Electronic Supplementary Material (ESI) for Chemical Communications.
This journal is © The Royal Society of Chemistry 2016

Electronic Supplementary Information

Bifunctional Tertiary Amine-Squaramide Catalyzed Asymmetric Catalytic 1,6-Conjugate Addition/Aromatization of *para*-Quinone Methides with Oxindoles

Yu-Hua Deng,[a,c] Xiang-Zhi Zhang,[b] Ke-Yin Yu,[b] Xu Yan,[b] Ji-Yuan Du,[b] Hanmin Huang,[a] and Chun-An Fan*[,a,b]

[a.] *State Key Laboratory for Oxo Synthesis and Selective Oxidation, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China;*

[b.] *State Key Laboratory of Applied Organic Chemistry, College of Chemistry and Chemical Engineering, Lanzhou University, 222 Tianshui Nanlu, Lanzhou 730000, China;*

[c.] *University of Chinese Academy of Sciences, Beijing 100049, China;*

E-mail: fanchunan@lzu.edu.cn

TABLE OF CONTENTS

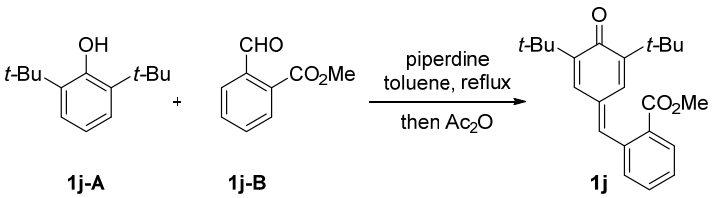
General

Unless otherwise noted, all moisture or oxygen-sensitive reactions were carried out under an argon atmosphere in oven or heat-dried flasks. All the solvents used were purified according to the standard procedures: THF (Na), CH_2Cl_2 (CaH_2), toluene (Na), and Et_2O (Na). All commercially available reagents were used as received. All reactions were monitored by thin-layer chromatography (TLC) on silica gel F_{254} plates using UV light as visualizing agent (if applicable), and a solution of ammonium molybdate tetrahydrate (50 g/L) in EtOH followed by heating as developing agents. The products were purified by flash column chromatography on silica gel (300–400 meshes) from the Anhui Liangchen Silicon Material Company in China.

Proton nuclear magnetic resonance (^{1}H NMR) and carbon NMR (^{13}C NMR) spectra were recorded in $CDCl_3$ (unless otherwise stated). ^{1}H (400 MHz) and ^{13}C (100 MHz) were performed on 400 MHz spectrometers. Chemical shifts were denoted in ppm (δ) and calibrated by using residual undeuterated solvent ($CDCl_3$ (7.26 ppm), DMSO-d_6 (2.50 ppm) or tetramethylsilane (0.00 ppm)) as internal reference for ^{1}H NMR and the deuterated solvent ($CDCl_3$ (77.00 ppm), DMSO-d_6 (39.70 ppm) or tetramethylsilane (0.00 ppm)) as internal standard for ^{13}C NMR. The following abbreviations were used to explain the multiplicities: s = singlet, d = doublet, t = triplet, q = quartet, dd = double doublet, td = triple doublet, dt = double triplet, dq = double quartet, br = broad, m = multiplet. The mass data were recorded on a GCMS-QP2010 SE mass spectrometer by means of the ESI technique, and the relative intensity (%) is given in brackets. High-resolution mass spectral analysis (HRMS) data were measured on a Bruker ApexII mass spectrometer by means of the ESI technique. The IR spectra were recorded on Nicolet Nexus 670 FT-IR spectrometer. The X-ray single-crystal determination was performed on a Bruker APEX II X-ray single crystal diffractometer. Optical rotations were measured using a 0.1-mL cell with a 1.0-cm path length on Rudolph Autopol IV automatic polarimeter, and concentrations (c) were reported in g×(100 mL)$^{-1}$. Analytical HPLC was recorded on a HPLC machine equipped with Waters 1525 Binary HPLC Pump and Waters 2998 Photodiode Array Detector (Waters HPLC machine). The chiral stationary phase was Daicel Chiralpak® IA-3/IB-3/IC-3/IE-3 column (Ø = 0.46 cm, length = 25.0 cm). The melting points were measured on a Kolfer melting point apparatus without calibration (Beijing Tech Instrument Co., LTD).

1. Preparation of *para*-Quinone Methides (*p*-QMs)

The *para*-Quinone Methides **1a-1p**,[1a] **1q**,[1b] **1r**,[1c] **1s**,[1d] **1t**[1a] and **1u**[1a] were prepared according to the reported methods. The preparation of **1j** referred to the reported procedure for **1a**[1a] was as follows:

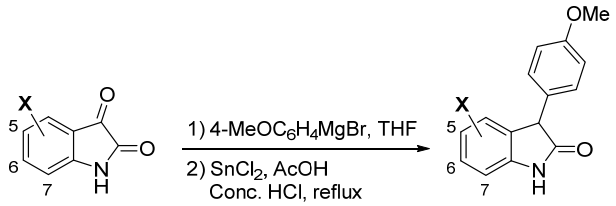


In a Dean-Stark apparatus, the solution of 2,6-di-*tert*-butylphenol **1j-A** (4.12 g, 20 mmol) and methyl 2-formylbenzoate **1j-B** (3.28 g, 20 mmol) in toluene was heated to reflux for 1 h. Piperidine (4 mL, 40 mmol) was added dropwise via the syringe within 2 h and then held to reflux for 3 h. After cooling just below the boiling point of the reaction mixture, acetic anhydride (3.8 mL, 40 mmol) was added and stirred for 20 min. Then the mixture was poured into ice-water and extracted with CH_2Cl_2. The combined the organic layers were dried over Na_2SO_4. After the removal of the solvent, the residual was purified by flash column chromatography purification on silica gel (petroleum ether/CH_2Cl_2 = 20:1) to afford the yellow solid product **1j** (1.68 g, 24% yield). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.09

(d, J = 7.9 Hz, 1H), 7.74 (s, 1H), 7.58 (t, J = 7.6 Hz, 1H), 7.45 (t, J = 7.6 Hz, 1H), 7.34 (d, J = 7.6 Hz, 1H), 7.16 (s, 1H), 7.10 (s, 1H), 3.88 (br, 3H), 1.32 (s, 9H), 1.21 (s, 9H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 186.5, 166.8, 149.0, 147.7, 142.7, 137.3, 134.9, 132.2, 131.9, 131.3, 131.1, 129.4, 128.7, 127.9, 52.2, 35.2, 34.9, 29.40, 29.36 ppm. **MS** (70 *eV*, EI)**:** *m/z* (%) = 352 (100) $[M]^+$, 337 (55) $[M-CH_3]^+$, 320 (34), 309 (58), 305 (93), 295 (25), 277 (38), 263 (73), 249 (30), 203 (21), 149 (26), 91 (20), 57 (38). **IR** (KBr) $\tilde{\nu}$ = 3408, 3067, 2953, 2910, 2864, 1710, 1612, 1552, 1480, 1437, 1359, 1263, 1229, 1137, 1081, 934, 885, 822, 749, 710 cm^{-1}.

2. Preparation of Oxindoles

The 3-substituted oxindoles **2a-2d**,[2a] **2f-2l**,[2a] **2n-2p**,[2a] **2r**,[2a] **2t-2y**,[2a] **2e**,[2b] **2m**,[2c] **2q**,[2d] and **2s**[2e] were prepared according to the reported methods. The preparation of **2v–2y** referred to the reported procedure for **2a**[2a] was as follows:

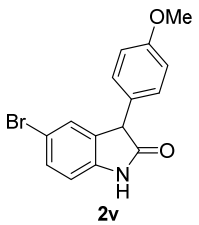


2v-A: X = 5-Br
2x-A: X = 6-Br
2y-A: X = 7-F

2v: X = 5-Br
2x: **X** = 6-Br
2y: **X** = 7-F

A freshly prepared solution of 4-$MeOC_6H_4MgBr$ in THF (12 mmol) was added dropwise to a stirred suspension of substituted isatin (5.0 mmol) in THF (30 mL) at 0 °C under argon. The mixture was allowed to warm to room temperature and stirred until the starting material was consumed. The reaction mixture was diluted with ethyl acetate, cooled in an ice-bath, and then quenched with 1*N* HCl. The aqueous layer was extracted with ethyl acetate, and the combined organic layers were washed with water and brine and then dried over Na_2SO_4. After the removal of the solvent under reduced pressure, the crude product was directly used for next step without further purification.

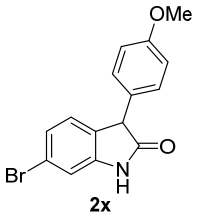
The crude product obtained above was dissolved in AcOH (15 mL), followed by the sequential addition of $SnCl_2$ (1.4 g, 7.5 mmol) and conc. HCl (1.5 mL). The resulting mixture was heated to reflux for 3~4 h at 120 °C, and cooled to room temperature. After the removal of the solvent under reduced pressure, the residual was diluted with ethyl acetate (30 mL) followed by the slow addition of the saturated aqueous solution of Na_2CO_3. The mixture was extracted with ethyl acetate, and the combined organic layers were washed with water and brine, and then dried over Na_2SO_4. After the removal of the solvent, the flash column chromatography purification on silica gel (petroleum ether/ethyl acetate = 3:1) afforded the product **2v**, **2x** and **2y**.



2v

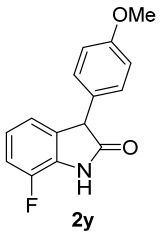
2v: white powder (0.96 g, 60% yield). **^{1}H NMR** (400 MHz, DMSO-d_6) δ = 10.68 (br, 1H), 7.43 (dd, J = 8.3, 1.8 Hz, 1H), 7.18 (s, 1H), 7.13-6.83 (m, 5H), 4.77 (s, 1H), 3.77 (s, 3H) ppm. **^{13}C NMR** (100 MHz, DMSO-d_6) δ = 177.2, 158.7, 142.2, 133.2, 130.9, 129.6, 129.1, 127.6, 114.4, 113.4, 111.6, 55.3, 51. 2 ppm. **MS** (70 *eV*, EI)**:** *m/z* (%) = 319 (78) $[M(^{81}Br)]^+$, 317 (77) $[M(^{79}Br)]^+$, 304 (8) $[M(^{81}Br)-CH_3]^+$, 302 (8) $[M(^{79}Br)-CH_3]^+$, 290 (31), 288 (32), 276 (21), 274 (22), 238 (100) $[M-Br]^+$, 210 (18), 195 (16), 167 (32), 152 (16), 76 (14), 63 (13). **IR** (KBr) $\tilde{\nu}$ = 3186,

3042, 2834, 1715, 1706, 1613, 1583, 1511, 1475, 1303, 1251, 1214, 1180, 1161, 1110, 1030, 906, 827, 819, 736, 629, 577, 561, 521 cm^{-1}.



