## 3-Chloro-1-lithiopropene - a Functional Organolithium Reagent - and its

# Reactions with Alkylboronates to Give 3-Alkylprop-1-en-3-ols

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# **Supporting Information**

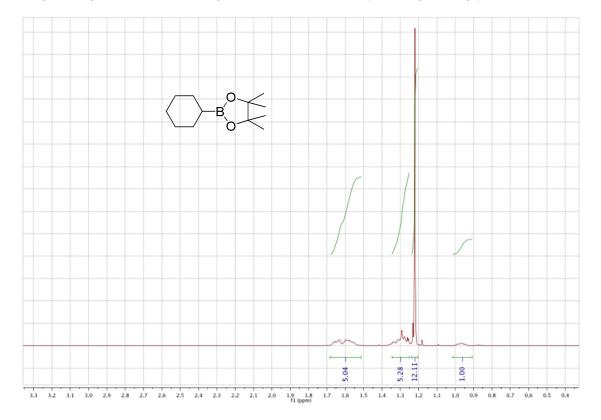
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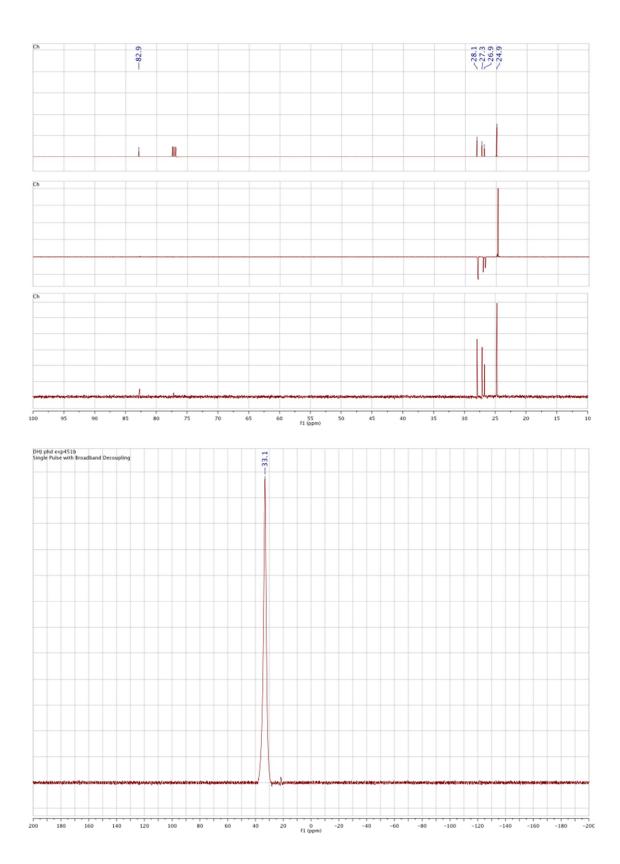
# Copies of <sup>1</sup>H, <sup>13</sup>C and <sup>11</sup>B NMR Spectra

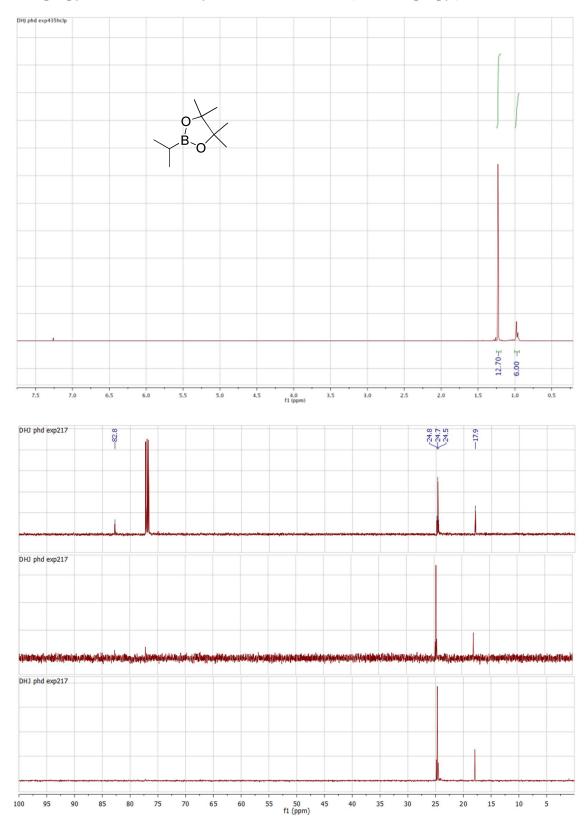
## Comment regarding <sup>11</sup>B NMR spectra of new compounds

Because of the system for measuring NMR spectra, samples were initially submitted for <sup>1</sup>H and <sup>13</sup>C spectra and subsequently submitted for <sup>11</sup>B spectra. Sometimes there was a significant time delay before the boron spectrum was run and this resulted in an additional peak in the spectrum due to oxidized product.

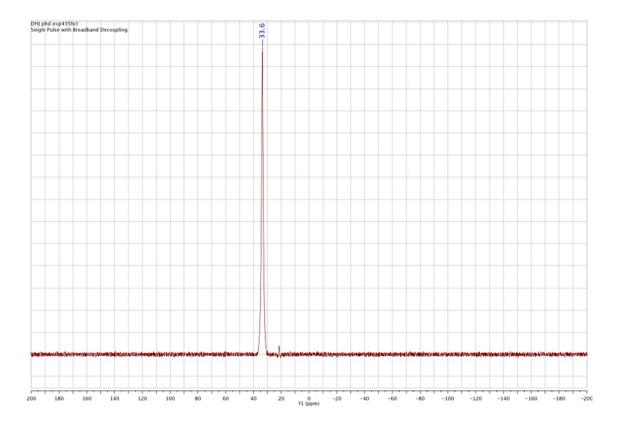


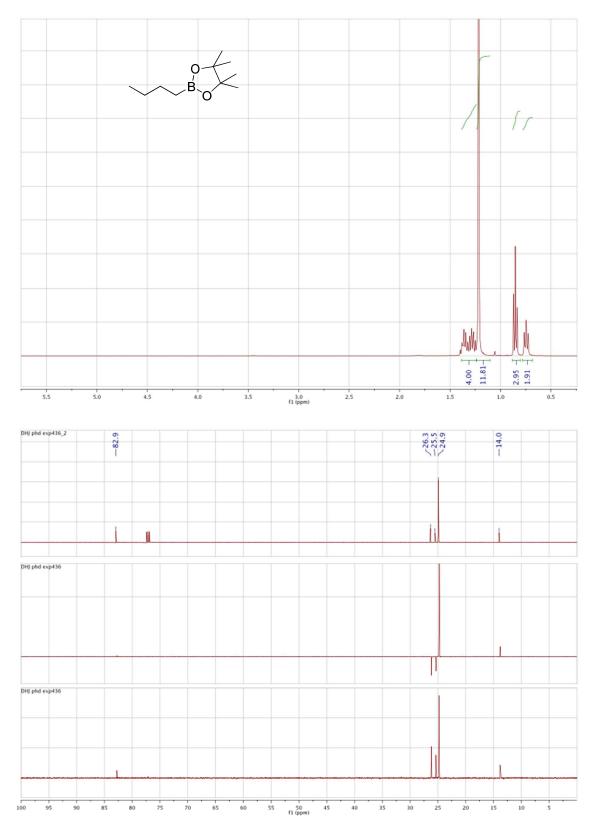
2-Cyclohexyl-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (3, R = cyclohexyl)



