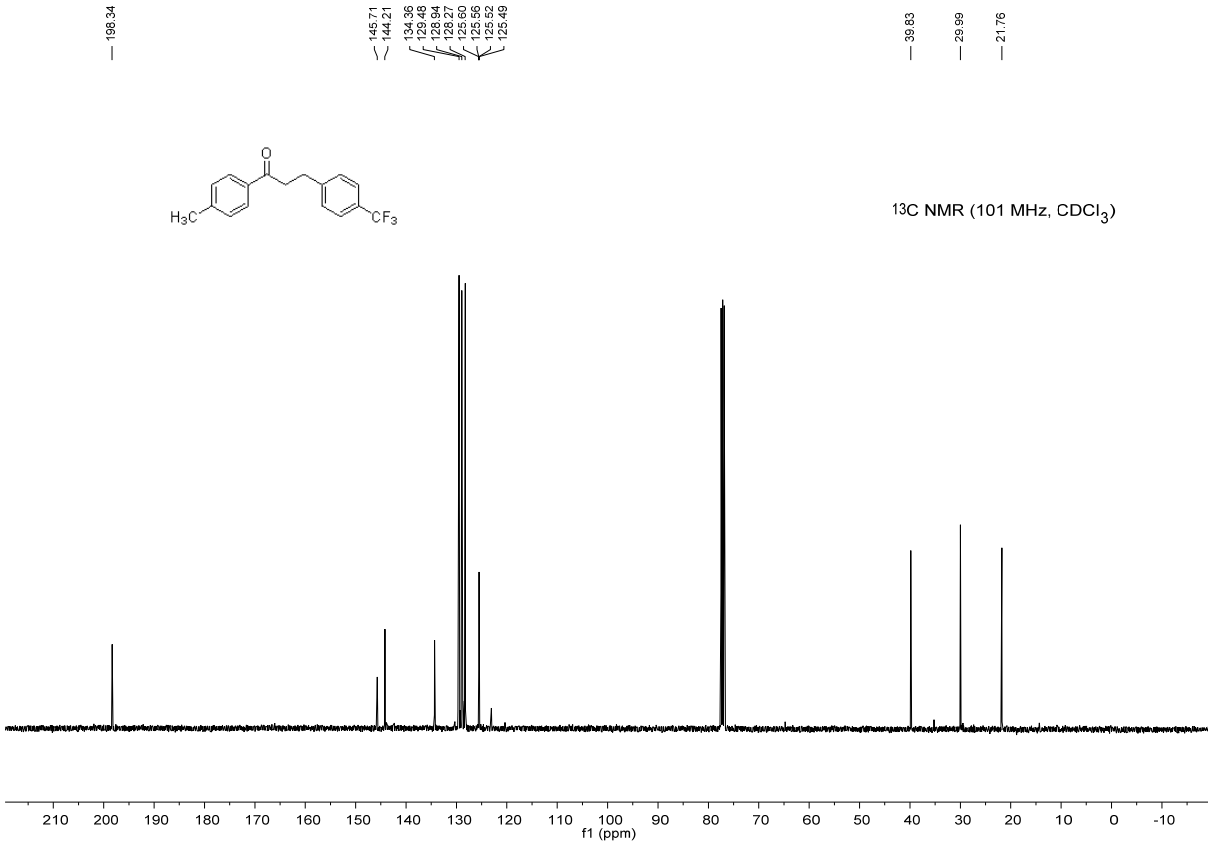


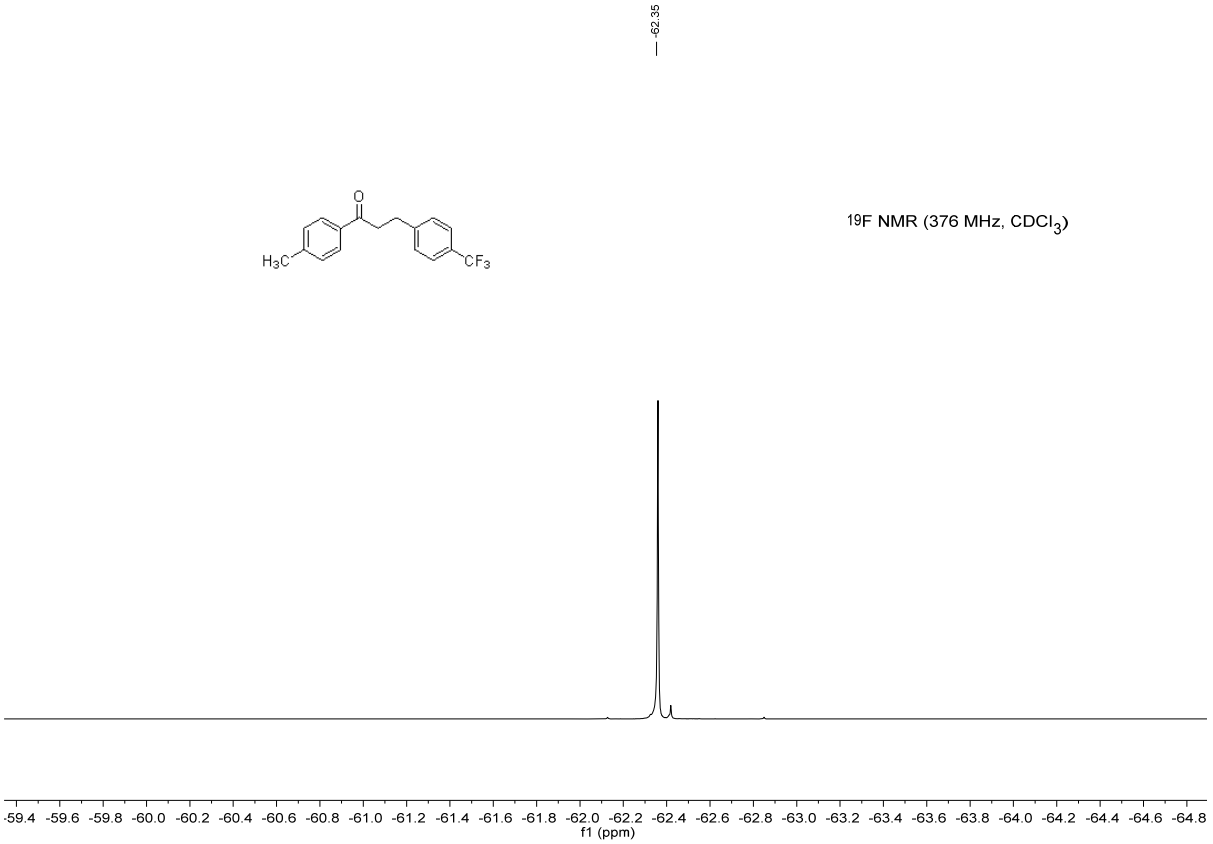



-117.30
O
H3C
F
19F NMR (376 MHz, CDCl3)
-113.5
-114.0
-114.5
-115.0
-115.5
-116.0
-116.5
-117.0
-117.5
-118.0
-118.5
-119.0
-119.5
-120.0
-120.5
f1 (ppm)