2x

2x: white powder (0.91 g, 57% yield). **^{1}H NMR** (400 MHz, DMSO-d_6) δ = 10.67 (br, 1H), 7.17-7.06 (m, 4H), 6.99 (d, J = 7.9 Hz, 1H), 6.93 (d, J = 8.6 Hz, 2H), 4.70 (s, 1H), 3.76 (s, 3H) ppm. **^{13}C NMR** (100 MHz, DMSO-d_6) δ = 177.5, 158.7, 144.6, 129.9, 129.6, 129.1, 126.7, 124.4, 120.7, 114.3, 112.4, 55.2, 50.8 ppm. **MS** (70 *eV*, EI)**:** *m/z* (%) = 319 (62) $[M(^{81}Br)]^+$, 317 (61) $[M(^{79}Br)]^+$, 304 (9) $[M(^{81}Br) - CH_3]^+$, 302 (9) $[M(^{79}Br) - CH_3]^+$, 290 (24), 288 (25), 276 (16), 274 (16), 238 (100) $[M - Br]^+$, 195 (12), 167 (20), 152 (15), 139 (18), 76 (11), 69 (9), 63 (10). **IR** (KBr) $\tilde{\nu}$ = 3214, 2836, 1713, 1612, 1586, 1511, 1480, 1448, 1319, 1247, 1241, 1178, 1109, 1032, 929, 856, 822, 803, 750, 684, 646, 587, 576, 516 cm^{-1}.



2y

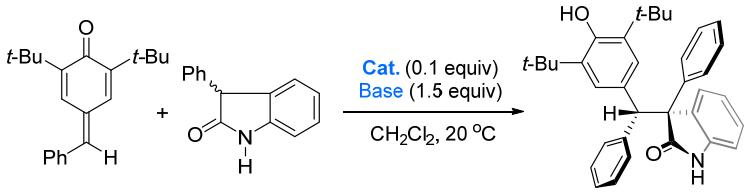
2y: white powder (0.65 g, 51% yield). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.34 (br, 1H), 7.17-7.10 (m, 2H), 7.07-6.83 (m, 5H), 4.63 (s, 1H), 3.79 (s, 3H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 177.5, 159.2, 146.9 (d, $^1J_{C\text{-}F}$ = 244.2 Hz), 132.4 (d, $^4J_{C\text{-}F}$ = 3.0 Hz), 129.4, 128.8 (d, $^2J_{C\text{-}F}$ = 12.1 Hz), 127.8, 123.3 (d, $^3J_{C\text{-}F}$ = 5.8 Hz), 120.9 (d, $^3J_{C\text{-}F}$ = 3.4 Hz), 115.3 (d, $^2J_{C\text{-}F}$ = 17 Hz), 114.4, 55.3, 51.8 (d, $^4J_{C\text{-}F}$ = 2.3 Hz) ppm. **MS** (70 *eV*, EI)**:** *m/z* (%) = 257 (100) $[M]^+$, 242 (15) $[M - CH_3]^+$, 228 (52), 214 (40), 198 (14), 185 (26), 120 (7), 93 (6), 69 (6). **IR** (KBr) $\tilde{\nu}$ = 3149, 3035, 2837, 1712, 1641, 1612, 1582, 1515, 1490, 1468, 1456, 1421, 1322, 1302, 1253, 1211, 1177, 1149, 1108, 1049, 1030, 1004, 825, 772, 733, 715, 667, 589, 580, 521, 507, 470, 432 cm^{-1}.

3. Preparation of Chiral Catalysts

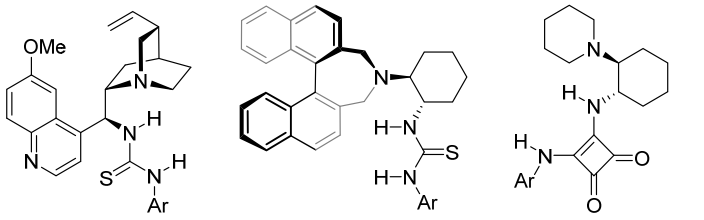
The chiral thiourea catalysts (**4a** and **4b**)[3] and the chiral squaramide catalysts (**4c–4j**)[4] were prepared according to reported procedures.

4. The Condition Optimizations for Asymmetric Catalytic 1,6-Conjugate Addition

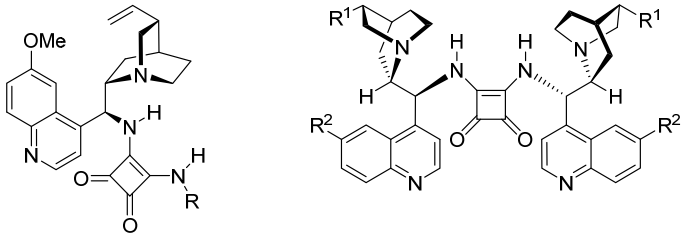
4.1. The Screening of Catalysts[a]



1a **2a** **3aa**



4a (Ar = 3,5-$(CF_3)_2C_6H_3$) **4b** (Ar = 3,5-$(CF_3)_2C_6H_3$) **4c** (Ar = 3,5-$(CF_3)_2C_6H_3$)



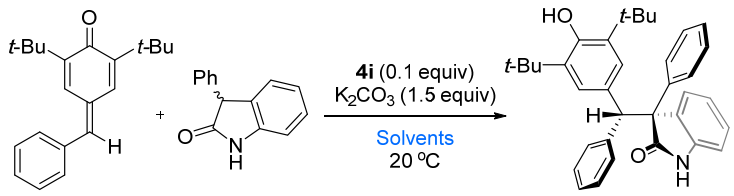
4d (R = 3,5-$(CF_3)_2C_6H_3$)
4e (R = Bn)
4f (R = (*S*)-1-methylbenzyl)
4g (R = (1*S*,2*R*)-(2-hydroxy)-indan-1-yl)

4h (R^1 = vinyl, R^2 = H)
4i (R^1 = vinyl, R^2 = OMe)
4j (R^1 = Et, R^2 =OMe)

Entry	Cat.	Base	*t* [h]	Yield [%][b]	*dr*[c]	*ee* [%][d,e]
1	**4a**	/	96	NR	/	/
2	**4a**	K_2CO_3	18	93	5:3	19 (0)
3	**4b**	K_2CO_3	23	91	5:3	0 (0)
4	**4c**	K_2CO_3	24	97	8:3	−11 (0)
5	**4d**	K_2CO_3	23	93	4:1	37 (21)
6	**4e**	K_2CO_3	13	94	4:1	64 (24)
7	**4f**	K_2CO_3	12	95	4:1	64 (21)
8	**4g**	K_2CO_3	28	87	3:1	51 (13)
9	**4h**	K_2CO_3	12	95	4:1	79 (17)
10	**4i**	K_2CO_3	9	94	5:1	80 (9)
11	**4j**	K_2CO_3	8	93	7:2	74 (12)

[a]Unless otherwise stated all reactions were performed with **1a** (0.05 mmol) and **2a** (0.05 mmol) in the presence of catalyst **4** (0.005 mmol) and K_2CO_3 (0.075 mmol) in CH_2Cl_2 (1.0 mL) at 20 °C. [b]Yield of isolated product. [c]Determined by HPLC. [d]Determined by HPLC analysis using a chiral stationary phase. [e]Enantiomeric excess of minor diastereoisomer in the parentheses. NR = No reaction.

4.2. The Screening of Solvents[a]

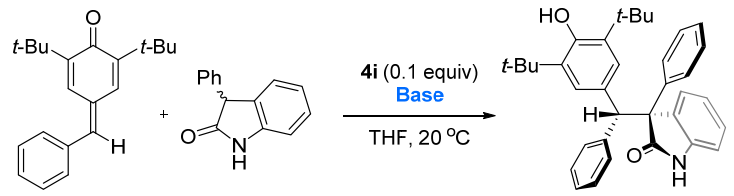


1a 2a 3aa

Entry	Solvents	*t* [h]	Yield [%][b]	d.r[c]	*ee* [%][d,e]
1	toluene	13	94	2:1	56 (5)
2	*p*-xylene	13	94	5:3	50 (3)
3	$PhCF_3$	8	97	5:1	77 (13)
4	mesitylene	13	89	5:3	53 (3)
5	CH_2Cl_2	9	94	5:1	80 (9)
6	$(CH_2Cl)_2$	10	94	9:2	80 (22)
7	$CHCl_3$	13	91	9:2	67 (14)
8	*t*-BuOMe	7	95	10:3	22 (5)
9	Et_2O	7	96	5:1	60 (19)
10	THF	1.0	98	13:1	90 (73)
11	1,4-dioxane	1.5	97	3:1	25 (9)
12	AcOEt	1.5	98	10:1	85 (60)
13	acetone	0.5	98	6:1	55 (43)
14	CH_3CN	4	94	3:2	0 (0)
15	CF_3CH_2OH	96	68	6:1	15 (3)
16	*n*-hexane	96	75	3:2	33 (2)

[a]Unless otherwise stated, all reactions were performed with **1a** (0.05 mmol) and **2a** (0.05 mmol) in the presence of the catalyst **4i** (0.005 mmol) and K_2CO_3 (0.075 mmol) in the indicated solvents (1.0 mL) at 20 °C. [b]Yield of isolated product. [c]Determined by HPLC. [d]Determined by HPLC analysis using a chiral stationary phase. [e]Enantiomeric excess of minor diastereoisomer in the parentheses.

