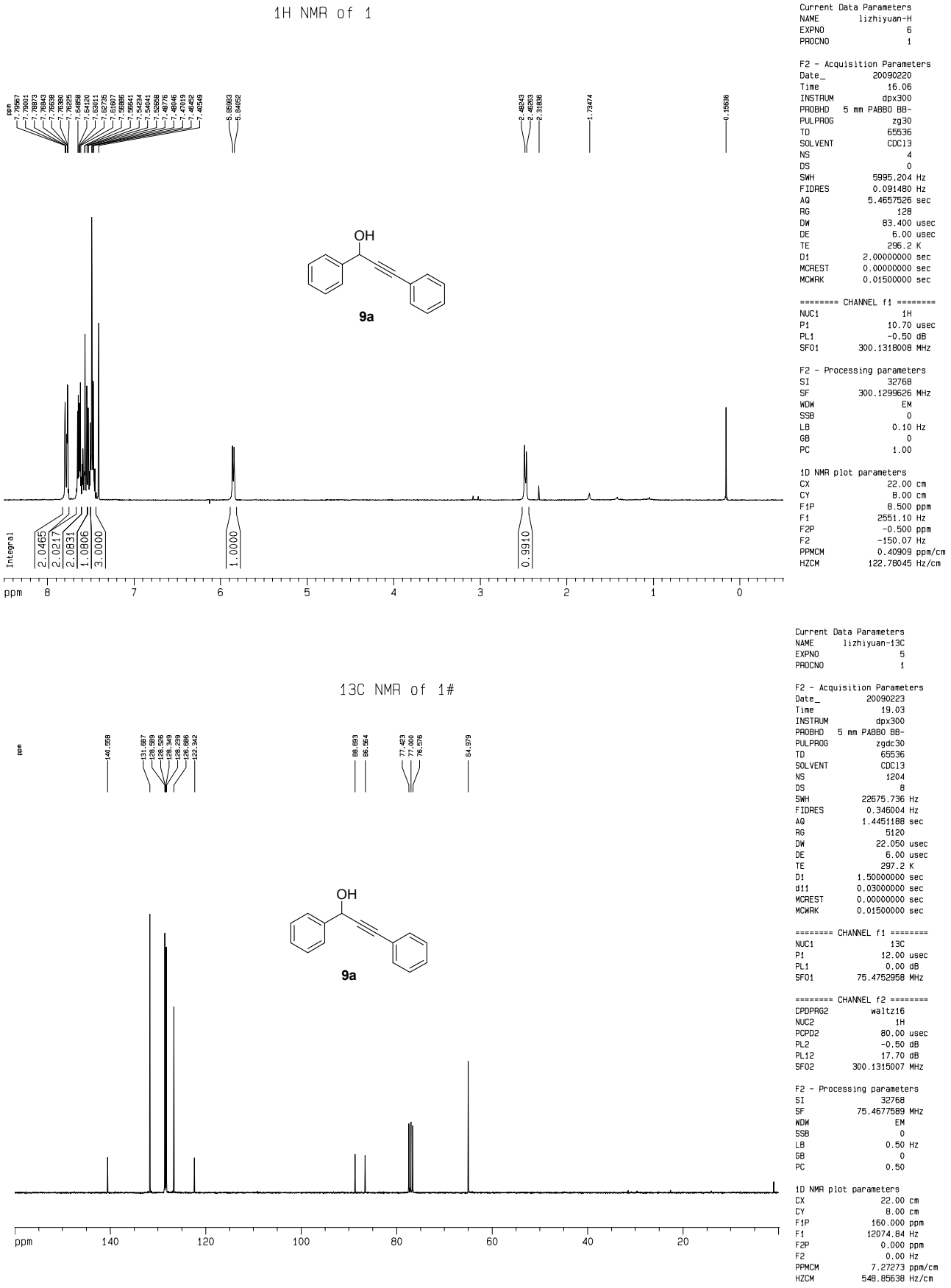
Supplementary Materials for Highly Enantioselective Addition of Phenylethynylzinc to Aldehydes Catalyzed by Chiral Cyclopropane-Based Amino Alcohols

Table Content

Table S1. Crystal Data and Structure Refinement for **7e**.

Empirical Formula	**$C_{40}H_{49}NO_2Si$**	
Formula weight	603.89	
Temperature	173(2) K	
Wavelength	0.71073 A	
Crystal system, space group	Orthorhombic, P2(1)2(1)2(1)	
Unit cell dimensions	*a* = 9.3798(19) Å	alpha = 90 deg.
	b = 13.079(3) Å	beta = 90 deg.
	c = 28.827(6) Å	gamma = 90 deg.
Volume	3536.5(12) $Å^3$	
***Z*, Calculated density**	4, 1.134 Mg/m^3	
Absorption coefficient	0.100 mm^{-1}	
***F* (000)**	1304	
Crystal size	0.80 × 0.70 × 0.60 mm	
Theta range for data collection	2.10 to 26.35 deg.	
Limiting indices	−11 <= h<=11, −14 <= k<=16, −34 <= l <= 36	
Reflections collected/unique	24411/7202 [*R* (int) = 0.0523]	
Completeness to theta = 26.35	99.9%	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9424 and 0.9242	
Refinement method	Full-matrix least-squares on F^2	
Data/restraints/parameters	7202/0/397	
Goodness-of-fit on F^2	1.175	
Final *R* indices [*I* > 2sigma (*I*)]	R_1 = 0.0597, wR_2 = 0.1444	
***R* indices (all data)**	R_1 = 0.0630, wR_2 = 0.1465	
Absolute structure parameter	−0.13(15)	
Largest diff. peak and hole	0.219 and −0.345 $e.A^{-3}$	

Figure S1. NMR Spectra for the Propargylic Alcohols Products.

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EXPNO                  6
PROCNO                 1

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Time               16.06
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PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                     4
DS                     0
SWH            5995.204 Hz
FIDRES         0.091480 Hz
AQ             5.4657526 sec
RG                   128
DW                83.400 usec
DE                 6.00 usec
TE                296.2 K
D1            2.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                 10.70 usec
PL1                -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1299626 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                  8.00 cm
F1P                8.500 ppm
F1                2551.10 Hz
F2P                -0.500 ppm
F2                -150.07 Hz
PPMCM             0.40909 ppm/cm
HZCM           122.78045 Hz/cm
```

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Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                  5
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090223
Time               19.03
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                  1204
DS                     8
SWH           22675.736 Hz
FIDRES         0.346004 Hz
AQ             1.4451188 sec
RG                  5120
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1            1.50000000 sec
d11           0.03000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                 12.00 usec
PL1                 0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -0.50 dB
PL12               17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677589 MHz
WDW                   EM
SSB                    0
LB                  0.50 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                  8.00 cm
F1P              160.000 ppm
F1             12074.84 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM              7.27273 ppm/cm
HZCM           548.85638 Hz/cm
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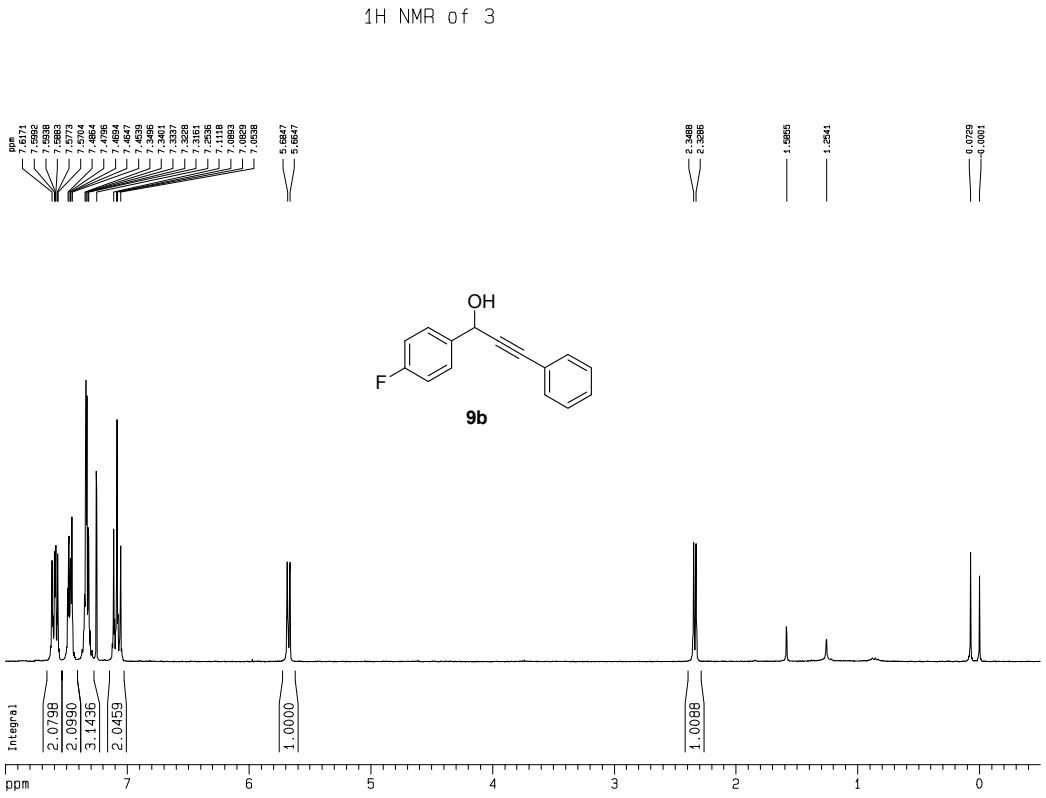


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NAME         lizhiyuan-H
EXPNO                 12
PROCNO                 1

F2 - Acquisition Parameters
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Time               10.55
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     6
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                295.2 K
D1            2.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1               -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300081 MHz
WDW                   EM
SSB                    0
LB                 0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                22.00 cm
CY                 6.00 cm
F1P               8.000 ppm
F1              2401.04 Hz
F2P              -0.500 ppm
F2              -150.06 Hz
PPMCM           0.38636 ppm/cm
HZCM          115.95932 Hz/cm
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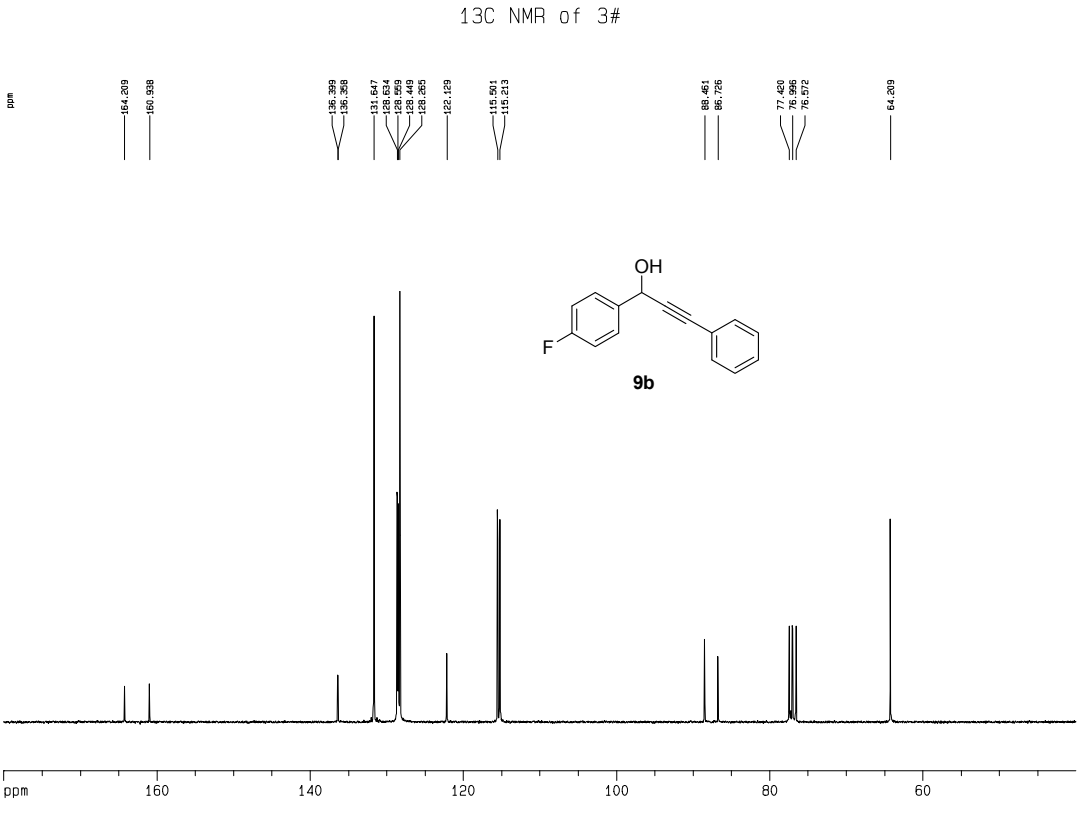


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NAME       lizhiyuan-13C
EXPNO                  8
PROCNO                 1

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Time               17.44
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                  1342
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  5120
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1            1.50000000 sec
d11           0.03000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2               -0.50 dB
PL12              17.70 dB
SFO2        300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677603 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                22.00 cm
CY                 9.00 cm
F1P             180.000 ppm
F1             13584.20 Hz
F2P             40.000 ppm
F2              3018.71 Hz
PPMCM           6.36364 ppm/cm
HZCM          480.24936 Hz/cm
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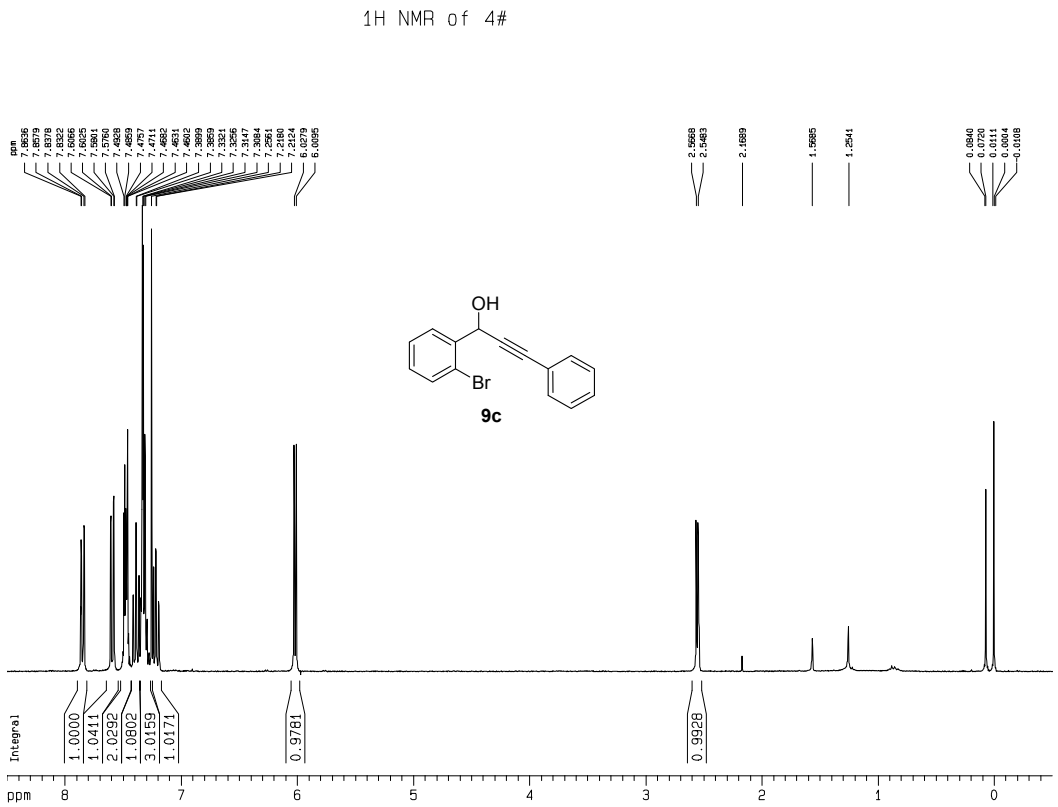


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Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 17
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090306
Time               12.04
INSTRUM            dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    20
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                296.2 K
D1             2.00000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1                -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF            300.1300074 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                 10.00 cm
F1P                8.500 ppm
F1               2551.10 Hz
F2P               -0.500 ppm
F2               -150.07 Hz
PPMCM            0.40909 ppm/cm
HZCM           122.78046 Hz/cm
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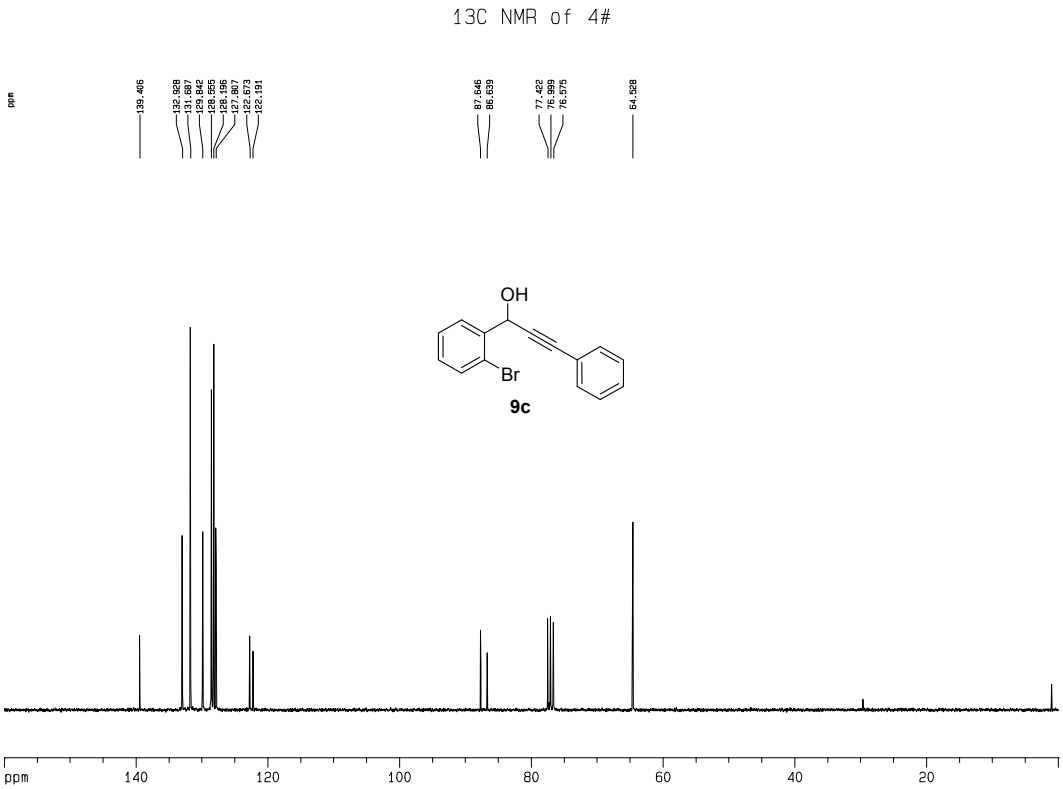


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NAME       lizhiyuan-13C
EXPNO                 18
PROCNO                 1

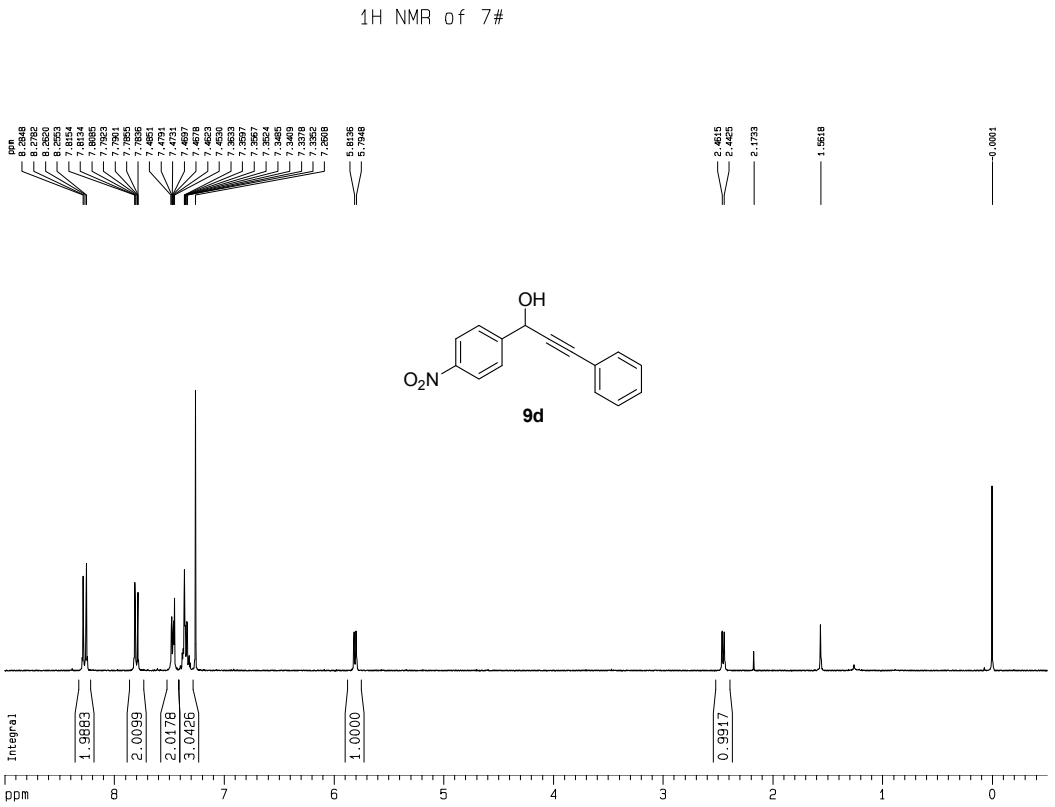
F2 - Acquisition Parameters
Date_           20090307
Time               15.50
INSTRUM            dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                   326
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  7168
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1             1.50000000 sec
d11            0.03000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1          75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2                -0.50 dB
PL12               17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF            75.4677610 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                  8.00 cm
F1P              160.000 ppm
F1             12074.84 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM           7.27273 ppm/cm
HZCM          548.85638 Hz/cm
```

