Electronic Supplementary Material (ESI) for ChemComm.
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General information

All reactions that required anhydrous conditions were carried by standard procedures under nitrogen atmosphere. Commercially available reagents from Alfa Aesar and Aldrich were used as received. The solvents were dried by distillation over the appropriate drying reagents.

Melting points were measured on a Meltemp melting point apparatus and were not corrected. ^{1}H NMR spectra were recorded on commercial instruments (300 MHz or 600 MHz). Chemical shifts were reported in ppm from tetramethylsilane with the solvent resonance as the internal standard ($CDCl_3$, δ = 7.26). Spectra were reported as follows: chemical shift (δ ppm), multiplicity (s = singlet, d = doublet, t =triplet, q = quartet, m = multiplet), coupling constants (Hz), integration and assignment. ^{13}C NMR spectra were collected on commercial instruments (300 MHz or 600 Hz) with complete proton decoupling. Chemical shifts are reported in ppm from the tetramethylsilane with the solvent resonance as internal standard ($CDCl_3$, δ = 77.0).

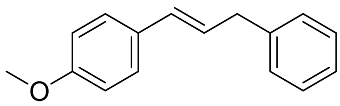
Dhps were prepared according the previous literature[1].

Nitro-olefines were prepared according to the previous literature[2].

General procedural for synthesis of trans-olefins via alkyl transfer reactions.

A reaction tube was charged with the DHP (0.4 mmol, 2 eq.), nitro-olefin (0.2 mmol, 1.0 eq.), *n*-butyl ether (2 mL), AIBN (1 eq.). The system was heated at 80 °C with stirring under a nitrogen atmosphere. The reaction was monitored by TLC. When the reaction was completed, the crude reaction mixture was allowed to reach room temperature, the solvent was eliminated, and the residue was directly purified by chromatography on silica gel.

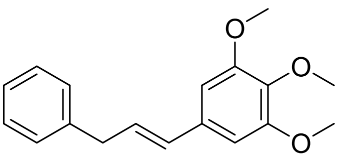
Characterization of the trans-olefin products



3a

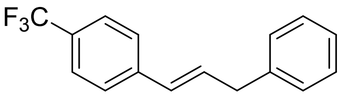
[1] G. Li, R. Chen, L. Wu, Q. Fu, X. Zhang, Z. Tang, Angew. Chem. Int. Ed. 2013, 52, 8432.
[2] L. Wu, G. -X Li, Q. –Q. Fu, L. –T. Yu, Z. Tang, Org. Biomol. Chem. 2013, 443-447.

Colorless oil[3]; ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.30 (dd, *J* = 7.8, 5.7 Hz, 4H), 7.25 (d, *J* = 7.6 Hz, 2H), 7.22 (t, *J* = 7.2 Hz, 1H), 6.84 (d, *J* = 8.6 Hz, 2H), 6.44 – 6.38 (m, 1H), 6.22 (dt, *J* = 15.6, 6.9 Hz, 1H), 3.80 (s, 3H), 3.53 (d, *J* = 6.8 Hz, 2H). ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.88, 140.47, 130.46, 130.36, 128.65, 128.45, 127.23, 127.08, 126.10, 113.95, 55.29, 39.33.



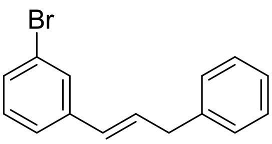
3b

Colorless oil[4], ^{1}H NMR (300 MHz, $CDCl_3$) δ 7.37–7.19 (m, 5H), 6.56 (t, *J* = 8.4 Hz, 2H), 6.38 (d, *J* =15.8 Hz, 1H), 6.33–6.20 (m, 1H), 3.85 (s, 6H), 3.83 (s, 3H) 3.54 (d, *J* = 6.3 Hz, 2H); ^{13}C NMR (75MHz, $CDCl_3$) δ 153.4, 140.2, 137.6, 133.4, 131.0, 129.0, 128.8, 128.6, 126.4, 103.3, 61.0, 56.2, 39.4.



3c

Colorless oil[5], ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.53 (d, *J* = 8.2 Hz, 2H), 7.44 (d, *J* = 8.0 Hz, 2H), 7.32 (t, *J* = 7.5 Hz, 2H), 7.24 (d, *J* = 7.0 Hz, 3H), 6.47 (s, 2H), 3.58 (s, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 140.95, 139.53, 132.13, 129.81, 128.68, 128.60, 126.38, 126.24, 125.46, 125.44, 125.41, 39.34.



3d

Light yellow oil[4]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.14–7.52 (m, 9H), 6.38–6.39 (m, 2H), 3.56 (d, 2H, *J* = 4.2 Hz); ^{13}C NMR (151 MHz, $CDCl_3$) δ 139.67, 130.96, 129.97, 129.61, 128.97, 128.64, 128.54, 126.30, 124.76, 122.70, 39.25.

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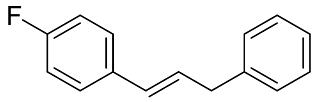
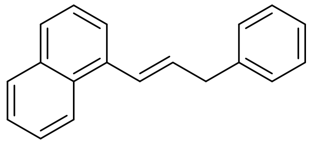
[3] Man-Bo Li, Yong Wang, and Shi-Kai Tian, Angew. Chem. Int. Ed. 2012, 51, 2968.
[4] Yang, H.-L., Sun, P., Zhu, Y., Yan, H., etc., Chem. Commun. 2012, 48, 7847.
[5] Takashi Mino, Taketo Kogure, Taichi Abe, Tomoko Koizumi, Tsutomu Fujita, Masami Sakamoto, Eur. J. Org. Chem., 2013: 1501.



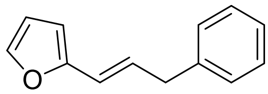
3e

Colorless oil[6]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.34–7.18 (m, 7H), 7.00-6.93 (m, 2H), 6.40 (d, *J* = 15.5Hz, 1H), 6.26 (dt, *J* = 15.5, 6.9 Hz, 1H), 3.53 (d, *J* = 6.9 Hz, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 162.0, 140.0, 133.6, 129.8, 129.0, 128.6, 128.5, 127.5, 126.2, 115.3, 39.3.



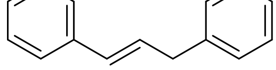
3g

Colorless oil[7]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 8.13 (d, *J* = 8.3 Hz, 1H), 7.85 (d, *J* = 8.5 Hz, 1H), 7.76 (d, *J* = 8.1 Hz, 1H), 7.59 (d, *J* = 7.1 Hz, 1H), 7.54 – 7.47 (m, 2H), 7.43 (dd, *J* = 14.8, 7.3 Hz, 2H), 7.38 – 7.32 (m, 4H), 7.21 (d, *J* = 15.5 Hz, 1H), 6.41 (dt, *J* = 15.4, 6.9 Hz, 1H), 3.70 (d, *J* = 6.9 Hz, 2H). ^{13}C NMR (151 MHz, $CDCl_3$) δ 140.18, 135.31, 133.65, 132.47, 131.19, 128.72, 128.57, 128.50, 128.39, 127.53, 126.24, 125.90, 125.68, 125.65, 123.89, 123.73, 39.74.



3h

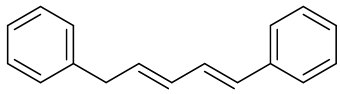
colorless oil[8]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.31 (t, *J* = 7.5 Hz, 3H), 7.25 – 7.20 (m, 3H), 6.35 (dd, *J* = 5.7, 3.5 Hz, 1H), 6.32 (dd, *J* = 11.1, 4.4 Hz, 1H), 6.24 (d, *J* = 15.7 Hz, 1H), 6.16 (d, *J* = 3.2 Hz, 1H), 3.53 (d, *J* = 6.7 Hz, 2H). ^{13}C NMR (151 MHz, $CDCl_3$) δ 153.02, 141.45, 139.88, 128.70, 128.50, 128.28, 126.21, 119.68, 111.11, 106.62, 39.04.



3i

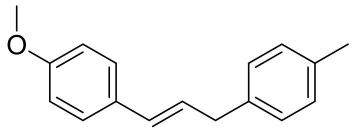
[6] Masaki Sekine, Laurean Ilies, and Eiichi Nakamura, Org. Lett. 2013, 15, 714.
[7] H.-L. Yang, H. Yan, P. Sun, Y. Zhu, L. –H. Lu, D. –F. Liu, G. –W. Rong, J. –C. Mao, Green Chem., 2013, 15, 976.
[8] X.-L. Tang, Z. Wu, M.-B. Li, Y. –H. Gu, S.-K. Tian, Eur. J. Org. Chem., 2012: 4107.

Colorless oil[8]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.38-7.17 (m, 10H), 6.46 (d, *J* = 15.6 Hz, 1H), 6.36 (dt, *J* = 15.6, 6.8 Hz, 1H), 3.55 (d, *J* = 6.8 Hz, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 140.2, 137.5, 131.1, 129.3, 128.7, 128.5, 127.1, 126.2, 126.1, 39.4.



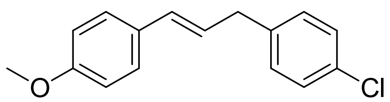
3j

Colorless oil[9]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.42 (dd, *J* = 12.5, 6.1 Hz, 1H), 7.37 (s, 1H), 7.31 (dt, *J* = 7.7, 4.8 Hz, 4H), 7.21 (dd, *J* = 8.4, 6.8 Hz, 4H), 6.79 (dd, *J* = 15.7, 10.3 Hz, 1H), 6.49 (d, *J* = 15.7 Hz, 1H), 6.37 – 6.19 (m, 1H), 6.06 – 5.89 (m, 1H), 3.50 (d, *J* = 6.9 Hz, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 140.13, 137.50, 133.70, 131.71, 131.00, 128.98, 128.64, 128.57, 128.49, 127.26, 126.21, 126.16, 39.20.



3l

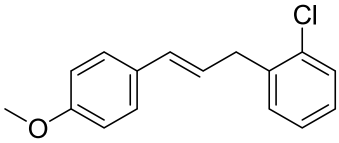
Colorless oil[4]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.26 (t, *J* = 11.6 Hz, 2H), 7.12 (m, 4H), 6.82 (d, *J* = 8.4 Hz, 2H), 6.38 (d, *J* = 15.7 Hz, 1H), 6.31–6.10 (m, 1H), 3.78 (s, 3H), 3.48 (d, *J* = 6.7 Hz, 2H), 2.32 (s, 3H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.8, 137.4, 135.6, 130.4, 130.2, 129.2, 128.5, 127.4, 127.2, 113.9, 55.3, 38.9, 21.0.