4.3. The Screening of Bases[a]



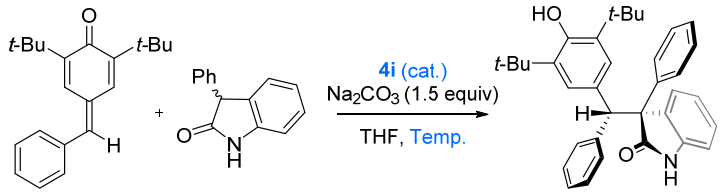
1a 2a 3aa

Entry	Base	Equiv (Base)	*t* (h)	Yield[%][b]	*dr*[c]	*ee* [%][d,e]
1	$K_3PO_4.3H_2O$	1.5	1.0	99	6:1	79 (65)
2	$KF.2H_2O$	1.5	7.5	92	17:1	92 (69)
3	KOAc	1.5	2.5	96	15:1	92 (69)
4	$Ca(OAc)_2$	1.5	72.0	44	13:1	90 (69)

5	Li_2CO_3	1.5	36.0	90	11:1	91 (73)
6	Na_2CO_3	1.5	6.0	97	17:1	94 (79)
7	K_2CO_3	1.5	1.0	98	13:1	90 (73)
8	Cs_2CO_3	1.5	1.2	76	5:2	0 (6)
9	$NaHCO_3$	1.5	12.0	94	13:1	94 (77)
10	Et_3N	1.5	48	88	14:1	93 (75)
11	*i*-Pr_2NEt	1.5	48	85	14:1	85 (53)
12	DBU	1.5	0.7	92	5:1	36 (25)
13	DABCO	1.5	33	91	12:1	95 (83)
14	DMAP	1.5	10	93	17:1	92 (71)
15	2,6-lutidine	1.5	36	64	18:1	93 (75)
16	/	/	72	36	13:1	93 (65)
17	Na_2CO_3	0.8	6	92	17:1	94 (78)
18	Na_2CO_3	1.0	6	94	17:1	94 (77)

[a]Unless otherwise stated all reactions were performed with **1a** (0.05 mmol) and **2a** (0.05 mmol) in the presence of the catalysts **4i** (0.005 mmol) and bases (the amount is indicated in the table) in THF (1.0 mL) at 20 °C. [b]Yield of isolated product. [c]Determined by HPLC. [d]Determined by HPLC analysis using a chiral stationary phase. [e]Enantiomeric excess of minor diastereoisomer in the parentheses. DBU = 1,8-diazabicyclo[5.4.0]undec-7-ene; DABCO = 1,4-diazabicyclo[2.2.2]octane; DMAP = 4-dimethylaminopyridine.

4.4. The Screening of Catalyst Amounts and Reaction Temperature[a]

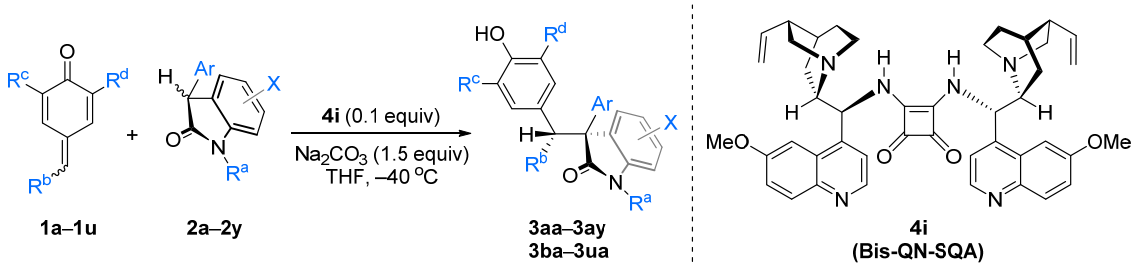


1a **2a** **3aa**

Entry	**4i** (equiv)	Temp. (°C)	*t* [h]	Yield [%][b]	d.r.[c]	*ee* [%][d,e]
1	0.025	20	13	88	17:1	87 (57)
2	0.05	20	10	94	17:1	92 (71)
3	0.1	20	6	96	17:1	94 (78)
4	0.15	20	5	97	17:1	96 (88)
5	0.2	20	4	97	17:1	96 (86)
6	0.1	0	12	96	15:1	96 (85)
8	0.1	−20	14	94	34:1	98 (83)
9	0.1	−40	18	96	51:1	99 (90)

[a]Unless otherwise stated all reactions were performed with **1a** (0.05 mmol) and **2a** (0.05 mmol) in the presence of the catalysts **4i** (the amount is indicated in the table) and Na_2CO_3 (0.075 mmol) in THF (1.0 mL) at the indicated temperature. [b]Yield of isolated product. [c]Determined by HPLC. [d]Determined by HPLC using a chiral stationary phase. [e]Enantiomeric excess of minor diastereoisomer in the parentheses.

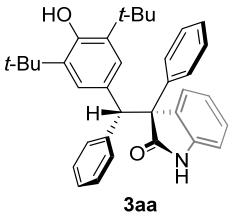
5. General Procedure for Asymmetric 1,6-Conjugate Addition



A mixture of *para*-quinone methides **1a–1u** (0.2 mmol), oxindoles **2a–2y** (0.2 mmol) and the catalyst **4i** (14.5 mg, 0.02 mmol) in THF (4.0 mL) was cooled to –40 °C, and then Na_2CO_3 (31.8 mg, 0.3 mmol) was added. The resulting reaction mixture was kept under vigorous stirring until the consumption of *p*-QMs or oxindoles (monitored by TLC analysis). Then the solvent was concentrated under reduced pressure, and the residue was purified by flash column chromatography on silica gel (petroleum ether/ethyl acetate10:1~2:1) to furnish the corresponding addition products **3aa–3ay** and **3ba–3ua**.

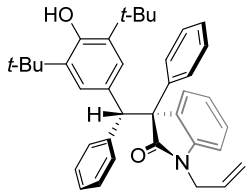
Unless otherwise stated, the yields were referred to the isolated products by flash column chromatography, and the dr's were determined by HPLC. The ee's referred to the major diastereoisomer were determined by HPLC using a chiral stationary phase.

6. Spectroscopic Data for Products 3aa–3ay and 3ba–3ua



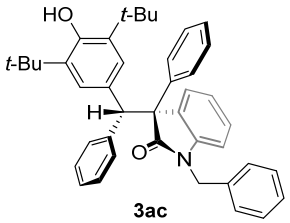
3aa

3aa: Following the above *General Procedure*, the reaction gave the product **3aa** (18 h, white foam, 97.0 mg, 96% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +65 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.20 (br, 1H), 7.61 (d, *J* = 7.3 Hz, 2H), 7.30-7.18 (m, 4H), 7.14-7.04 (m, 3H), 6.97 (t, *J* = 7.6 Hz, 1H), 6.94-6.85 (m, 2H), 6.74 (d, *J* = 7.7 Hz, 1H), 6.62 (d, *J* = 7.7, 1H), 6.60 (s, 2H), 5.16 (s, 1H), 5.03 (s, 1H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.6, 152.4, 141.7, 140.3, 138.9, 134.2, 129.43, 129.37, 128.7, 128.5, 128.4, 128.3, 128.1, 128.0, 127.2, 127.0, 126.6, 121.0, 110.0, 61.1, 59.6, 34.2, 30.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3637, 3390, 3255, 2956, 2872, 1710, 1619, 1598, 1496, 1471, 1437, 1391, 1322, 1236, 1209, 1197, 1155, 1122, 887, 808, 749, 729, 670, 594, 582 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{37}NO_2Na$ [*M* + Na]$^+$: 526.2717; found: 526.2711. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 12.8 min, t_{major} = 8.1 min; For minor diastereoisomer: t_{minor} = 6.2 min, t_{major} = 4.5 min).



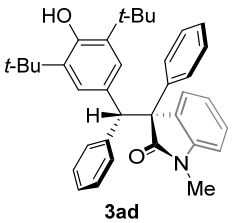
3ab

3ab: Following the above *General Procedure*, the reaction gave the product **3ab** (19 h, white solid, 104.9 mg, 96% yield, >20:1 *dr*, 96% *ee*, mp = 169.6-170.4 °C, $[\alpha]_D^{25}$ = +94 (*c* = 1.2, $CHCl_3$)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.65 (d, *J* = 7.0 Hz, 2H), 7.36-7.15 (m, 4H), 7.14-6.93 (m, 6H), 6.86 (d, *J* = 7.0 Hz, 1H), 6.74 (d, *J* = 7.7 Hz, 1H), 6.65 (s, 2H), 5.27-5.08 (m, 1H), 5.19 (s, 1H), 5.04 (s, 1H), 4.92 (d, *J* = 10.2 Hz, 1H), 4.82 (d, *J* = 17.2 Hz, 1H), 4.16 (d, *J* = 17.2 Hz, 1H), 3.80 (dd, *J* = 16.1, 6.0 Hz, 1H) 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 176.7, 152.4, 143.5, 140.1, 139.1, 134.2, 131.4, 129.9, 129.5, 128.7, 128.3, 128.2, 128.1, 127.8, 127.7, 127.03, 126.98, 126.4, 121.1, 117.26, 109.0, 60.9, 60.0, 42.2, 34.1, 30.0 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3524, 2957, 1710, 1609, 1495, 1486, 1466, 1434, 1360, 1312, 1235, 1137, 1120, 1035, 916, 888, 801, 754, 724, 702, 698, 665, 593, 536, 498 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{38}H_{41}NO_2Na$ $[M + Na]^+$: 566.3030; found: 566.3022. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 97:3, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 11.3 min, t_{major} = 14.4 min; For minor diastereoisomer: t_{minor} = 5.1 min, t_{major} = 4.7 min).



3ac

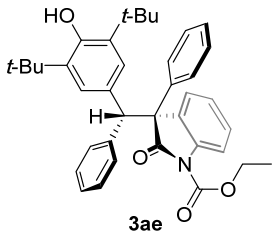
3ac: Following the above *General Procedure*, the reaction gave the product **3ac** (19 h, white foam, 112.2 mg, 94% yield, 10:1 *dr*, 79% *ee*, $[\alpha]_D^{25}$ = +72 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.71 (d, *J* = 7.9 Hz, 2H), 7.33-6.94 (m, 13H), 6.88 (d, *J* = 7.9 Hz, 1H), 6.69 (s, 2H), 6.64 (d, *J* = 7.3 Hz, 2H), 6.58 (d, *J* = 7.9 Hz, 1H), 5.26 (s, 1H), 5.06 (br, 1H), 4.84 (d, *J* = 15.8 Hz, 1H), 4.30 (d, *J* = 15.8 Hz, 1H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 177.2, 152.4, 143.6, 140.1, 139.2, 135.4, 134.2, 129.8, 129.2, 128.7, 128.4, 128.34, 128.31, 128.14, 128.08, 127.9, 127.1, 127.0, 126.6, 121.2, 109.3, 60.8, 59.8, 43.8, 34.2, 30.1 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3633, 2954, 1712, 1610, 1487, 1495, 1436, 1360, 1236, 1186, 1156, 1121, 1080, 1033,887, 805, 749, 727, 699 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{42}H_{43}NO_2Na$ $[M + Na]^+$: 616.3186; found: 616.3179. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 85:15, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 27.2 min, t_{major} = 16.9 min; For minor diastereoisomer: t_{minor} = 7.9 min, t_{major} = 4.1 min).