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Current Data Parameters
NAME        lizhiyuan-H
EXPNO                35
PROCNO                1

F2 - Acquisition Parameters
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Time              10.25
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH            5995.204 Hz
FIDRES         0.091480 Hz
AQ             5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                296.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                 1H
P1                10.70 usec
PL1               -0.50 dB
SFO1        300.1318008 MHz

F2 - Processing parameters
SI                32768
SF          300.1300060 MHz
WDW                  EM
SSB                   0
LB                 0.10 Hz
GB                    0
PC                 1.00

1D NMR plot parameters
CX                22.00 cm
CY                 6.00 cm
F1P               9.000 ppm
F1              2701.17 Hz
F2P              -0.500 ppm
F2              -150.07 Hz
PPMCM          0.43182 ppm/cm
HZCM          129.60159 Hz/cm
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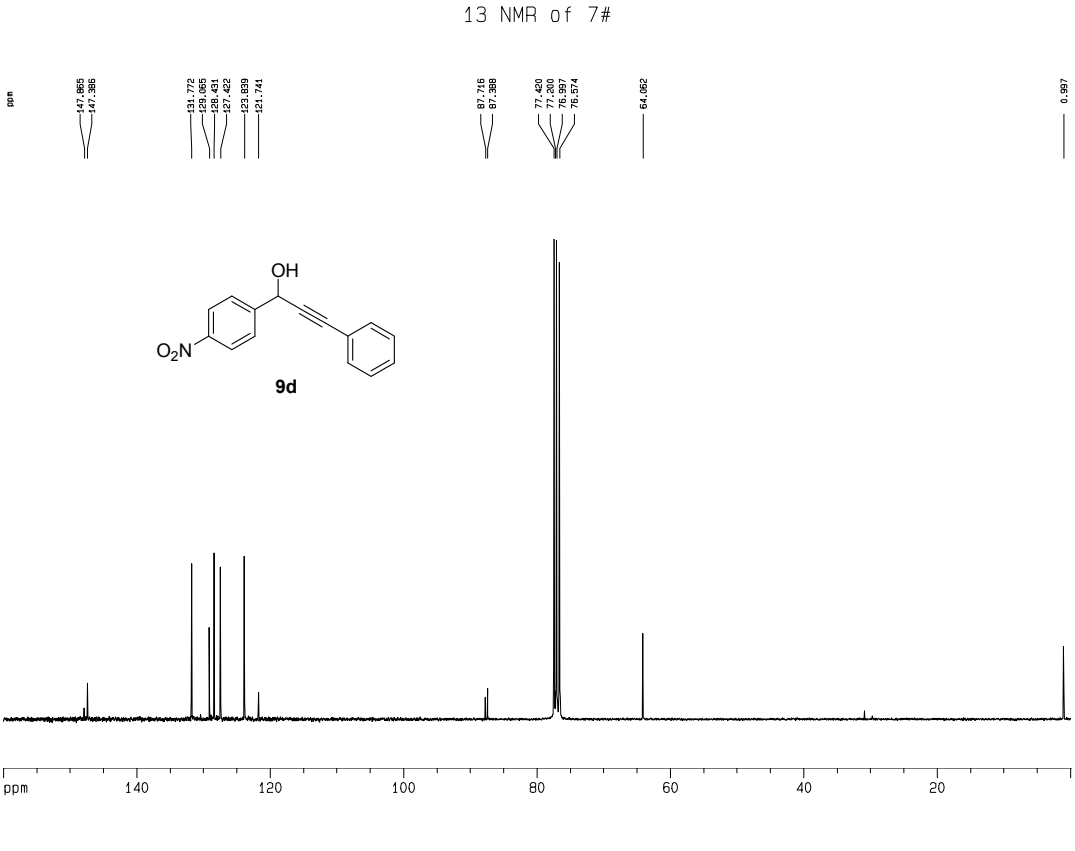


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NAME      lizhiyuan-13C
EXPNO                24
PROCNO                1

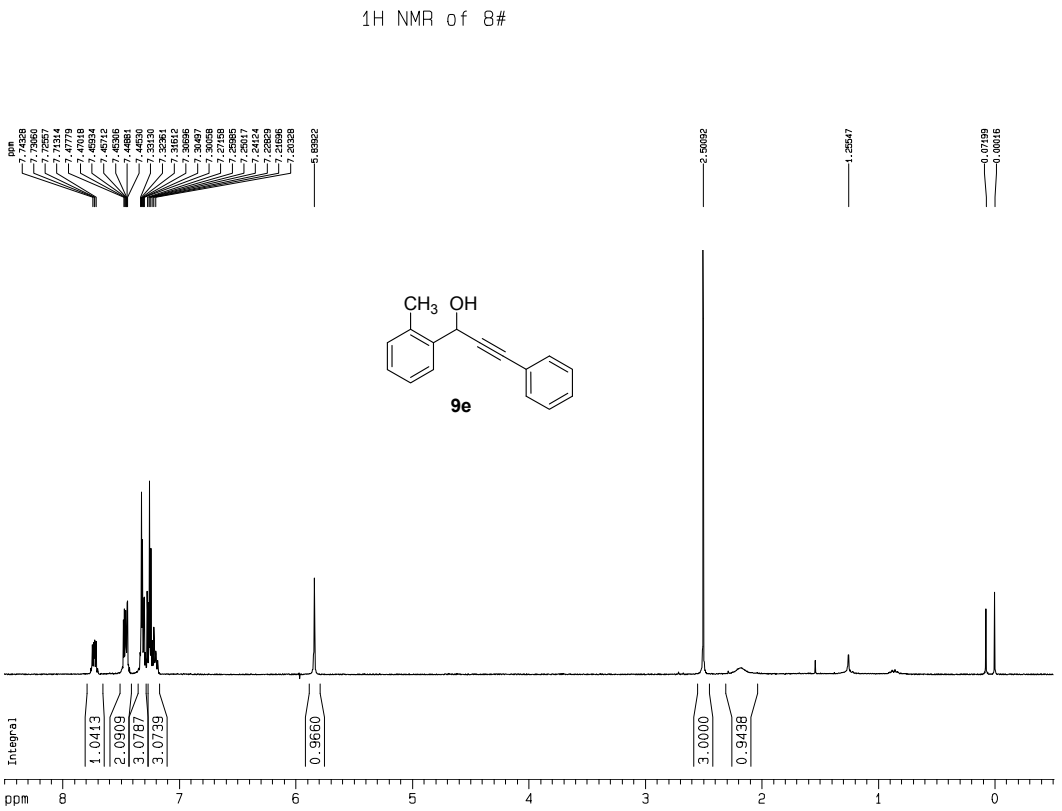
F2 - Acquisition Parameters
Date_          20090410
Time               7.46
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                65536
SOLVENT            CDCl3
NS                10240
DS                    8
SWH           22675.736 Hz
FIDRES         0.346004 Hz
AQ             1.4451188 sec
RG                 1024
DW                22.050 usec
DE                 6.00 usec
TE                300.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                13C
P1                12.00 usec
PL1                0.90 dB
SFO1        75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             80.00 usec
PL2               -2.50 dB
PL12              18.00 dB
SFO2        300.1315007 MHz

F2 - Processing parameters
SI                32768
SF          75.4677492 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 0.50

1D NMR plot parameters
CX                22.00 cm
CY                10.00 cm
F1P              160.000 ppm
F1             12074.84 Hz
F2P               0.000 ppm
F2                0.00 Hz
PPMCM          7.27273 ppm/cm
HZCM         548.85638 Hz/cm
```

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Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 31
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090320
Time               15.52
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                    4
DS                    0
SWH            5995.204 Hz
FIDRES        0.091480 Hz
AQ            5.4657526 sec
RG                  128
DW               83.400 usec
DE                6.00 usec
TE                298.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1               -0.50 dB
SFO1        300.1318008 MHz

F2 - Processing parameters
SI                32768
SF           300.1300092 MHz
WDW                  no
SSB                   0
LB                 0.00 Hz
GB                    0
PC                 1.00

1D NMR plot parameters
CX                22.00 cm
CY                 9.00 cm
F1P               8.500 ppm
F1             2551.10 Hz
F2P              -0.500 ppm
F2             -150.07 Hz
PPMCM         0.40909 ppm/cm
HZCM         122.78046 Hz/cm
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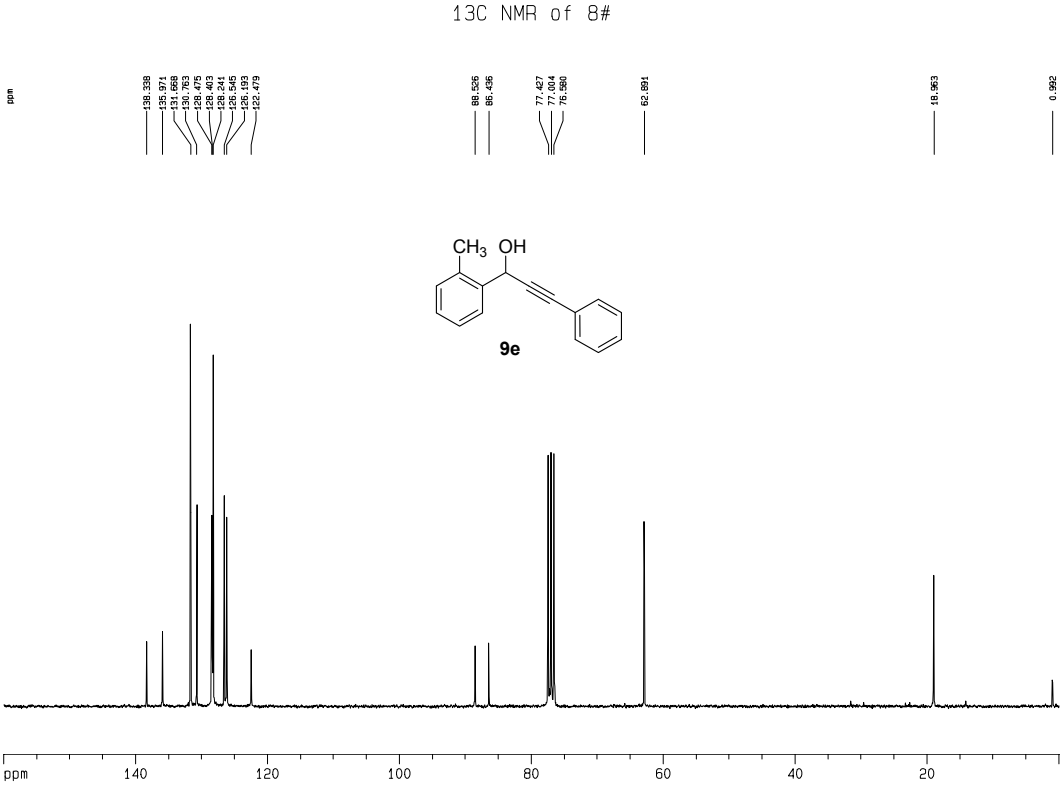


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Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 14
PROCNO                 1

F2 - Acquisition Parameters
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Time               19.44
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                 2048
DS                    8
SWH           22675.736 Hz
FIDRES        0.346004 Hz
AQ            1.4451188 sec
RG                 3072
DW               22.050 usec
DE                6.00 usec
TE                297.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2               -0.50 dB
PL12              17.70 dB
SFO2        300.1315007 MHz

F2 - Processing parameters
SI                32768
SF           75.4677561 MHz
WDW                  EM
SSB                   0
LB                 2.00 Hz
GB                    0
PC                 0.50

1D NMR plot parameters
CX                22.00 cm
CY                 8.00 cm
F1P             160.000 ppm
F1           12074.84 Hz
F2P              0.000 ppm
F2               0.00 Hz
PPMCM          7.27273 ppm/cm
HZCM         548.85638 Hz/cm
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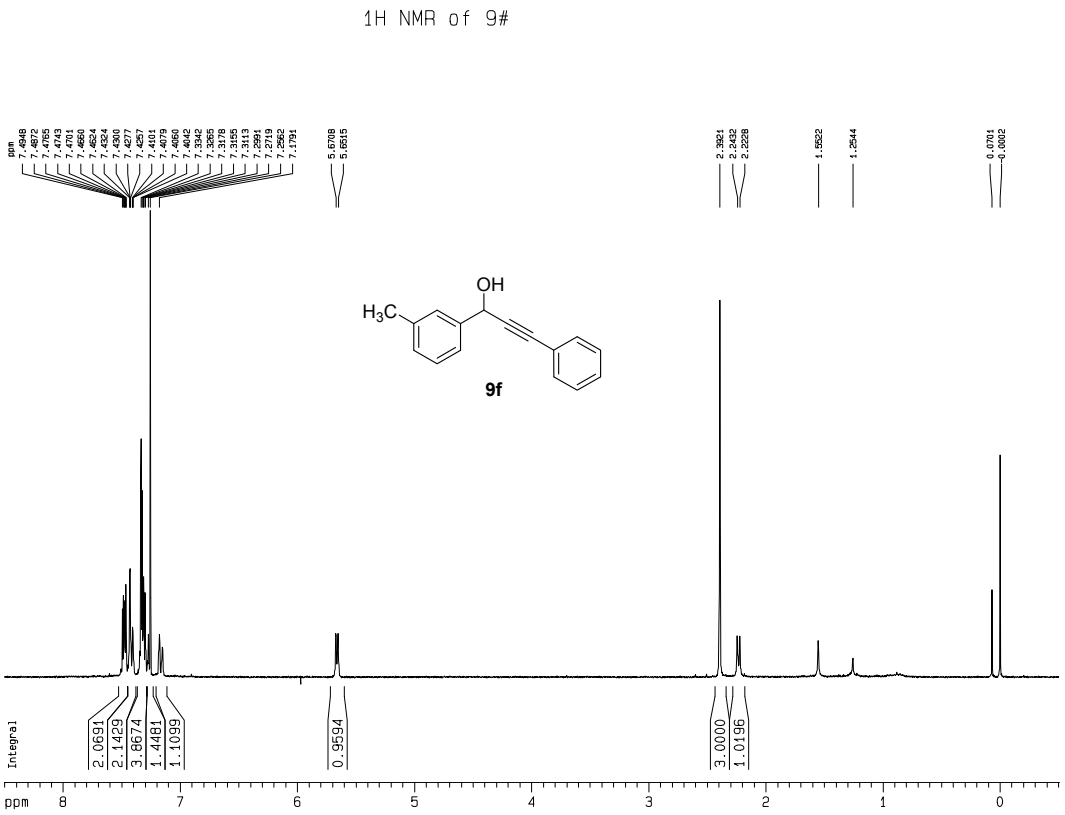


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Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 33
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090323
Time               13.12
INSTRUM            dpx300
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                    8
DS                    0
SWH            5995.204 Hz
FIDRES         0.091480 Hz
AQ             5.4657526 sec
RG                  256
DW                83.400 usec
DE                 6.00 usec
TE                  0.0 K
D1            2.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1               -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                32768
SF           300.1300074 MHz
WDW                  no
SSB                   0
LB                 0.00 Hz
GB                    0
PC                 1.00

1D NMR plot parameters
CX                22.00 cm
CY                10.00 cm
F1P                8.500 ppm
F1              2551.10 Hz
F2P               -0.500 ppm
F2              -150.07 Hz
PPMCM          0.40909 ppm/cm
HZCM          122.78046 Hz/cm
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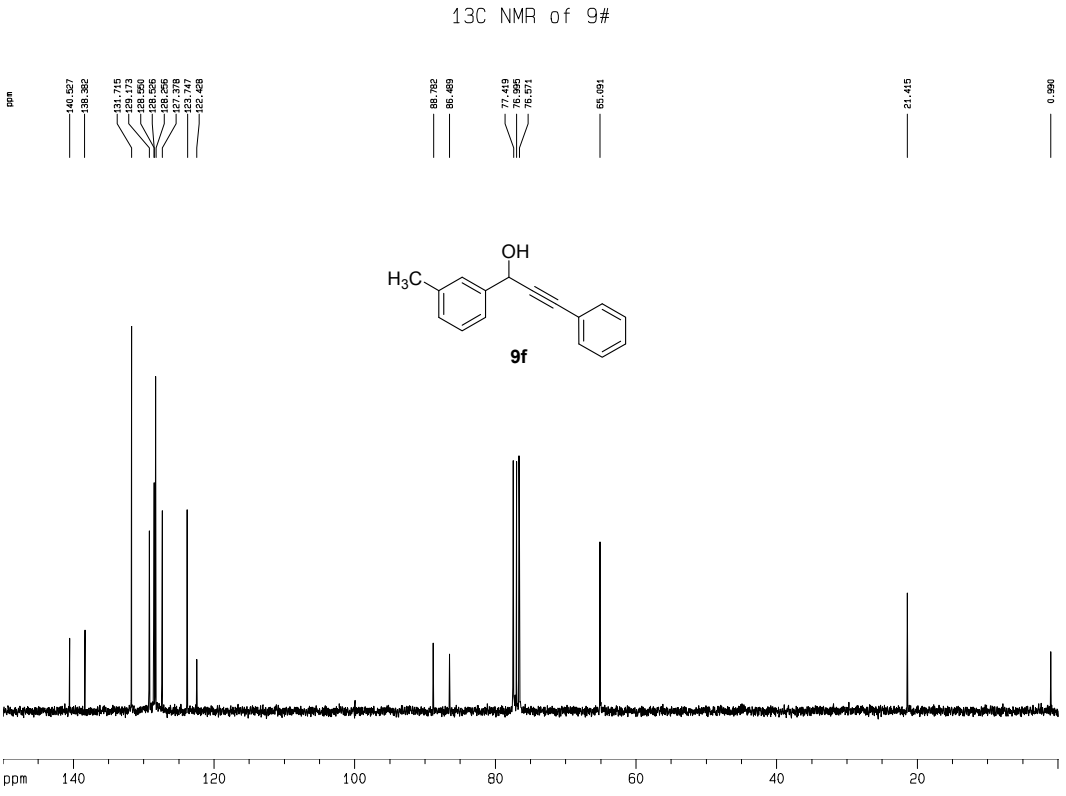


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Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 21
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090324
Time               17.54
INSTRUM            dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                  258
DS                    8
SWH           22675.736 Hz
FIDRES         0.346004 Hz
AQ             1.4451188 sec
RG                 2048
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1            1.50000000 sec
d11           0.03000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

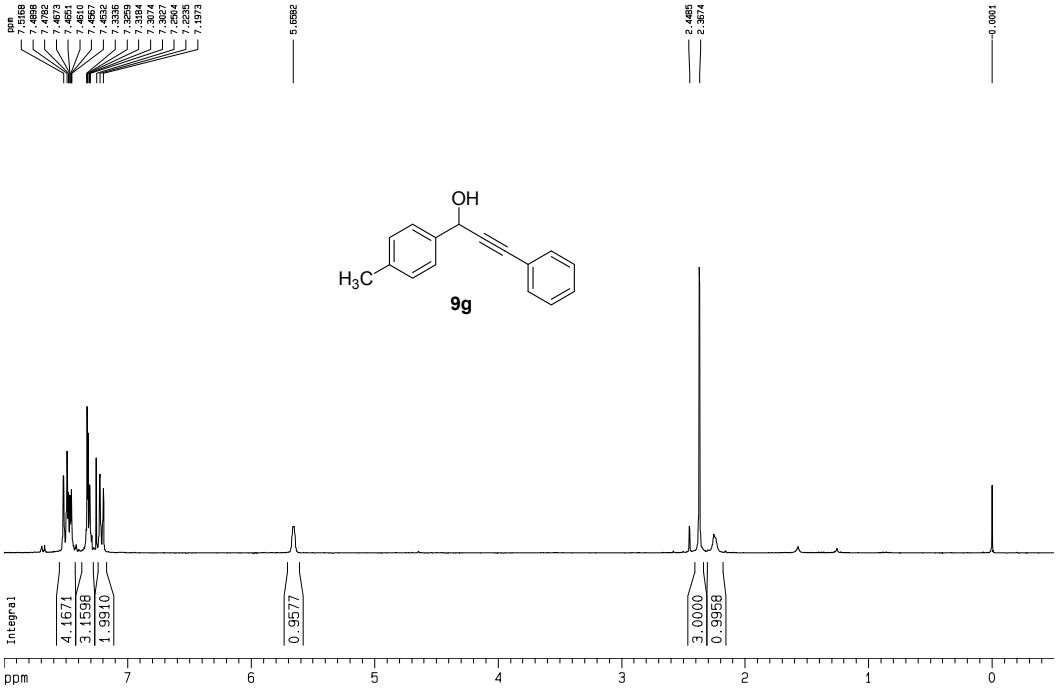
======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2               -0.50 dB
PL12              17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                32768
SF           75.4677547 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 0.50

1D NMR plot parameters
CX                22.00 cm
CY                 8.00 cm
F1P              150.000 ppm
F1             11320.16 Hz
F2P               -0.000 ppm
F2                -0.00 Hz
PPMCM          6.81818 ppm/cm
HZCM         514.55292 Hz/cm
```