3m

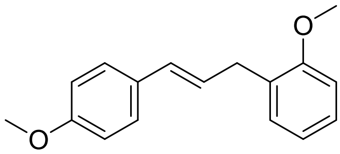
Colorless oil[4]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.27 (t, *J* = 7.8 Hz, 4H), 7.15 (d, *J* = 8.3 Hz, 2H), 6.83 (d, *J*= 8.7 Hz, 2H), 6.37 (d, *J* = 15.8 Hz, 1H), 6.24–6.08 (m, 1H), 3.79 (s, 3H), 3.48 (d, *J* = 6.7 Hz, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.9, 138.9, 131.8, 130.8, 130.0, 128.7, 128.5, 127.2, 126.4, 114.0, 55.3, 38.6.

[9] G. G. K. S. N. Kumar, K. K. Laali, Org. Biomol. Chem., 2012, 10, 7347.



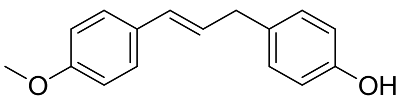
3n

Colorless oil[4]. ^{1}H NMR (600 MHz, $CDCl_3$) δ7.36 (d, J = 7.4 Hz, 1H), 7.33–7.25 (m, 3H), 7.23–7.11 (m, 2H), 6.83 (d, J = 8.5 Hz, 2H), 6.39 (d, J = 15.8 Hz, 1H), 6.26–6.11 (m, 1H), 3.79 (s, 3H), 3.63 (d, J = 6.6 Hz, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.9, 138.1, 134.0, 131.1, 130.4, 130.2, 129.4, 127.6, 127.3, 126.9, 125.0, 113.9, 55.3, 36.8.



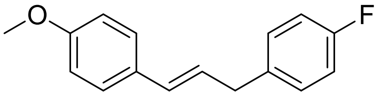
3o

Colorless oil[10]. ^{1}H NMR (300 MHz, $CDCl_3$) δ 7.37 – 7.27 (m, 2H), 7.20 (t, J = 7.5 Hz, 2H), 6.89 (dd, J = 13.4, 7.6 Hz, 2H), 6.82 (d, J = 8.7 Hz, 2H), 6.38 (d, J = 16.8 Hz, 1H), 6.30 – 6.17 (m, 1H), 3.85 (s, 3H), 3.79 (s, 3H), 3.51 (d, J = 6.7 Hz, 2H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.71, 157.30, 130.68, 130.06, 129.81, 128.99, 127.56, 127.31, 127.15, 126.74, 120.52, 113.87, 110.38, 55.40, 55.28, 33.31.



3p

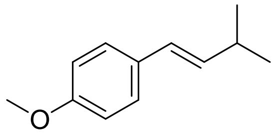
Off-white solid, M.P 75℃[11] ^{1}H NMR (300 MHz, $CDCl_3$) δ 7.30 (s, 2H), 7.10 (d, J = 8.4 Hz, 2H), 6.80 (dd, J = 17.3, 8.6 Hz, 4H), 6.37 (d, J = 15.8 Hz, 1H), 6.24 – 6.12 (m, 1H), 4.69 (s, 1H), 3.80 (s, 3H), 3.45 (d, J = 6.7 Hz, 2H); ^{13}C NMR (151 MHz, DMSO) δ 158.82, 154.03, 132.51, 130.42, 130.14, 129.75, 127.51, 127.20, 115.30, 113.95, 77.23, 77.02, 76.81, 55.30, 38.42.



3q

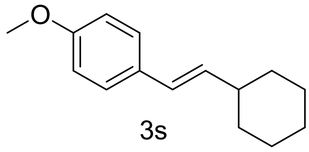
[10] J. O. Oluwadiya, W. Basil Whalley, J. Chem. Soc., Perkin Trans. 1, 1978, 88.
[11] E. Schmidl, Gy. Frhter, H.-J. Hansen, H. Schmid, Helvetica Chimica Acta, 1972, 55, 1625.

[1]H NMR (300 MHz, DMSO) δ 7.30 (dd, *J* = 16.6, 7.9 Hz, 3H), 7.19 (dd, *J* = 8.5, 5.6 Hz, 2H), 6.99 (t, *J* = 8.7 Hz, 2H), 6.85 (t, *J* = 7.4 Hz, 2H), 6.38 (d, *J* = 15.9 Hz, 1H), 6.18 (dt, *J* = 15.7, 6.8 Hz, 1H), 3.80 (s, 3H), 3.49 (d, *J* = 6.7 Hz, 2H); [13]C NMR (151 MHz, $CDCl_3$) δ 158.96, 130.61, 130.19, 130.01, 129.96, 127.24, 126.83, 115.24, 115.09, 113.97, 55.29, 38.46.



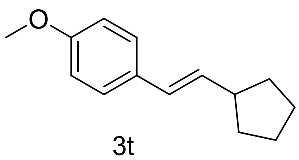
3r

Colorless oil[12][1]H NMR (300 MHz, $CDCl_3$) δ 7.31-7.26 (m, 2H), 6.87-6.83 (m, 2H), 6.29 (d, *J* = 16.0 Hz, 1H), 6.05 (dd, *J* = 16.0, 6.4 Hz, 1H), 3.78 (s, 3H), 2.45 (m, 1H), 1.08 (d, *J* = 6.8 Hz, 6H); [13]C NMR (75 MHz, $CDCl_3$) δ 136.2, 127.7, 127.2, 126.4, 114.2, 114.1, 55.5, 31.7, 22.8.



3s

Colorless oil[13]. [1]H NMR (600 MHz, $CDCl_3$) δ 7.28 (d, *J* = 8.6 Hz, 2H), 6.83 (d, *J* = 8.6 Hz, 2H), 6.29 (d, *J* = 15.9 Hz, 1H), 6.04 (dd, *J* = 16.0, 7.0 Hz, 1H), 3.80 (s, 3H), 2.15 – 2.05 (m, 1H), 1.81 – 1.74 (m, 3H), 1.68 (d, *J* = 12.7 Hz, 1H), 1.30 (ddd, *J* = 17.7, 16.5, 11.3 Hz, 3H), 1.24 – 1.12 (m, 3H); [13]C NMR (151 MHz, $CDCl_3$) δ 158.61, 134.80, 130.93, 126.99, 126.55, 113.91, 55.29, 41.11, 33.10, 26.21, 26.09.



3t

Colorless oil[14]. [1]H NMR (600 MHz, $CDCl_3$) δ 7.27 (d, *J* = 8.6 Hz, 2H), 6.83 (d, *J* = 8.7 Hz, 2H), 6.31 (d, *J* = 15.8 Hz, 1H), 6.06 (dd, *J* = 15.8, 7.8 Hz, 1H), 3.80 (s, 3H), 2.57 (dd, *J* = 16.2, 8.1 Hz, 1H), 1.85 (d, *J* = 6.9 Hz, 2H), 1.70 (d, *J* = 8.3 Hz, 2H), 1.60 (dd, *J* = 7.2, 4.6 Hz, 2H), 1.38 (dd, *J* = 12.2, 8.2 Hz, 2H); [13]C NMR (151 MHz, $CDCl_3$) δ 158.59, 133.60, 130.82, 127.19, 126.97, 113.91, 55.29, 43.79, 33.30, 25.22.

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[13] Anders T. Lindhardt, Thomas M. Gøgsig, and Troels Skrydstrup, J. Org. Chem., 2009 74, 135.
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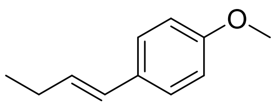
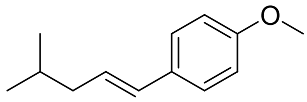


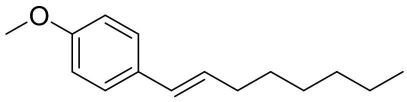
3v

Colorless oil[15] ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.29 – 7.26 (m, 2H), 6.83 (d, *J* = 8.6 Hz, 2H), 6.32 (d, *J* = 15.8 Hz, 1H), 6.12 (dt, *J* = 15.8, 6.6 Hz, 1H), 3.80 (s, 3H), 2.24 – 2.17 (m, 2H), 1.08 (t, *J* = 7.5 Hz, 3H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.62, 130.83, 130.53, 128.13, 126.96, 113.91, 55.28, 29.70, 26.01, 13.78.



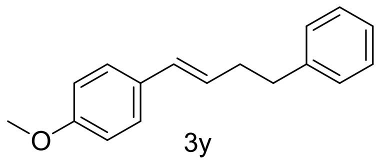
3w

Colorless oil[16]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.28 (t, *J* = 5.8 Hz, 2H), 6.84 (d, *J* = 8.7 Hz, 2H), 6.31 (d, *J* = 15.7 Hz, 1H), 6.13 – 6.03 (m, 1H), 3.80 (s, 3H), 2.07 (t, *J* = 7.0 Hz, 2H), 1.77 – 1.66 (m, 1H), 0.94 (d, *J* = 6.6 Hz, 6H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.64, 130.85, 130.12, 127.73, 126.99, 113.91, 55.29, 42.40, 28.68, 22.36.



3x

Colorless oil [17]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.28 (d, *J* = 8.7 Hz, 2H), 6.84 (d, *J* = 8.7 Hz, 2H), 6.33 (d, *J* = 15.7 Hz, 1H), 6.09 (dt, *J* = 15.7, 7.0 Hz, 1H), 3.81 (s, 3H), 2.19 (q, *J* = 7.5 Hz, 2H), 1.50–1.42 (m, 2H), 1.40–1.26 (m, 6H), 0.93–0.88 (m, 3H); ^{13}C NMR (151 MHz, $CDCl_3$) δ 158.6, 130.8, 129.1, 129.0, 126.9, 113.9, 55.2, 33.0, 31.8, 29.5, 28.9, 22.6, 14.1.