3ad

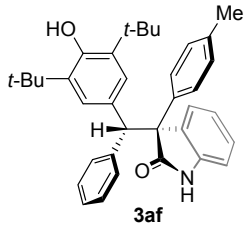
3ad: Following the above *General Procedure*, the reaction gave the product **3ad** (22 h, white foam, 97.2 mg, 93% yield, >20:1 *dr*, 90% *ee*, $[\alpha]_D^{25}$ = +74 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.66 (d, *J* = 7.9 Hz, 2H), 7.39-7.17 (m, 4H), 7.13-6.98 (m, 4H), 6.97-6.85 (m, 2H), 6.76-6.69 (m, 2H), 6.61 (s, 2H), 5.17 (s, 1H), 5.03 (s, 1H), 2.80

(s, 3H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 177.1, 152.4, 144.5, 140.2, 139.0, 134.2, 129.5, 129.3, 128.8, 128.5, 128.3, 128.1, 127.9, 127.7, 127.1, 126.9, 126.5, 121.2, 108.0, 60.9, 60.1, 34.1, 30.0, 25.9 ppm. **IR** (KBr): $\tilde{\nu}$ = 3634, 2954, 1711, 1611, 1495, 1470, 1436, 1372, 1348, 1236, 1156, 1131, 1122, 1091, 1033, 945, 888, 802, 757, 748, 698, 645, 599, 542 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_2Na$ [*M* + Na]$^+$: 540.2873; found: 540.2866. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 97:3, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 6.8 min, t_{major} = 13.5 min; For minor diastereoisomer: t_{minor} = 5.2 min, t_{major} = 6.1 min).



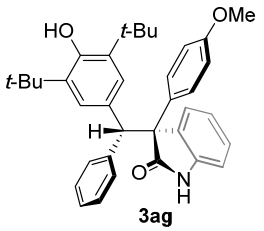
3ae

3ae: Following the above *General Procedure*, the reaction gave the product **3ae** (13 h, white foam, 111.1mg, 96% yield, 10:1 *dr*, 11% *ee* (major isomer), $[\alpha]_D^{25}$ = +3 (*c* = 0.7, $CHCl_3$)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.95 (d, *J* = 8.1 Hz, 1H), 7.69-7.62 (m, 2H), 7.48-7.41 (m, 1H), 7.39-7.26 (m, 3H), 7.23-7.14 (m, 4H), 7.03-6.95 (m, 2H), 6.73 (d, *J* = 7.6 Hz, 1H), 6.65 (s, 2H), 5.30 (s, 1H), 5.09 (s, 1H), 4.35-4.27 (m, 2H), 1.32 (d, *J* = 7.2 Hz, 3H), 1.23 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 175.4 (CON), 152.6, 150.6 (COOEt), 140.1, 139.7, 138.7, 134.4, 129.6, 128.8, 128.5 (CH × 2), 128.4 (CH × 2 + CH ×1), 128.3, 128.1, 127.8, 127.5, 127.0, 126.7, 123.3, 115.1, 63.0, 61.2, 60.4, 34.1, 30.0, 14.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3621, 2959, 1761, 1737, 1728, 1606, 1481, 1466, 1436, 1390, 1344, 1304, 1285, 1240, 1171, 1157, 1097, 1058, 1022, 888, 877, 808, 766, 727, 701, 597 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{38}H_{41}NO_4Na$ [*M* + Na]$^+$: 598.2928; found: 598.2933. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 95:5, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 9.3 min, t_{major} = 6.6 min; For minor diastereoisomer: $t_{mixture}$ = 4.0-4.8 min).



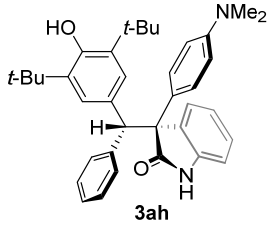
3af

3af: Following the above *General Procedure*, the reaction gave the product **3af** (15 h, white foam, 100.6 mg, 97% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +87 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.12 (br, 1H), 7.54 (d, *J* = 8.3 Hz, 2H), 7.37-7.27 (m, 1H), 7.18-7.08 (m, 5H), 7.02 (t, *J* = 7.6, 1H), 6.99-6.92 (m, 2H), 6.80 (d, *J* = 7.8, 1H), 7.02 (d, *J* = 7.6, 1H), 6.64 (s, 2H), 5.16 (s, 1H), 5.08 (s, 1H), 2.33 (s, 3H), 1.24 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.6, 152.4, 141.7, 140.4, 136.8, 135.9, 134.1 (C × 2), 129.7, 129.4, 128.8, 128.4, 128.3, 128.2, 128.0, 127.1, 126.6, 120.9, 110.0, 60.8, 59.8, 34.2, 30.0, 20.8 ppm. **IR** (KBr): $\tilde{\nu}$ = 3638, 3386, 3250, 2955, 1709, 1618, 1596, 1471, 1436, 1391, 1360, 1324, 1236, 1192, 1155, 1122, 1023, 809, 752, 702, 588 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_2Na$ [*M* + Na]$^+$: 540.2873; found: 540.2865. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, v = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 7.6 min, t_{major} = 16.8 min; For minor diastereoisomer: t_{minor} = 5.2 min, t_{major} = 11.5 min).



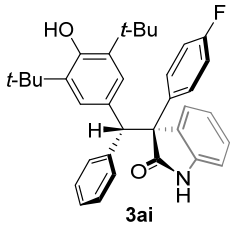
3ag

3ag: Following the above *General Procedure*, the reaction gave the product **3ag** (24 h, white foam, 103.9 mg, 97% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +88 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.25 (br, 1H), 7.58 (d, *J* = 8.7 Hz, 2H), 7.30 (t, *J* = 7.6 Hz, 1H), 7.20-7.09 (m, 3H), 7.02 (t, *J* = 7.6 Hz, 1H), 6.98-6.90 (m, 2H), 6.85 (d, *J* = 8.8 Hz, 2H), 6.80 (d, *J* = 7.4 Hz, 1H), 6.71-6.62 (m, 1H), 6.66 (s, 2H), 5.13 (s, 1H), 5.10 (s, 1H), 3.79 (s, 3H), 1.26 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.8, 158.8, 152.4, 141.7, 140.4, 134.1, 131.0, 129.7, 129.4, 129.3, 128.8, 128.4, 128.3, 128.0, 127.1, 126.6, 120.9, 113.5, 110.0, 60.4, 59.7, 55.2, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3635, 3387, 3268, 2955, 2872, 1709, 1618, 1509, 1483, 1471, 1437, 1391, 1324, 1252, 1238, 1184, 1155, 1121, 1035, 887, 827, 753, 703, 589, 570 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_3Na$ $[M + Na]^+$: 556.2822; found: 556.2815. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, v = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 10.4 min, t_{major} = 21.0 min; For minor diastereoisomer: t_{minor} = 6.1 min, t_{major} = 15.4 min).



3ah

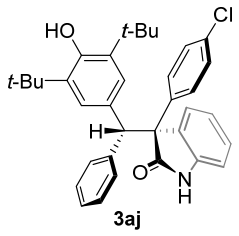
3ah: Following the above *General Procedure*, the reaction gave the product **3ah** (21 h, white foam, 98.5 mg, 90% yield, 12:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +106 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.17 (br, 1H), 7.43 (d, *J* = 8.4 Hz, 1H), 7.22 (t, *J* = 7.6 Hz, 1H), 7.12-7.03 (m, 3H), 6.98-6.86 (m, 3H), 6.71(d, *J* = 7.7 Hz, 1H), 6.67-6.60 (m, 2H), 6.62 (s, 2H), 6.57(d, *J* = 7.5 Hz, 1H), 5.06 (s, 1H), 5.03 (s, 1H), 2.85 (s, 6H), 1.20 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 180.0, 152.3, 149.8, 141.7, 140.6, 134.0, 130.0, 129.3, 129.0, 128.9, 128.4, 128.0, 127.9, 127.2, 126.6, 126.4, 120.6, 112.6, 109.9, 60.2, 59.6, 40.6, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3636, 3367, 3248, 2953, 1707, 1612, 1518, 1470, 1436, 1390, 1357, 1321, 1234, 1155, 1121, 949, 820, 810, 752, 702, 587 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{37}H_{42}N_2O_2Na$ $[M + Na]^+$: 569.3138; found: 569.3131. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 90:10, v = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 34.0 min, t_{major} = 13.4 min; For minor diastereoisomer: t_{minor} = 26.3 min, t_{major} = 5.6 min).



3ai

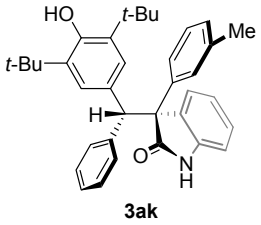
3ai: Following the above *General Procedure*, the reaction gave the product **3ai** (13 h, white foam, 99.0 mg, 94% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +65 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.26 (br, 1H), 7.70-7.61 (m, 2H), 7.32 (t, *J* = 7.6 Hz, 1H), 7.18-6.88 (m, 8H), 6.81 (d, *J* = 7.8 Hz, 1H), 6.69 (d, *J* = 7.6 Hz, 1H), 6.65 (s, 2H), 5.13

(s, 1H), 5.11 (br, 1H), 1.26 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.4, 162.1 (d, $^1J_{C\text{-}F}$ = 246.7 Hz), 152.5, 141.7, 140.1, 134.8 (d, $^4J_{C\text{-}F}$ = 2.8 HZ), 134.4, 130.1 (d, $^3J_{C\text{-}F}$ = 7.9 Hz), 129.31, 129.28, 128.6, 128.5, 128.4, 128.0, 127.0, 126.7, 121.1, 114.8 (d, $^2J_{C\text{-}F}$ = 21.1 Hz), 110.1, 60.5, 60.0, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{v}$ = 3638, 3254, 2958, 1709, 1618, 1507, 1471, 1436, 1392, 1323, 1236, 1163, 1121, 887, 829, 811, 753, 702, 588 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}FNO_2Na$ $[M + Na]^+$: 544.2622; found: 544.2617. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 7.2 min, t_{major} = 10.7 min; For minor diastereoisomer: t_{minor} = 4.9 min, t_{major} = 7.8 min).