1H NMR of 10#

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Current Data Parameters
NAME        lizhiyuan-H
EXPNO                37
PROCNO                1

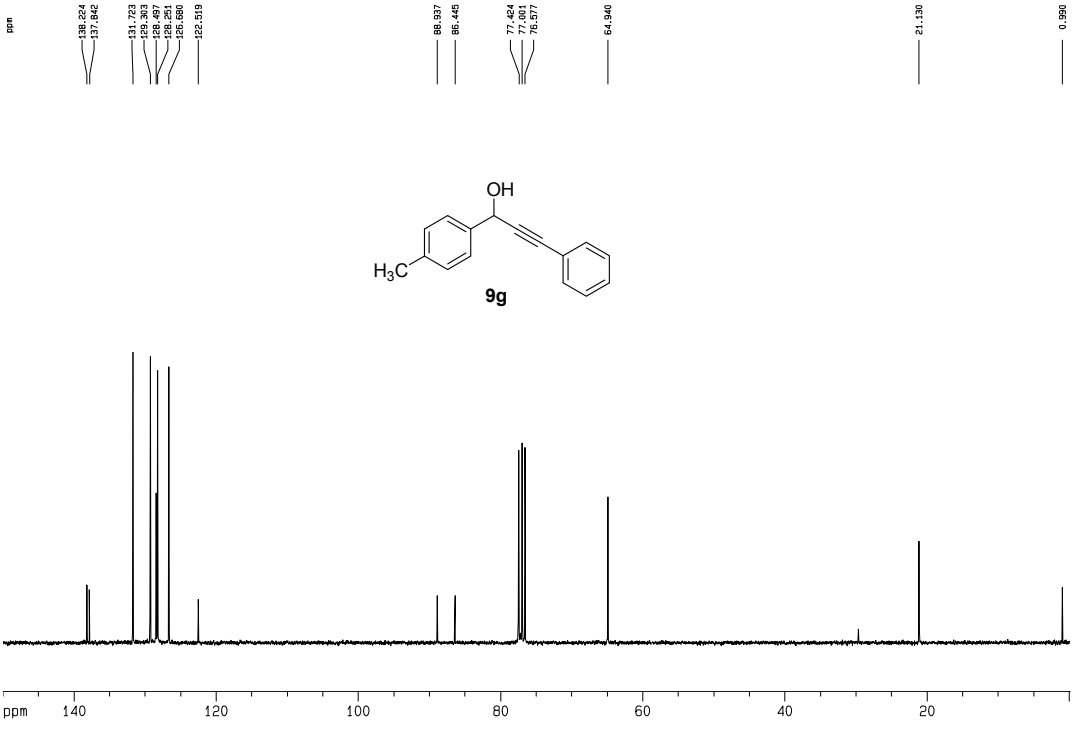
F2 - Acquisition Parameters
Date_          20090407
Time               17.20
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                297.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWAK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                 1H
P1                10.00 usec
PL1               -2.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300085 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                  6.00 cm
F1P                8.000 ppm
F1              2401.04 Hz
F2P               -0.500 ppm
F2              -150.06 Hz
PPMCM           0.38636 ppm/cm
HZCM          115.95932 Hz/cm
```

13C NMR of 10#

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Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 27
PROCNO                 1

F2 - Acquisition Parameters
Date_          20090411
Time               18.35
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                   566
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  6144
DW                22.050 usec
DE                 6.00 usec
TE                300.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWAK        0.01500000 sec

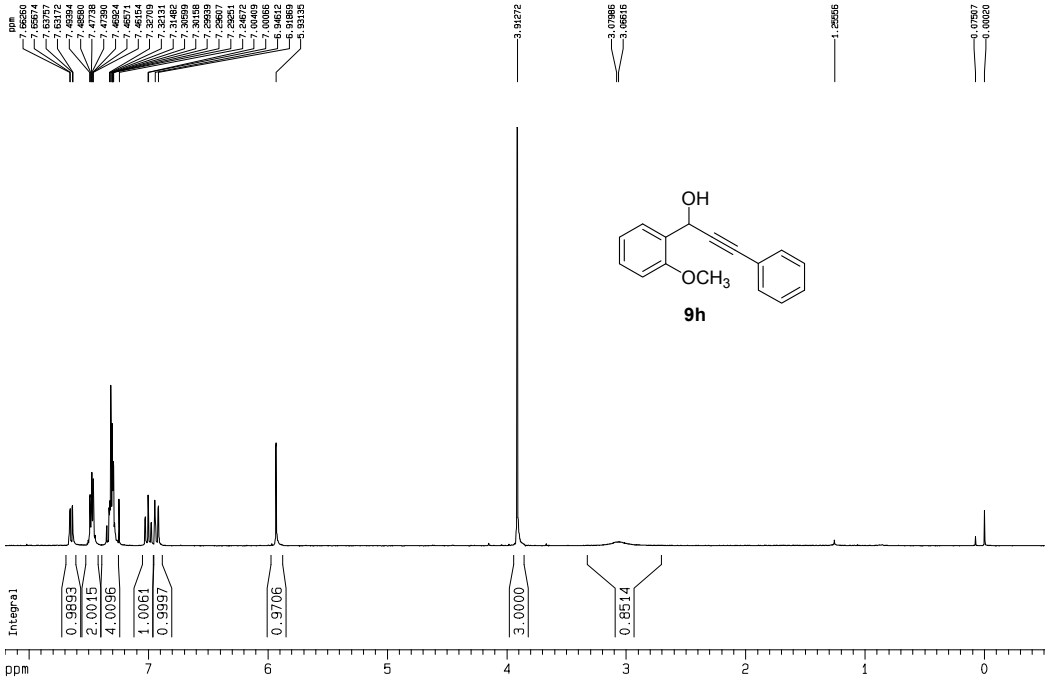
======== CHANNEL f1 ========
NUC1                13C
P1                12.00 usec
PL1                0.90 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             80.00 usec
PL2               -2.50 dB
PL12              18.00 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677527 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                  6.00 cm
F1P              150.000 ppm
F1             11320.16 Hz
F2P               -0.000 ppm
F2                -0.00 Hz
PPMCM           6.81818 ppm/cm
HZCM          514.55286 Hz/cm
```

1H NMR of 11#




```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 39
PROCNO                 1

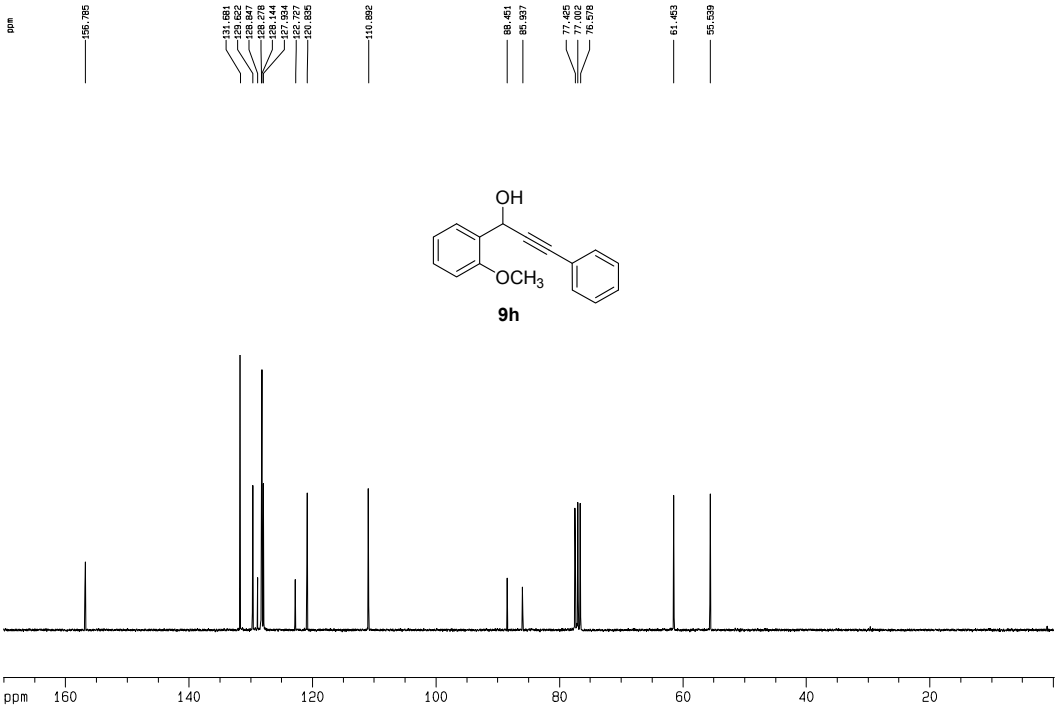
F2 - Acquisition Parameters
Date_           20090409
Time               11.00
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   128
DW                83.400 usec
DE                 6.00 usec
TE                297.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                 1H
P1                10.00 usec
PL1               -2.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300102 MHz
WDW                   no
SSB                    0
LB                 0.00 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                22.00 cm
CY                 9.00 cm
F1P               8.200 ppm
F1              2461.07 Hz
F2P              -0.500 ppm
F2              -150.07 Hz
PPMCM           0.39545 ppm/cm
HZCM          118.68777 Hz/cm
```

13C NMR of 11#




```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 26
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090411
Time               17.47
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                   802
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  9216
DW                22.050 usec
DE                 6.00 usec
TE                300.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

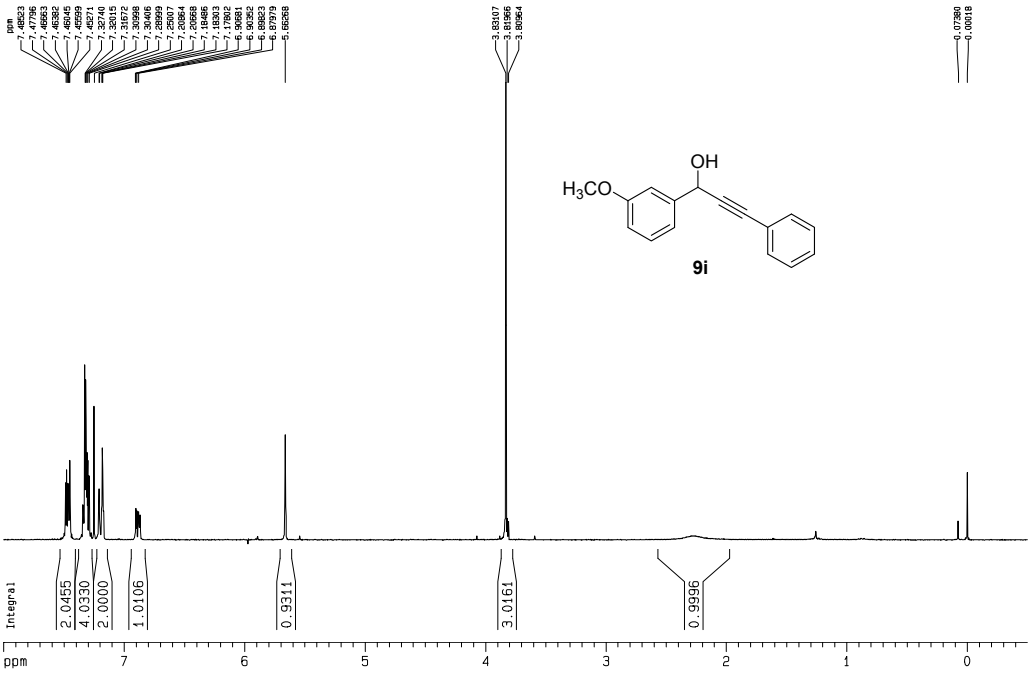
======== CHANNEL f1 ========
NUC1                13C
P1                12.00 usec
PL1                0.90 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                 1H
PCPD2             80.00 usec
PL2               -2.50 dB
PL12              18.00 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677582 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                22.00 cm
CY                 6.00 cm
F1P             170.000 ppm
F1              12829.52 Hz
F2P              -0.000 ppm
F2               -0.00 Hz
PPMCM           7.72727 ppm/cm
HZCM          583.15991 Hz/cm
```

1H NMR of 12#



9i

```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 23
PROCNO                 1

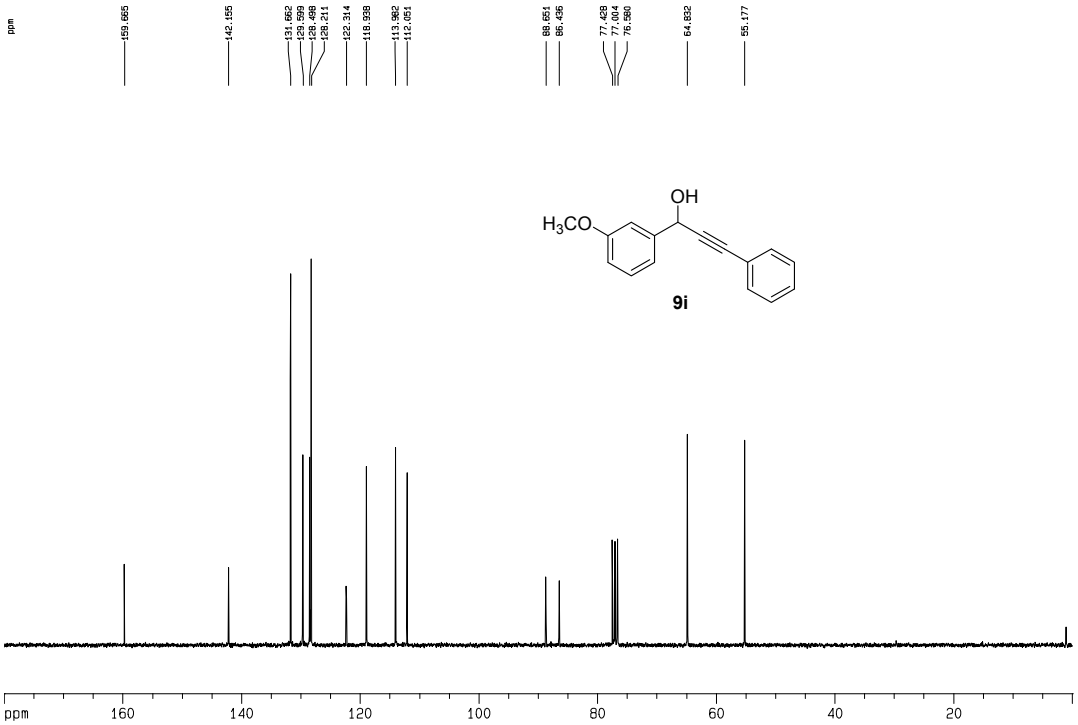
F2 - Acquisition Parameters
Date_          20090319
Time              20.41
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH            5995.204 Hz
FIDRES         0.091480 Hz
AQ             5.4657526 sec
RG                   128
DW                83.400 usec
DE                 6.00 usec
TE                298.2 K
D1            2.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1               -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300092 MHz
WDW                   no
SSB                    0
LB                 0.00 Hz
GB                     0
PC                 1.00

1D NMR plot parameters
CX                22.00 cm
CY                16.00 cm
F1P               8.000 ppm
F1             2401.04 Hz
F2P              -0.500 ppm
F2             -150.06 Hz
PPMCM          0.38636 ppm/cm
HZCM          115.95932 Hz/cm
```

13C NMR of 12#



9i

```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 13
PROCNO                 1

F2 - Acquisition Parameters
Date_          20090306
Time              19.27
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                   236
DS                     8
SWH           22675.736 Hz
FIDRES         0.346004 Hz
AQ             1.4451188 sec
RG                  6144
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1            1.50000000 sec
d11           0.03000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

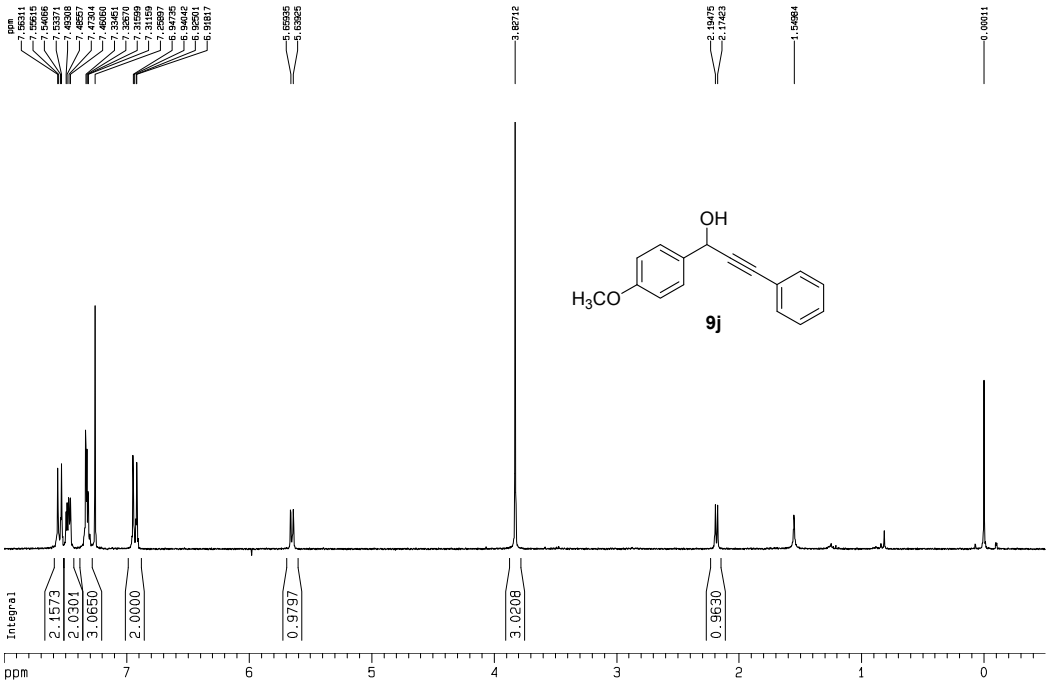
======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2               -0.50 dB
PL12              17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677603 MHz
WDW                   EM
SSB                    0
LB                 1.00 Hz
GB                     0
PC                 0.50

1D NMR plot parameters
CX                22.00 cm
CY                 8.00 cm
F1P             180.000 ppm
F1             13584.20 Hz
F2P               0.000 ppm
F2                0.00 Hz
PPMCM          8.18182 ppm/cm
HZCM          617.46350 Hz/cm
```