3y

Colorless oil[18]. ^{1}H NMR (600 MHz, $CDCl_3$) δ 7.32 – 7.25 (m, 5H), 7.21 (dd, *J* = 18.2, 7.4 Hz, 3H), 6.84 (d, *J* = 8.6 Hz, 2H), 6.37 (d, *J* = 15.8 Hz, 1H), 6.18 – 6.07 (m, 1H), 3.81 (s, 3H), 2.79 (t, *J* = 7.8 Hz, 2H), 2.52 (dd, *J* =

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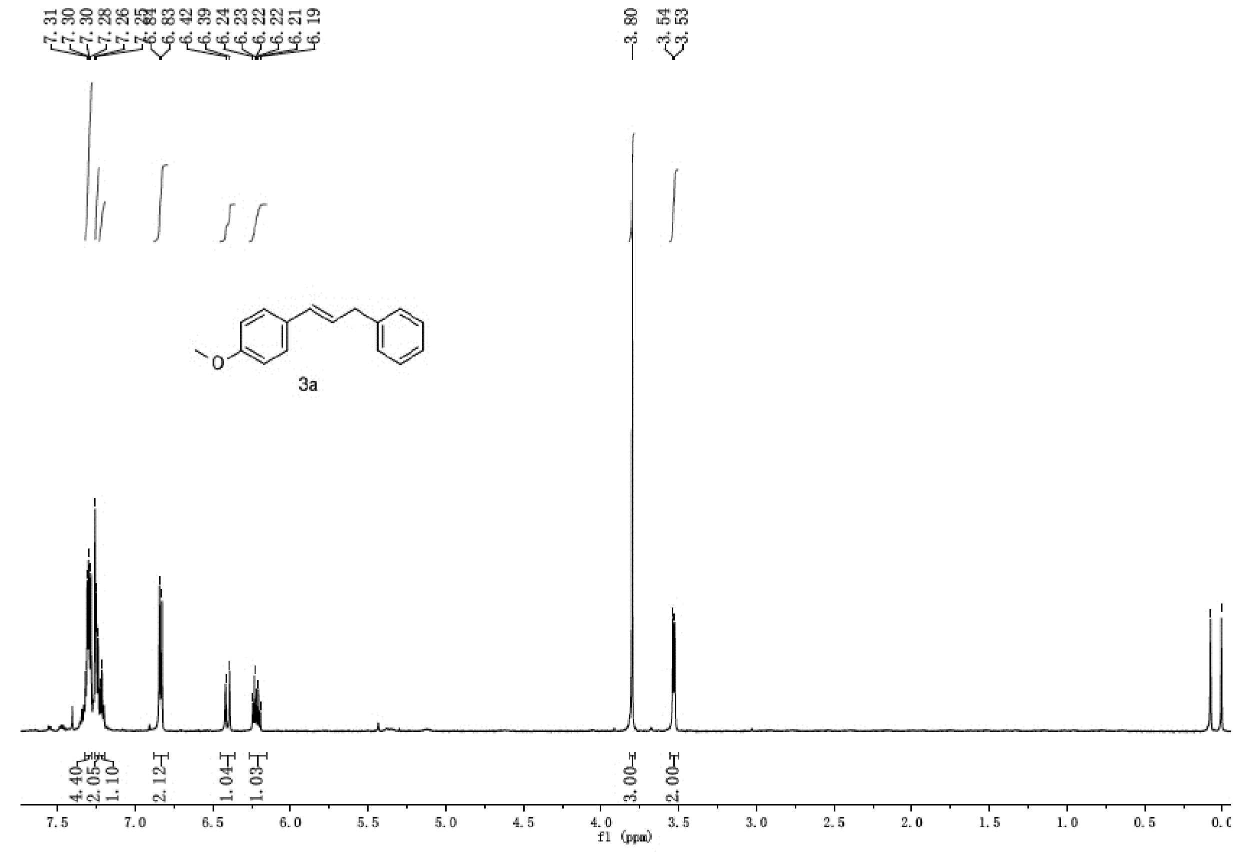
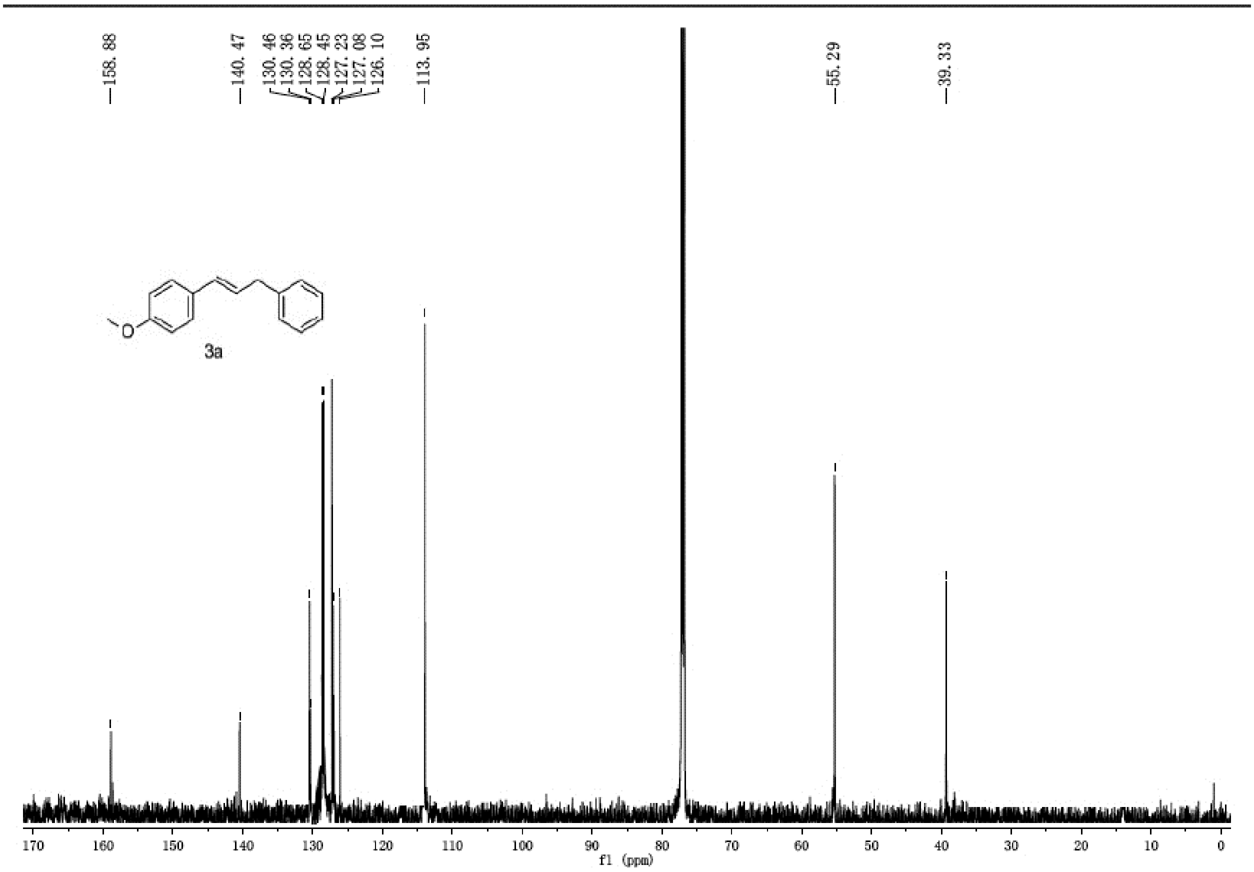
[17] Yoshiaki Nakao, Hidekazu Imanaka,Akhila K. Sahoo,Akira Yada, Tamejiro Hiyama, J. Am. Chem. Soc. 2005 127, 6952.
[18] Saumen Hajra, Biswajit Maji, Dipakranjan Mal, Adv. Synth. Catal. 2009, 351,859–864.

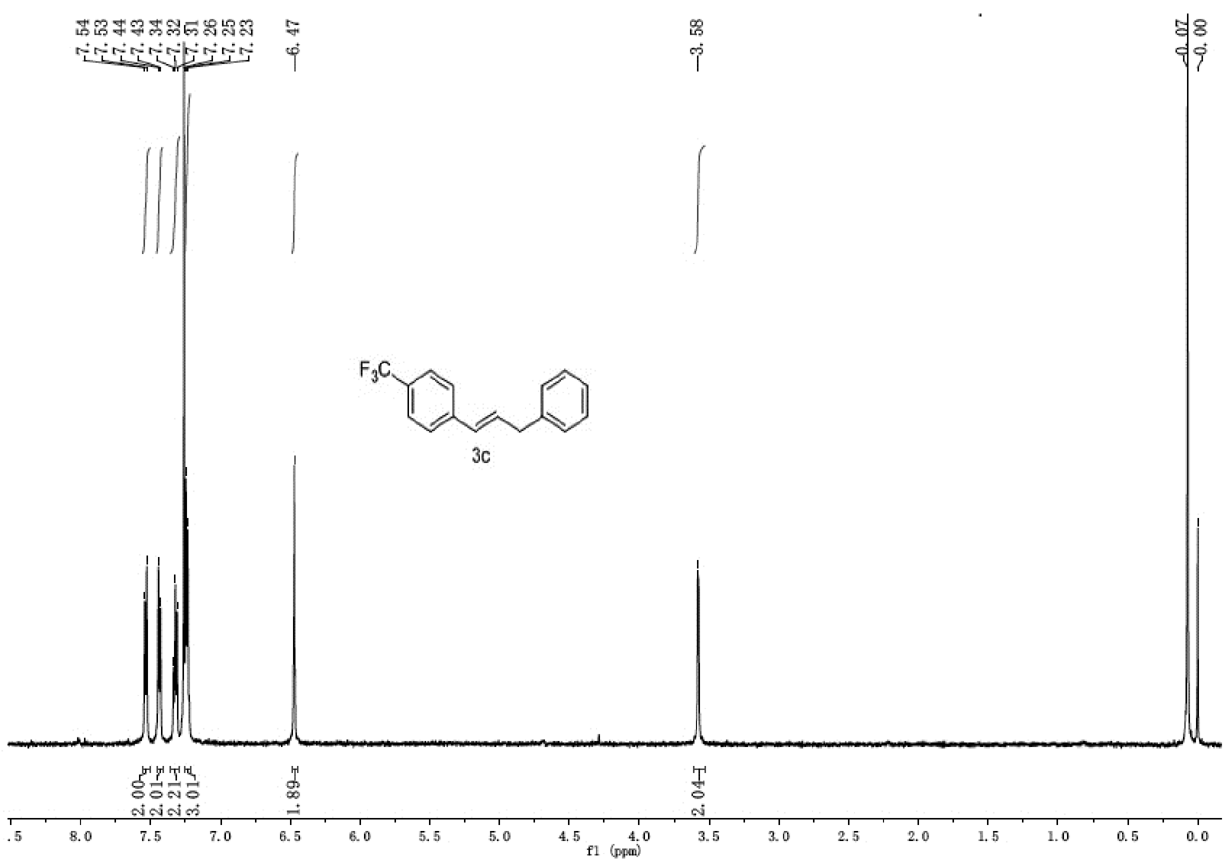
15.1, 7.3 Hz, 2H); ^{3}C NMR (151 MHz, $CDCl_3$) δ 158.76, 141.88, 132.00, 129.71, 128.47, 128.33, 127.83, 127.07, 125.83, 113.94, 55.29, 36.04, 34.85.