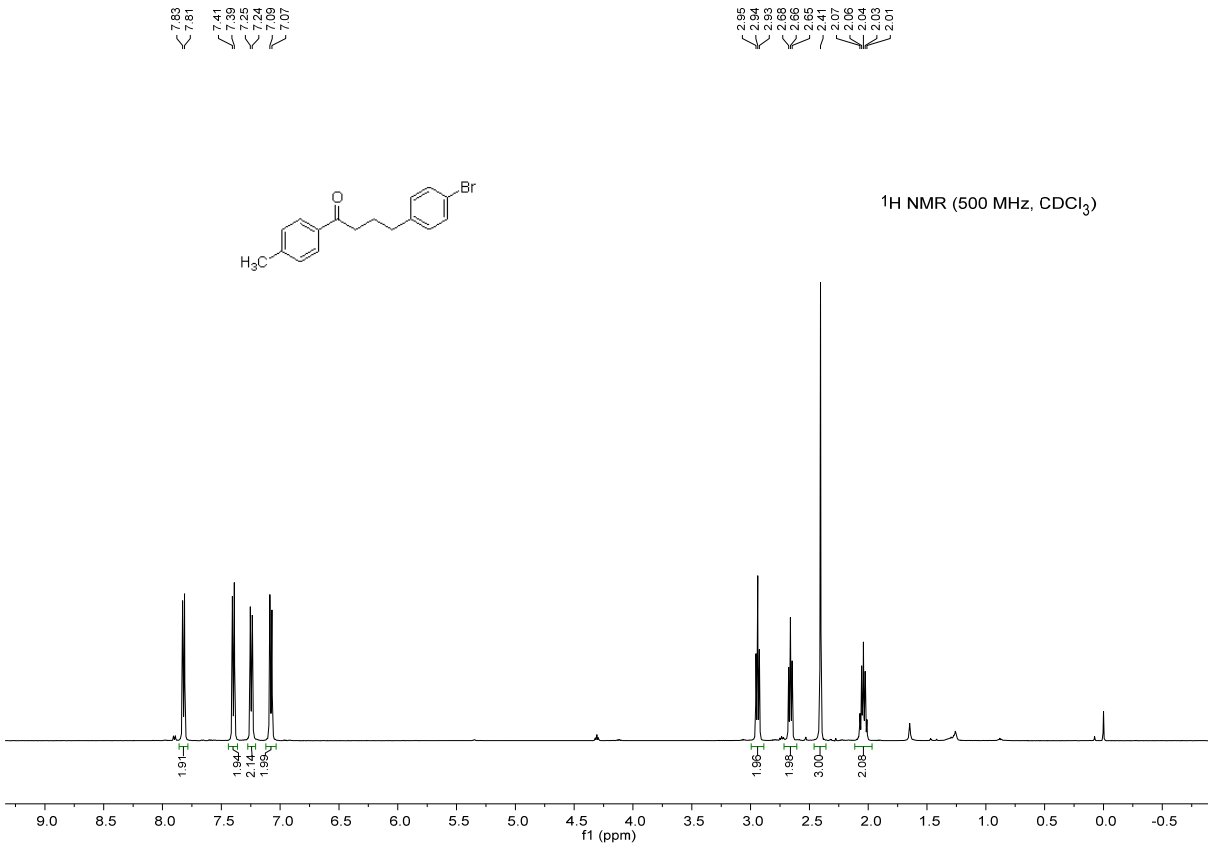
(24) 1-(*p*-tolyl)-3-(4-(trifluoromethyl)phenyl)propan-1-one (**3bm**)