1H NMR of 13#




```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 38
PROCNO                 1

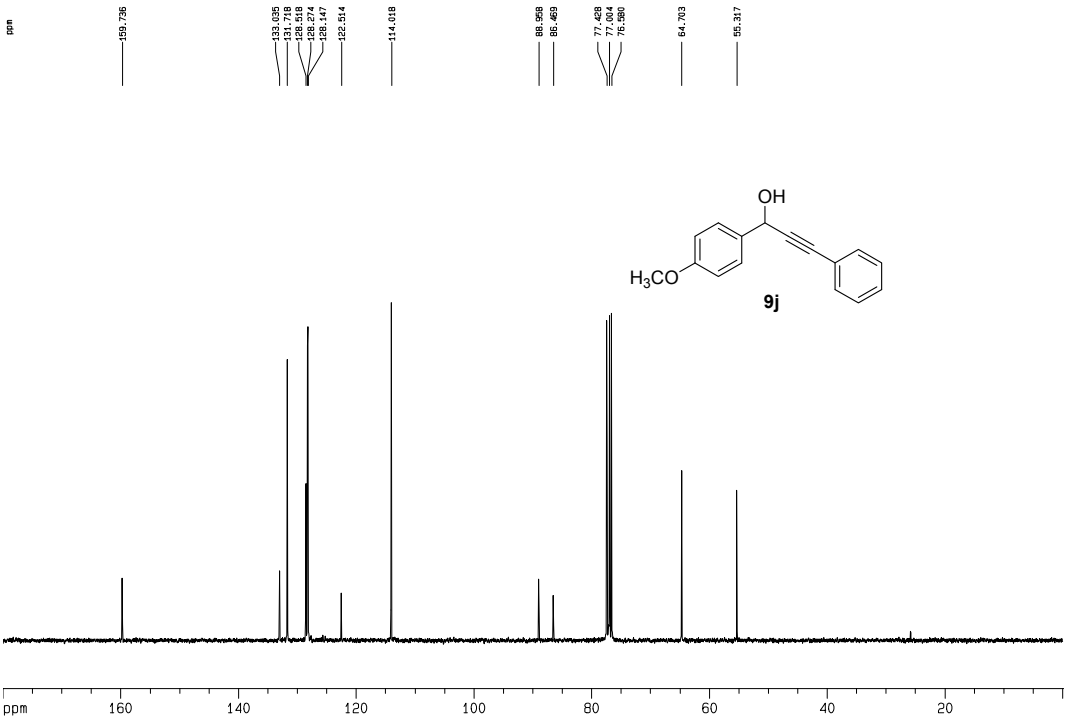
F2 - Acquisition Parameters
Date_           20090407
Time               17.25
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                    4
DS                    0
SWH            5995.204 Hz
FIDRES         0.091480 Hz
AQ             5.4657526 sec
RG                  258
DW                83.400 usec
DE                 6.00 usec
TE                297.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWAK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                1H
P1                10.00 usec
PL1               -2.50 dB
SFO1        300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300060 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                  9.00 cm
F1P                8.000 ppm
F1              2401.04 Hz
F2P               -0.500 ppm
F2              -150.06 Hz
PPMCM           0.38636 ppm/cm
HZCM          115.95932 Hz/cm
```

13C NMR of 13#




```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 23
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090408
Time               17.43
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                65536
SOLVENT           CDCl3
NS                 1370
DS                    8
SWH           22675.736 Hz
FIDRES         0.346004 Hz
AQ             1.4451188 sec
RG                 3072
DW                22.050 usec
DE                 6.00 usec
TE                299.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWAK        0.01500000 sec

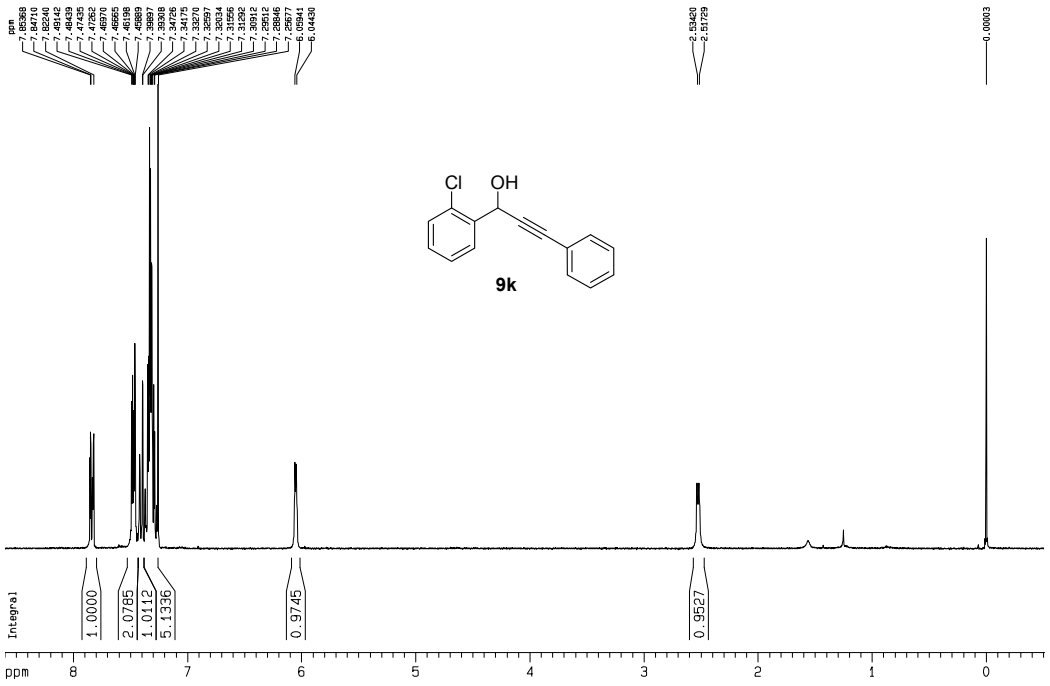
======== CHANNEL f1 ========
NUC1               13C
P1                12.00 usec
PL1                0.90 dB
SFO1        75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2             80.00 usec
PL2               -2.50 dB
PL12              18.00 dB
SFO2        300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677513 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                  7.00 cm
F1P              180.000 ppm
F1             13584.20 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM           8.18182 ppm/cm
HZCM          617.46344 Hz/cm
```

1H NMR of 15#




```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 19
PROCNO                 1

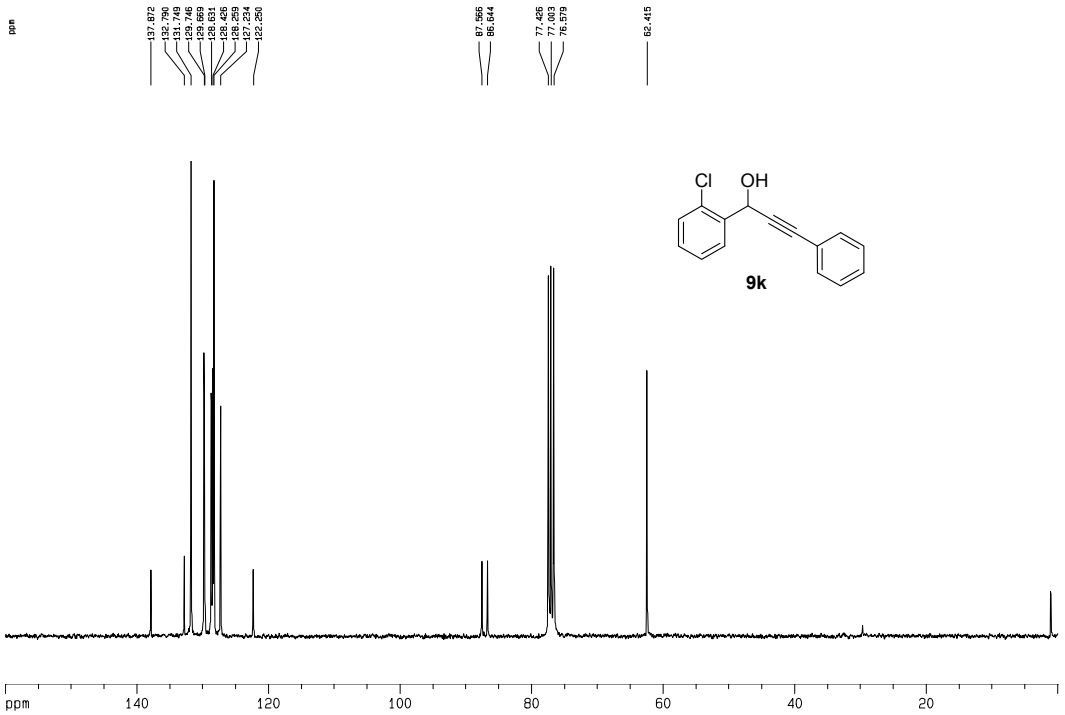
F2 - Acquisition Parameters
Date_           20090306
Time               12.57
INSTRUM            dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ             5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                296.2 K
D1             2.00000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                   1H
P1                 10.70 usec
PL1                -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF            300.1300072 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                 10.00 cm
F1P                8.600 ppm
F1               2581.12 Hz
F2P               -0.500 ppm
F2               -150.07 Hz
PPMCM           0.41364 ppm/cm
HZCM          124.14469 Hz/cm
```

13C NMR of 15#




```
Current Data Parameters
NAME      lizhiyuan-13C
EXPNO                16
PROCNO                1

F2 - Acquisition Parameters
Date_           20090307
Time               11.54
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                  2048
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ             1.4451188 sec
RG                  8192
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1             1.50000000 sec
d11            0.03000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                  13C
P1                 12.00 usec
PL1                 0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                   1H
PCPD2              80.00 usec
PL2                -0.50 dB
PL12               17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF            75.4677540 MHz
WDW                   EM
SSB                    0
LB                  3.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                 10.00 cm
F1P               160.000 ppm
F1             12074.84 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM           7.27273 ppm/cm
HZCM          548.85638 Hz/cm
```

1H NMR of 16#


```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 34
PROCNO                 1

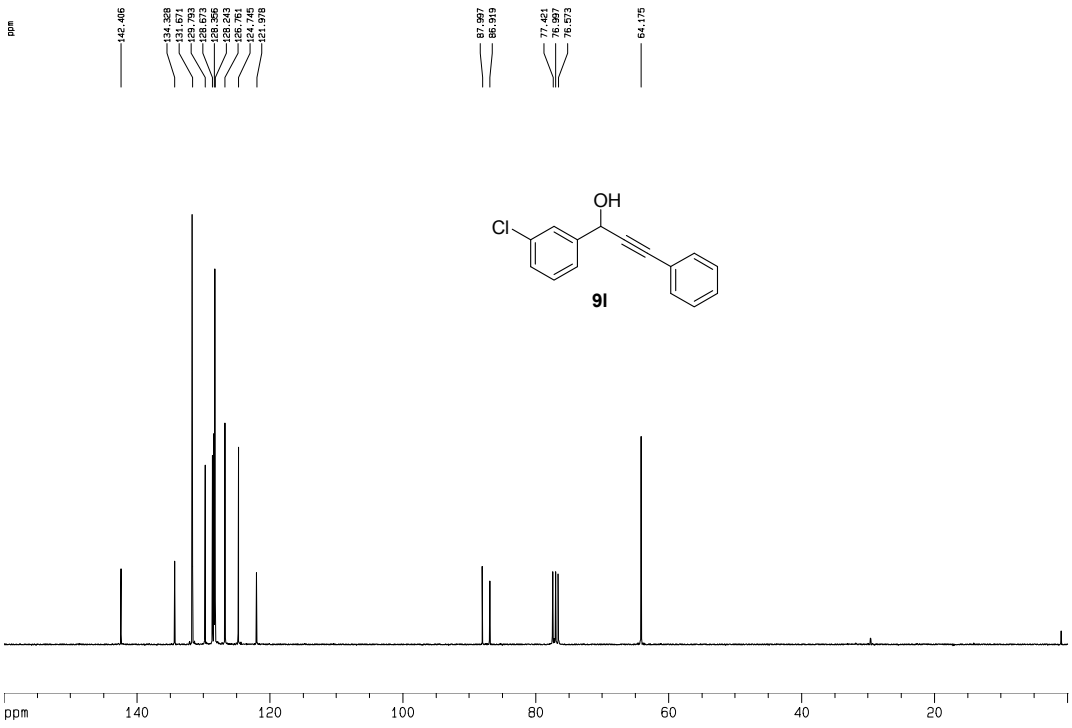
F2 - Acquisition Parameters
Date_           20090324
Time               14.18
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH            5995.204 Hz
FIDRES         0.091480 Hz
AQ             5.4657526 sec
RG                    32
DW                83.400 usec
DE                 6.00 usec
TE                297.2 K
D1            2.00000000 sec
MCREST        0.00000000 sec
MCWAK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                 10.70 usec
PL1                -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300252 MHz
WDW                   no
SSB                    0
LB                  0.00 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                  8.00 cm
F1P                8.500 ppm
F1              2551.11 Hz
F2P               -0.500 ppm
F2              -150.07 Hz
PPMCM           0.40909 ppm/cm
HZCM          122.78047 Hz/cm
```

13C NMR of 16#




```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 20
PROCNO                 1

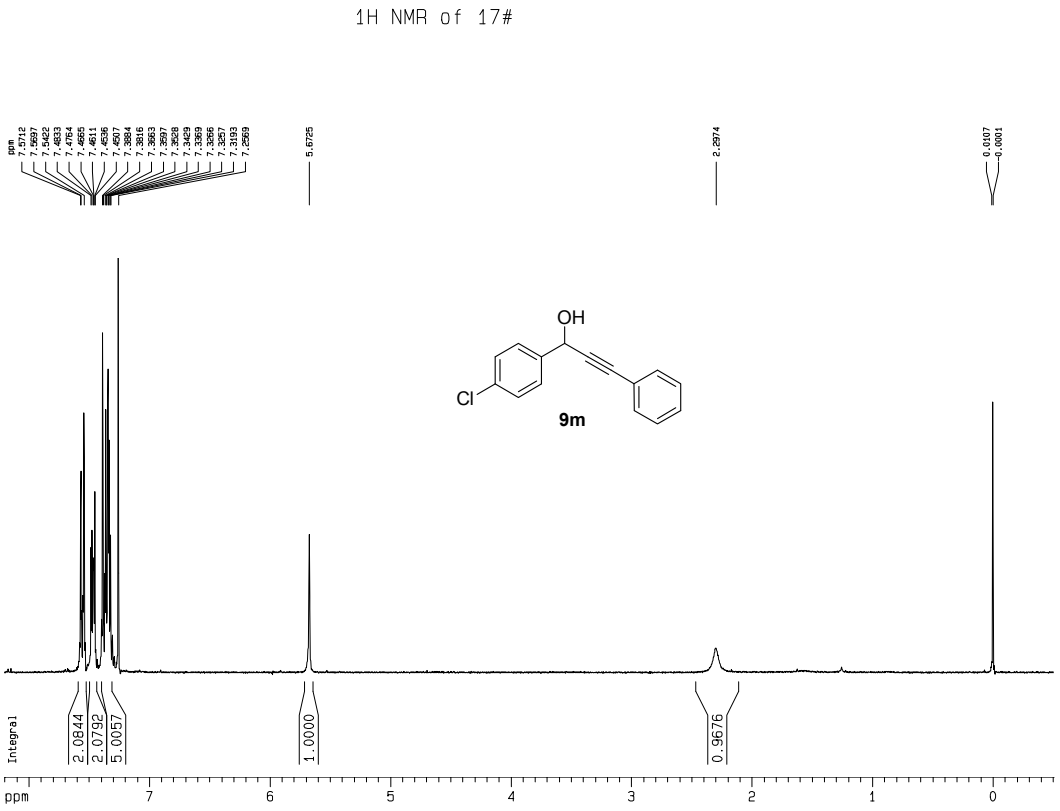
F2 - Acquisition Parameters
Date_           20090324
Time               11.45
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                  2024
DS                     8
SWH           22675.736 Hz
FIDRES         0.346004 Hz
AQ             1.4451188 sec
RG                  2048
DW                22.050 usec
DE                 6.00 usec
TE                297.2 K
D1            1.50000000 sec
d11           0.03000000 sec
MCREST        0.00000000 sec
MCWAK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                 12.00 usec
PL1                 0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -0.50 dB
PL12               17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677630 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                  9.00 cm
F1P              160.000 ppm
F1             12074.84 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM           7.27273 ppm/cm
HZCM          548.85645 Hz/cm
```



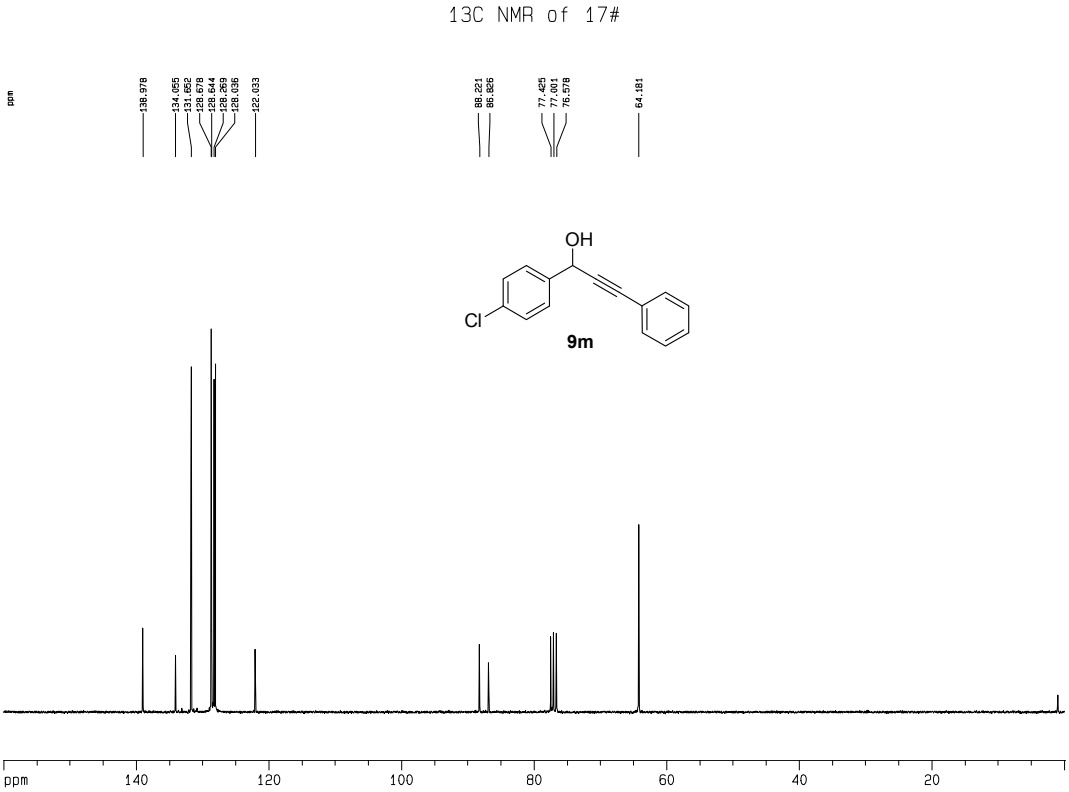
Current Data Parameters
NAME lizhiyuan-H
EXPNO 22
PROCNO 1

F2 - Acquisition Parameters
Date_ 20090306
Time 13.17
INSTRUM dpx300
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 0
SWH 5995.204 Hz
FIDRES 0.091480 Hz
AQ 5.4657526 sec
RG 258
DW 83.400 usec
DE 6.00 usec
TE 295.2 K
D1 2.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 1H
P1 10.70 usec
PL1 -0.50 dB
SFO1 300.1318008 MHz

F2 - Processing parameters
SI 32768
SF 300.1300072 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 22.00 cm
CY 9.00 cm
F1P 8.200 ppm
F1 2461.07 Hz
F2P -0.500 ppm
F2 -150.07 Hz
PPMCM 0.39545 ppm/cm
HZCM 118.68777 Hz/cm



Current Data Parameters
NAME lizhiyuan-13C
EXPNO 17
PROCNO 1

F2 - Acquisition Parameters
Date_ 20090307
Time 15.21
INSTRUM dpx300
PROBHD 5 mm PABBO BB-
PULPROG zgdc30
TD 65536
SOLVENT CDCl3
NS 482
DS 8
SWH 22675.736 Hz
FIDRES 0.346004 Hz
AQ 1.4451188 sec
RG 7168
DW 22.050 usec
DE 6.00 usec
TE 297.2 K
D1 1.50000000 sec
d11 0.03000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

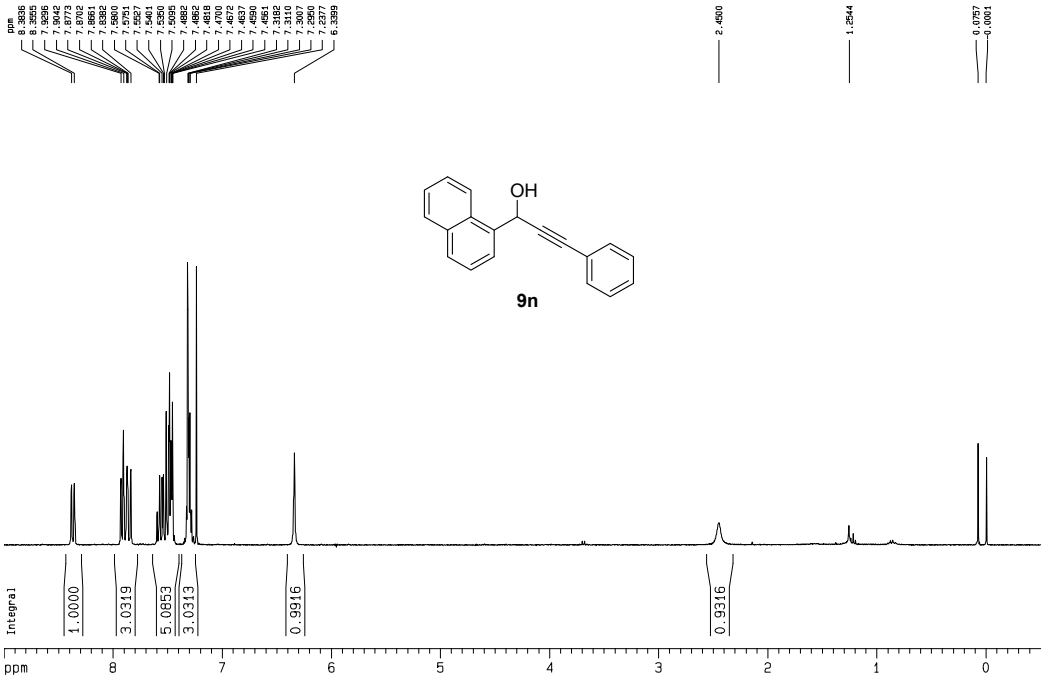
======== CHANNEL f1 ========
NUC1 13C
P1 12.00 usec
PL1 0.00 dB
SFO1 75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -0.50 dB
PL12 17.70 dB
SFO2 300.1315007 MHz