Selected NMR spectrums





158.88
140.47
130.46
130.36
128.65
128.45
127.23
127.08
126.10
113.95
55.29
39.33
3a
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
f1 (ppm)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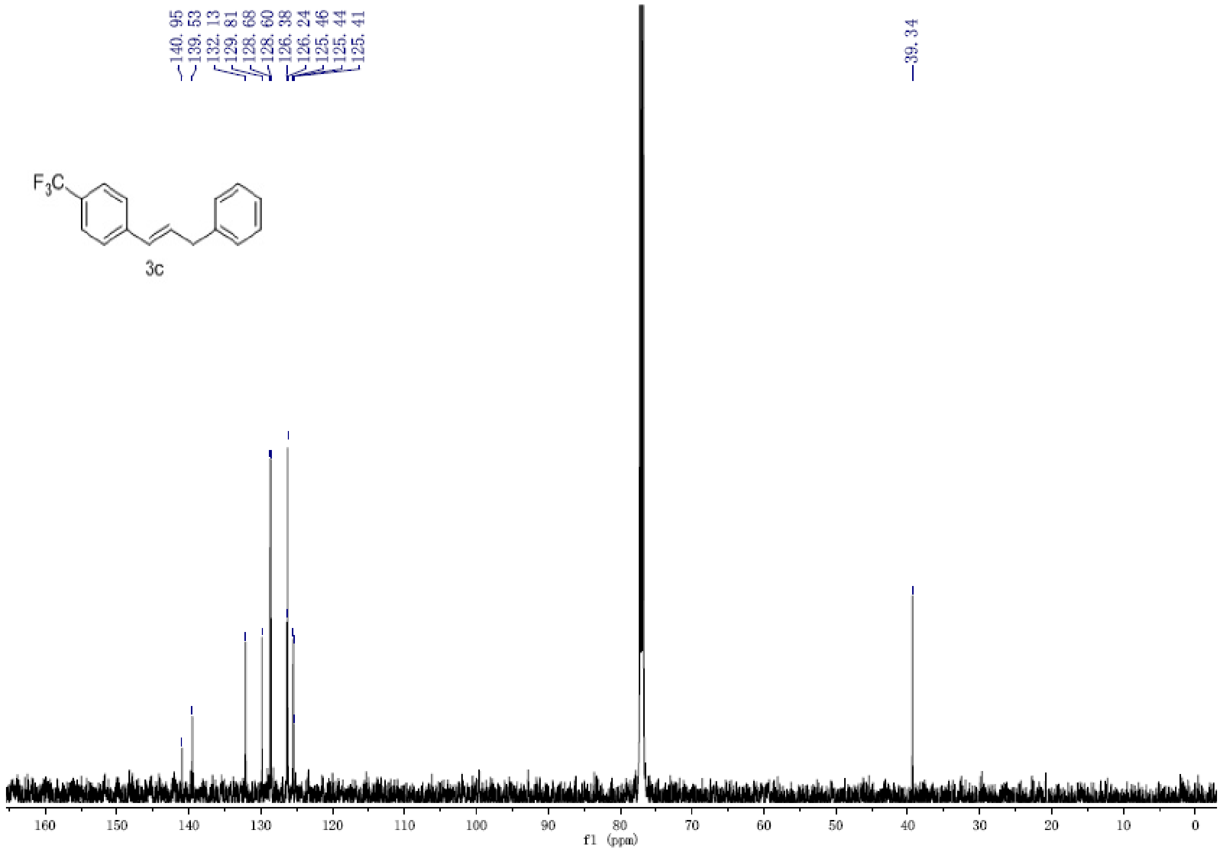
7.53
7.44
7.43
7.34
7.32
7.31
7.26
7.25
7.23
6.47
3.58
0.07
0.00
F3C
3c
2.00
2.01
2.21
3.01
1.89
2.04
.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)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139.53
132.13
129.81
128.68
128.60
126.38
126.24
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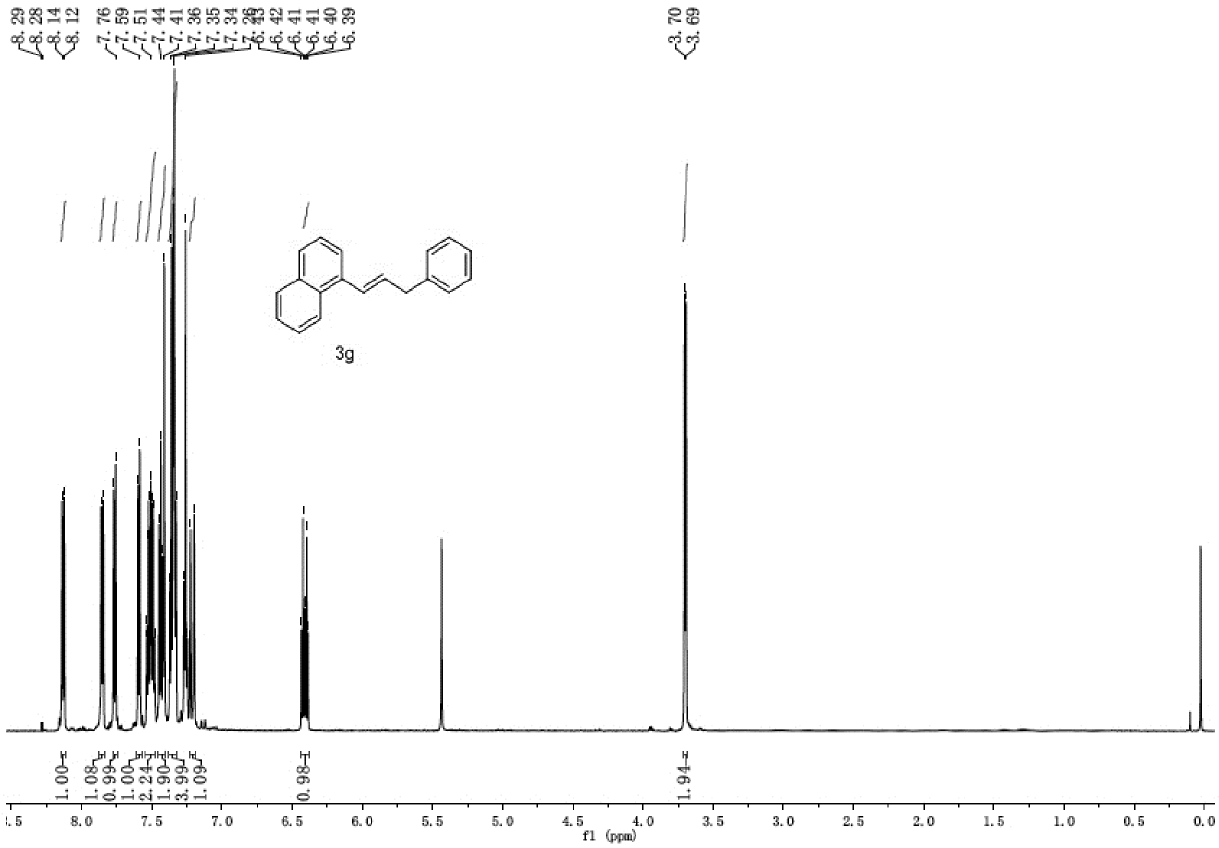
125.44
125.41
39.34
F3C
3c
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)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8.14
8.12
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7.44
7.41
7.36
7.35
7.34
7.26
6.43
6.42
6.41
6.41
6.40
6.39
3.70
3.69
3g
1.00
1.08
0.99
1.00
2.24
1.90
3.99
1.09
0.98
1.94
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
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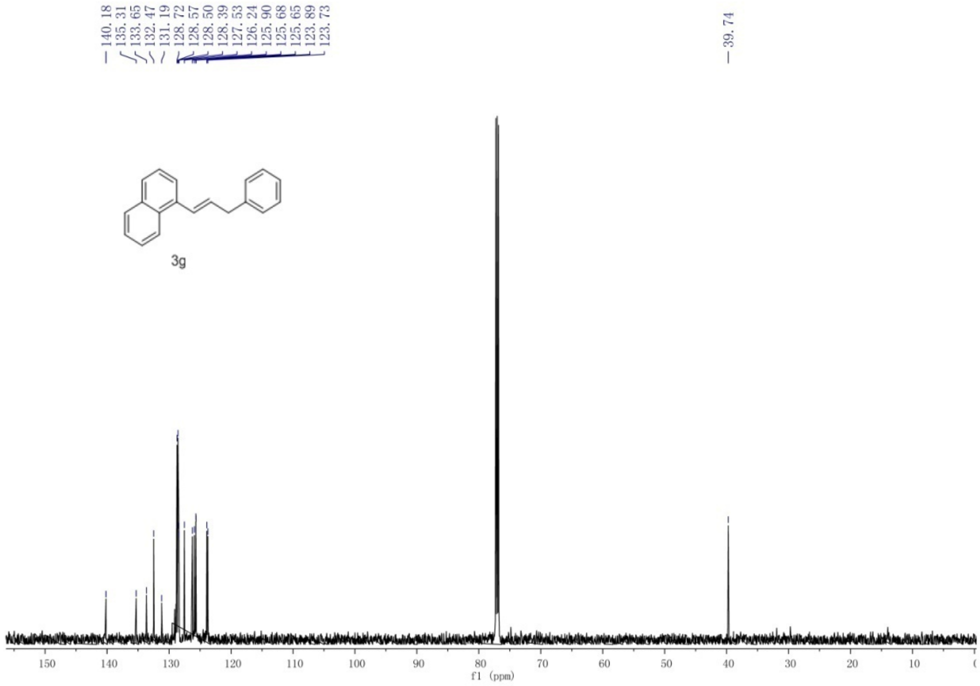
0.0
f1 (ppm)