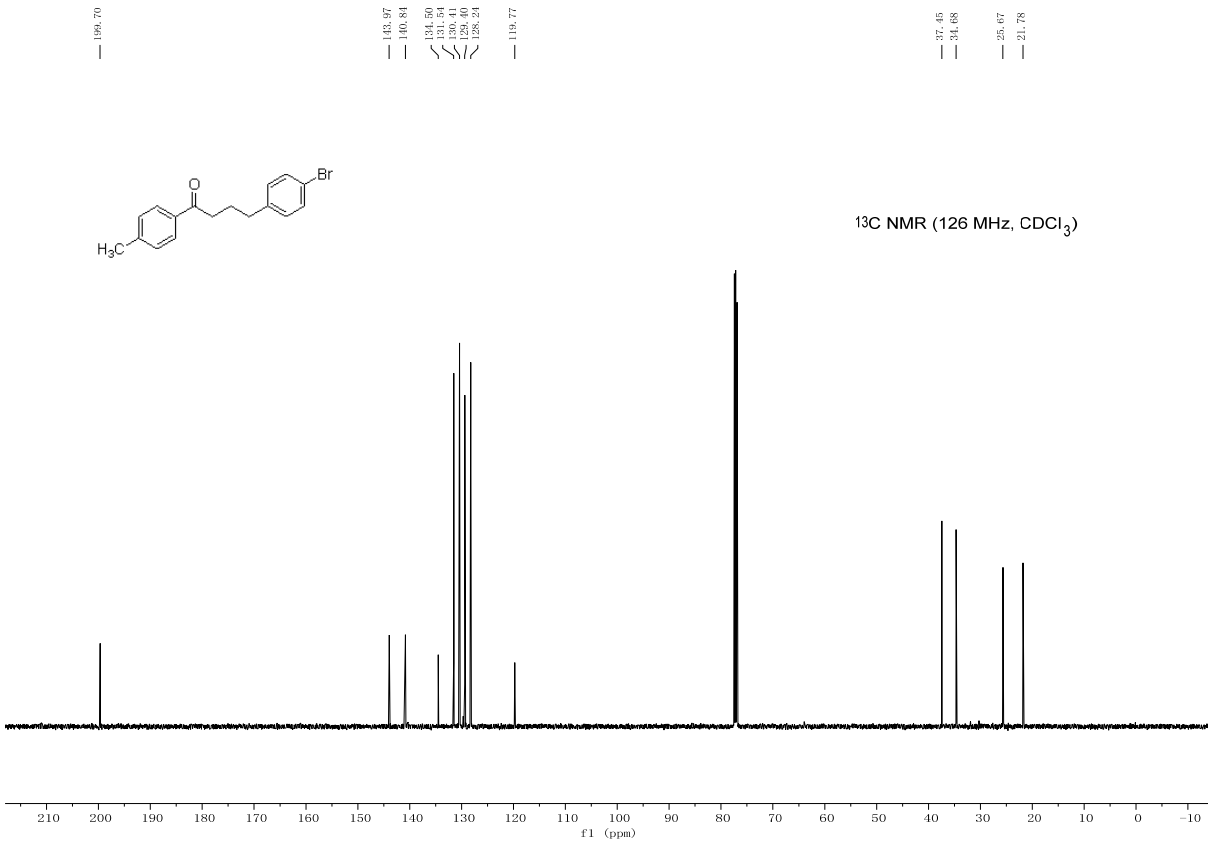




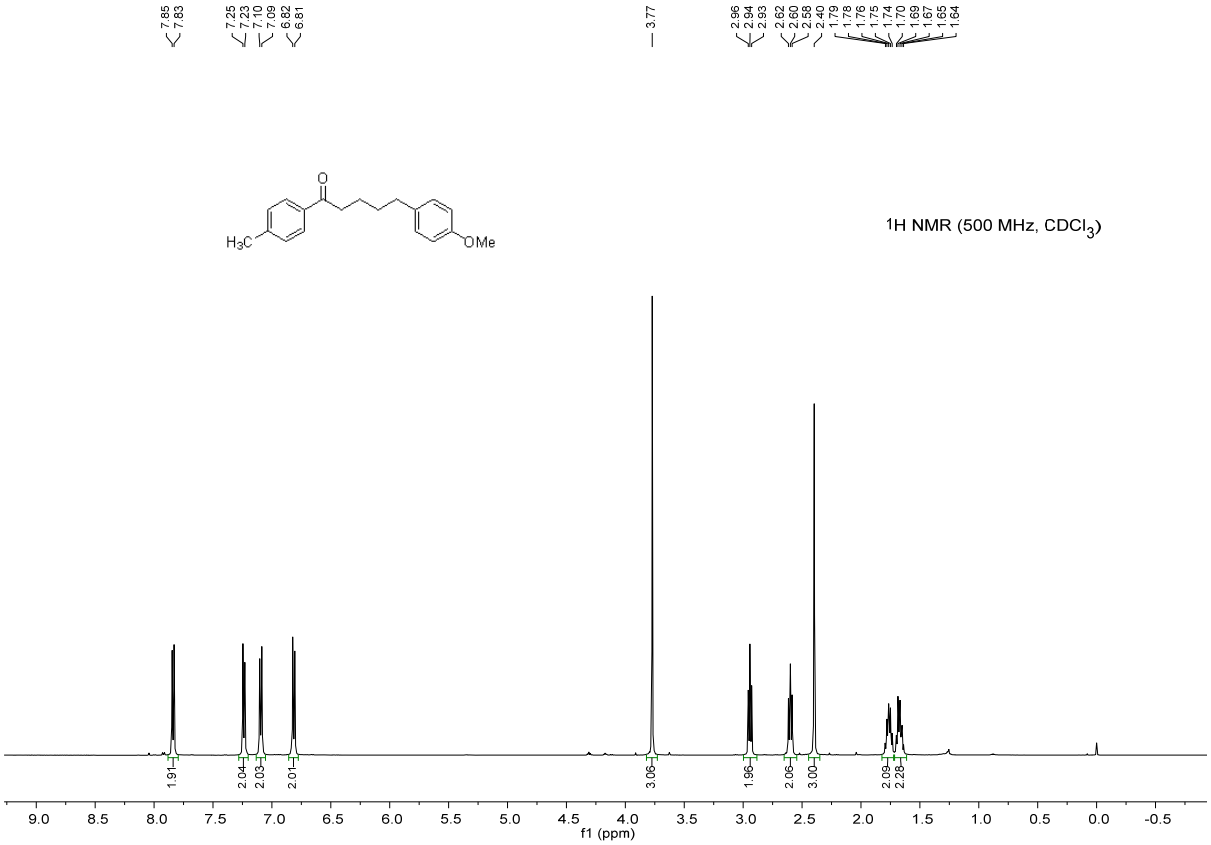

-62.35
O
H3C
CF3
19F NMR (376 MHz, CDCl3)
-59.4 -59.6 -59.8 -60.0 -60.2 -60.4 -60.6 -60.8 -61.0 -61.2 -61.4 -61.6 -61.8 -62.0 -62.2 -62.4 -62.6 -62.8 -63.0 -63.2 -63.4 -63.6 -63.8 -64.0 -64.2 -64.4 -64.6 -64.8
f1 (ppm)

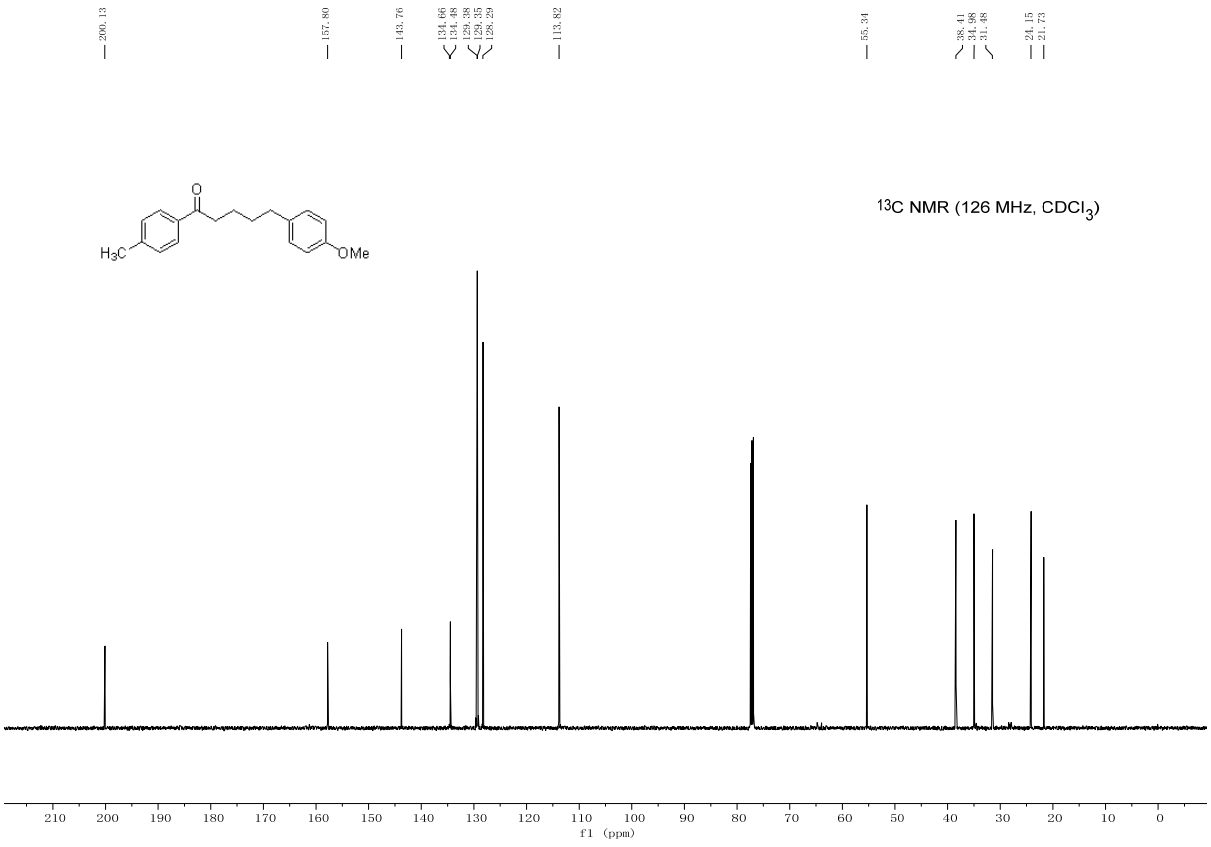
(25) 4-(4-bromophenyl)-1-(*p*-tolyl)butan-1-one (**3bn**)