F2 - Processing parameters
SI 32768
SF 75.4677610 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 0.50

1D NMR plot parameters
CX 22.00 cm
CY 8.00 cm
F1P 160.000 ppm
F1 12074.84 Hz
F2P 0.000 ppm
F2 0.00 Hz
PPMCM 7.27273 ppm/cm
HZCM 548.85638 Hz/cm

1H NMR of 18#




```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 28
PROCNO                 1

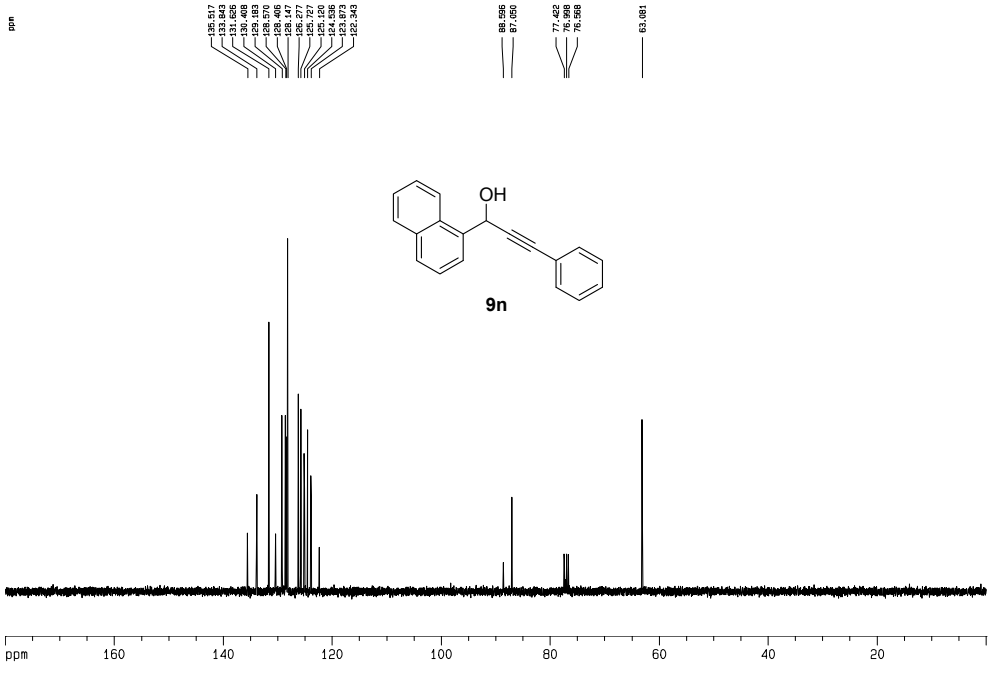
F2 - Acquisition Parameters
Date_           20090320
Time               15.40
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ             5.4657526 sec
RG                   128
DW                83.400 usec
DE                 6.00 usec
TE                298.2 K
D1             2.00000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1               -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300129 MHz
WDW                   no
SSB                    0
LB                  0.00 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                  6.00 cm
F1P                9.000 ppm
F1              2701.17 Hz
F2P                -0.500 ppm
F2              -150.07 Hz
PPMCM           0.43182 ppm/cm
HZCM          129.60159 Hz/cm
```

13C NMR of 18#




```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 12
PROCNO                 1

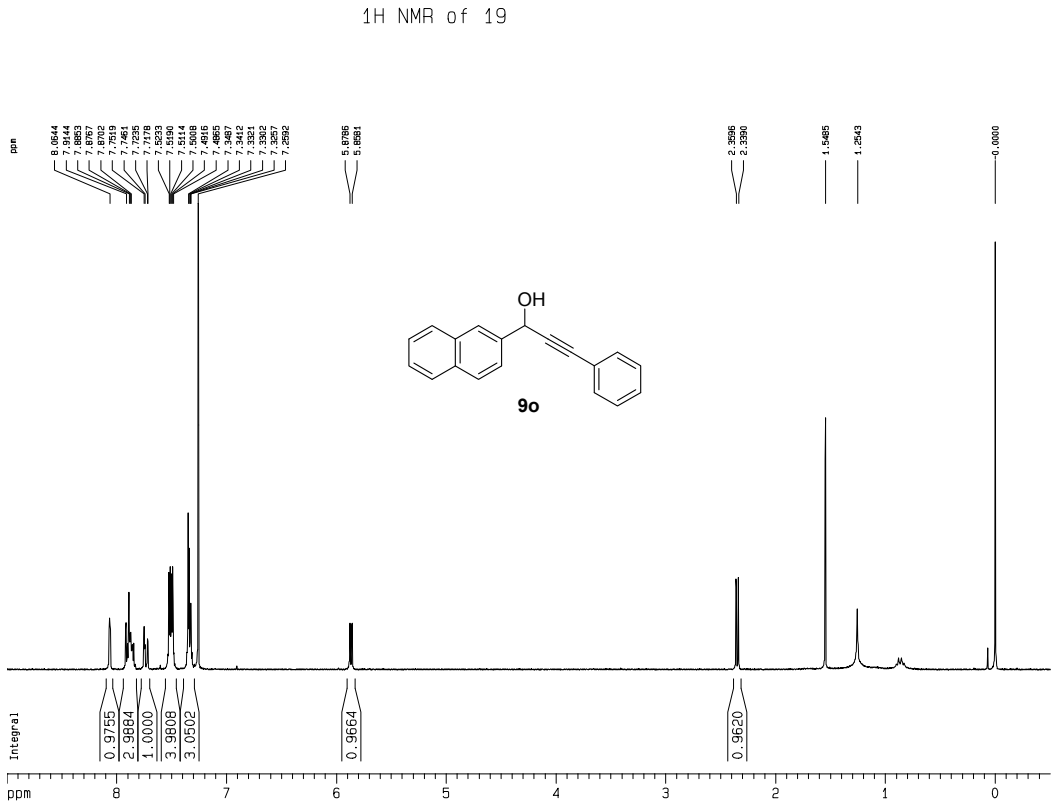
F2 - Acquisition Parameters
Date_           20090227
Time               21.09
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                 65536
SOLVENT            CDCl3
NS                  2048
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ             1.4451188 sec
RG                  8192
DW                22.050 usec
DE                 6.00 usec
TE                295.2 K
D1             1.50000000 sec
d11            0.03000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2               -0.50 dB
PL12              17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677700 MHz
WDW                   EM
SSB                    0
LB                  0.20 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                  8.00 cm
F1P              180.000 ppm
F1             13584.20 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM           8.18182 ppm/cm
HZCM          617.46362 Hz/cm
```



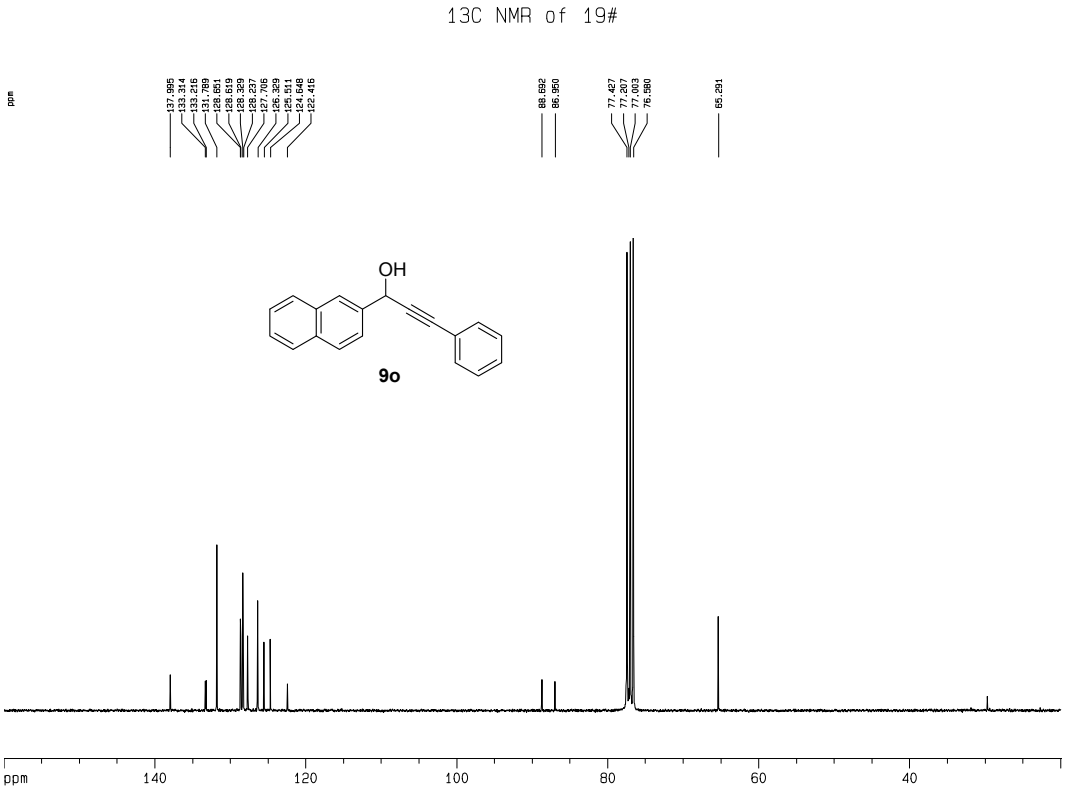

```
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 11
PROCNO                 1

F2 - Acquisition Parameters
Date_          20090226
Time               10.49
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    12
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                295.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                 10.70 usec
PL1                -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF          300.1300065 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                 14.00 cm
F1P                9.000 ppm
F1              2701.17 Hz
F2P               -0.500 ppm
F2              -150.07 Hz
PPMCM           0.43182 ppm/cm
HZCM          129.60159 Hz/cm
```

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Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 10
PROCNO                 1

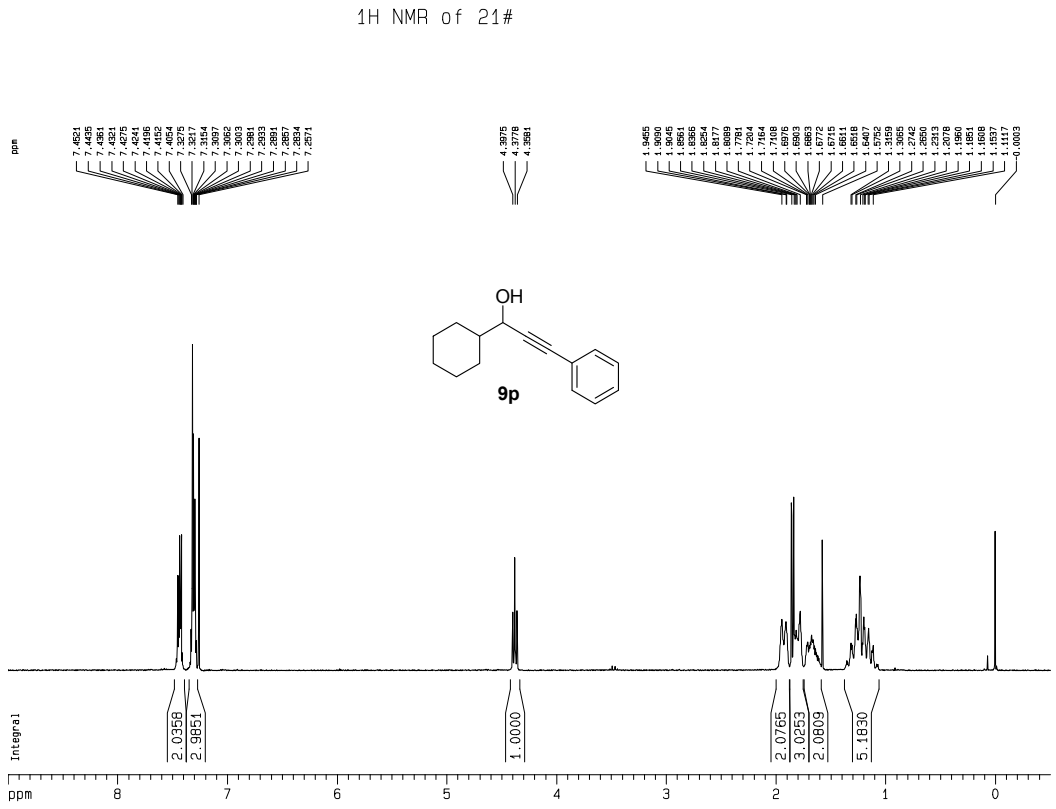
F2 - Acquisition Parameters
Date_          20090227
Time               2.27
INSTRUM          dpx300
PROBHD   5 mm PABBO BB-
PULPROG          zgdc30
TD                 65536
SOLVENT            CDCl3
NS                  8192
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  9216
DW                22.050 usec
DE                 6.00 usec
TE                299.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                 13C
P1                 12.00 usec
PL1                 0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -0.50 dB
PL12               17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF          75.4677499 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                 22.00 cm
CY                 10.00 cm
F1P              160.000 ppm
F1             12074.84 Hz
F2P               20.000 ppm
F2              1509.35 Hz
PPMCM           6.36364 ppm/cm
HZCM          480.24930 Hz/cm
```

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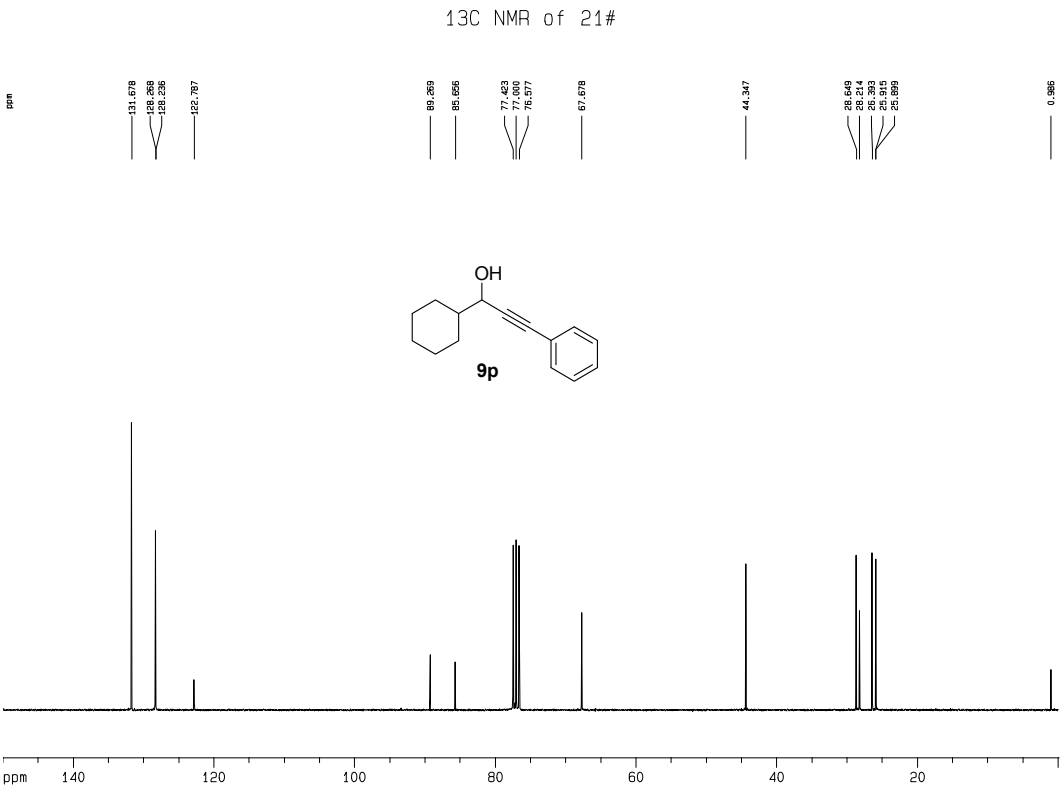
Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 45
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090415
Time               9.59
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG            zg30
TD                65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   258
DW                83.400 usec
DE                 6.00 usec
TE                299.2 K
D1           2.00000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                10.70 usec
PL1               -0.50 dB
SFO1         300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300072 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                22.00 cm
CY                 7.00 cm
F1P               9.000 ppm
F1             2701.17 Hz
F2P              -0.500 ppm
F2             -150.07 Hz
PPMCM          0.43182 ppm/cm
HZCM          129.60159 Hz/cm
```




```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 29
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090415
Time               22.13
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                65536
SOLVENT            CDCl3
NS                  4222
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  6144
DW                22.050 usec
DE                 6.00 usec
TE                300.2 K
D1           1.50000000 sec
d11          0.03000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

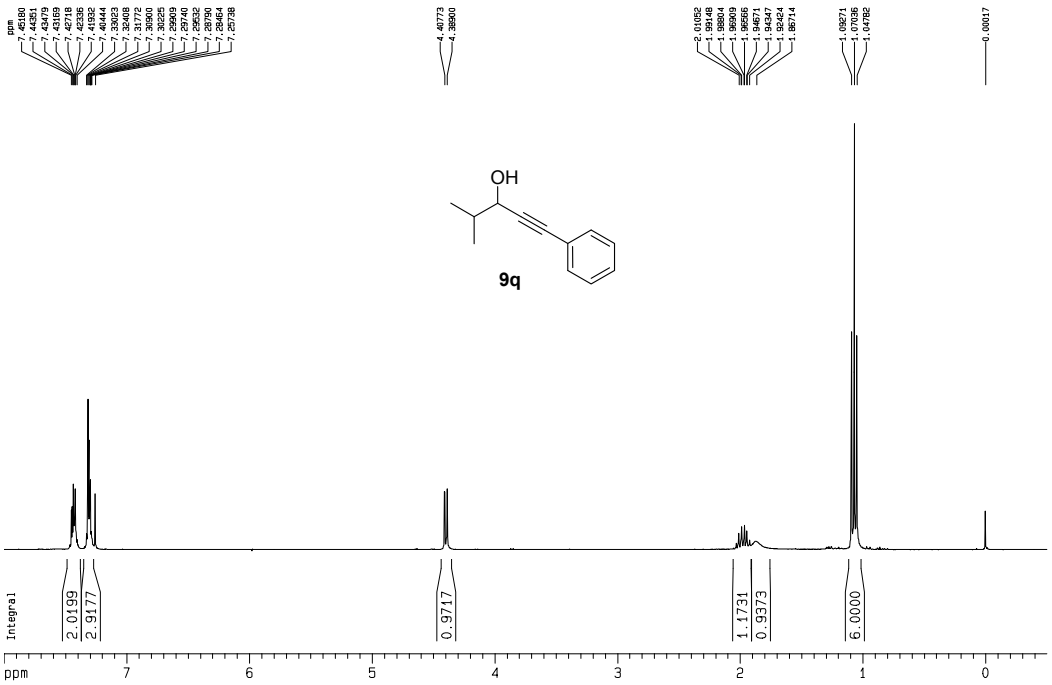
======== CHANNEL f1 ========
NUC1                 13C
P1                12.00 usec
PL1                0.00 dB
SFO1         75.4752958 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2             80.00 usec
PL2               -0.50 dB
PL12              17.70 dB
SFO2         300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677506 MHz
WDW                   EM
SSB                    0
LB                  0.50 Hz
GB                     0
PC                  0.50

1D NMR plot parameters
CX                22.00 cm
CY                 6.00 cm
F1P             150.000 ppm
F1             11320.16 Hz
F2P              -0.000 ppm
F2               -0.00 Hz
PPMCM          6.81818 ppm/cm
HZCM          514.55286 Hz/cm
```

1H NMR of 22#

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Current Data Parameters
NAME         lizhiyuan-H
EXPNO                 40
PROCNO                 1