140.18
135.31
133.65
132.47
131.19
128.72
128.57
128.50
128.39
127.53
126.24
125.90
125.68
125.65
123.89
123.73
39.74
3g
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130
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80
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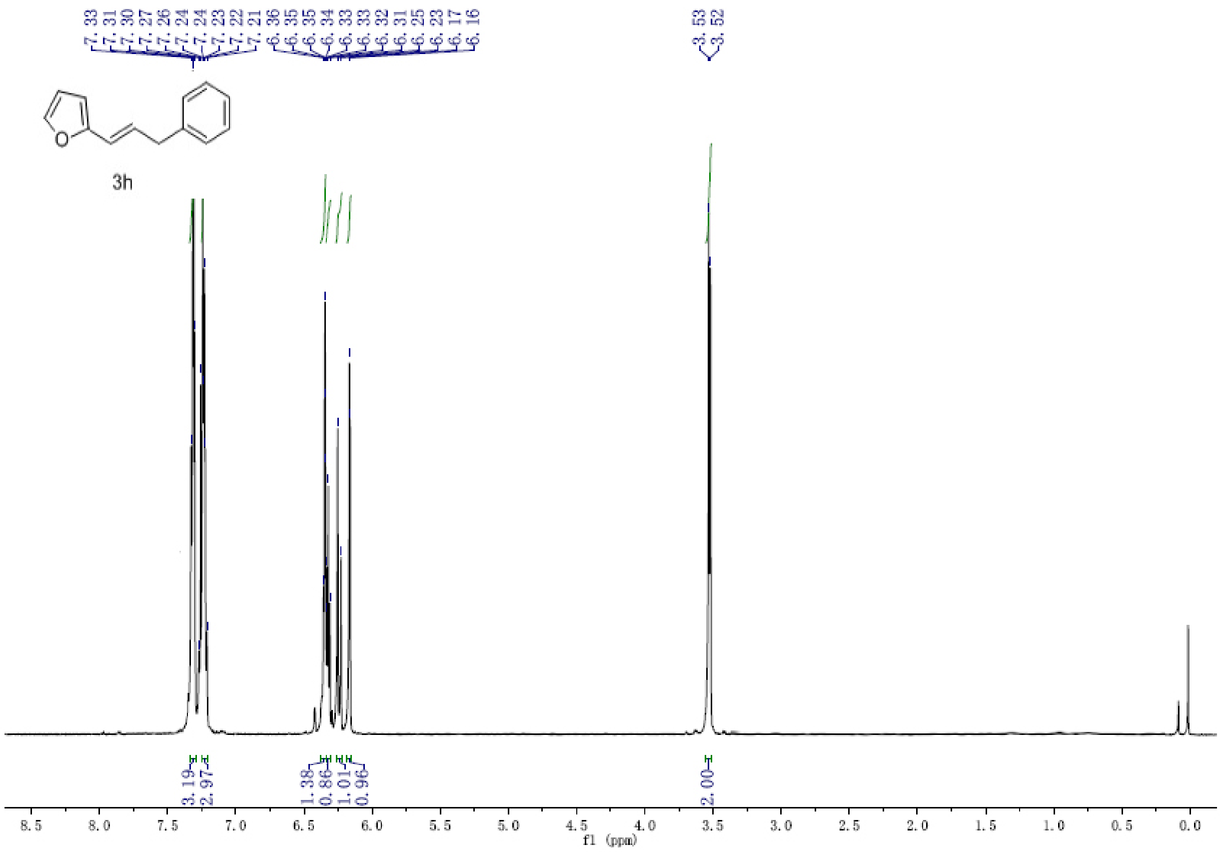
60
50
40
30
20
10
f1 (ppm)



7.33
7.31
7.30
7.27
7.26
7.24
7.24
7.23
7.22
7.21
6.36
6.35
6.35
6.34
6.33
6.33
6.32
6.31
6.25
6.23
6.17
6.16
3.53
3.52
O
3h
3.19
2.97
1.38
0.86
1.01
0.96
2.00
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
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3.5
3.0
2.5
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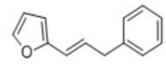
f1 (ppm)



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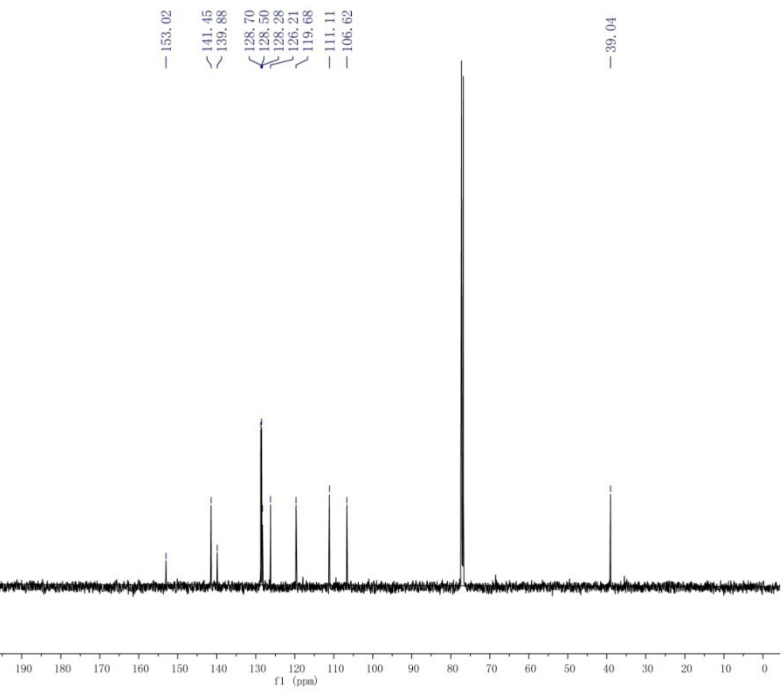

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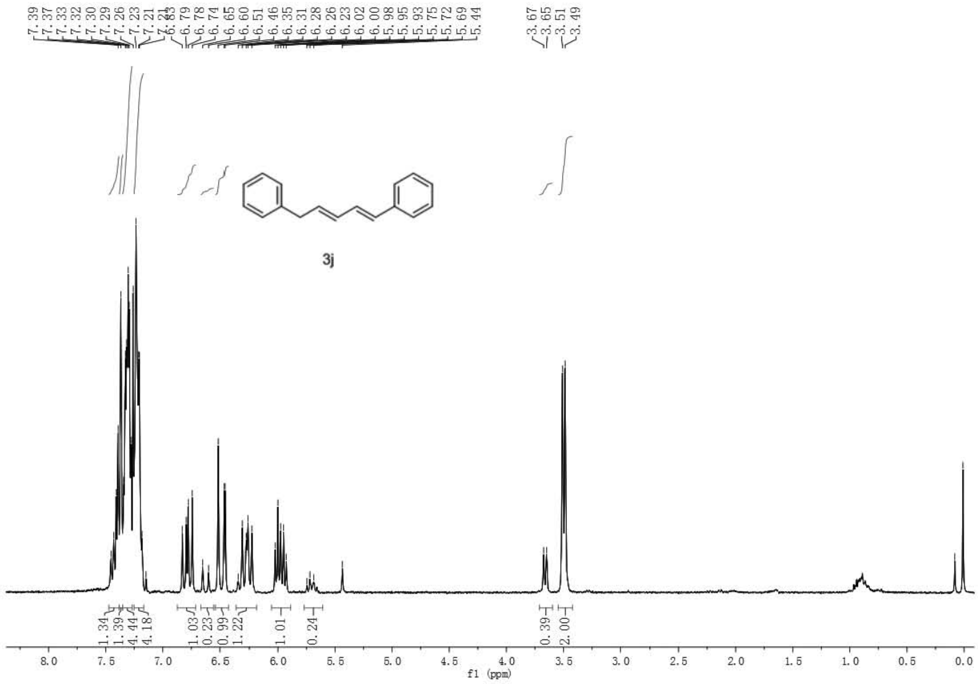
141.45
139.88
128.70
128.50
128.28
126.21
119.68
111.11
106.62
39.04
240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
f1 (ppm)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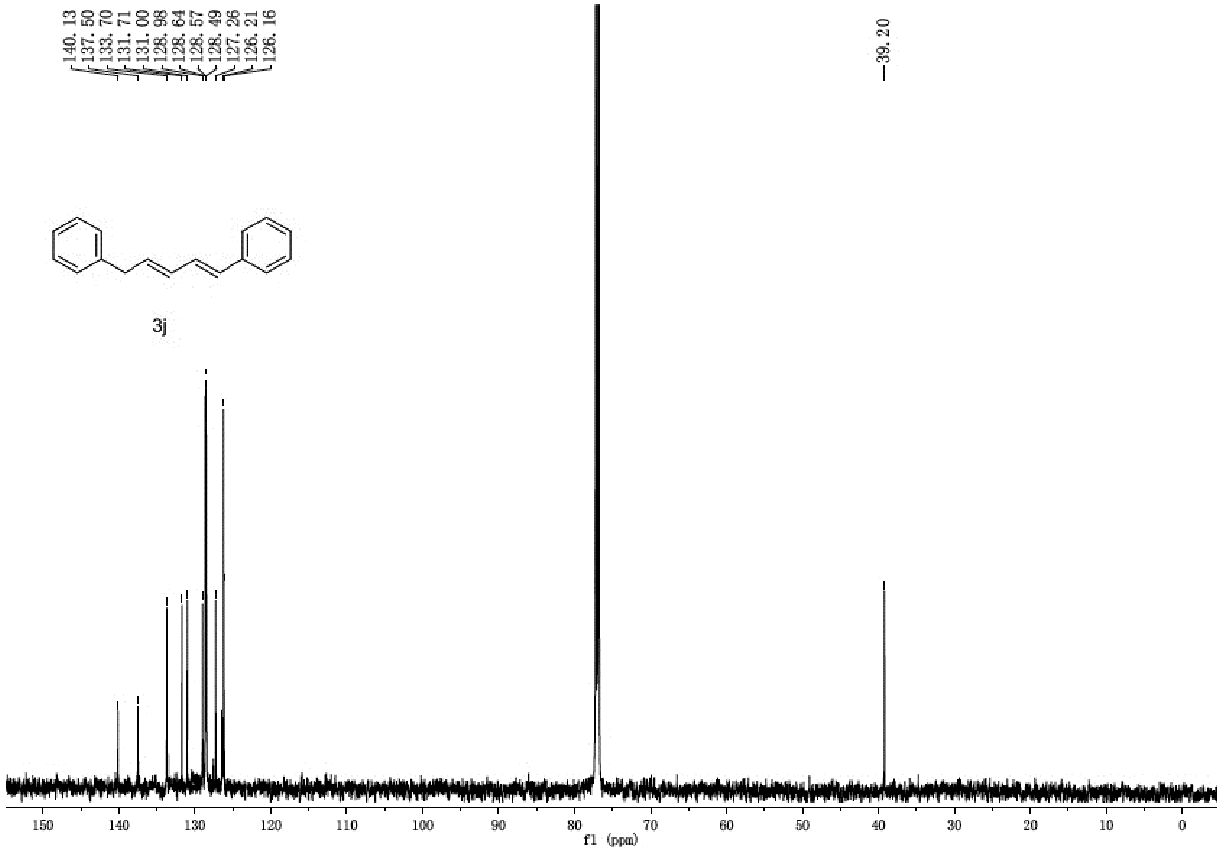
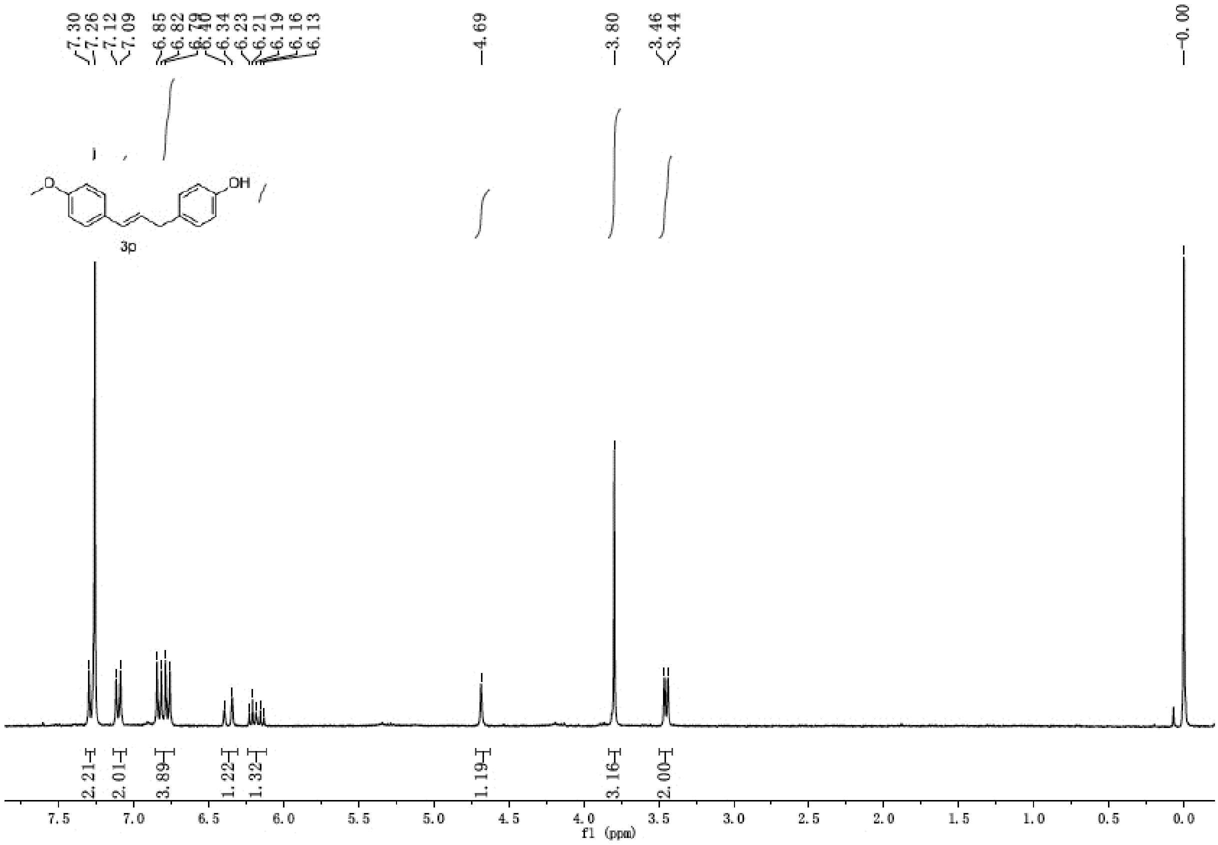
3.67 3.65 3.51 3.49
1.34 1.39 4.44 4.18 1.03 0.23 0.99 1.22 1.01 0.24 0.39 2.00
8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
f1 (ppm)