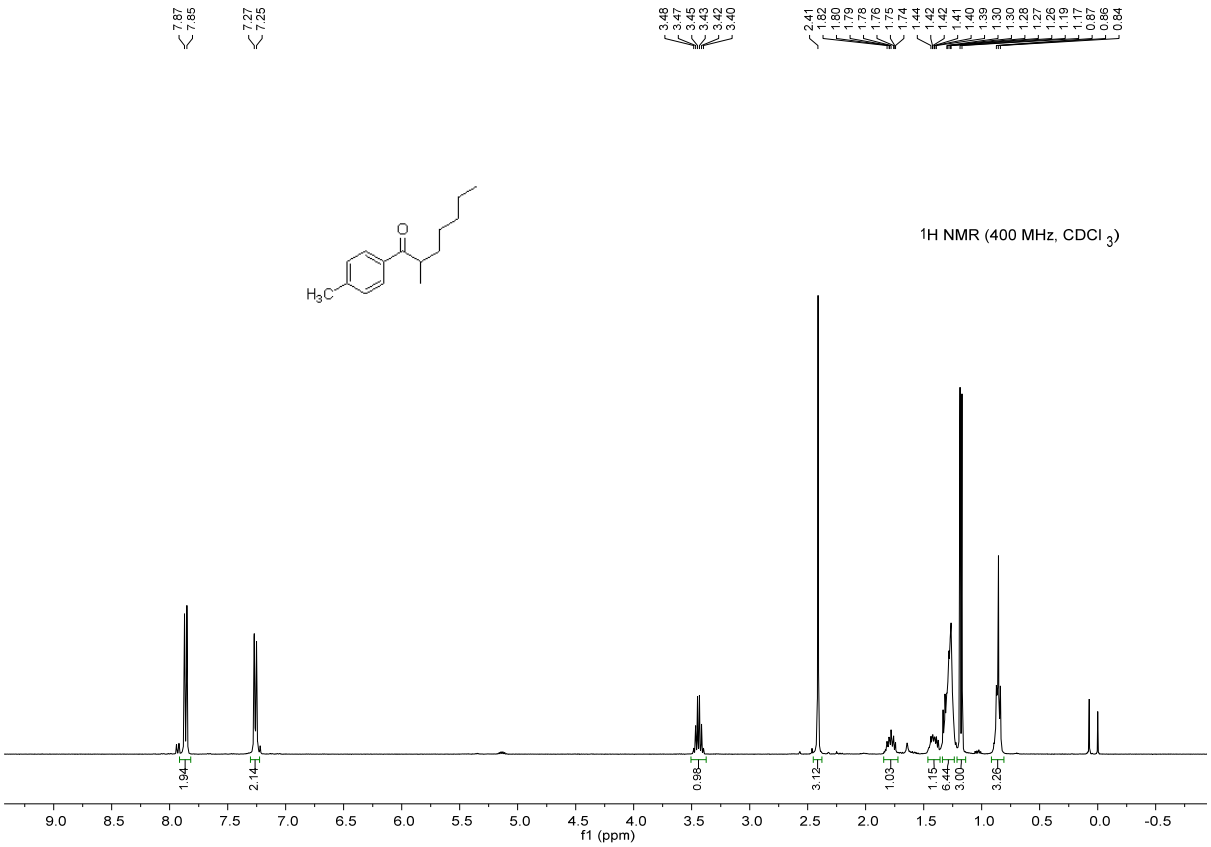


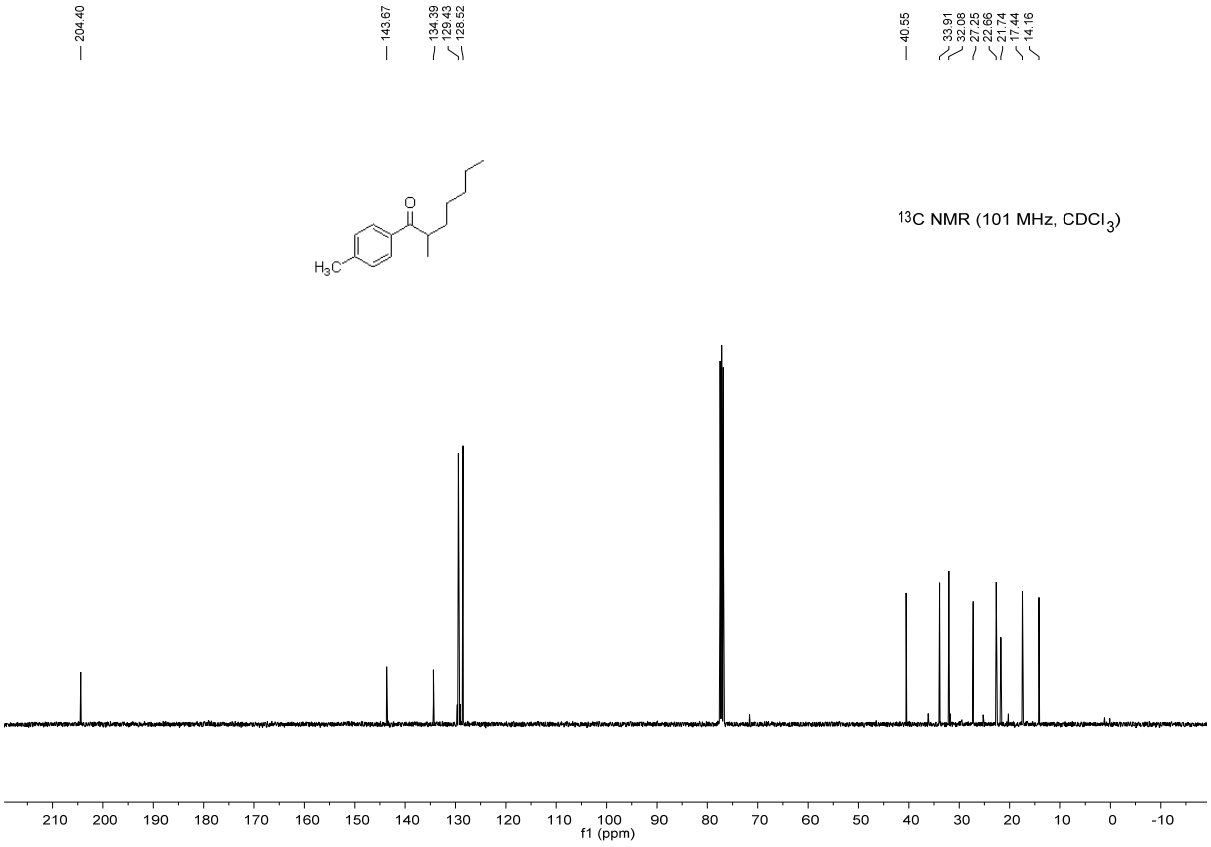
(26) 5-(4-methoxyphenyl)-1-(*p*-tolyl)pentan-1-one (**3bo**)