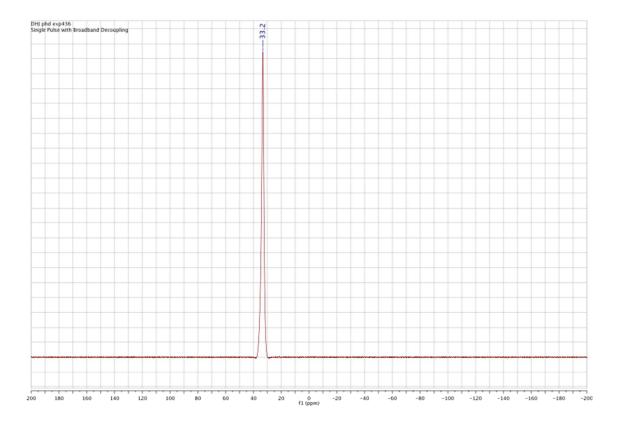


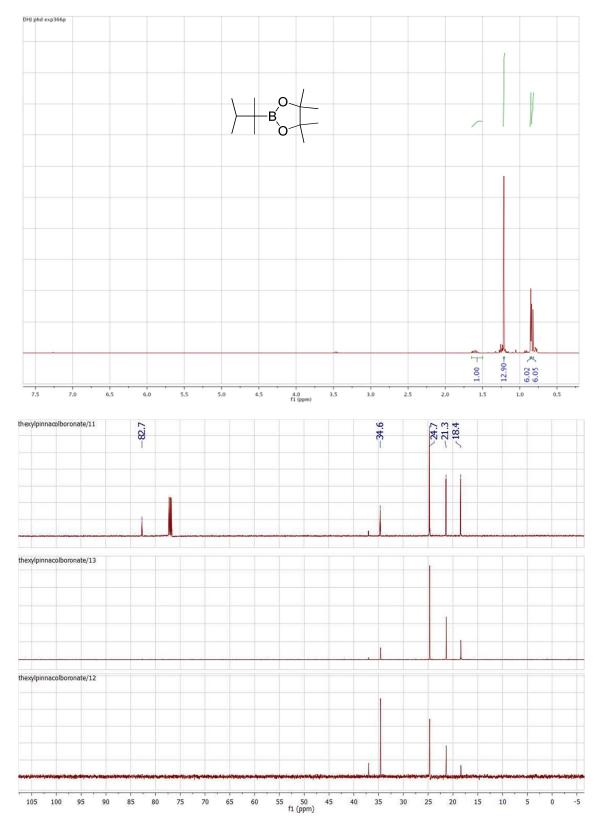
### 2-Isopropyl-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (3, R = isopropyl)



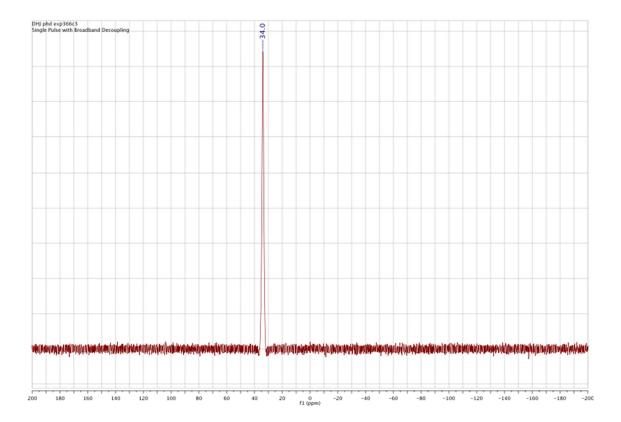


2-Butyl-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (3, R = *n*-butyl)

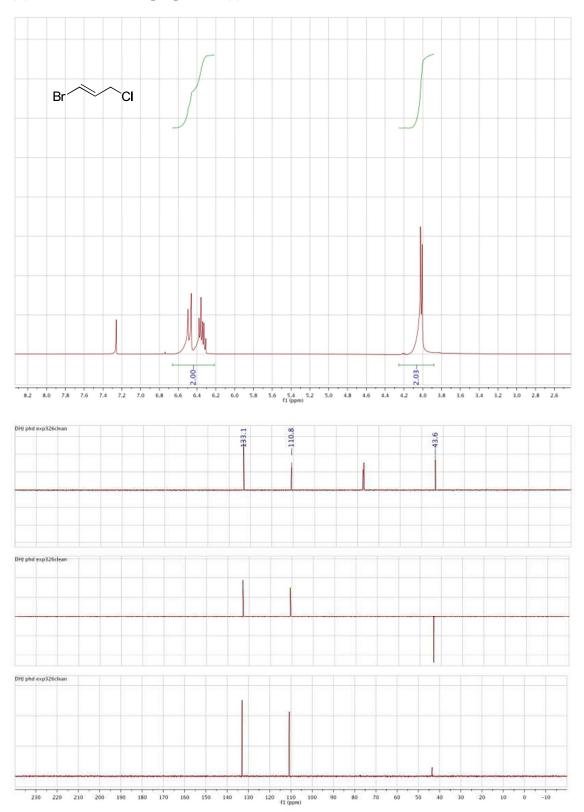




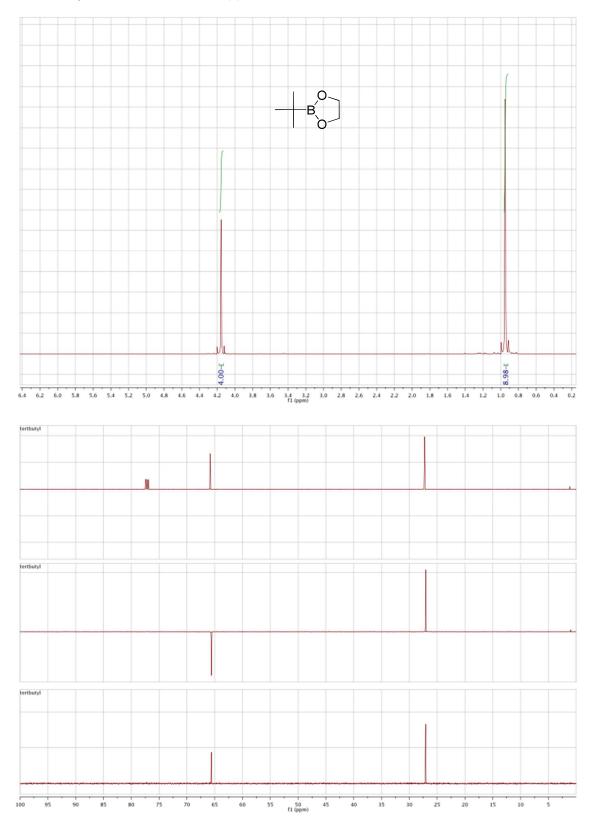
2-(2,3-Dimethylbutan-2-yl)-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (3, R = thexyl)