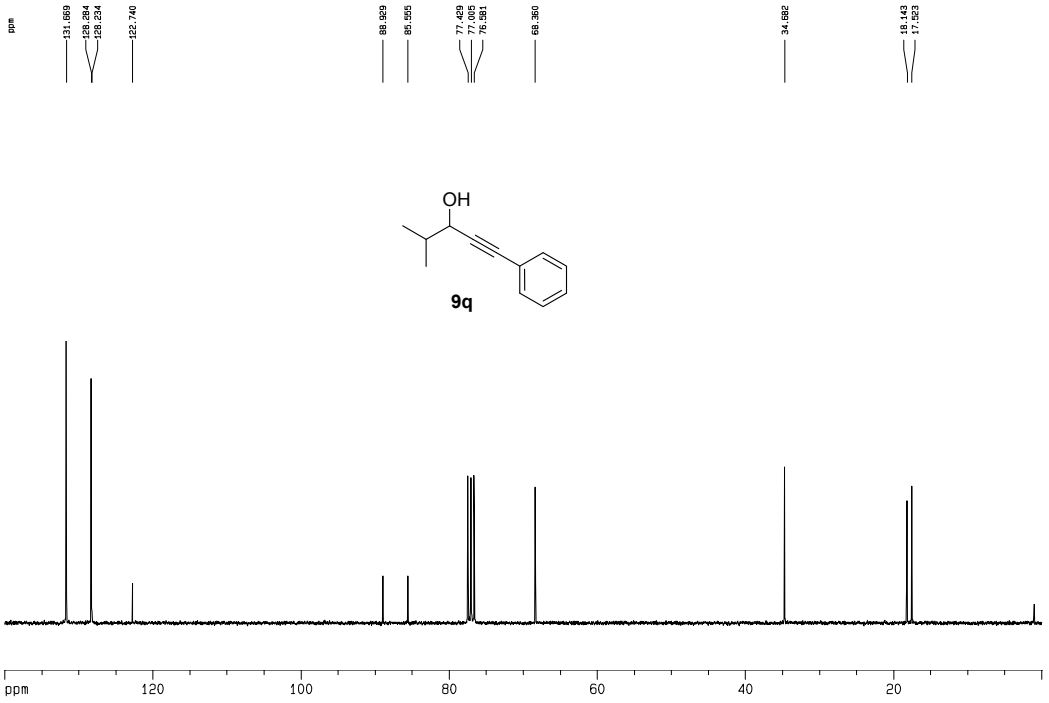
F2 - Acquisition Parameters
Date_           20090409
Time               11.34
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     0
SWH             5995.204 Hz
FIDRES          0.091480 Hz
AQ              5.4657526 sec
RG                   128
DW                83.400 usec
DE                 6.00 usec
TE                297.2 K
D1             2.00000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                  1H
P1                 10.00 usec
PL1                -2.50 dB
SFO1          300.1318008 MHz

F2 - Processing parameters
SI                 32768
SF           300.1300070 MHz
WDW                   EM
SSB                    0
LB                  0.10 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 22.00 cm
CY                  9.00 cm
F1P                8.000 ppm
F1              2401.04 Hz
F2P               -0.500 ppm
F2              -150.06 Hz
PPMCM           0.38636 ppm/cm
HZCM          115.95932 Hz/cm
```

13C NMR of 2#




```
Current Data Parameters
NAME       lizhiyuan-13C
EXPNO                 25
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090411
Time               12.28
INSTRUM           dpx300
PROBHD   5 mm PABBO BB-
PULPROG           zgdc30
TD                 65536
SOLVENT            CDCl3
NS                   298
DS                     8
SWH            22675.736 Hz
FIDRES          0.346004 Hz
AQ              1.4451188 sec
RG                  2048
DW                22.050 usec
DE                 6.00 usec
TE                299.2 K
D1             1.50000000 sec
d11            0.03000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

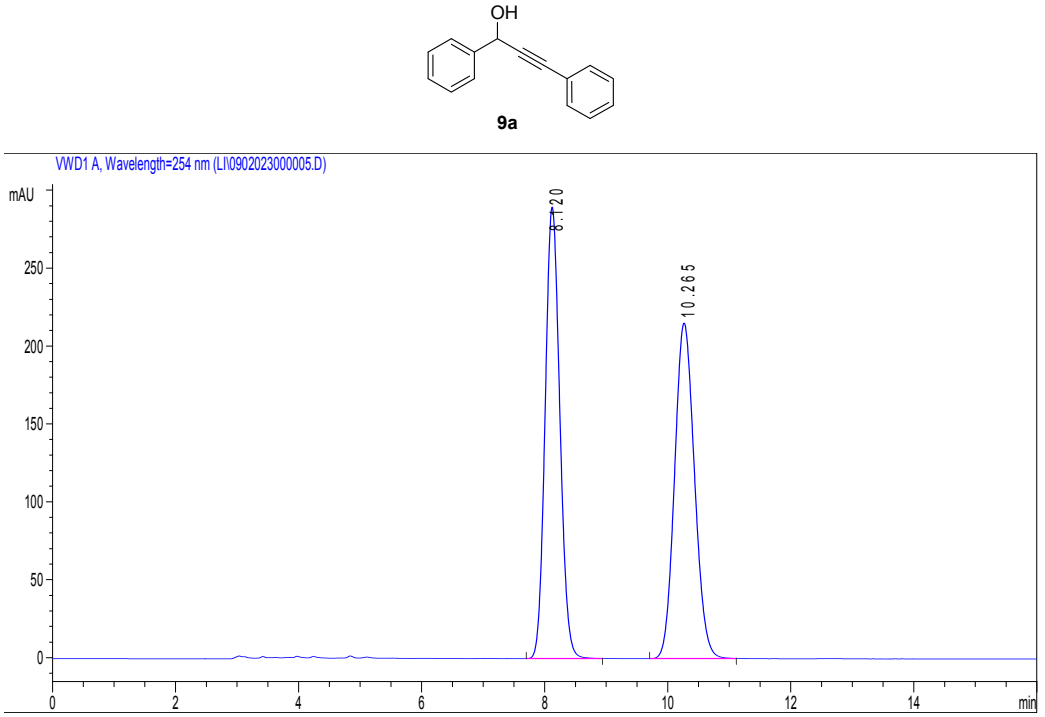
======== CHANNEL f1 ========
NUC1                 13C
P1                 12.00 usec
PL1                 0.90 dB
SFO1          75.4752958 MHz

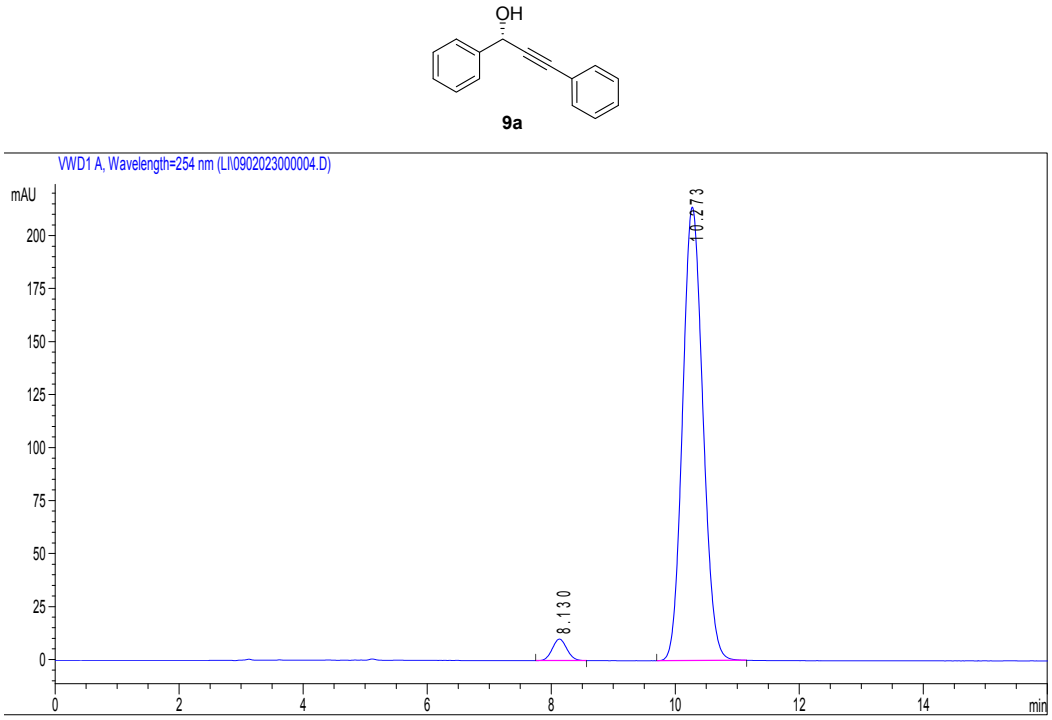
======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2              80.00 usec
PL2                -2.50 dB
PL12               18.00 dB
SFO2          300.1315007 MHz

F2 - Processing parameters
SI                 32768
SF           75.4677520 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  0.50