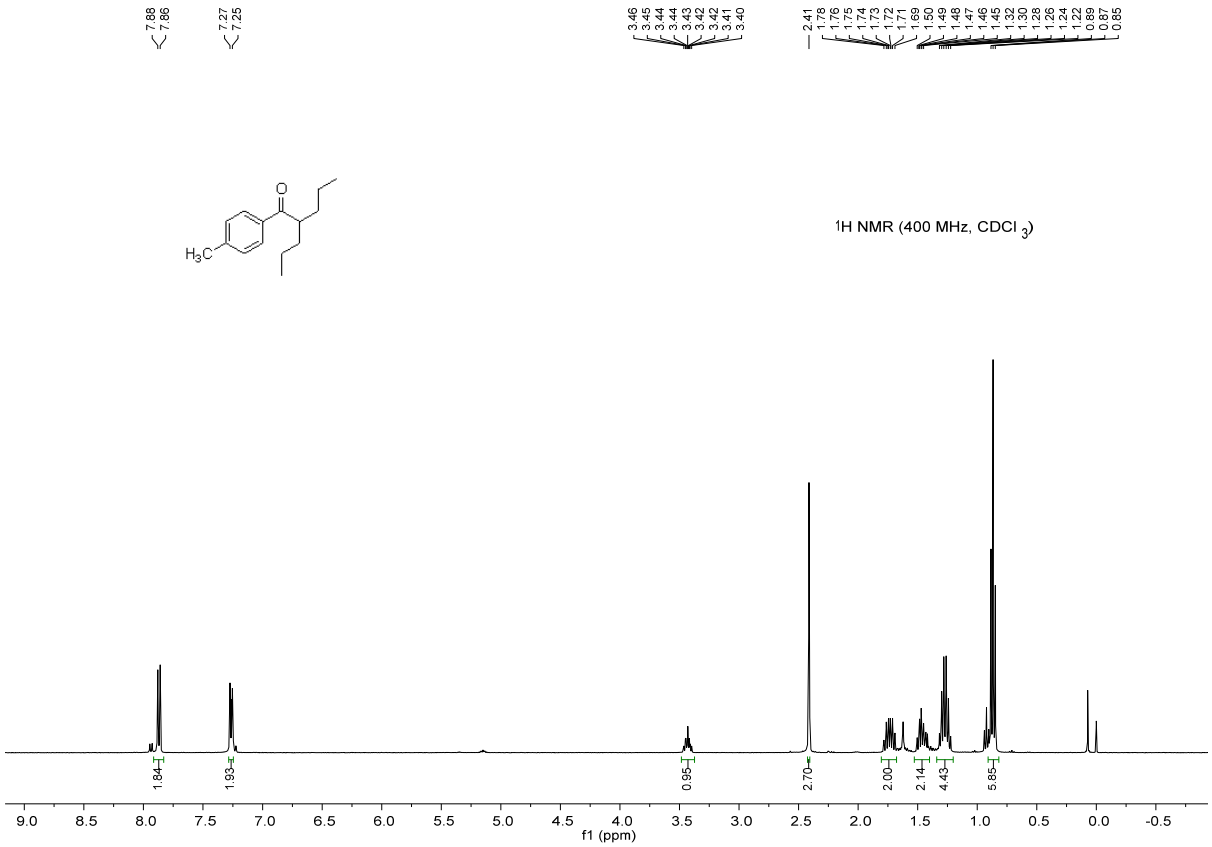


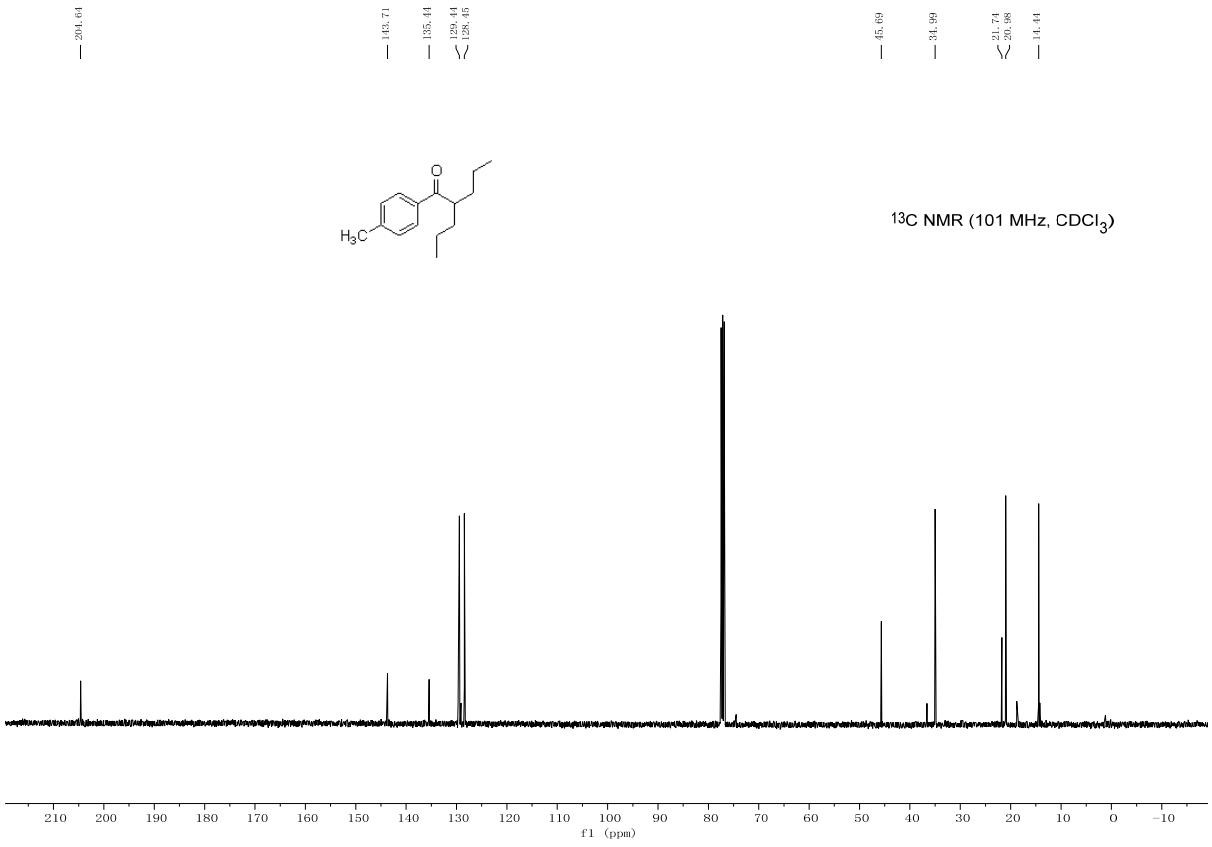
(27) 2-methyl-1-(*p*-tolyl)heptan-1-one (**3bp**)