3j



140.13
137.50
133.70
131.71
131.00
128.98
128.64
128.57
128.49
127.26
126.21
126.16
39.20
3j
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)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7.26
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7.09
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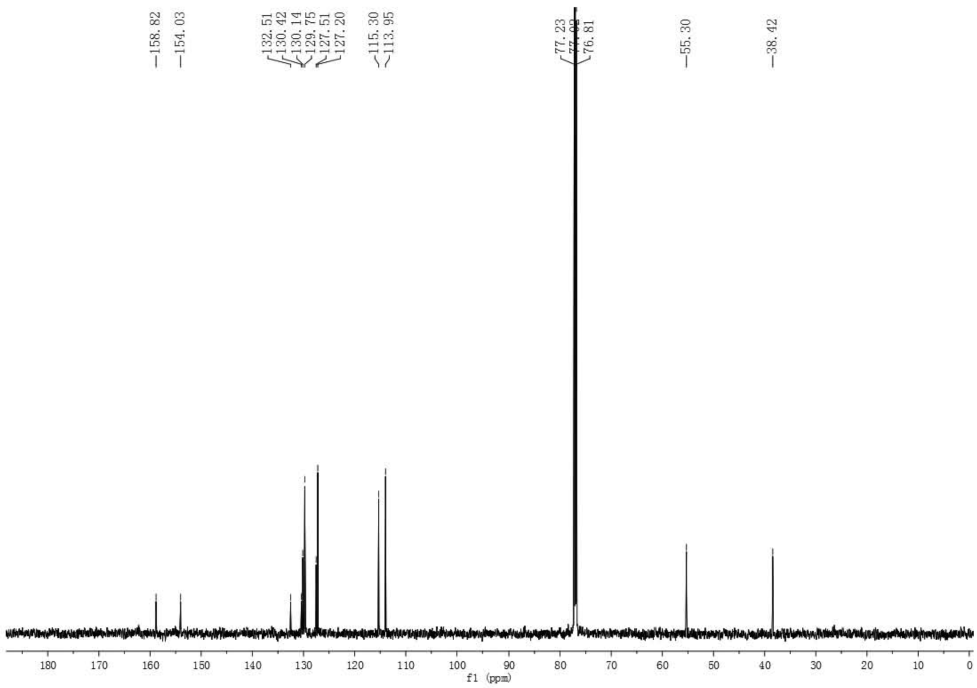
6.82
6.79
6.40
6.34
6.23
6.21
6.19
6.16
6.13
4.69
3.80
3.46
3.44
0.00
OH
3p
2.21
2.01
3.89
1.22
1.32
1.19
3.16
2.00
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)



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154.03
132.51
130.42
130.14
129.75
127.51
127.20
115.30
113.95
77.23
76.81
55.30
38.42
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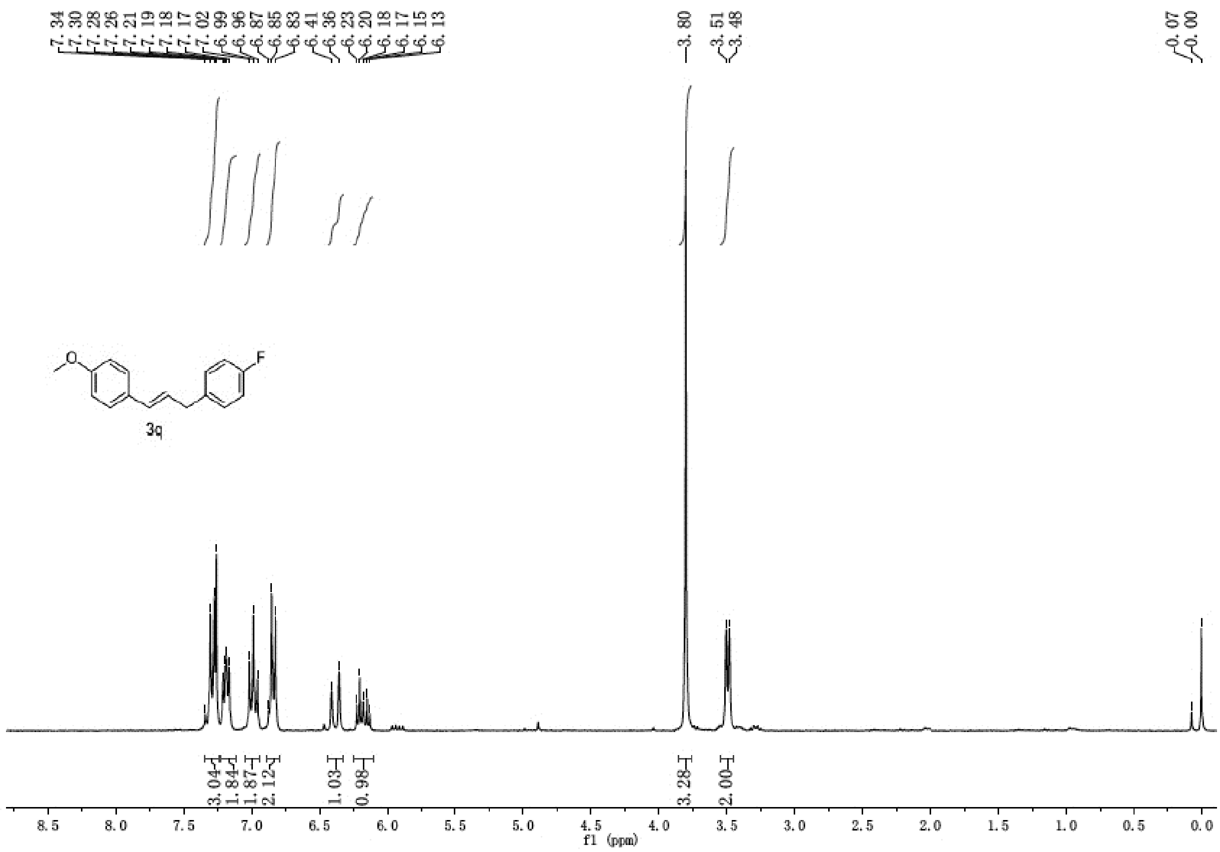
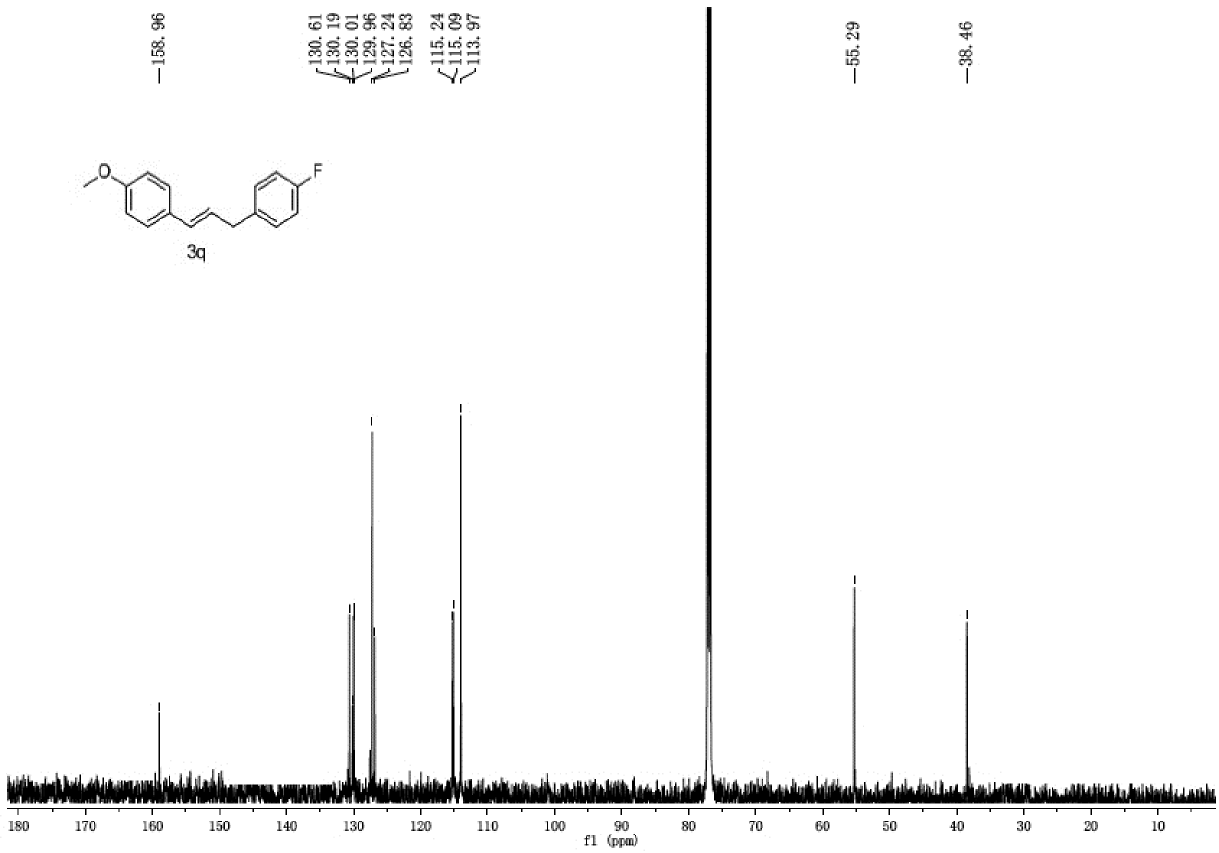
f1 (ppm)