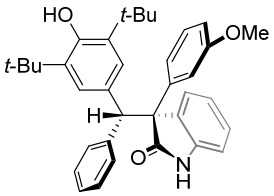
3aj

3aj: Following the above *General Procedure*, the reaction gave the product **3aj** (20 h, white foam, 104.8 mg, 97% yield, >20:1 *dr*, 97% *ee*, $[\alpha]_D^{25}$ = +88 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.26 (br, 1H), 7.56 (d, *J* = 8.7 Hz, 2H), 7.32-7.19 (m, 3H), 7.12-7.04 (m, 3H), 6.99-6.96 (m, 3H), 6.92-6.84 (m, 3H), 6.75 (d, *J* = 7.6, 1H), 6.64 (d, *J* = 7.6, 1H), 6.58 (s, 2H), 5.07 (s, 1H), 5.06 (s, 1H), 1.21 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.2, 152.5, 141.6, 139.9, 137.6, 134.4, 133.3, 129.8, 129.3, 129.0, 128.7, 128.3, 128.1 (CH × 2 + C × 2), 128.0, 127.0, 126.7, 121.2, 110.2, 60.6, 60.0, 34.2, 30.0 ppm. **IR** (KBr): $\tilde{v}$ = 3636, 3396, 3261, 2958, 1710, 1619, 1594, 1492, 1472, 1437, 1398, 1323, 1236, 1155, 1122, 1097, 1014, 887, 824, 811, 752, 702, 586 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}ClNO_2Na$ $[M + Na]^+$: 560.2327; found: 560.2321. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 8.2 min, t_{major} = 14.1 min; For minor diastereoisomer: t_{minor} = 5.1 min, t_{major} = 10.3 min).



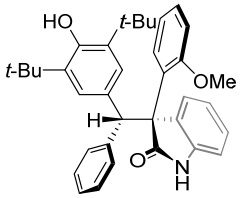
3ak

3ak: Following the above *General Procedure*, the reaction gave the product **3ak** (20 h, white foam, 99.5 mg, 96% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +63 (*c* = 0.8, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.19 (br, 1H), 7.54 (s, 1H), 7.41 (d, *J* = 8.0 Hz, 1H), 7.34-7.28 (m, 1H), 7.22-7.6.93 (m, 8H), 6.80 (d, *J* = 7.7 Hz, 1H), 6.65 (d, *J* = 7.7 Hz, 1H), 6.67 (s, 2H), 5.22 (s, 1H), 5.10 (s, 1H), 2.35 (s, 3H), 1.25 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.6, 152.4, 141.7, 140.4, 138.8, 137.6, 134.2, 129.6, 129.4 (CH × 2), 128.9, 128.8, 128.5, 128.3, 127.98 (CH × 2), 127.96 (CH × 2), 127.1 (CH × 2), 126.6, 125.5, 121.0, 110.0, 61.0, 59.6, 34.2, 30.0, 21.6 ppm. **IR** (KBr): $\tilde{v}$ = 3638, 3389, 3259, 2956, 1710, 1618, 1484, 1471, 1436, 1323, 1235, 1156, 1122, 888, 770, 752, 702, 586 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_2Na$ $[M + Na]^+$: 540.2873; found: 540.2883. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 215.3 nm; For major diastereoisomer: t_{minor} = 9.4 min, t_{major} = 7.5 min; For minor diastereoisomer: t_{minor} = 5.7 min, t_{major} = 4.9 min).



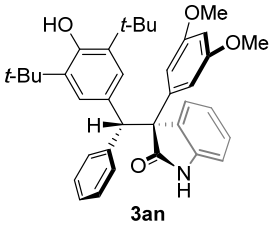
3al

3al: Following the above *General Procedure*, the reaction gave the product **3al** (20 h, white foam, 103.4 mg, 96% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +81 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.22 (br, 1H), 7.32-7.05 (m, 8H), 7.00-6.86 (m, 3H), 6.80-6.70 (m, 2H), 6.67-6.60 (m, 1H), 6.63 (s, 1H), 5.13 (s, 1H), 5.05 (br, 1H), 3.69 (s, 3H), 1.20 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.4, 159.4, 152.4, 141.6, 140.5, 140.3, 134.2 (C × 2), 129.5, 129.3, 128.9, 128.7, 128.4, 128.0, 127.0, 126.6, 121.0, 120.8, 114.8, 112.4, 110.0, 61.0, 59.7, 55.1, 34.2, 30.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3633, 3389, 3271, 3060, 2955, 1710, 1618, 1599, 1582, 1486, 1471, 1435, 1322, 1290, 1253, 1237, 1155, 1055, 887, 752, 731, 700, 582 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_3Na$ $[M + Na]^+$: 556.2822; found: 556.2815. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 14.1 min, t_{major} = 39.4 min; For minor diastereoisomer: t_{minor} = 10.6 min, t_{major} = 15.2 min).



3am

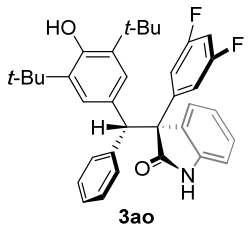
3am: Following the above *General Procedure*, the reaction was peformed with **1a** (59.0 mg, 0.20 mmol), **2m** (47.8 mg, 0.20mmol), **4i** (14.5 mg, 0.02 mmol), and K_2CO_3 (41.5 mg, 0.3 mmol) in THF (4.0 mL) at −20 °C for 33 h to afford the product **3am** (white foam, 96.0 mg, 89% yield, >20:1 *dr*, 95% *ee*, $[\alpha]_D^{25}$ = +402 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.71 (d, *J* = 7.7 Hz, 2H), 7.47 (br, 1H), 7.36 (d, *J* = 7.6 Hz, 1H), 7.31-7.25 (m, 1H), 7.17-7.09 (m, 2H), 7.09-7.00 (m, 3H), 6.96 (t, *J* = 7.5 Hz, 1H), 6.75-6.65 (m, 2H), 6.60 (s, 2H), 6.46 (d, *J* =7.6 Hz, 1H), 5.23 (s, 1H), 4.95 (s, 1H), 3.50 (s, 3H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 180.0, 157.2, 152.0, 141.8, 140.7, 135.1, 134.0, 130.7, 129.8, 129.7, 128.9, 127.8, 127.6, 127.4, 127.0, 125.3, 124.3, 122.0, 120.4, 112.1, 108.2, 60.8, 58.4, 55.3, 34.1, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3637, 3404, 2955, 1709, 1618, 1493, 1473, 1436, 1323, 1251, 1158, 1124, 1026, 889, 749, 702 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_3Na$ $[M + Na]^+$: 556.2822; found: 556.2814. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 6.1 min, t_{major} = 18.3 min; For minor diastereoisomer: t_{minor} = 13.3 min, t_{major} = 20.2 min).



3an

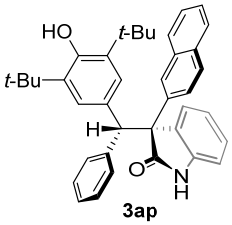
3an: Following the above *General Procedure*, the reaction was performed with **1a** (61.5 mg, 0.21 mmol), **2n** (53.8 mg, 0.20mmol), **4i** (14.5 mg, 0.02 mmol), and Na_2CO_3 (31.8 mg, 0.3 mmol) in THF (4.0 mL) at −40 °C for 20 h to afford

the product **3an** (white foam, 106.5 mg, 94% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +110 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.24 (br, 1H), 7.23 (t, *J* = 7.8 Hz, 1H), 7.14-7.01 (m, 3H), 7.00-6.79 (m, 5H), 6.72 (d, *J* = 7.7 Hz, 1H), 6.83 (s, 2H), 6.68-6.60 (m, 1H), 6.35 (s, 1H), 5.10 (s, 1H), 5.06 (s, 1H), 3.69 (s, 6H), 1.22 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.2, 160.4, 152.4, 141.6, 141.3, 140.2, 134.2, 129.5, 129.3, 128.7, 128.4, 128.3, 128.0, 127.0, 126.6, 121.0, 110.0, 107.1, 99.1, 61.0, 59.6, 55.3, 34.2, 30.0 ppm. **IR** (KBr): $\bar{\nu}$ = 3634, 3390, 2956, 1711, 1594, 1472, 1436, 1323, 1236, 1205, 1156, 1070, 837, 753, 702 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{37}H_{41}NO_4Na$ $[M + Na]^+$: 586.2928; found: 586.2922. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 13.9 min, t_{major} = 40.6 min; For minor diastereoisomer: t_{minor} = 11.9 min, t_{major} = 14.7 min).



3ao

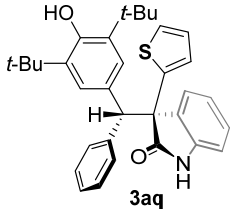
3ao: Following the above *General Procedure*, the reaction gave the product **3ao** (30 h, white foam, 103.1mg, 95% yield, >20:1 *dr*, 89% *ee*, $[\alpha]_D^{25}$ = +66 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.41 (br, 1H), 7.31 (t, *J* = 7.6 Hz, 1H), 7.28-7.18 (m, 2H), 7.12-7.06 (m, 2H), 7.02 (t, *J* = 7.5 Hz, 1H), 6.90-6.82 (m, 2H), 6.79 (d, *J* = 7.8 Hz, 1H), 6.75-6.59 (m, 2H), 6.64 (s, 2H), 5.10 (s, 1H), 5.01 (s, 1H), 1.23 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 178.6, 162.7 (dd, $^1J_{C\text{-}F}$ = 247.3 Hz, $^3J_{C\text{-}F}$ = 13.0 Hz, C × 2), 152.7, 143.3 (t, $^3J_{C\text{-}F}$ = 8.9 Hz), 141.6, 139.6, 134.6, 129.2, 129.0, 128.4, 128.3, 128.1, 128.0, 126.9, 121.5, 111.7 (dd, $^2J_{C\text{-}F}$ =19.3 Hz, $^4J_{C\text{-}F}$ = 7.3 Hz), 110.4, 102.7 (t, $^2J_{C\text{-}F}$ = 25.5 Hz), 60.8, 60.1, 34.2, 30.1 ppm. **IR** (KBr): $\bar{\nu}$ = 3638, 3246, 2958, 17121, 1621, 1593, 1472, 1435, 1319, 1298, 1236, 1156, 1119, 1028, 993, 852, 753, 731, 703, 688 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{35}F_2NO_2Na$ $[M + Na]^+$: 562.2528; found: 562.2532. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IB-3, *n*-hexane/2-propanol = 98:2, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 7.8 min, t_{major} = 11.9 min; For minor diastereoisomer: t_{minor} = 5.3 min, t_{major} = 10.1 min).