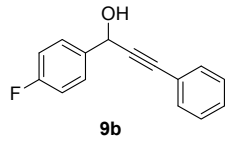
1D NMR plot parameters
CX                 22.00 cm
CY                  6.00 cm
F1P              140.000 ppm
F1              10565.49 Hz
F2P                0.000 ppm
F2                 0.00 Hz
PPMCM           6.36364 ppm/cm
HZCM          480.24930 Hz/cm
```

Figure S2. HPLC Spectra of the Propargylic Alcohols Products.

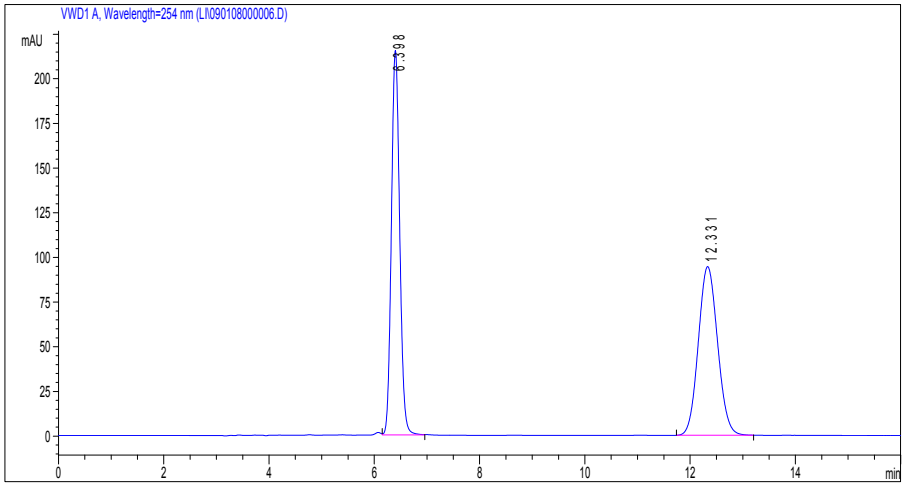


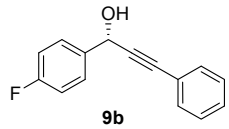


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|--------------|--------------|------------|
1 8.130 BB 0.2539 167.02376 10.18796 3.3201
2 10.273 BB 0.3569 4863.61865 213.96878 96.6799
Totals: 5030.64241 224.15674

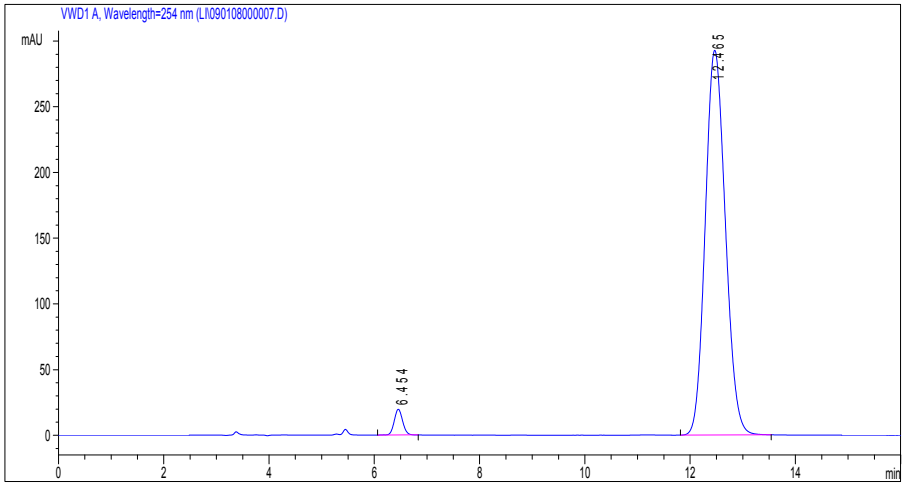


9b

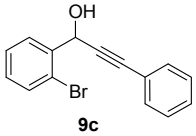




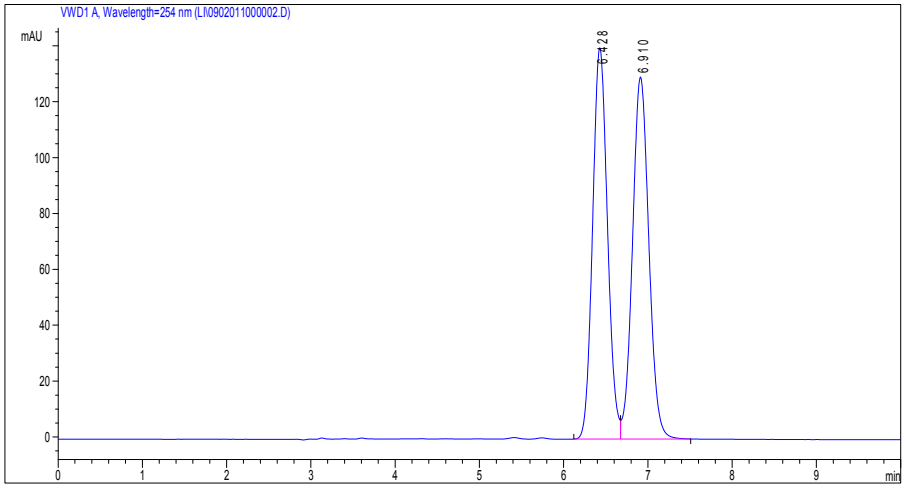
9b

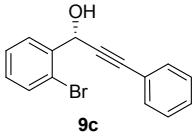


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|--------------|--------------|------------|
1 6.454 BB 0.1741 219.45233 19.63624 2.7447
2 12.465 BB 0.4161 7775.95850 292.79892 97.2553
Totals: 7995.41083 312.43516



9c





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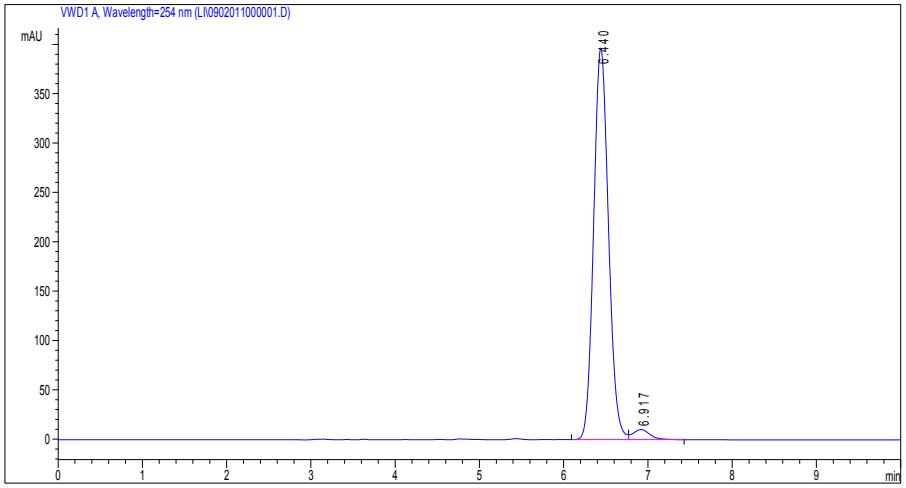
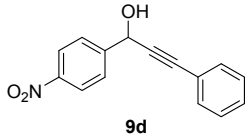
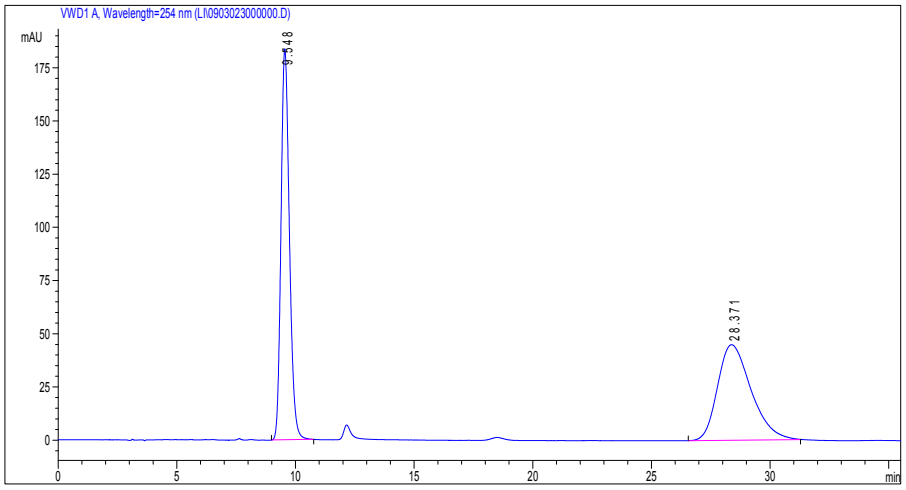
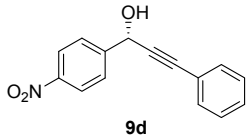


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|----------|----------|----------|
1 6.440 VV 0.1908 4856.67627 397.02255 97.0249
2 6.917 BB 0.2160 148.92174 10.34672 2.9751
Totals: 5005.59801 407.36927

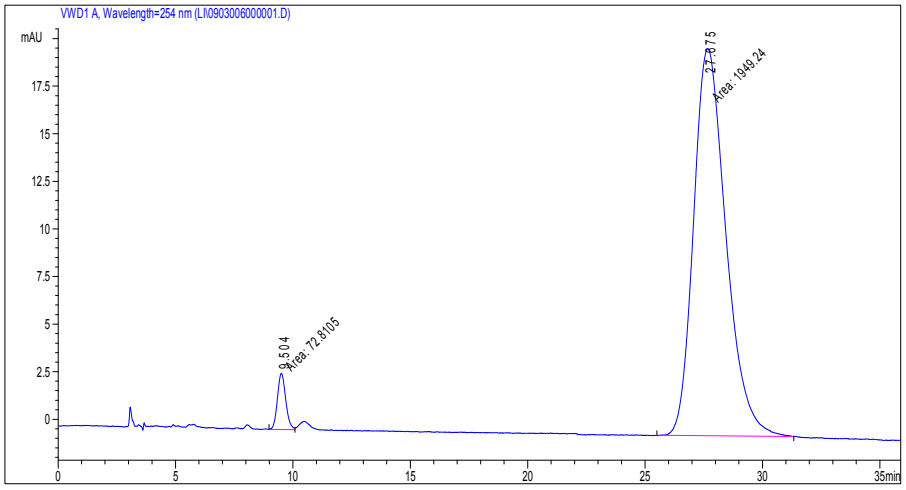


9d

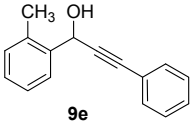




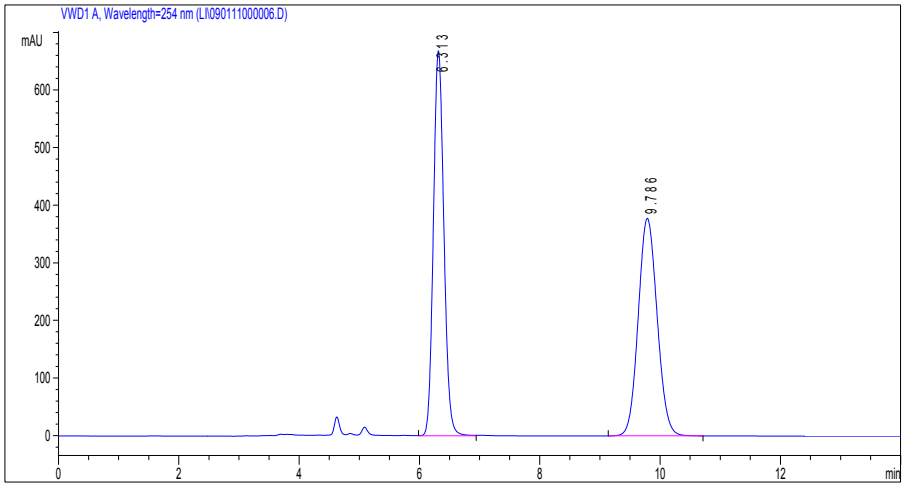
9d

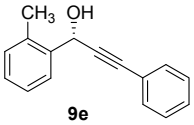


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|-----------|-----|-----------|---------------|---------------|-------------|
1 9.504 BV 0.3701 72.11470 2.94545 3.6785
2 27.675 BB 1.1559 1888.30469 20.17732 96.3215
Totals: 1960.41939 23.12277



9e





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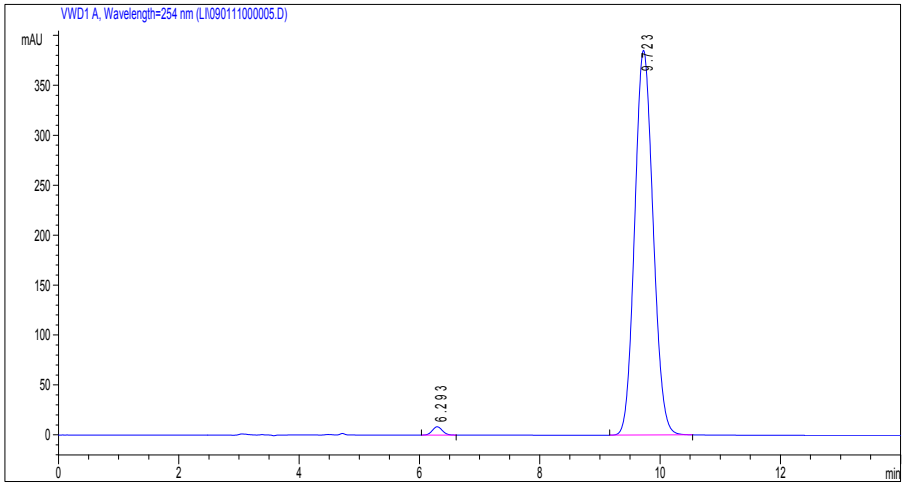
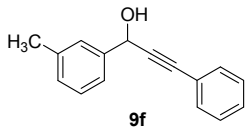


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|--------------|--------------|----------|
1 6.293 BB 0.1805 96.56470 8.32010 1.1636
2 9.723 BB 0.3328 8202.46777 385.29794 98.8364
Totals: 8299.03247 393.61805



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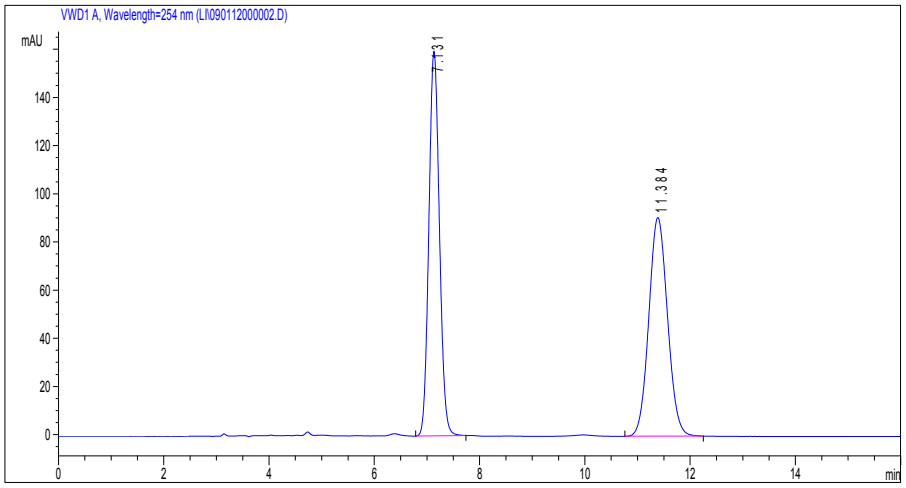
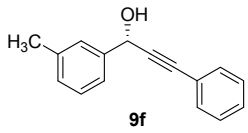
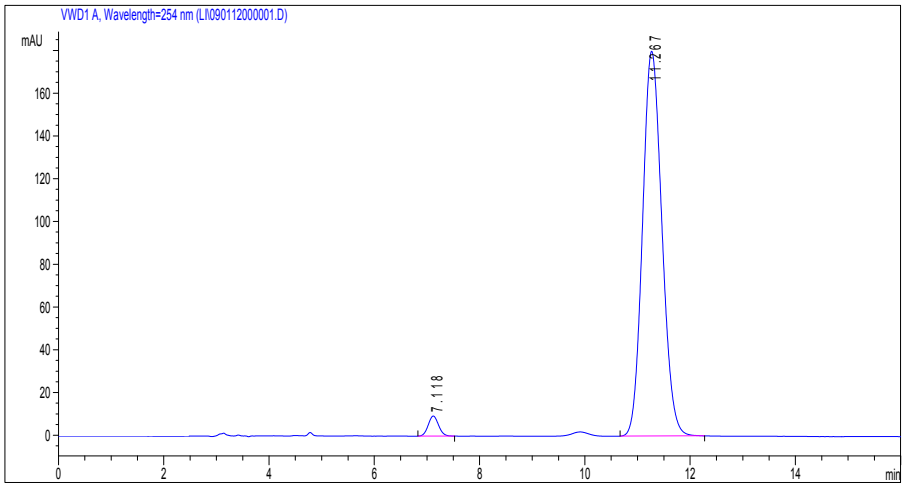
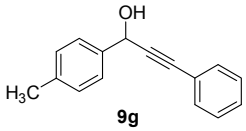




9f



Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|---------------|---------------|-------------|
1 7.118 BB 0.2128 129.48990 9.41662 2.7356
2 11.267 BB 0.3988 4604.02734 180.01799 97.2644
Totals: 4733.51724 189.43461



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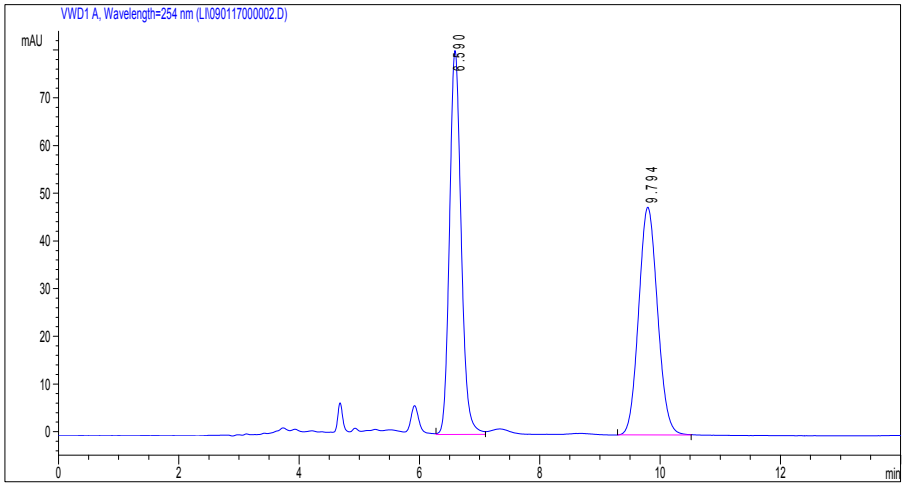
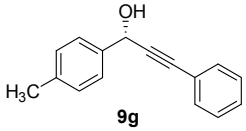
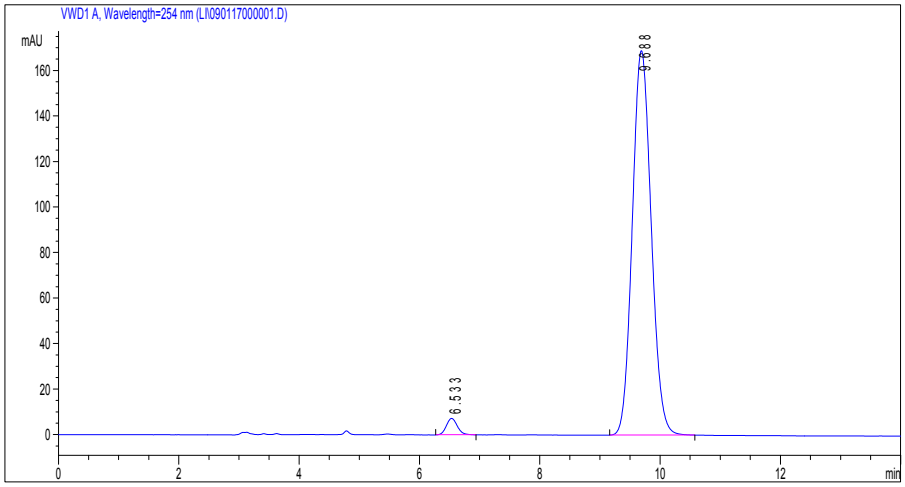
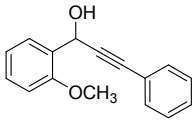




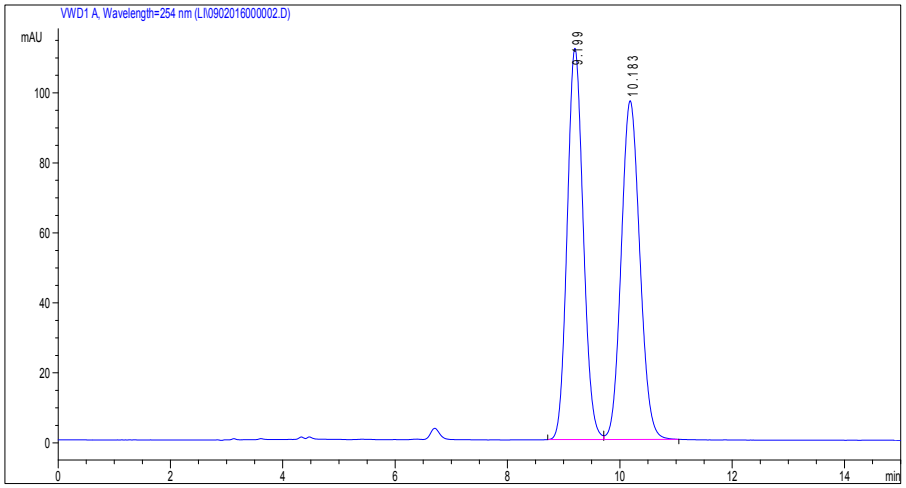
9g

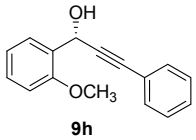


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|-----------|--------------|--------------|------------|
1 6.533 BB 0.1980 92.27942 7.24765 2.4403
2 9.688 BB 0.3421 3689.23779 168.98087 97.5597
Totals: 3781.51721 176.22851

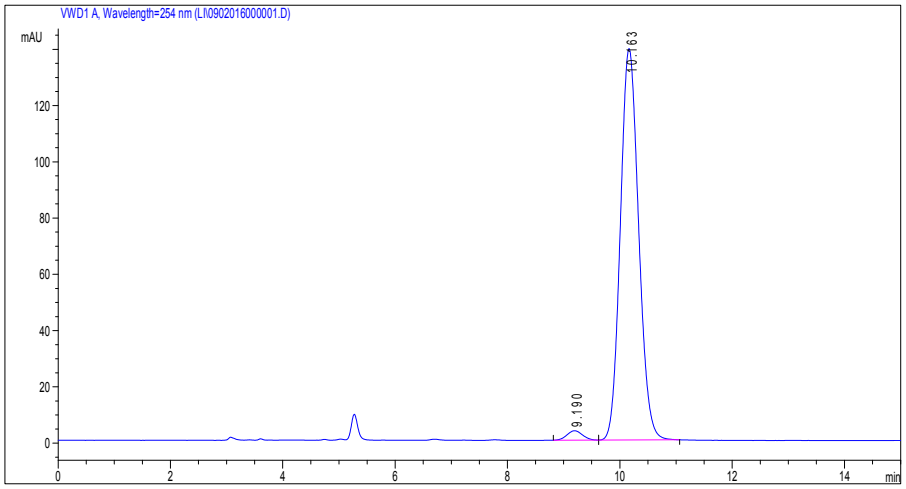


9h

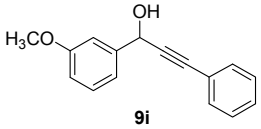




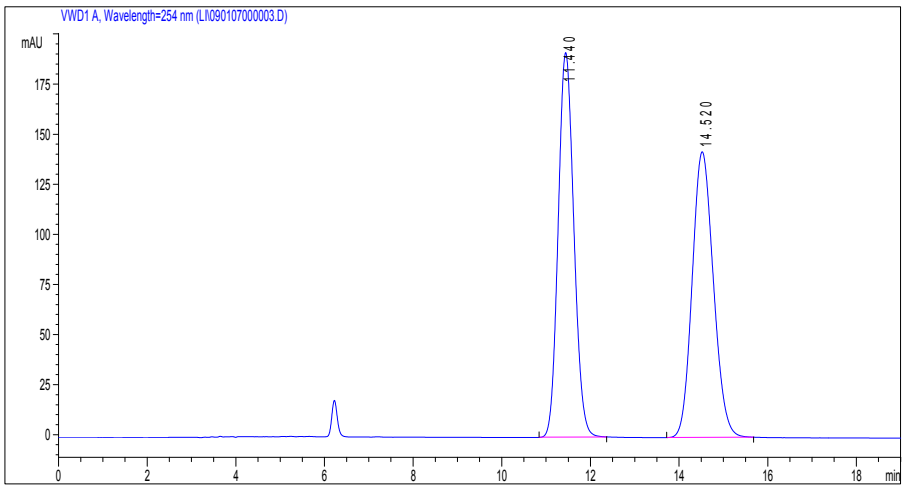
9h

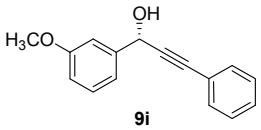


Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.190	BV	0.3002	65.34696	3.37397	2.0347
2	10.163	VB	0.3526	3146.21997	139.17323	97.9653
Totals:				3211.56693	142.54721	

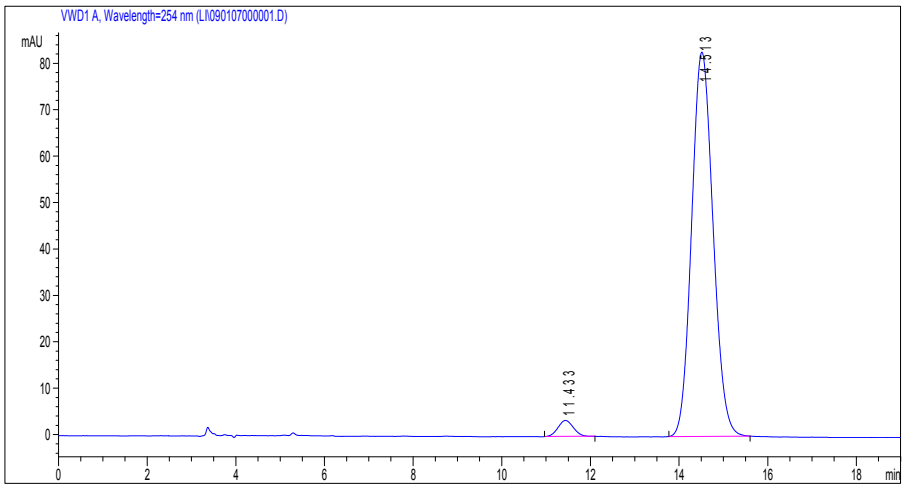


9i

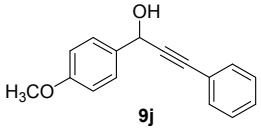