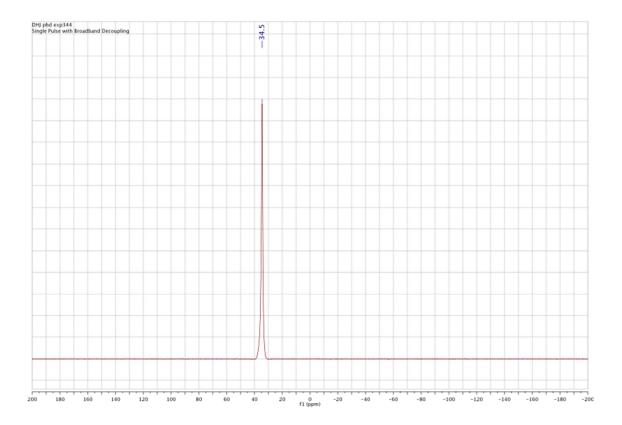


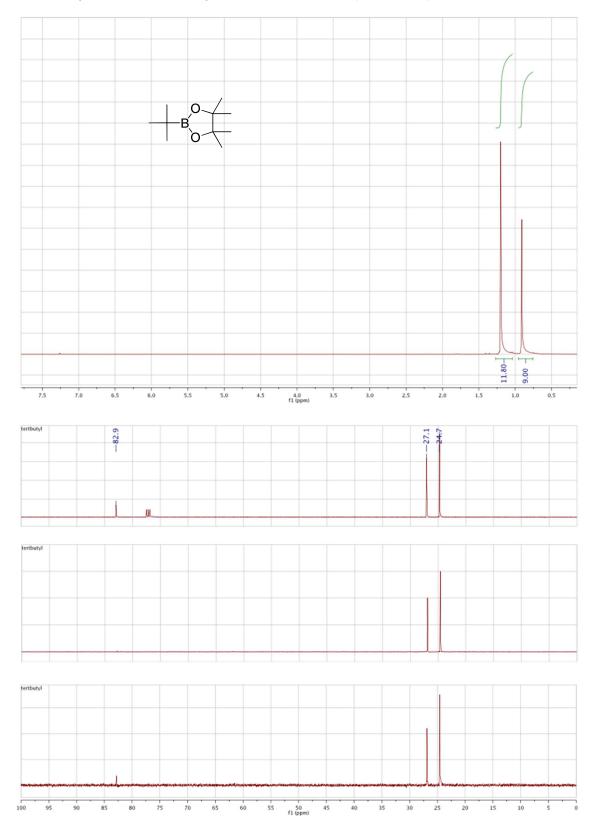
#### (E)-1-Bromo-3-chloroprop-1-ene (5)



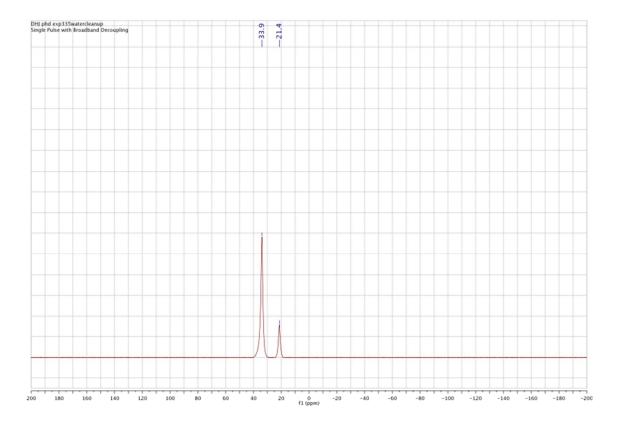
## 2-tert-Butyl-1,3,2-dioxaborolane (6)

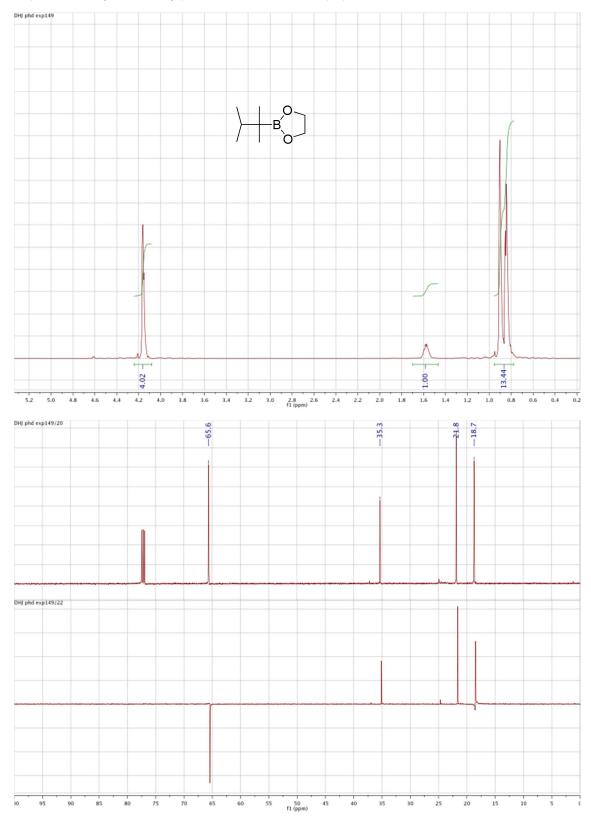






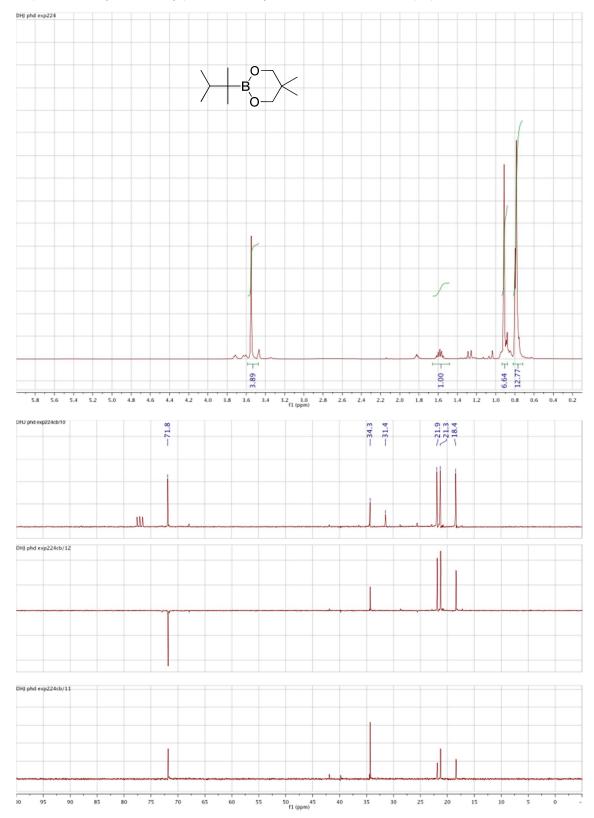
## 2-*tert*-Butyl-4,4,5,5-tetramethyl-1,3,2-dioxaborolane (7, R = *t*-Bu)