3ap

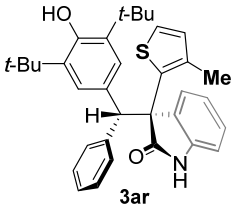
3ap: Following the above *General Procedure*, the reaction gave the product **3ap** (18 h, white foam, 107.9 mg, 97% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +88 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.24 (br, 1H), 8.18 (dd, *J* = 8.8, 1.8 Hz, 1H), 7.82 (d, *J* = 8.8 Hz, 1H), 7.74 (d, *J* = 7.9 Hz, 1H), 7.65 (s, 1H), 7.60 (d, *J* = 7.9 Hz, 1H), 7.44-7.22 (m, 3H), 7.15-7.06 (m, 3H), 7.05-6.91 (m, 3H), 6.76 (d, *J* = 7.5 Hz, 1H), 6.69 (d, *J* = 7.5 Hz, 1H), 6.54 (s, 2H), 5.26 (s, 1H), 4.98 (s, 1H), 1.04 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 152.4, 141.7, 140.2, 136.2, 134.2, 132.9, 132.5, 129.5 (CH × 2), 129.4, 128.6 (CH × 2), 128.5, 128.1 (CH × 2), 128.0, 127.8, 127.6, 127.1 (CH × 2), 127.0, 126.7, 126.01, 125.97, 125.8, 121.1, 110.1, 61.2, 59.5, 34.0, 29.9 ppm. **IR** (KBr): $\bar{\nu}$ = 3634, 3394, 2955, 1709, 1617, 1597, 1471, 1436, 1322, 1236, 1155, 1121, 809, 750, 702 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{39}H_{39}NO_2Na$ $[M + Na]^+$: 576.2873; found: 576.2866. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-

3, *n*-hexane/2-propanol = 85:15, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 8.3 min, t_{major} = 18.8 min; For minor diastereoisomer: t_{minor} = 5.5 min, t_{major} = 13.7 min).



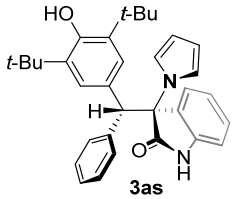
3aq

3aq: Following the above *General Procedure*, the reaction gave the product **3aq** (13 h, white foam, 99.2 mg, 97% yield, 16:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +67 (*c* = 0.5, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.26 (br, 1H), 7.33 (t, *J* = 7.7 Hz, 1H), 7.23 (d, *J* = 5.0 Hz, 1H), 7.19-7.10 (m, 3H), 7.08-6.98 (m, 2H), 6.96-6.88 (m, 3H), 6.84 (d, *J* = 7.7 Hz, 1H), 6.80 (s, 2H), 6.72 (d, *J* = 7.5 Hz, 1H), 5.12 (s, 1H), 5.01 (s, 1H), 1.30 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 178.7, 152.7, 143.2, 141.6, 139.8, 134.3, 129.9, 129.1 (CH × 2), 128.9, 128.2 (CH × 2), 128.1, 127.6, 126.8 (CH × 4), 126.4, 125.4, 121.2, 110.1, 61.4, 59.1, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{v}$ = 3636, 3386, 3254, 2956, 1713, 1618, 1471, 1436, 1323, 1235, 1156, 1122, 886, 808, 752, 703, 587 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{33}H_{35}NO_2SNa$ $[M + Na]^+$: 532.2281; found: 532.2278. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 93:7, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 9.0 min, t_{major} = 16.4 min; For minor diastereoisomer: t_{minor} = 7.1 min, t_{major} = 10.0 min).



3ar

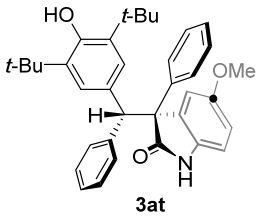
3ar: Following the above *General Procedure*, the reaction gave the product **3ar** (4 d, white foam, 90.0 mg, 85% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +23 (*c* = 0.9, $CHCl_3$)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.00 (br, 1H), 7.29-7.19 (m, 1H), 7.18-7.07 (m, 3H), 7.05-6.95 (m, 2H), 6.94-6.76 (m, 3H), 6.82 (s, 2H), 6.66 (d, *J* = 7.7 Hz, 1H), 6.53 (d, *J* = 7.6 Hz, 1H), 5.45 (s, 1H), 5.07 (s, 1H), 2.66 (s, 3H), 1.24 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 178.5, 152.4, 141.4, 140.0, 135.7, 135.6, 134.5, 133.0, 131.1, 129.7 (CH × 2), 129.1, 128.9, 127.9 (CH × 2 + CH × 1), 126.8 (CH × 2), 126.7, 122.5, 121.0, 109.4, 59.7, 55.4, 34.2, 30.1, 16.8 ppm. **IR** (KBr): $\tilde{v}$ = 3636, 3382, 3211, 2955, 1711, 1618, 1595, 1471, 1436, 1321, 1236, 1156, 1121, 910, 808, 752, 703, 584 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{34}H_{37}NO_2SNa$ $[M + Na]^+$: 546.2437; found: 546.2445. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 9.9 min, t_{major} = 18.8 min; For minor diastereoisomer: t_{minor} = 9.0 min, t_{major} = 10.9 min).



3as

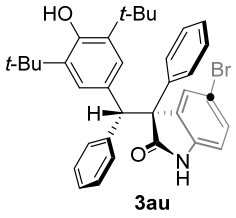
3as: Following the above *General Procedure*, the reaction gave the product **3as** (12 h, white foam, 96.4 mg, 97% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +75 (*c* = 0.8, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.26 (br, 1H), 7.38 (t, *J* = 7.7

Hz, 1H), 7.23-7.10 (m, 5H), 7.02 (t, *J* = 7.6 Hz, 1H), 6.93-6.86 (m, 2H), 6.83 (d, *J* = 7.8 Hz, 1H), 6.64 (s, 2H), 6.59 (d, *J* = 7.6 Hz, 1H), 6.21 (s, 2H), 5.21 (s, 1H), 5.19 (s, 1H), 1.34 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 175.8, 152.9, 142.1, 138.0, 134.8, 130.3, 129.5, 128.8, 128.2, 127.2, 127.0, 126.4, 125.5, 121.4, 119.5, 110.5, 108.6, 69.4, 58.6, 34.3, 30.1 ppm. **IR** (KBr): $\tilde{v}$ = 3638, 3352, 2956, 1724, 1620, 1472, 1437, 1237, 1156, 1094, 1078, 903, 888, 808, 756, 725, 703, 585 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{33}H_{36}N_2O_2Na$ $[M + Na]^+$: 515.2669; found: 515.2661. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 5.5 min, t_{major} = 10.0 min; For minor diastereoisomer: t_{minor} = 4.8 min, t_{major} = 6.2 min).



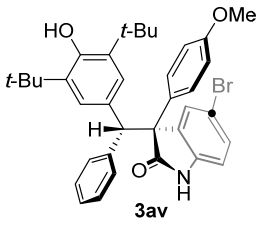
3at

3at: Following the above *General Procedure*, the reaction gave the product **3at** (21 h, white foam, 101.0 mg, 94% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +43 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.24 (br, 1H), 7.62 (d, *J* = 7.6 Hz, 2H), 7.34-7.17 (m, 3H), 7.15-7.05 (m, 3H), 6.96-6.87 (m, 2H), 6.65-6.56 (m, 1H), 6.77 (dd, *J* = 8.5, 2.4 Hz, 1H), 6.60 (s, 2H), 6.25 (d, *J* = 1.9 Hz, 1H), 5.19 (s, 1H), 5.04 (br, 1H), 3.69 (s, 3H), 1.17 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 154.5, 152.4, 140.3, 139.1, 135.2, 134.3, 130.9, 129.5, 128.8, 128.23, 128.15, 127.9, 127.2, 127.0, 126.6, 116.2, 112.4, 110.0, 61.5, 59.2, 55.6, 34.1, 30.0 ppm. **IR** (KBr): $\tilde{v}$ = 3635, 3399, 2955, 1707, 1599, 1488, 1437, 1300, 1236, 1206, 1156, 1035, 892, 808, 748, 700, 590 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_3Na$ $[M + Na]^+$: 556.2822; found: 556.2815. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 14.4 min, t_{major} = 19.9 min; For minor diastereoisomer: t_{minor} = 8.5 min, t_{major} = 10.3 min).



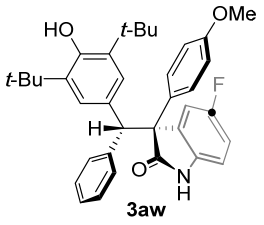
3au

3au: Following the above *General Procedure*, the reaction gave the product **3au** (26 h, white foam, 112.1 mg, 96% yield, >20:1 *dr*, 96% *ee*, $[\alpha]_D^{25}$ = +78 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.52 (br, 1H), 7.56 (d, *J* = 8.3 Hz, 2H), 7.38 (dd, *J* = 8.3, 1.9 Hz, 1H), 7.31-7.20 (m, 3H), 7.14-7.03 (m, 3H), 6.94-6.81 (m, 3H), 6.64-6.52 (m, 1H), 6.59 (s, 2H), 5.10 (s, 1H), 5.07 (br, 1H), 1.21 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.4, 152.6, 140.8, 140.0, 138.1, 134.5, 131.7, 131.3, 131.2, 129.2, 128.3, 128.13, 128.10, 128.07, 127.5, 127.0, 126.8, 113.9, 111.6, 61.2, 59.7, 34.2, 30.0 ppm. **IR** (KBr): $\tilde{v}$ = 3636, 3392, 3259, 2957, 1712, 1615, 1496, 1473, 1437, 1292, 1236, 1156, 1120, 888, 810, 748, 735, 700, 590, 540 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}BrNO_2Na$ $[M + Na]^+$: 604.1822; found: 604.1816. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IE-3, *n*-hexane/2-propanol = 97:3, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 9.3 min, t_{major} = 10.5 min; For minor diastereoisomer: t_{minor} = 5.7 min, t_{major} = 6.3 min).



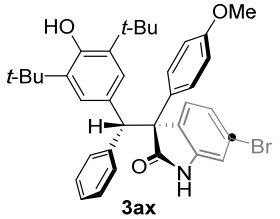
3av

3av: Following the above *General Procedure*, the reaction gave the product **3av** (20 h, white foam, 117.8 mg, 96% yield, >20:1 *dr*, 97% *ee*, $[\alpha]_D^{25}$ = +93 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.57 (br, 1H), 7.47 (d, *J* = 8.2 Hz, 2H), 7.36 (dd, *J* = 8.2, 1.8 Hz, 1H), 7.15-7.05 (m, 3H), 6.90-6.75 (m, 5H), 6.65-6.50 (m, 1H), 6.60 (s, 2H), 5.08 (s, 1H), 5.02 (br, 1H), 3.73 (s, 3H), 1.23 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.6, 158.9, 152.6, 140.7, 140.0, 134.4, 131.9, 131.2, 131.0, 130.0, 129.3, 129.1, 128.13, 128.07, 127.0, 126.7, 113.8, 113.6, 111.6, 60.5, 59.8, 55.2, 34.2, 30.0 ppm. **IR** (KBr): $\bar{\nu}$ = 3634, 3385, 3262, 2955, 1711, 1614, 1510, 1495, 1472, 1437, 1294, 1253, 1184, 1156, 1119, 1035, 889, 826, 812, 703, 589, 538 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{38}BrNO_3Na$ $[M + Na]^+$: 634.1927; found: 634.1931. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 18.0 min, t_{major} = 20.9 min; For minor diastereoisomer: t_{minor} = 8.9 min, t_{major} = 12.0 min).