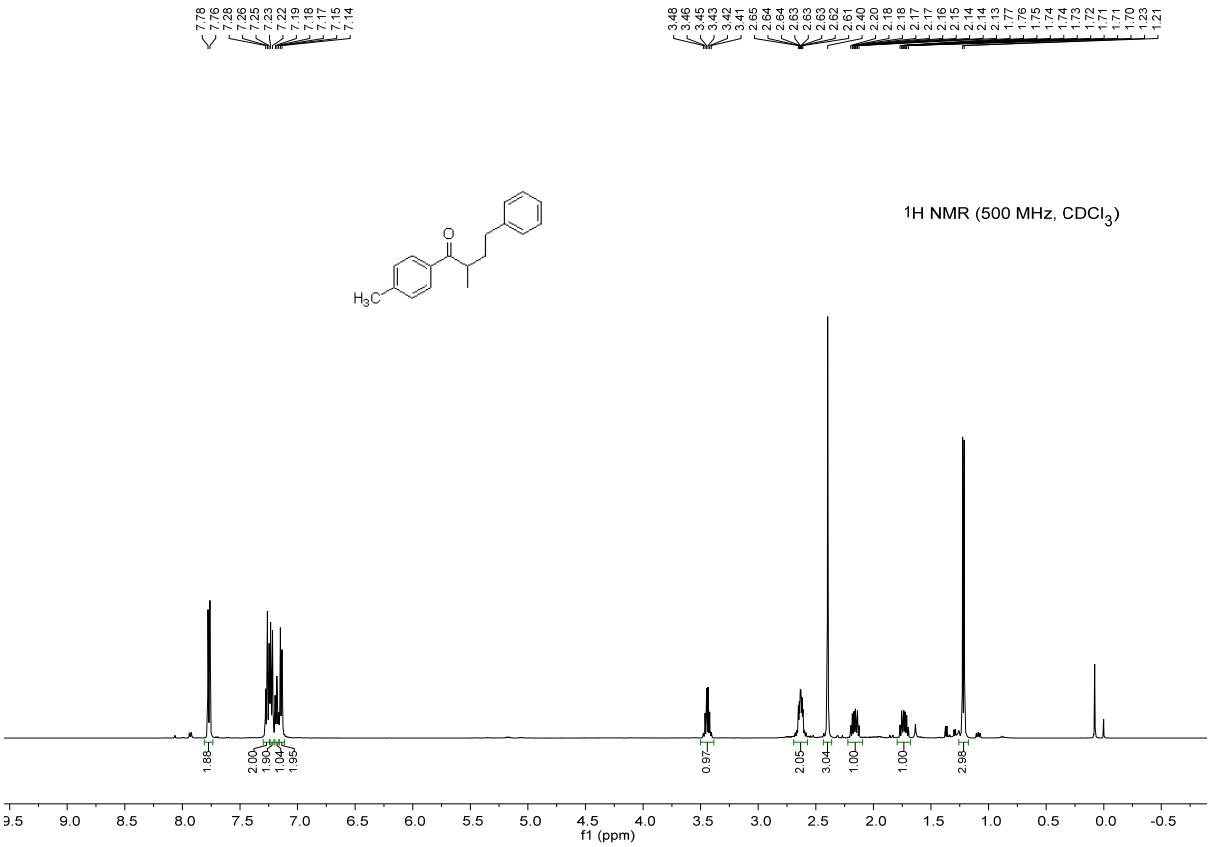


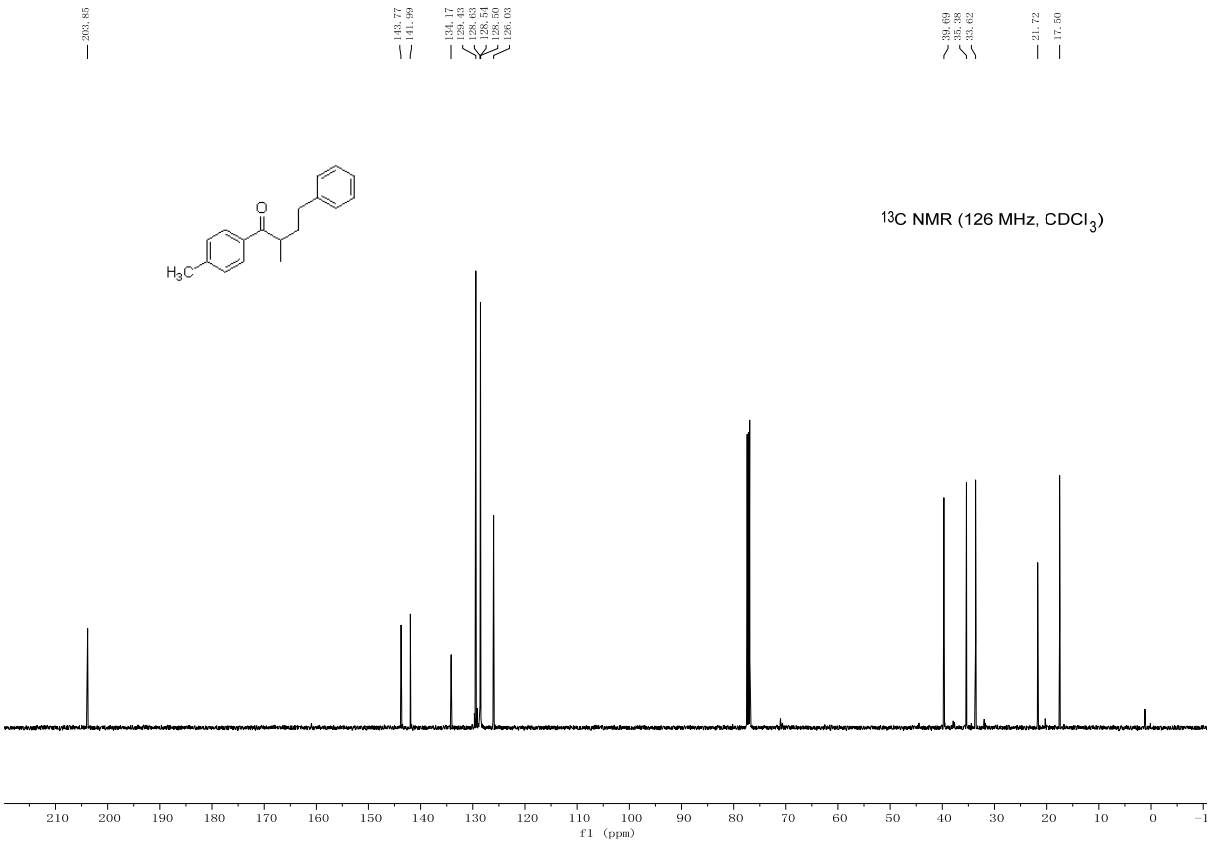
(28) 2-propyl-1-(*p*-tolyl)pentan-1-one (**3bq**)