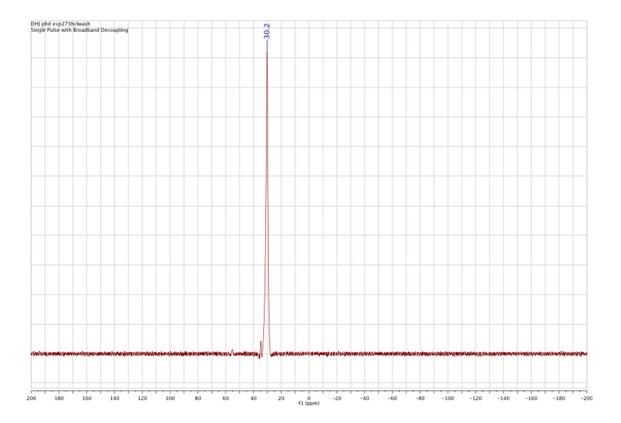


## 2-(2,3-Dimethylbutan-2-yl)-1,3,2-dioxaborolane (11)

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# 2-(2,3-Dimethylbutan-2-yl)-5,5-dimethyl-1,3,2-dioxaborinane (12)



`в-О. О́ []r ,, 1 M.W M 0.99 1 3.97 H 1+1+1 20.67-5.96 1.97 2.25 1.01 1.5 1.0 8.5 4.0 3.0 2.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 f1 (ppm) 3.5 2.0 0.5 ∠129.0 ∠128.4 ⊤126.2 -71.9 -41.1 31.4 730.5 727.7 -27.4 -27.4 -27.3 DHJ phd exp415v8cr 1 Πľ DHJ phd exp415v8cr

# (*E*)-2-(1,1-Dicyclohexyl-3-phenylallyl)-5,5-dimethyl-1,3,2-dioxaborinane (13, $R^{C}$ = cyclohexyl, $R^{D}$ = PhCH=CH)

65

60

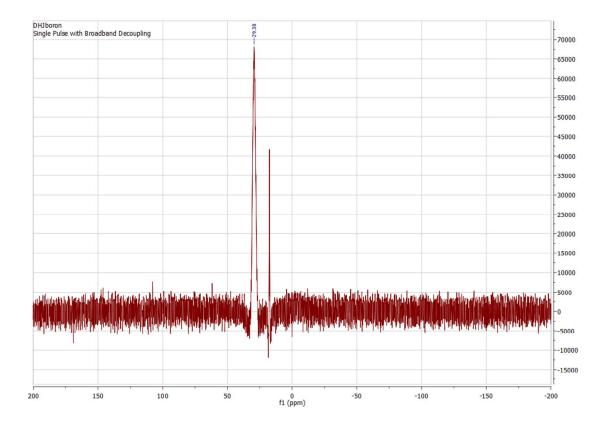
55 50 45 40 35 30 25 20 15 10 5

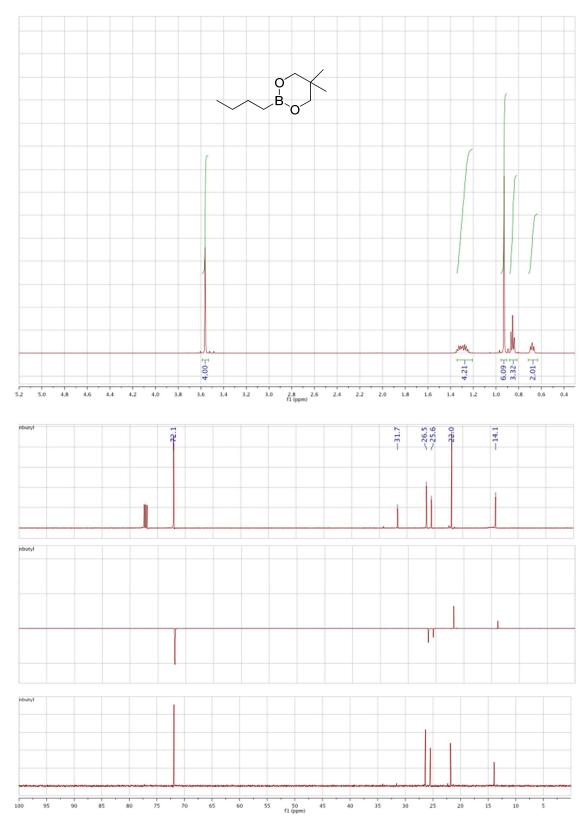
80 75 70 f1 (ppm)

150 145 140 135 130 125 120 115 110 105 100 95 90 85

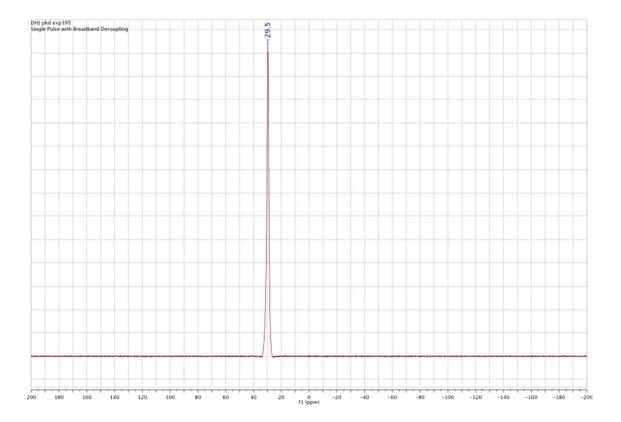
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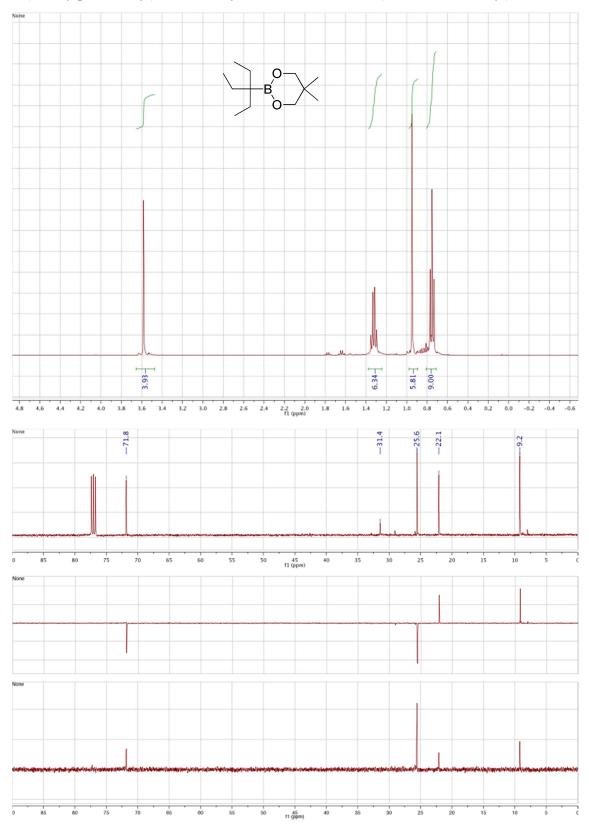
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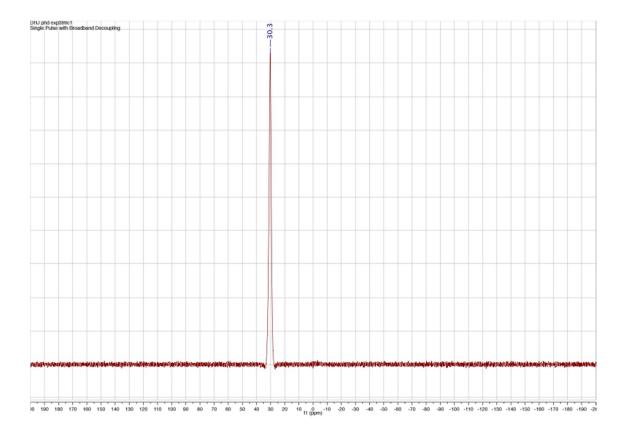