3aw

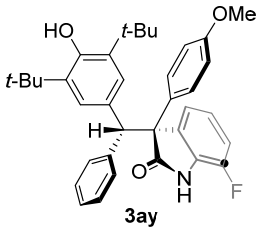
3aw: Following the above *General Procedure*, the reaction gave the product **3aw** (18 h, white foam, 108.0 mg, 96% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +83 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.50 (br, 1H), 7.48 (d, *J* = 8.5 Hz, 2H), 7.16-7.05 (m, 3H), 7.00-6.91 (m, 1H), 6.90-6.75 (m, 4H), 6.66-6.61 (m, 1H), 6.59 (s, 2H), 6.31 (d, *J* = 8.8 Hz, 1H), 5.08 (s, 1H), 5.07 (br, 1H), 3.74 (s, 3H), 1.21 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 180.0, 158.9, 157.9 (d, $^1J_{C\text{-}F}$ = 239.1 Hz), 152.6, 140.2, 137.7, 134.3, 131.2 (d, $^3J_{C\text{-}F}$ = 8.2 Hz), 130.4, 129.3, 129.1, 128.2, 128.1, 127.0, 126.7, 116.2 (d, $^2J_{C\text{-}F}$ = 25.4 Hz), 114.7 (d, $^2J_{C\text{-}F}$ = 23.3 Hz), 113.6, 110.4 (d, $^3J_{C\text{-}F}$ = 8.0 Hz), 60.8, 59.6, 55.3, 34.2, 30.0 ppm. **IR** (KBr): $\bar{\nu}$ = 3637, 3268, 2956, 1709, 1605, 1510, 1485, 1456, 1437, 1294, 1254, 1184, 1156, 1121, 1035, 907, 891, 825, 812, 703, 603, 592 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{38}FNO_3Na$ $[M + Na]^+$: 574.2728; found: 574.2722. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 19.5 min, t_{major} = 23.3 min; For minor diastereoisomer: t_{minor} = 9.3 min, t_{major} = 13.2 min).



3ax

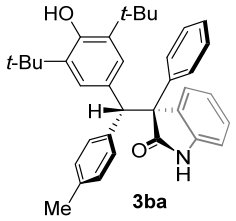
3ax: Following the above *General Procedure*, the reaction gave the product **3ax** (20 h, white foam, 118.1 mg, 96% yield, >20:1 *dr*, 97% *ee*, $[\alpha]_D^{25}$ = +72 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.71 (br, 1H), 7.56-7.48 (m, 2H), 7.25-7.12 (m, 4H), 6.95 (br, 3H), 6.90-6.81 (m, 2H), 6.62 (s, 2H), 6.50-6.39 (m, 1H), 5.12 (br, 2H), 3.79 (s,

3H), 1.26 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 180.0, 158.9, 152.5, 143.0, 140.2, 134.3, 130.4, 129.4, 129.3 (CH × 2), 129.1 (CH × 2), 128.8, 128.5, 128.1 (CH × 2), 127.0 (CH × 2), 126.8, 123.8, 122.0, 113.6, 60.3, 59.5, 55.3, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3635, 3254, 2955, 1713, 1607, 1510, 1480, 1437, 1320, 1253, 1184, 1156, 1120, 1035, 908, 828, 809, 702, 590 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{38}BrNO_3Na$ [*M* + Na]$^+$: 634.1927; found: 634.1922. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IE-3, *n*-hexane/2-propanol = 90:10, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 7.6 min, t_{major} = 27.0 min; For minor diastereoisomer: t_{minor} = 5.0 min, t_{major} = 15.8 min).



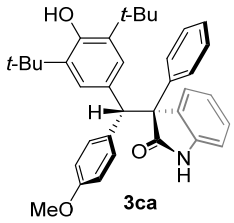
3ay

3ay: Following the above *General Procedure*, the reaction gave the product **3ay** (18 h, white foam, 104.3 mg, 94% yield, 16:1 *dr*, 95% *ee*, $[\alpha]_D^{25}$ = +78 (*c* = 0.8, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.08 (br, 1H), 7.51 (d, *J* = 8.8 Hz, 2H), 7.15-7.03 (m, 4H), 6.98-6.78 (m, 5H), 6.52-6.46 (m, 1H), 6.62 (s, 2H), 5.09 (s, 1H), 5.06 (br, 1H), 3.74 (s, 3H), 1.20 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 178.7,158.9, 152.5, 147.2 (d, $^1J_{C\text{-}F}$ = 244.4 Hz), 139.9, 134.2, 132.6, 130.4, 129.33, 129.27 (CH × 2 + C × 1), 128.4, 128.1, 127.1, 126.7, 124.1(d, $^4J_{C\text{-}F}$ = 3.1 Hz), 121.4 (d, $^3J_{C\text{-}F}$ = 5.6 Hz), 115.3 (d , $^2J_{C\text{-}F}$ = 16.8 Hz), 113.6, 61.0, 59.8, 55.2, 34.2, 30.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3636, 3443, 3394, 3264, 2956, 1716, 1642, 1605, 1510, 1493, 1468, 1437, 1319, 1254, 1184, 1156, 1121, 1035, 892, 827, 746, 703, 581,533 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{38}FNO_3Na$ [*M* + Na]$^+$: 574.2728; found: 574.2719. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 93:7, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 11.0 min, t_{major} = 16.2 min; For minor diastereoisomer: t_{minor} = 6.5 min, t_{major} = 5.5 min).



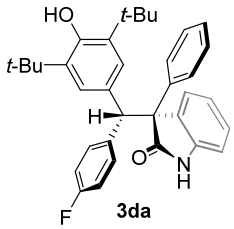
3ba

3ba: Following the above *General Procedure*, the reaction gave the product **3ba** (19 h, white foam, 99.3 mg, 95% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +66 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.02 (br, 1H), 7.61 (d, *J* = 7.2 Hz, 2H), 7.32-7.15 (m, 4H), 6.96 (t, *J* = 7.6 Hz, 1H), 6.90 (d, *J* = 8.0 Hz, 2H), 6.78 (d, *J* = 8.0, 2H), 6.73 (d, *J* = 7.6 Hz, 1H), 6.66-6.57 (m, 1H), 6.60 (s, 2H), 5.12 (s, 1H), 5.02 (s, 1H), 2.20 (s, 3H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 152.4, 141.7, 139.0, 137.2, 135.9, 134.1, 129.4, 129.2, 128.9, 128.7, 128.6 (CH × 2 + C × 1), 128.3, 128.1, 127.2, 127.0, 120.9, 109.9, 61.2, 59.4, 34.1, 30.1, 20.9 ppm. **IR** (KBr): $\tilde{\nu}$ = 3638, 3383, 3256, 2956, 1710, 1619, 1595, 1471, 1437, 1322, 1236, 1191, 1155, 1121, 831, 748, 723, 697, 593, 582 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_2Na$ [*M* + Na]$^+$: 540.2873; found: 540.2869. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 96:4, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 16.2 min, t_{major} = 9.9 min; For minor diastereoisomer: t_{minor} = 7.7 min, t_{major} = 4.8 min).



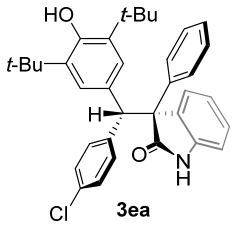
3ca

3ca: Following the above *General Procedure*, the reaction gave the product **3ca** (72 h, white foam, 104.8 mg, 98% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +57 (*c* = 0.5, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.69-7.58 (m, 3H), 7.33-7.20 (m, 4H), 6.99 (t, *J* = 7.6 Hz, 1H), 6.88-6.80 (m, 2H), 6.77 (d, *J* = 7.6 Hz, 1H), 6.69-6.62 (m, 3H), 6.61 (s, 2H), 5.13 (s, 1H), 5.02 (s, 1H), 3.69 (s, 3H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.2, 158.1, 152.4, 141.6, 139.0, 134.2, 132.4, 130.5, 129.4, 129.0, 128.7, 128.4, 128.3, 128.1, 127.2, 127.0, 121.0, 113.3, 109.8, 61.3, 58.9, 55.0, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3635, 3396, 2955, 1710, 1618, 1511, 1471, 1437, 1322, 1246, 1237, 1181, 1155, 1121, 1036, 837, 749, 697, 582 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{39}NO_3Na$ $[M + Na]^+$: 556.2822; found: 556.2816. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 8.6 min, t_{major} = 20.2 min; For minor diastereoisomer: t_{minor} = 5.9 min, t_{major} = 9.7 min).



3da

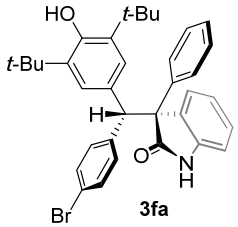
3da: Following the above *General Procedure*, the reaction gave the product **3da** (13 h, white foam, 102.8 mg, 96% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +60 (*c* = 0.5, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.02 (br, 1H), 7.60 (d, *J* = 7.1 Hz, 2H), 7.35-7.19 (m, 4H), 7.00 (t, *J* = 7.5 Hz, 1H), 6.94-6.86 (m, 2H), 6.85-6.75 (m, 3H), 6.67 (d, *J* = 7.5 Hz, 1H), 6.58 (s, 2H), 5.16 (s, 1H), 5.05 (s, 1H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.3, 161.6 (d, $^1J_{C\text{-}F}$ = 244.8 Hz), 152.5, 141.5, 138.7, 136.1 (d, $^4J_{C\text{-}F}$ = 3.4 Hz), 134.3, 131.0 (d, $^3J_{C\text{-}F}$ = 7.7 Hz), 129.3, 128.6, 128.5, 128.4, 128.24, 128.23, 127.3, 126.9, 121.2, 114.7 (d, $^2J_{C\text{-}F}$ = 20.8 Hz), 109.9, 61.2, 58.7, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3638, 3399, 3255, 2957, 1709, 1619, 1509, 1471, 1437, 1322, 1231, 1159, 842, 749, 734, 697, 592, 581 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}FNO_2Na$ $[M + Na]^+$: 544.2622; found: 544.2626. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 96:4, *v* = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 13.9 min, t_{major} = 8.1 min; For minor diastereoisomer: t_{minor} = 6.8 min, t_{major} = 4.8 min).