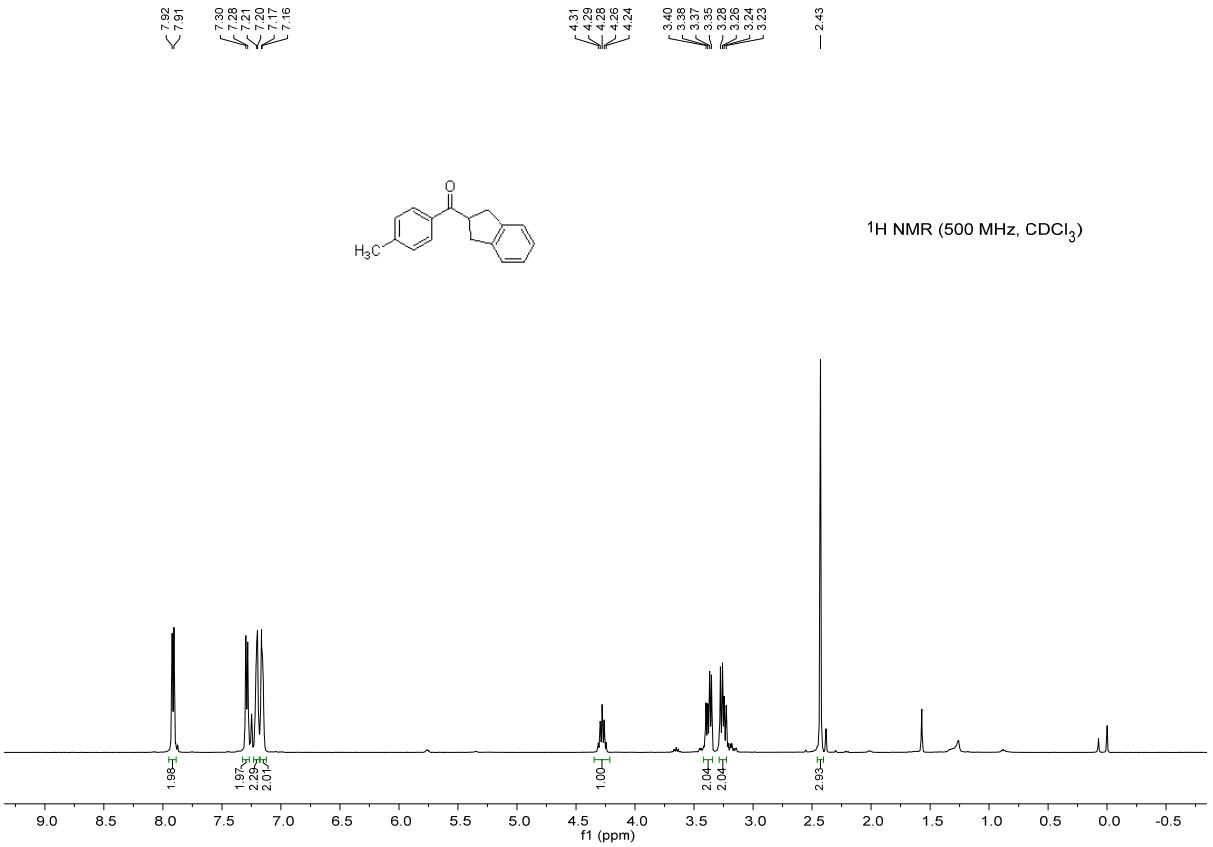


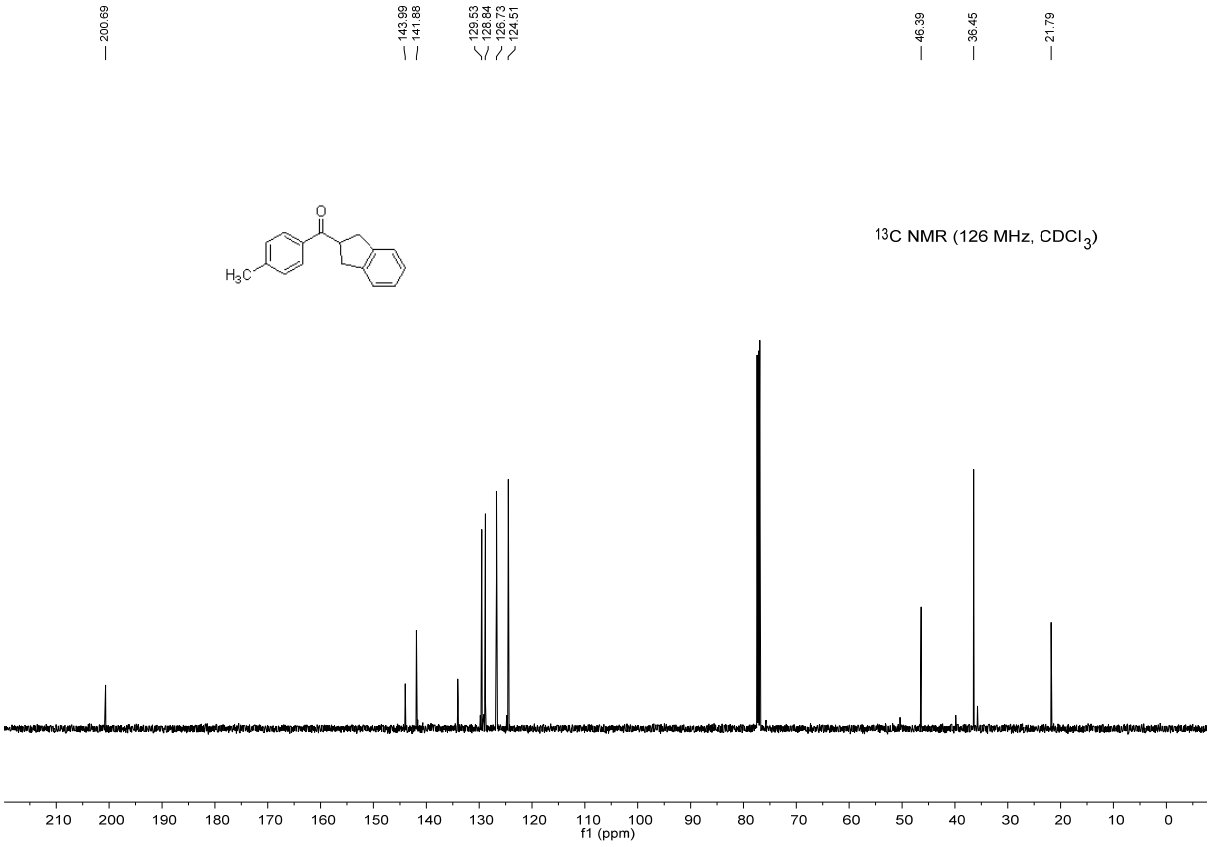
(29) 2-methyl-4-phenyl-1-(*p*-tolyl)butan-1-one (**3br**)