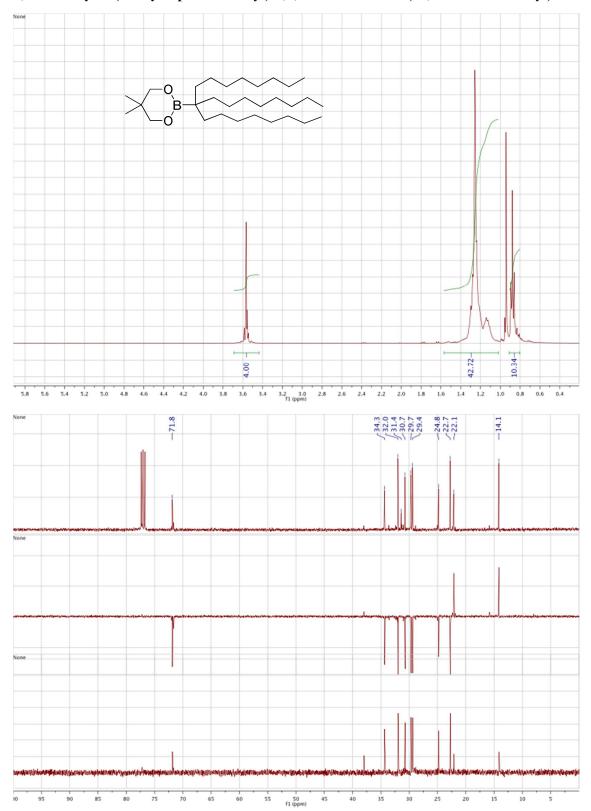
2-Butyl-5,5-dimethyl-1,3,2-dioxaborinane (13,  $R^{C} = H$ ,  $R^{D} = n$ -propyl)



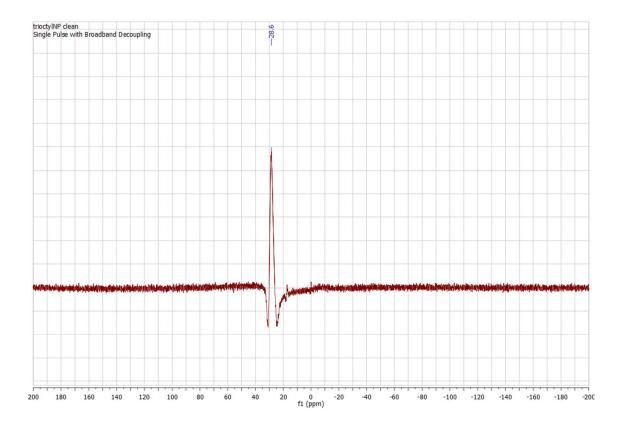


# 2-(3-Ethylpentan-3-yl)-5,5-dimethyl-1,3,2-dioxaborinane (13, $R^{C} = R^{D} = ethyl)$

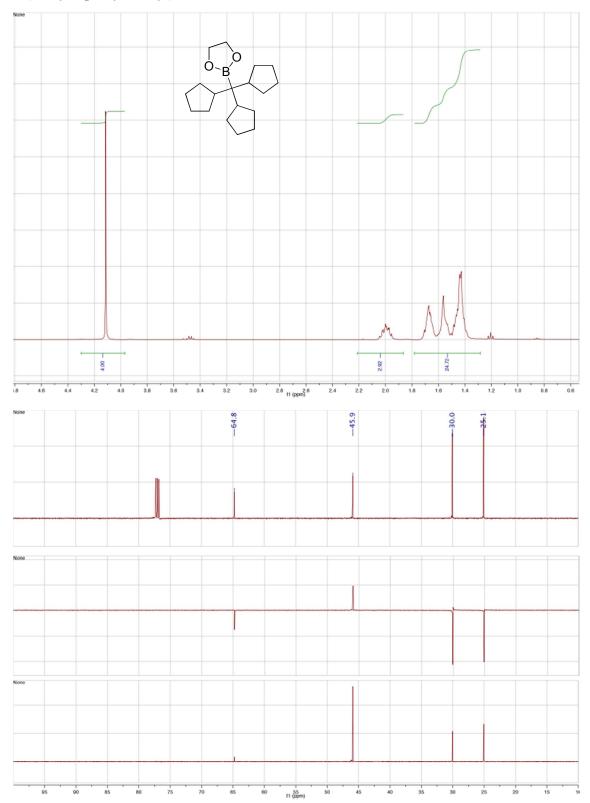




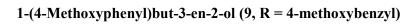
5,5-Dimethyl-2-(9-octylheptadecan-9-yl)-1,3,2-dioxaborinane (13,  $R^{C} = R^{D} = n$ -octyl)