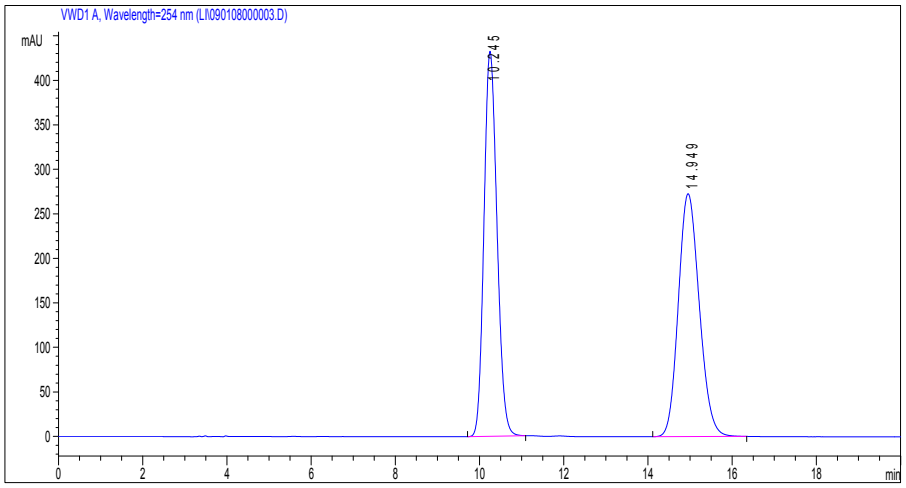
9i

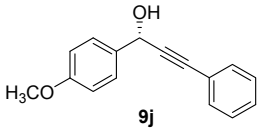


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|-----------|-----|-----------|---------------|---------------|-------------|
1 11.433 BB 0.3651 84.38023 3.47189 2.9429
2 14.513 BB 0.5229 2782.89478 82.85305 97.0571
Totals: 2867.27500 86.32494

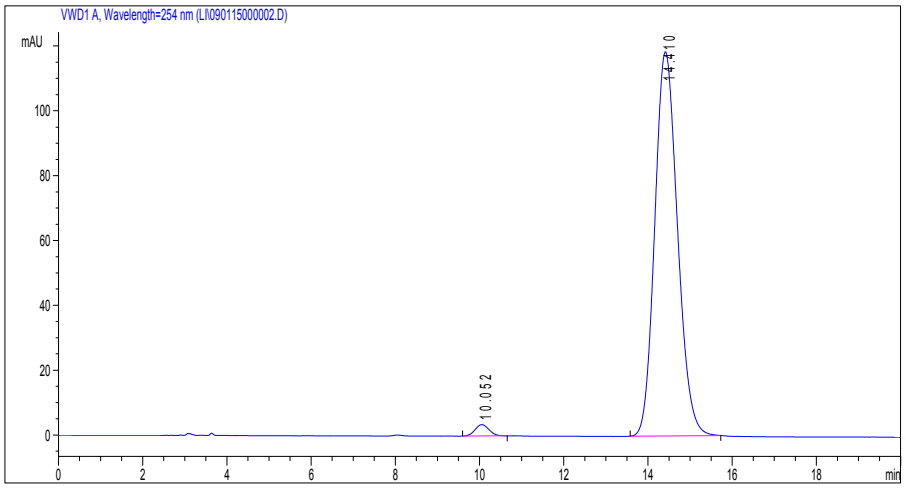


9j

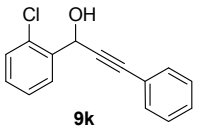




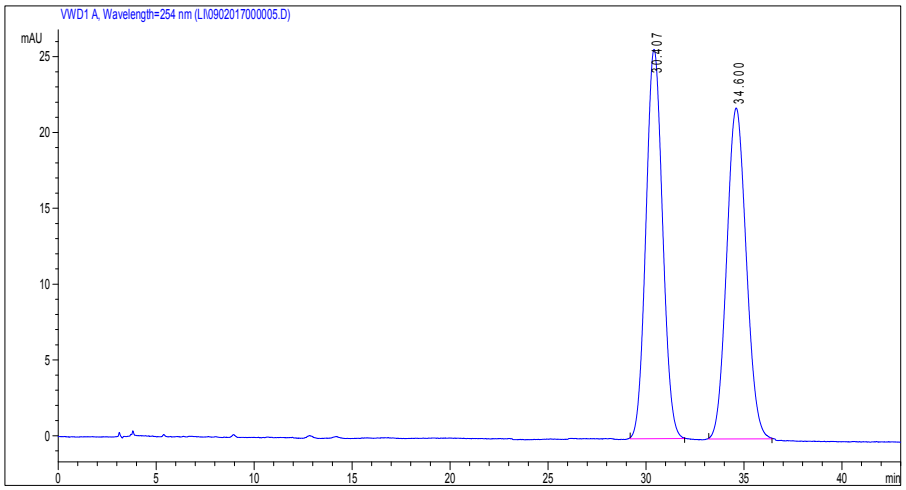
9j

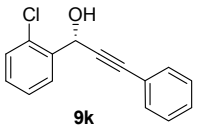


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|-----------|-----|-----------|---------------|---------------|-------------|
1 10.052 BB 0.3574 80.70335 3.50592 1.7836
2 14.410 BB 0.5828 4443.92822 118.57702 98.2164
Totals: 4524.63157 122.08293

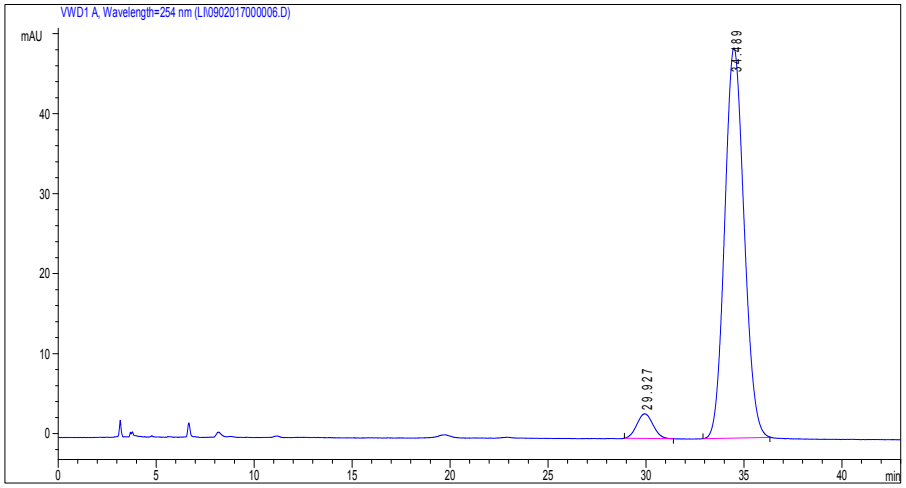


9k

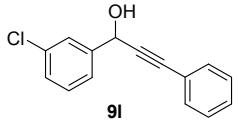




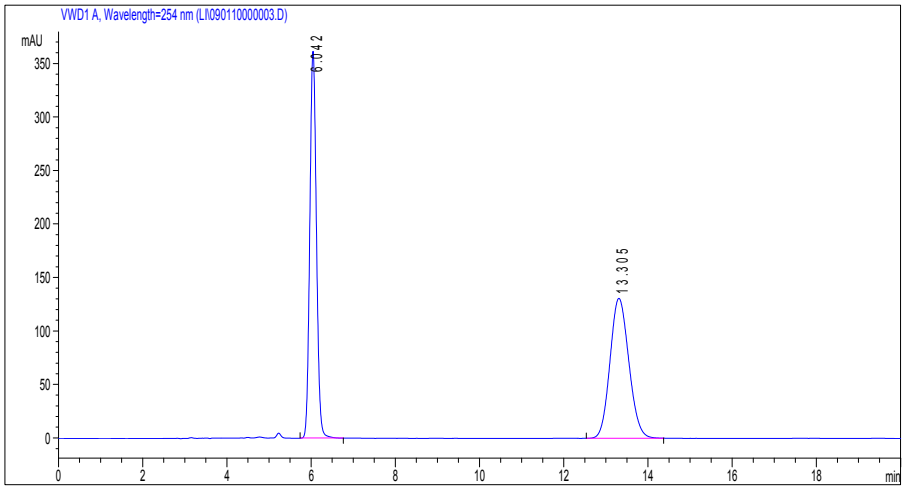
9k

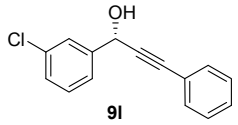


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|-----------|-----|-----------|---------------|---------------|-------------|
1 29.927 BB 0.6856 178.26758 3.09936 5.0314
2 34.489 BB 1.0546 3364.80078 48.81406 94.9686
Totals: 3543.06836 51.91342

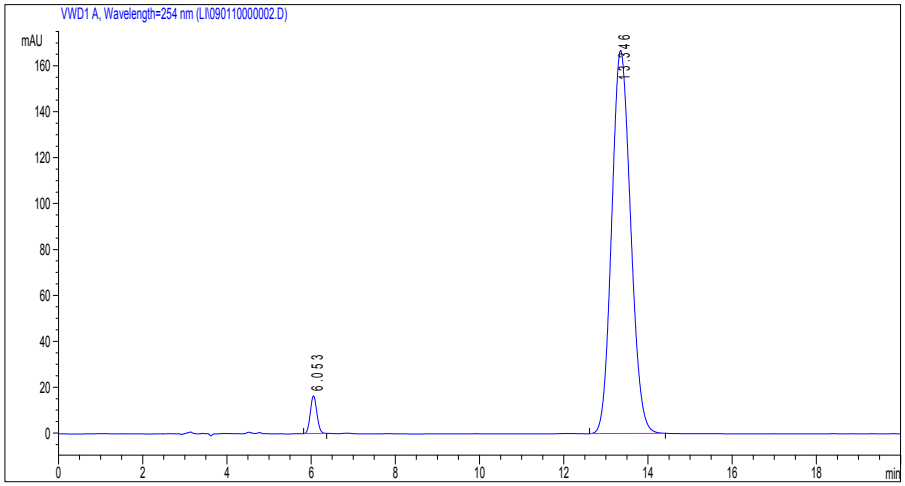


9l

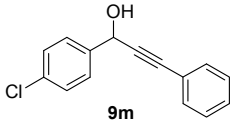




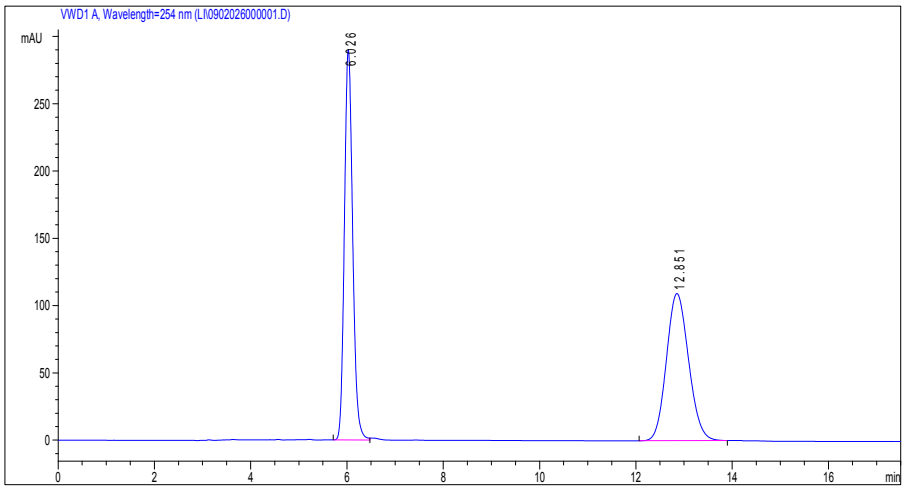
9l

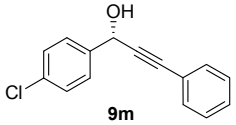


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|--------------|--------------|------------|
1 6.053 BB 0.1713 180.19814 16.47809 3.3396
2 13.346 BB 0.4898 5215.59277 166.92085 96.6604
Totals: 5395.79091 183.39894

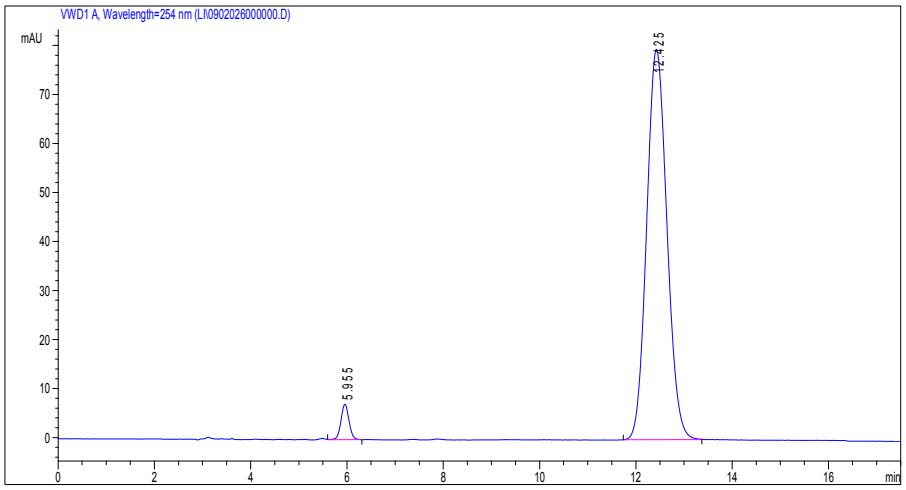


9m

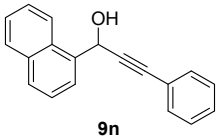




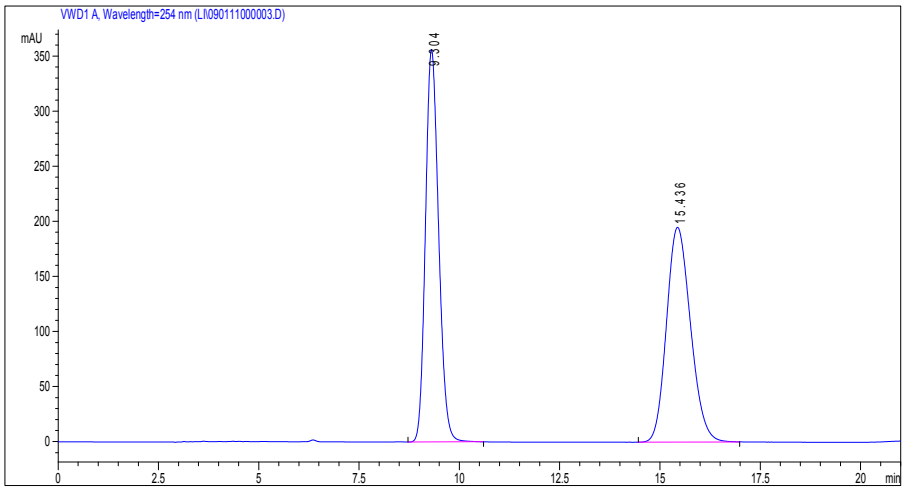
9m

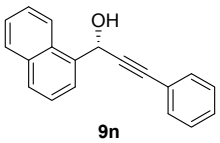


Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|-----------|-----|-----------|---------------|---------------|-------------|
1 5.955 VB 0.1813 84.62672 7.24935 3.5058
2 12.425 BB 0.4562 2329.29492 79.66242 96.4942
Totals: 2413.92165 86.91177

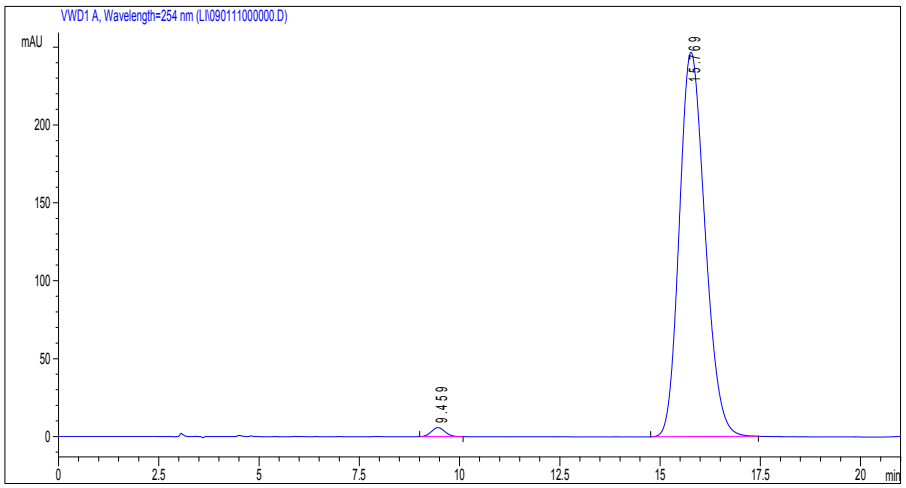


9n





9n



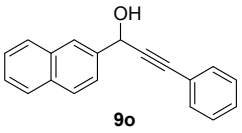
Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %

------|----------|-----|----------|--------------|--------------|-------------|

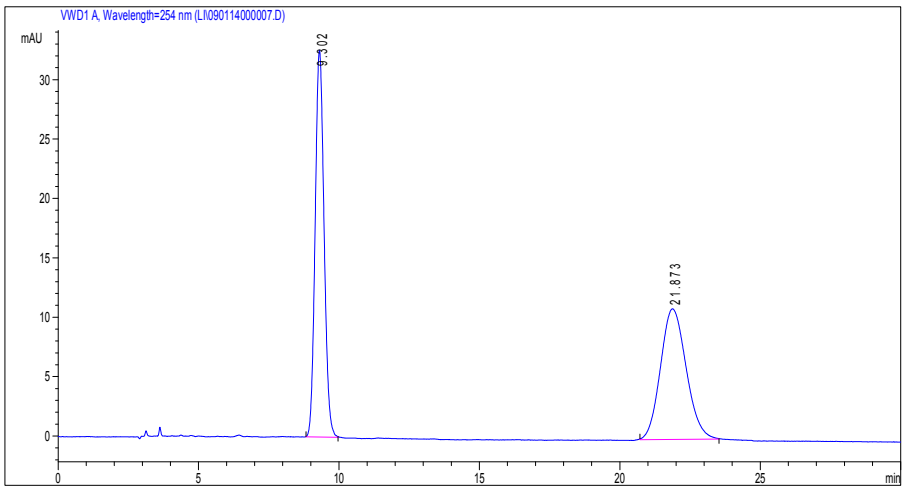
1 9.459 BB 0.3679 167.02376 5.82216 1.2526

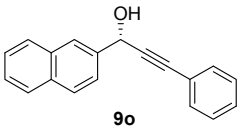
2 15.769 BB 0.6908 1.09811e4 246.83197 98.7474

Totals: 1.11204e4 252.65413



9o





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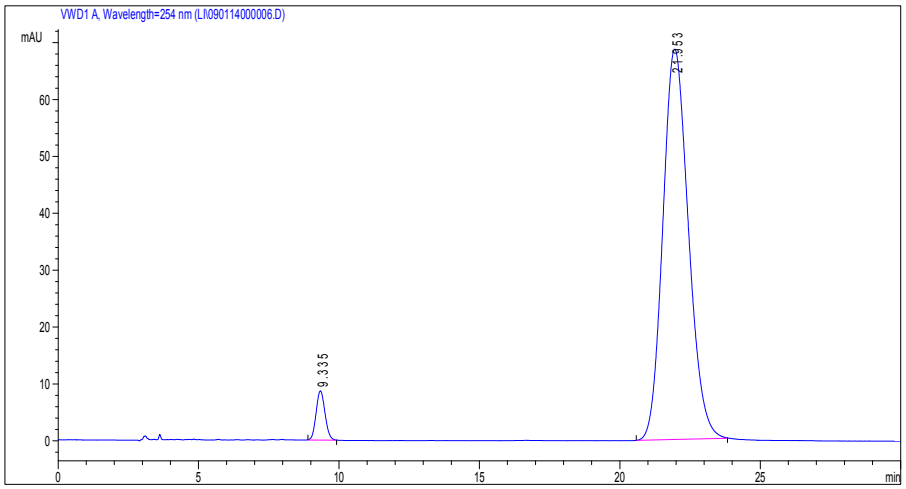


Peak RetTime Type Width Area Height Area

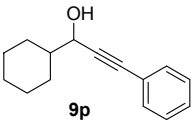
[min] [min] mAU *s [mAU] %

------|----------|-----|----------|--------------|--------------|------------|

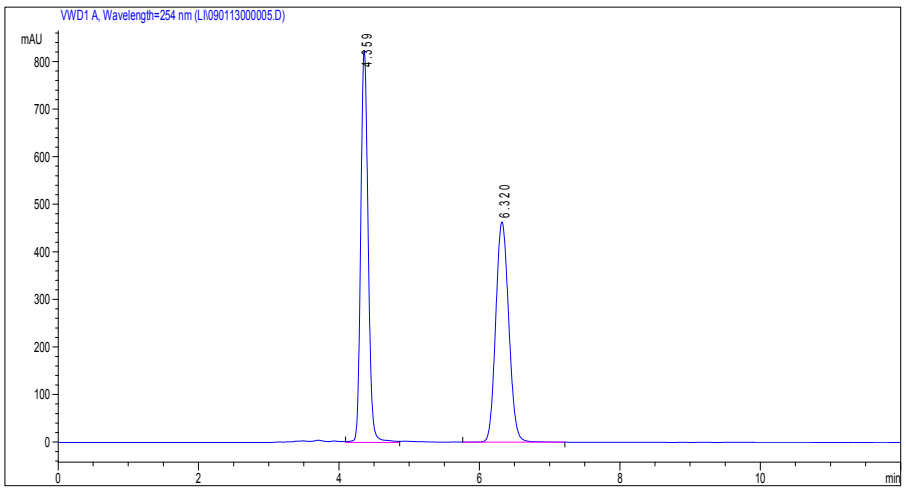
1 9.335 BB 0.3430 191.04559 8.66960 4.2188

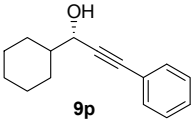
2 21.953 BB 0.9746 4337.38818 68.63472 95.7812

Totals: 4528.43378 77.30432

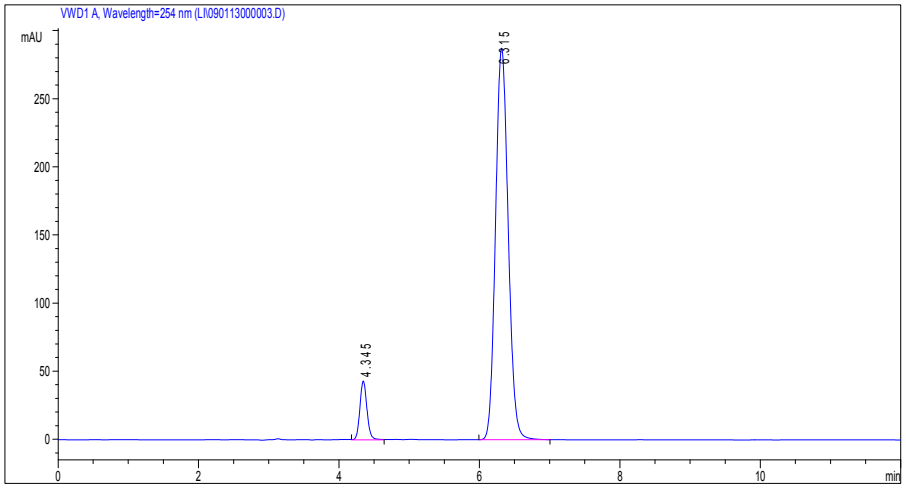


9p





9p



Peak RetTime Type Width Area Height Area

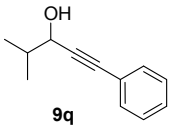
[min] [min] mAU *s [mAU] %

------|----------|-----|----------|--------------|----------------|------------|

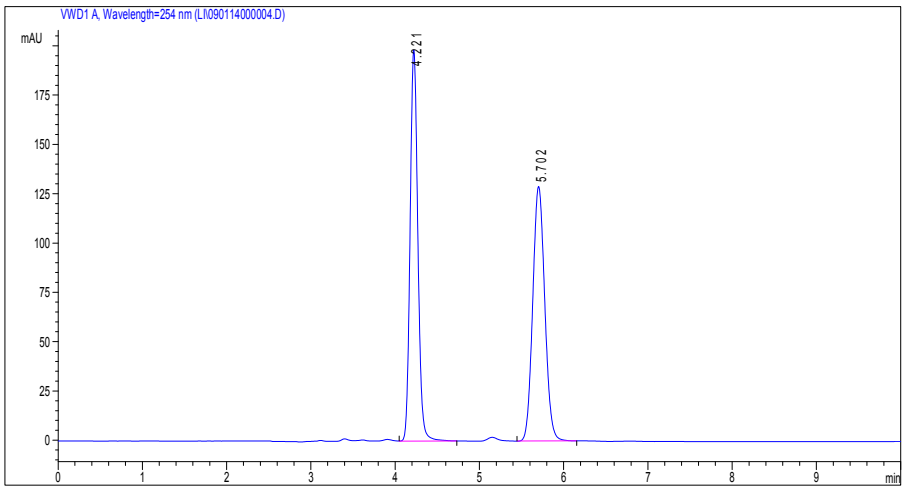
1 4.345 BB 0.1086 305.69379 43.29863 7.8295

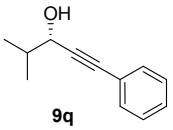
2 6.315 BB 0.1956 3598.67700 287.41974 92.1705

Totals: 3904.37079 330.71836

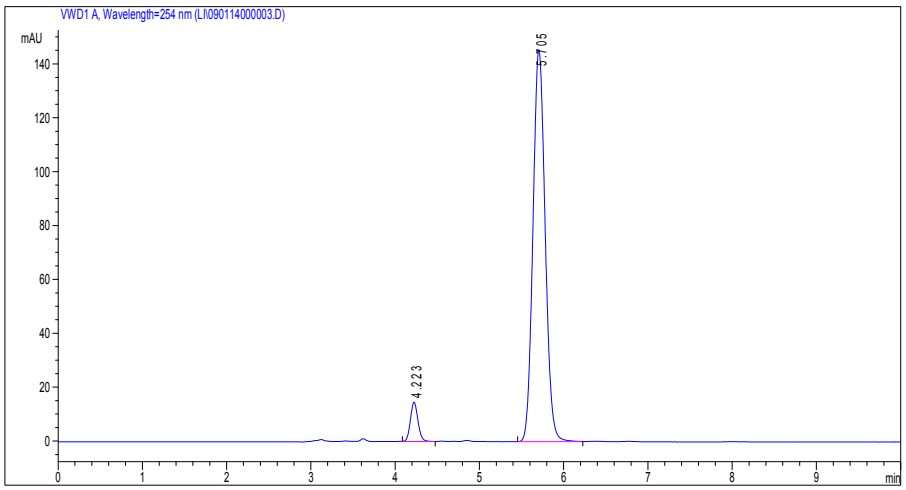


9q





9q



Peak RetTime Type Width Area Height Area
[min] [min] mAU *s [mAU] %
------|----------|-----|----------|---------------|---------------|-------------|
1 4.223 BB 0.0975 90.75805 14.55558 5.8361
2 5.705 BB 0.1567 1464.34680 145.50090 94.1639
Totals: 1555.10485 160.05648