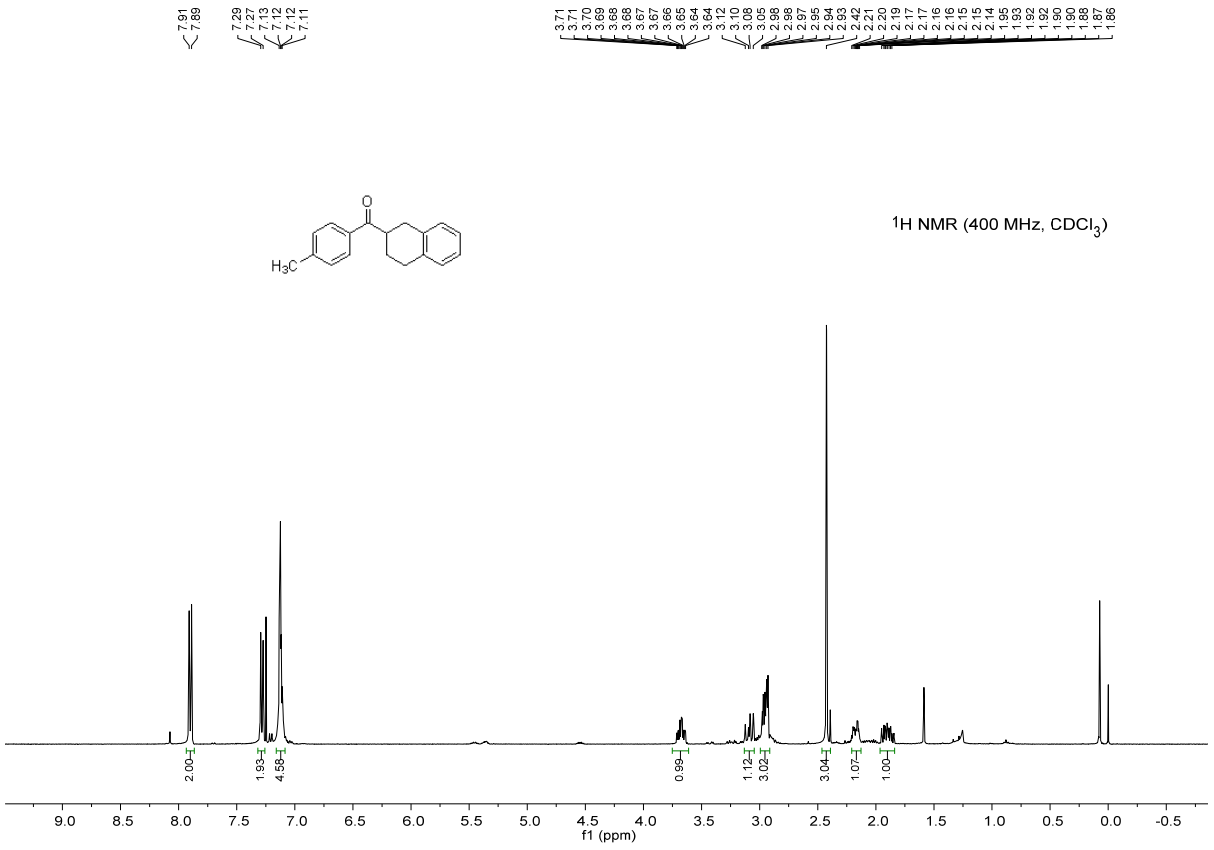


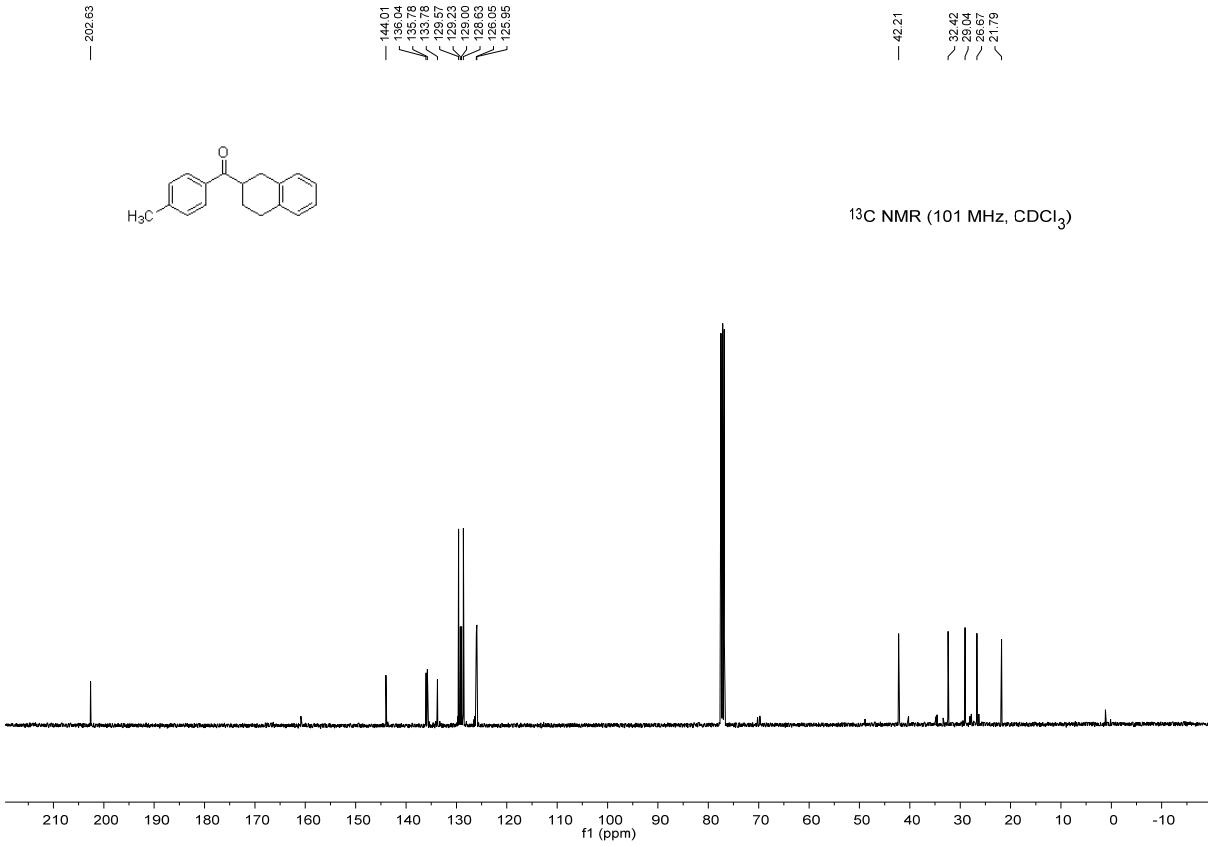
(30) (2,3-dihydro-1H-inden-2-yl)(*p*-tolyl)methanone (**3bs**)





(31) (1,2,3,4-tetrahydronaphthalen-2-yl)(*p*-tolyl)methanone (**3bt**)





^{1}H NMR spectrum of 1-(*p*-tolyl)pent-4-en-1-one (**3az**)