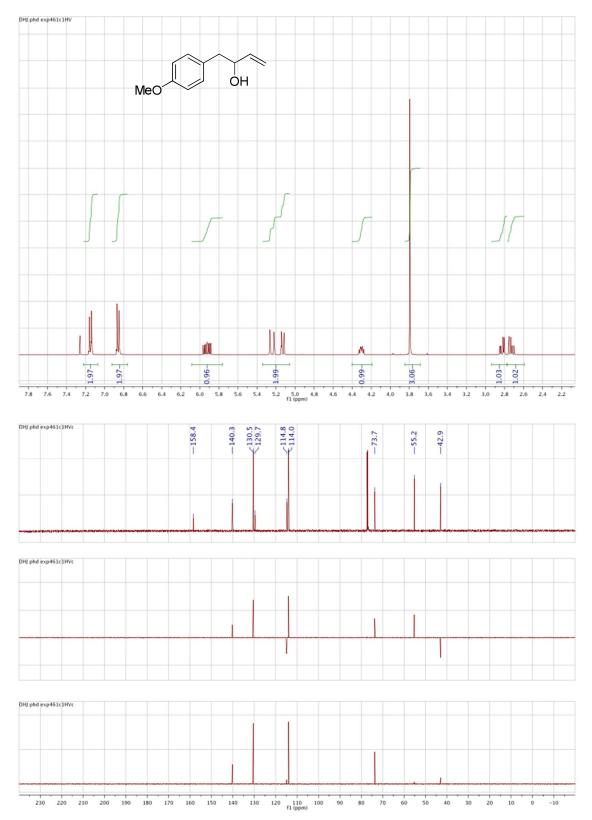


# 2-(Tricyclopentylmethyl)-1,3,2-dioxaborolane

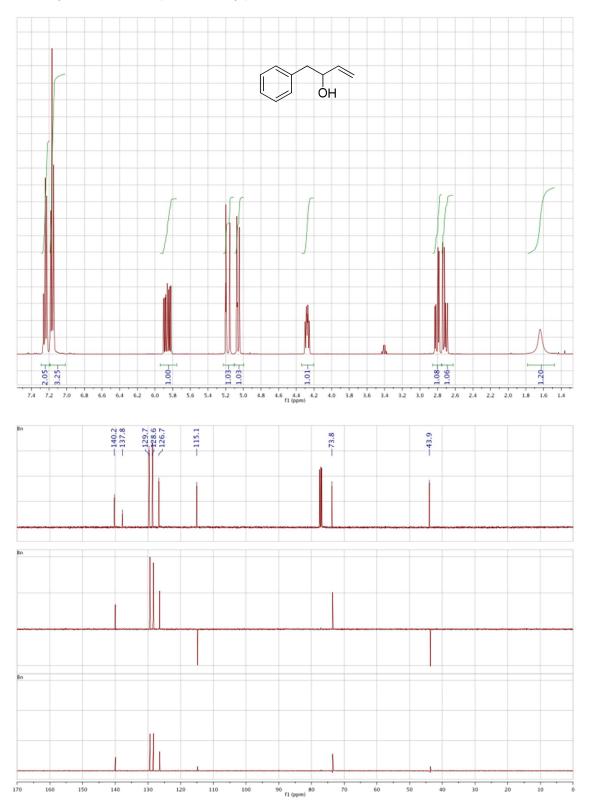


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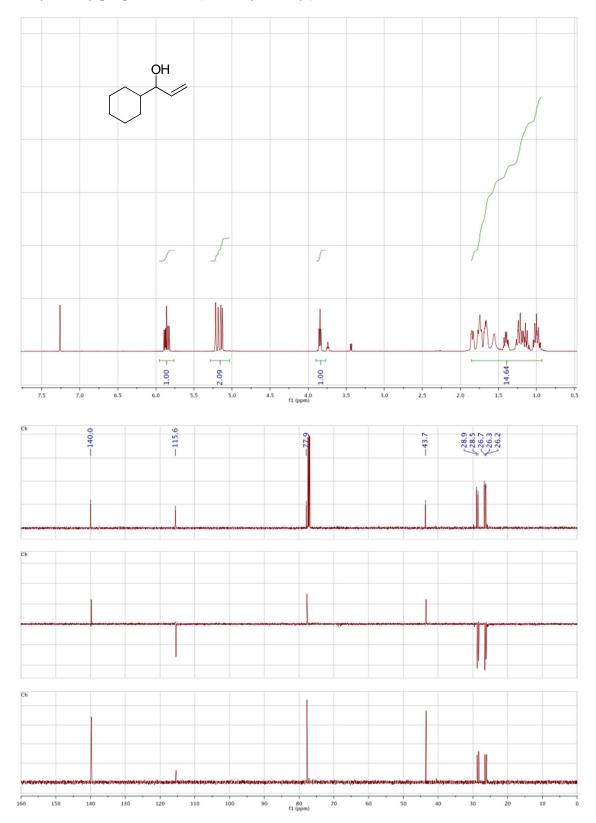




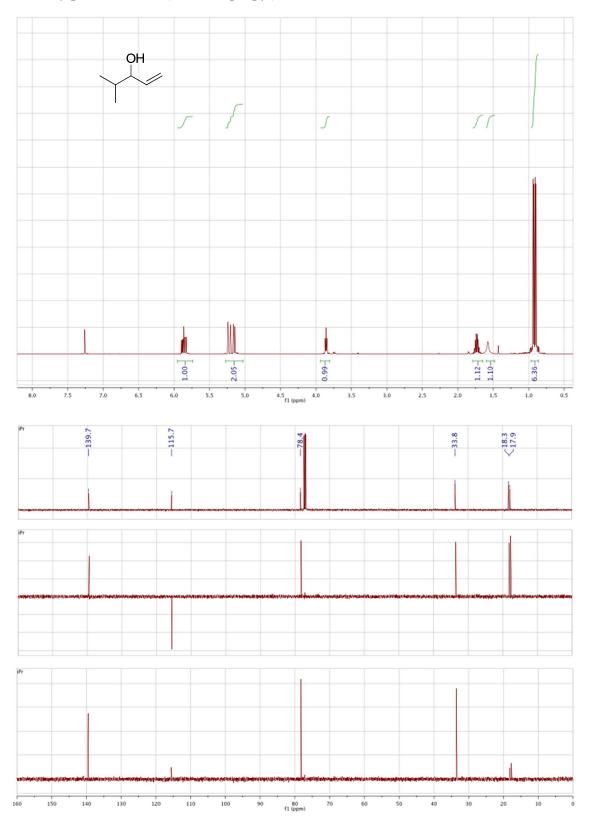
# 1-Phenylbut-3-en-2-ol (9, R = benzyl)



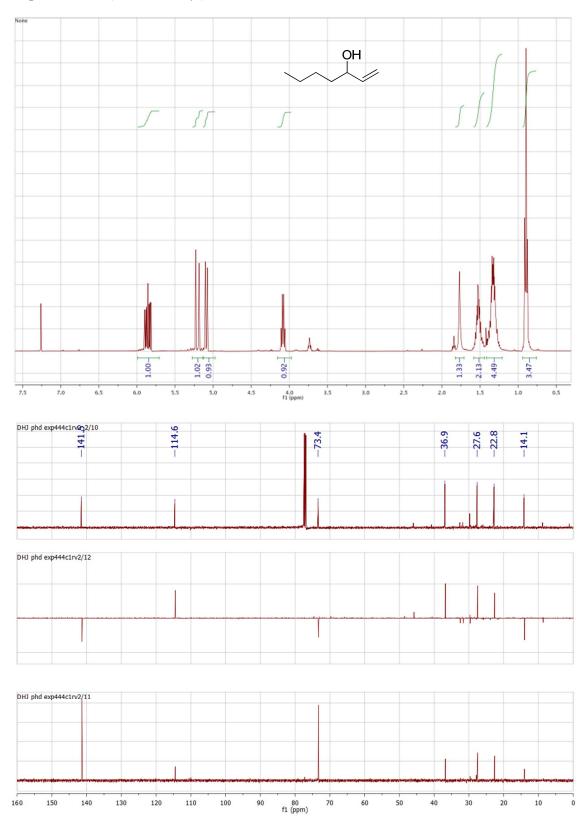
# 1-Cyclohexylprop-2-en-1-ol (9, R = cyclohexyl)