7.34 7.30 7.28 7.26 7.21 7.19 7.18 7.17 7.02 6.99 6.96 6.87 6.85 6.83 6.41 6.36 6.23 6.20 6.18 6.17 6.15 6.13
3.80
3.51 3.48
0.07 0.00
F
3q
3.04 1.84 1.87 2.12 1.03 0.98 3.28 2.00
8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
f1 (ppm)



158.96
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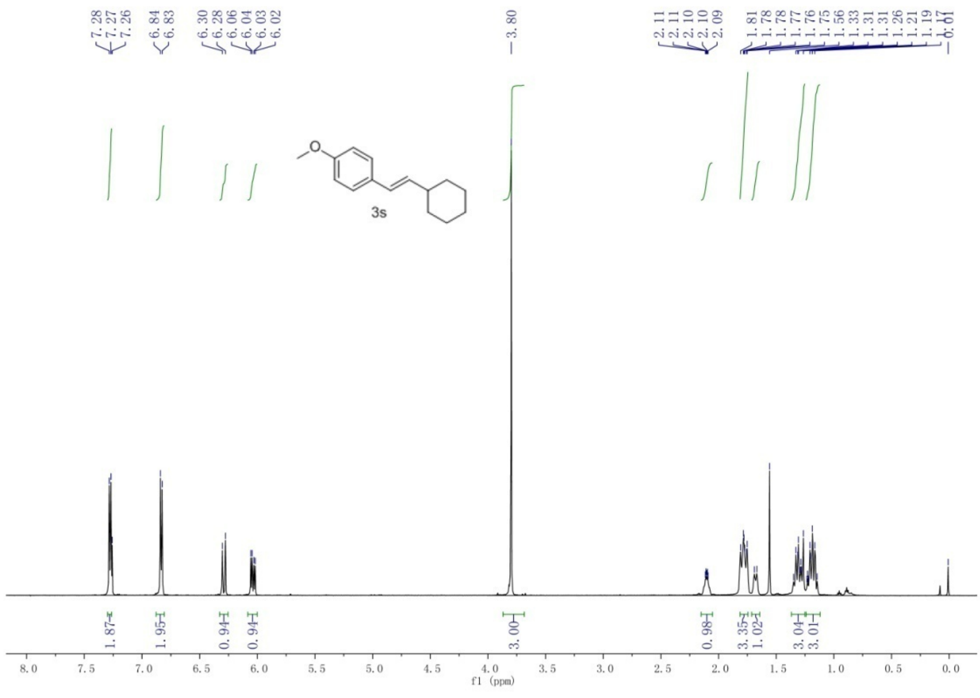
130.19
130.01
129.96
127.24
126.83
115.24
115.09
113.97
55.29
38.46
O
F
3q
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
f1 (ppm)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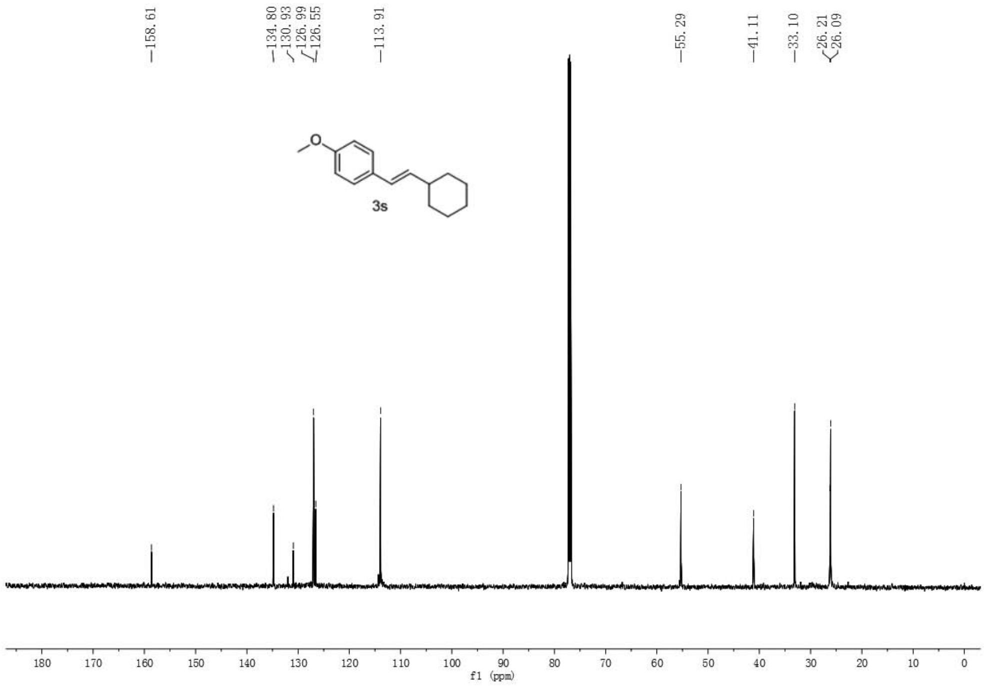
7.27
7.26
6.84
6.83
6.30
6.28
6.06
6.04
6.03
6.02
3.80
2.11
2.11
2.10
2.10
2.09
1.81
1.78
1.78
1.77
1.76
1.75
1.56
1.33
1.31
1.31
1.26
1.21
1.19
1.17
0.01
3s
1.87
1.95
0.94
0.94
3.00
0.98
3.35
1.02
3.04
3.01
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)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134.80
130.93
126.99
126.55
113.91
55.29
41.11
33.10
26.21
26.09
3s
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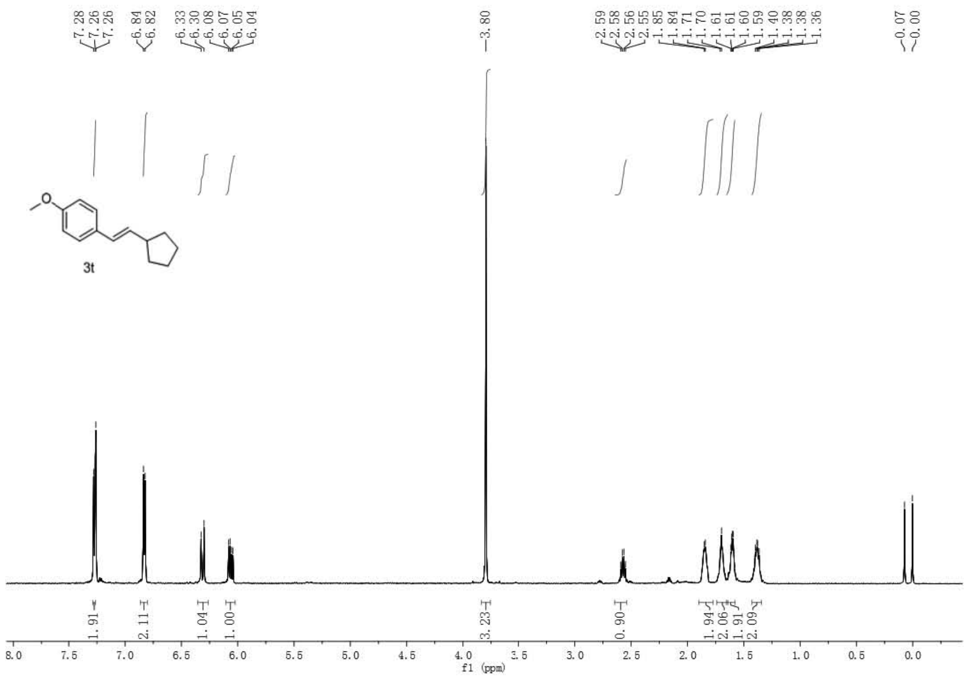
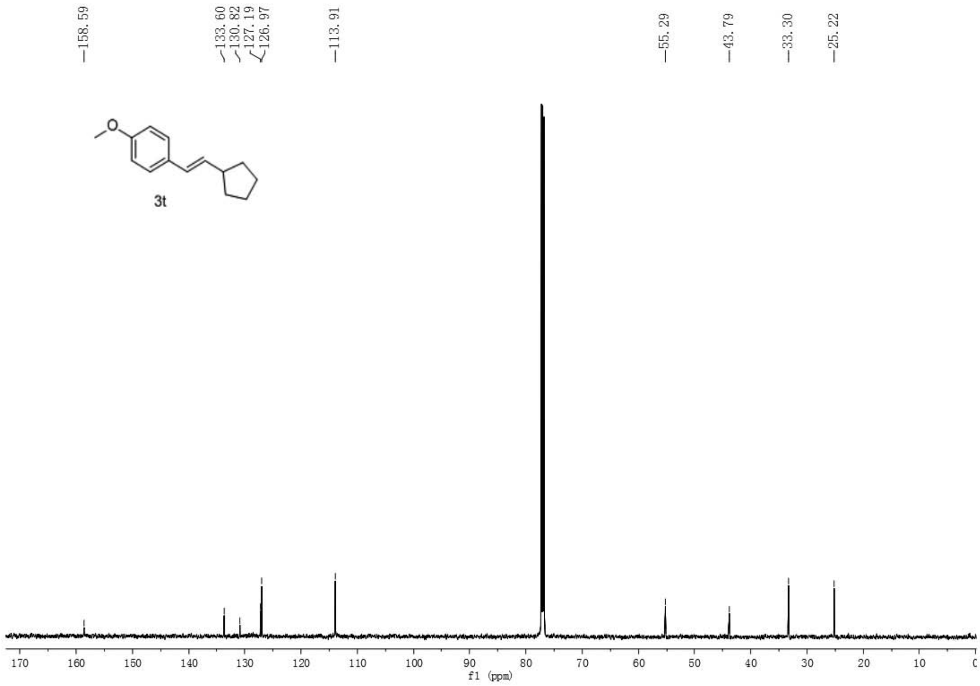
f1 (ppm)