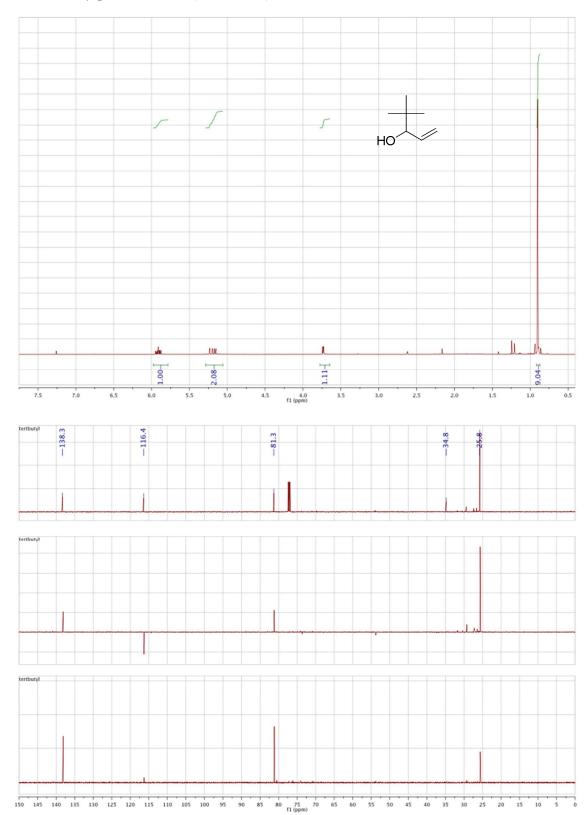


4-Methylpent-1-en-3-ol (9, R = isopropyl)

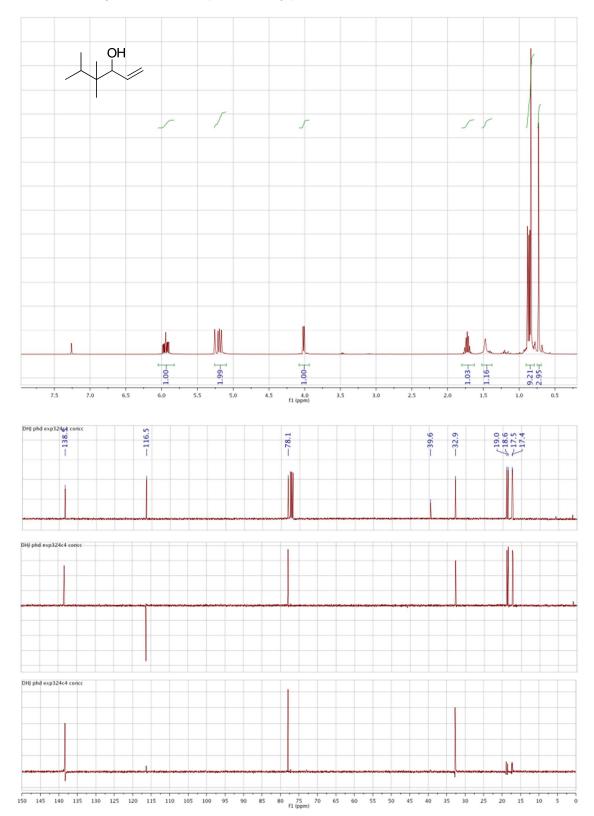


Hept-1-en-3-ol (9, R = n-butyl)

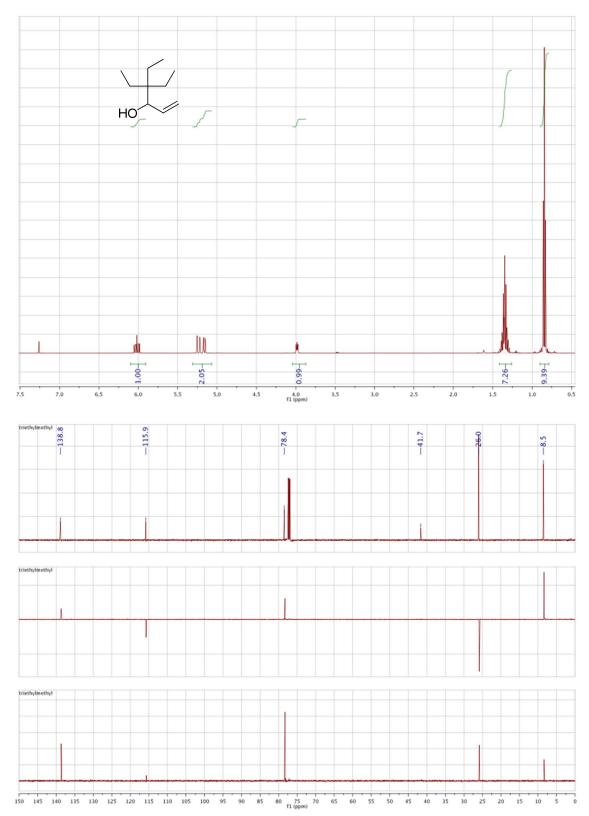




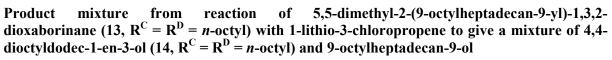
## 4,4-Dimethylpent-1-en-3-ol (8, R = *t*-Bu)

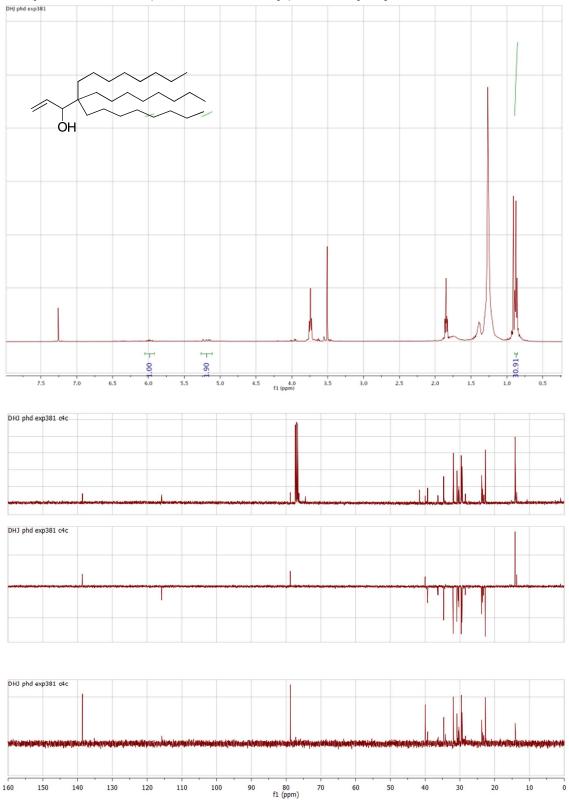


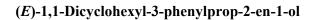
# 4,4,5-Trimethylhex-1-en-3-ol (9, R = thexyl)

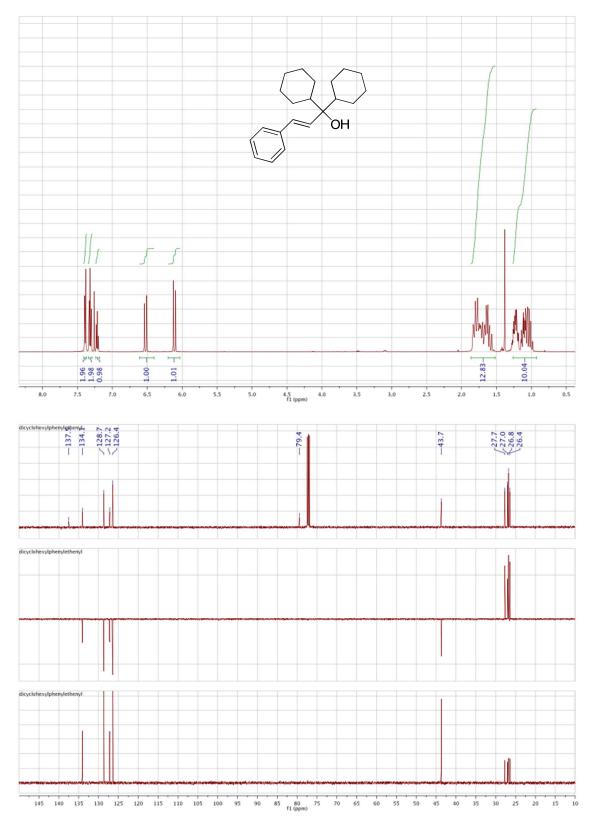


# 4,4-Diethylhex-1-en-3-ol (14, $R^C = R^D = ethyl)$

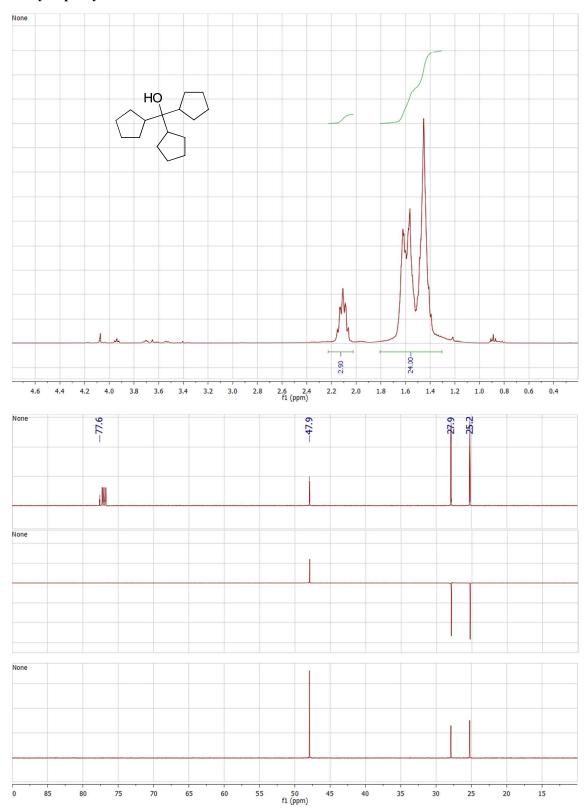


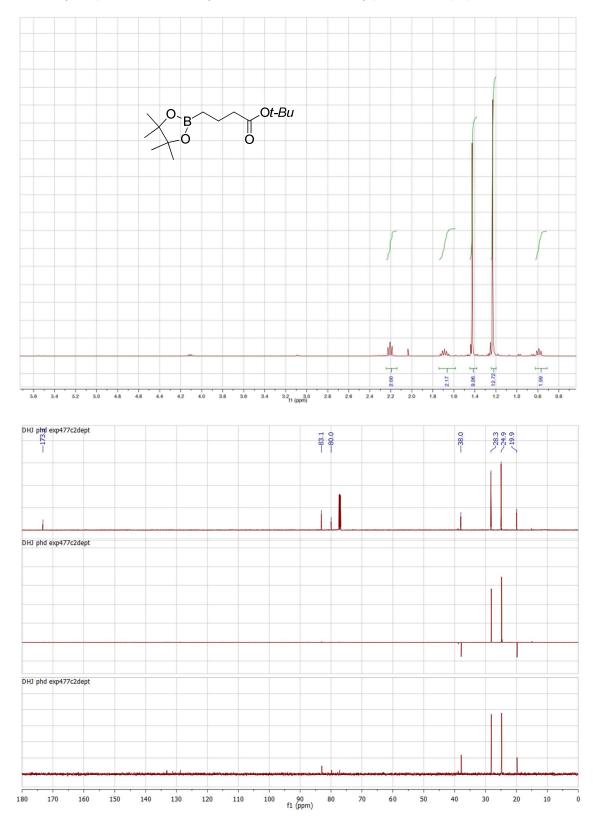




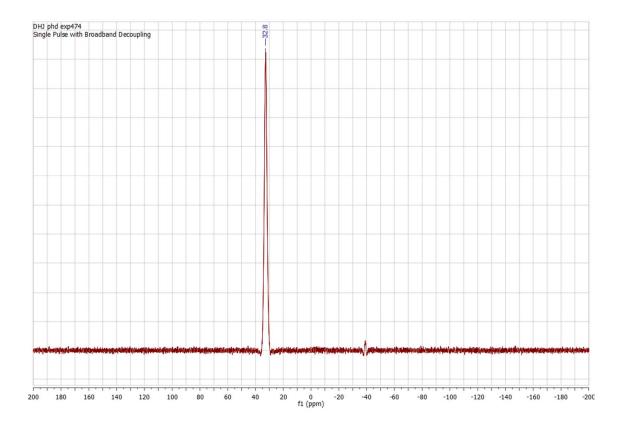


# Tricyclopentylmethanol

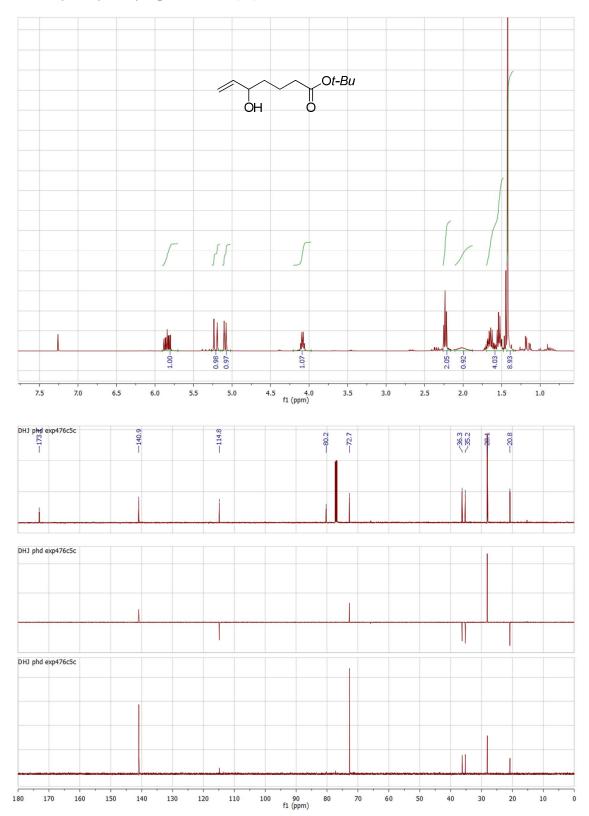




#### tert-Butyl 4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)butanoate (15)



# tert-Butyl 5-hydroxyhept-6-enoate (17)



## 6-Vinyltetrahydro-2H-pyran-2-one (18)