7.28
7.26
7.26
6.84
6.82
6.33
6.30
6.08
6.07
6.05
6.04
3.80
2.59
2.58
2.56
2.55
1.85
1.84
1.71
1.70
1.61
1.61
1.60
1.59
1.40
1.38
1.38
1.36
0.07
0.00
3t
1.91
2.11
1.04
1.00
3.23
0.90
1.94
2.06
1.91
2.09
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)



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130.82
127.19
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43.79
33.30
25.22
3t
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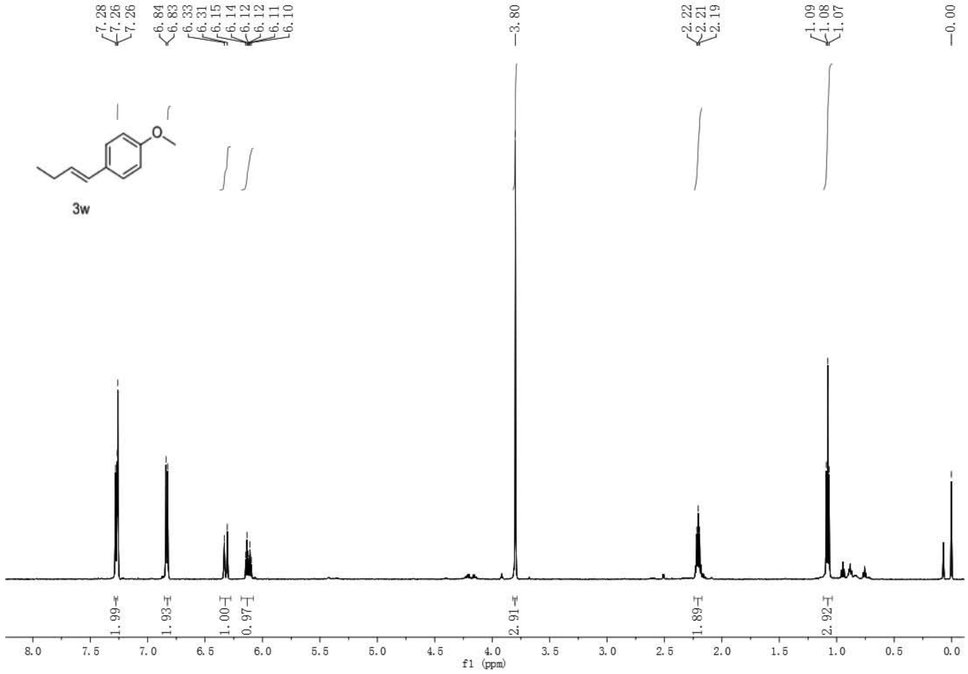
f1 (ppm)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7.26
7.26
6.84
6.83
6.33
6.31
6.15
6.14
6.12
6.12
6.11
6.10
3.80
2.22
2.21
2.19
1.09
1.08
1.07
0.00
3w
1.99
1.93
1.00
0.97
2.91
1.89
2.92
8.0
7.5
7.0
6.5
6.0
5.5
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3.0
2.5
2.0
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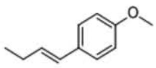
0.0
f1 (ppm)



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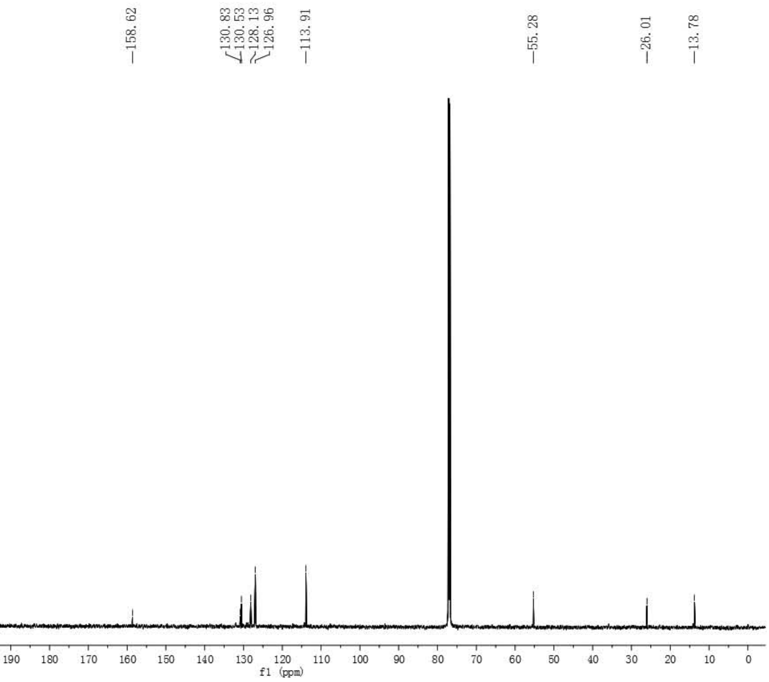

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128.13
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113.91
55.28
26.01
13.78
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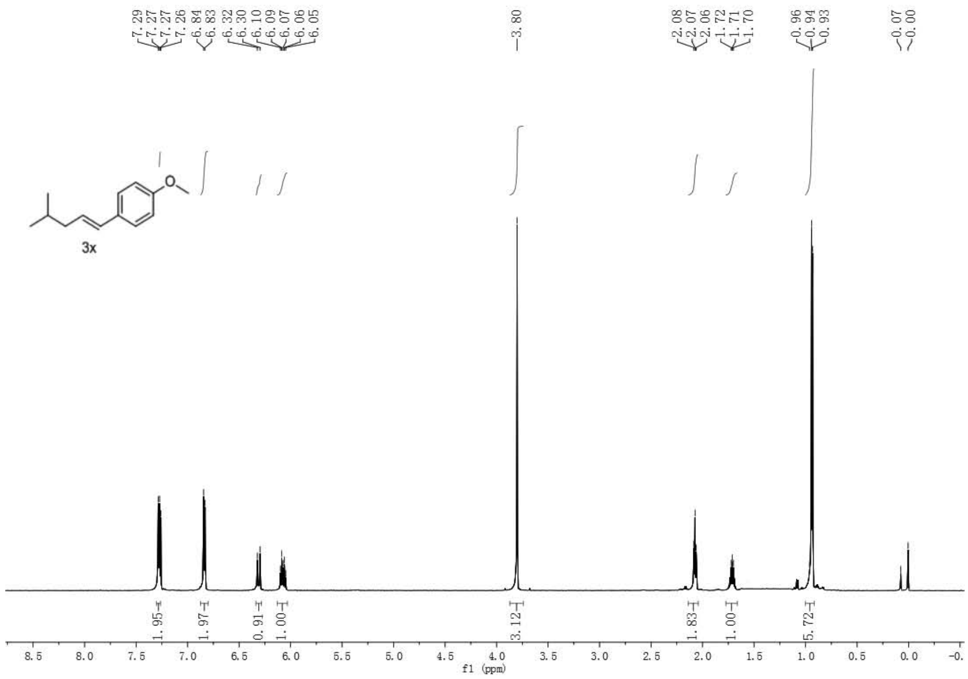
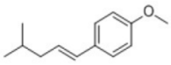
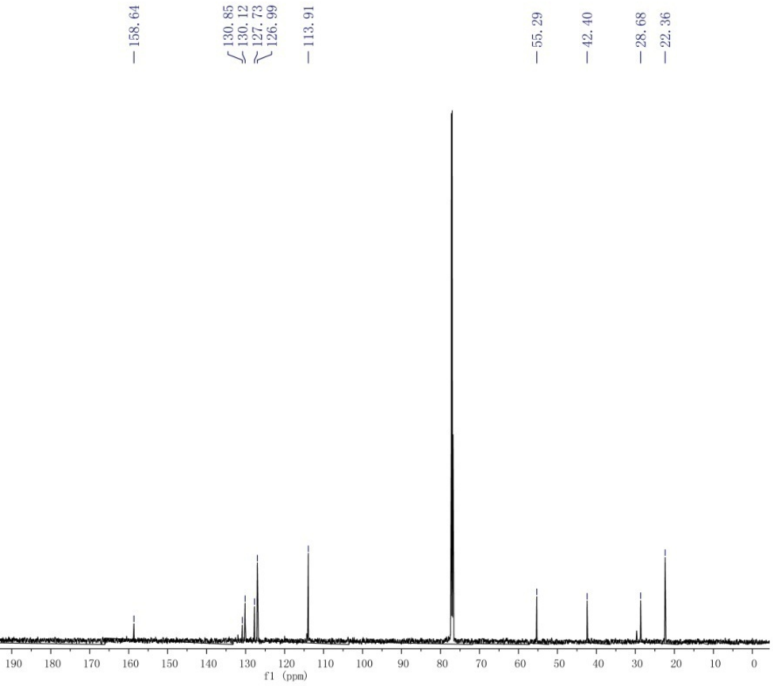
f1 (ppm)



7.29
7.27
7.27
7.26
6.84
6.83
6.32
6.30
6.10
6.09
6.07
6.06
6.05
3.80
2.08
2.07
2.06
1.72
1.71
1.70
0.96
0.94
0.93
0.07
0.00
3x
1.95
1.97
0.91
1.00
3.12
1.83
1.00
5.72
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)



3x



158.64
130.85
130.12
127.73
126.99
113.91
55.29
42.40
28.68
22.36
240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
f1 (ppm)