3ea

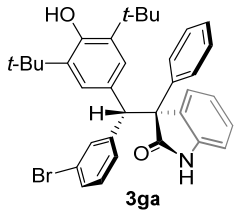
3ea: Following the above *General Procedure*, the reaction gave the product **3ea** (19 h, white foam, 105.5 mg, 98% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +80 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.29 (br, 1H), 7.58 (d, *J* = 7.0 Hz, 2H), 7.35-7.18 (m, 4H), 7.09 (d, *J* = 8.5 Hz, 2H), 6.98 (t, *J* = 7.6 Hz, 1H), 6.87 (d, *J* = 8.5 Hz, 2H), 6.74 (d, *J* = 7.7 Hz, 1H), 6.67(d, *J* = 7.6 Hz, 1H), 6.57 (s, 2H), 5.15 (s, 1H), 5.07 (s, 1H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz,

$CDCl_3$) δ = 179.5, 152.5, 141.5, 139.0, 138.6, 134.4, 132.3, 130.8 (CH × 2), 129.2, 128.6, 128.3 (CH × 4), 128.20 (CH × 2), 128.17, 128.1, 127.3, 126.9 (CH × 2), 121.2, 110.0, 61.1, 58.8, 34.2, 30.0 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3635, 3250, 2956, 1709, 1619, 1491, 1471, 1436, 1322, 1236, 1155, 1093, 1014, 836, 751, 733, 697, 591, 581 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}ClNO_2Na$ $[M + Na]^+$: 560.2327; found: 560.2320. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 95:5, υ = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 10.5 min, t_{major} = 8.6 min; For minor diastereoisomer: t_{minor} = 5.9 min, t_{major} = 4.3 min).



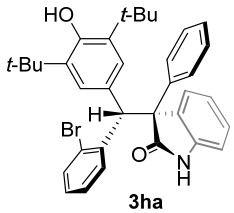
3fa

3fa: Following the above *General Procedure*, the reaction gave the product **3fa** (13 h, white foam, 114.1 mg, 98% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +85 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.31 (br, 1H), 7.58 (d, *J* = 7.2 Hz, 2H), 7.35-7.18 (m, 6H), 6.98 (t, *J* = 7.6 Hz, 1H), 6.82 (d, *J* = 8.3 Hz, 2H), 6.73 (d, *J* = 7.6 Hz, 1H), 6.66 (d, *J* = 7.6 Hz, 1H), 6.56 (s, 2H), 5.13 (s, 1H), 5.07 (s, 1H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 152.5, 141.5, 139.5, 138.6, 134.4, 131.2 (CH × 2), 131.0 (CH × 2), 129.2, 128.6, 128.3, 128.2 (CH × 4), 128.0, 127.3, 126.9 (CH × 2), 121.2, 120.6, 110.1, 61.0, 58.9, 34.1, 30.0 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3636, 3393, 3252, 2956, 1710, 1619, 1487, 1471, 1436, 1322, 1236, 1155, 1122, 1010, 834, 750, 732, 697, 591, 581 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}BrNO_2Na$ $[M + Na]^+$: 604.1822; found: 604.1816. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 96:4, υ = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 13.2 min, t_{major} = 11.1 min; For minor diastereoisomer: t_{minor} = 7.0 min, t_{major} = 4.8 min).



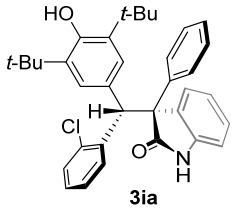
3ga

3ga: Following the above *General Procedure*, the reaction gave the product **3ga** (12 h, white foam, 113.9 mg, 98% yield, >20:1 *dr*, 97% *ee*, $[\alpha]_D^{25}$ = +93 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.45 (br, 1H), 7.59 (d, *J* = 7.1 Hz, 2H), 7.32-7.17 (m, 5H), 7.12 (br, 1H), 7.02-6.90 (m, 2H), 6.84-6.75 (m, 2H), 6.64 (d, *J* = 7.5 Hz, 1H), 6.56 (s, 2H), 5.10 (s, 1H), 5.08 (s, 1H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 152.6, 142.6, 141.6, 138.4, 134.4, 133.0, 129.7, 129.4, 129.0, 128.7, 128.4, 128.23, 128.18, 127.8, 127.6, 127.4, 126.9, 122.0, 121.1, 110.2, 61.0, 59.2, 34.2, 30.0 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3635, 3399, 2957, 1710, 1619, 1593, 1472, 1437, 1322, 1236, 1155, 1122, 751, 731, 698, 678, 585 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}BrNO_2Na$ $[M + Na]^+$: 604.1822; found: 604.1813. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 96:4, υ = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 11.2 min, t_{major} = 8.1 min; For minor diastereoisomer: t_{minor} = 6.4 min, t_{major} = 4.7 min).



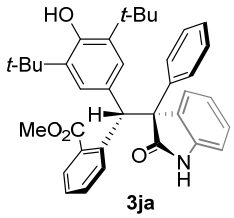
3ha

3ha: Following the above *General Procedure*, the reaction gave the product **3ha** (14 h, white foam, 114.3 mg, 98% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +193 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.31 (br, 1H), 7.60-7.43 (m, 3H), 7.25-7.11 (m, 4H), 6.99-6.86 (m, 4H), 6.74 (d, *J* = 7.7 Hz, 1H), 6.56 (d, *J* = 7.6 Hz, 1H), 6.51 (s, 2H), 5.77 (s, 1H), 5.00 (s, 1H), 1.14 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 152.6, 141.4, 140.0, 139.3, 134.2, 133.1, 130.2, 129.4, 128.4, 128.2, 127.9, 127.8, 127.2, 126.8, 126.5, 121.2, 110.0, 61.6, 57.7, 34.1, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3638, 3615, 3188, 2954, 1710, 1617, 1470, 1436, 1320, 1236, 1155, 1122, 1023, 907, 887, 806, 749, 733, 699, 676, 586 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}BrNO_2Na$ $[M + Na]^+$: 604.1822; found: 604.1826. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, v = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 10.2 min, t_{major} = 16.0 min; For minor diastereoisomer: t_{minor} = 11.4 min, t_{major} = 18.0 min).



3ia

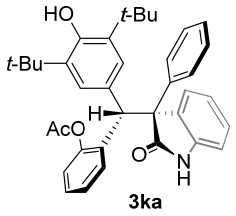
3ia: Following the above *General Procedure*, the reaction gave the product **3ia** (20 h, white foam, 105.6 mg, 98% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +202 (*c* = 0.5, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.30 (br, 1H), 7.61-7.52 (m, 2H), 7.32 (d, *J* = 7.7 Hz, 1H), 7.29-7.16 (m, 4H), 7.07-6.90 (m, 4H), 6.78 (d, *J* = 7.7 Hz, 1H), 6.59 (d, *J* = 7.5 Hz, 1H), 6.54 (s, 2H), 5.82 (s, 1H), 5.04 (s, 1H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 152.6, 141.3, 139.3, 138.5, 135.0, 134.2, 130.2, 129.8, 129.3, 128.4, 128.20, 128.18, 128.0, 127.5, 127.2, 127.1, 126.9, 126.1, 121.2, 110.0, 61.4, 54.6, 34.1, 30.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3639, 3620, 3189, 2956, 1711, 1618, 1471, 1436, 1321, 1236, 1156, 1122, 1037, 1026, 806, 750, 736, 701, 682, 586 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{35}H_{36}ClNO_2Na$ $[M + Na]^+$: 560.2327; found: 560.2319. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IE-3, *n*-hexane/2-propanol = 95:5, v = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 7.6 min, t_{major} = 12.2 min; For minor diastereoisomer: t_{minor} = 6.1 min, t_{major} = 10.1 min).



3ja

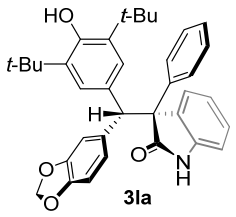
3ja: Following the above *General Procedure*, the reaction gave the product **3ja** (7 d, white foam, 98.7 mg, 88% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +161 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.16 (br, 1H), 7.85-7.69 (m, 1H), 7.60-7.47 (m, 2H), 7.29-7.09 (m, 7H), 7.09-7.01 (m, 1H), 7.01-6.92 (m, 1H), 6.78 (d, *J* = 7.6 Hz, 1H), 6.71 (d, *J* = 7.6 Hz, 1H), 6.61 (s, 2H), 6.51 (s, 1H), 5.00 (s, 1H), 3.88 (s, 3H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.6, 168.7, 152.3, 141.7, 141.3, 139.5, 134.1, 131.4, 130.8, 130.6, 130.5, 129.6, 128.35, 128.29, 128.19, 128.15,

127.8, 127.1, 127.0, 126.0, 121.3, 109.9, 61.9, 52.9, 52.1, 34.1, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3636, 3301, 2954, 1721, 1618, 1485, 1471, 1435, 1262, 1238, 1195, 1132, 1123, 1080, 749, 734, 698, 677, 585 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{37}H_{39}NO_4Na$ $[M + Na]^+$: 584.2771; found: 584.2774. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/CH_2Cl_2 = 4:3, *v* = 0.70 mL·min^{-1}, λ = 226.1 nm; For major diastereoisomer: t_{minor} = 16.1 min, t_{major} = 26.6 min; For minor diastereoisomer: t_{minor} = 19.6 min, t_{major} = 21.0 min).



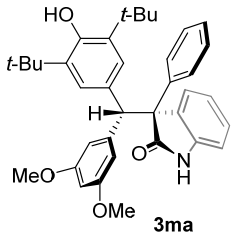
3ka

3ka: Following the above *General Procedure*, the reaction gave the product **3ka** (72 h, white foam, 105.2 mg, 93% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +206 (*c* = 0.5, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.60 (br, 1H), 7.52 (d, *J* = 7.1 Hz, 2H), 7.27-7.24 (m, 4H), 7.15-7.08 (m, 1H), 7.05-7.00 (m, 1H), 6.99-6.92 (m, 2H), 6.92-6.83 (m, 1H), 6.78 (d, *J* = 7.8 Hz, 2H), 6.47 (s, 2H), 5.45 (s, 1H), 5.01 (s, 1H), 2.11 (s, 3H), 1.16 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.7, 168.4, 152.4, 148.6, 141.3, 139.3, 134.1, 133.1, 130.5, 129.0, 128.3, 128.2, 128.0, 127.8, 127.6, 127.1, 126.99, 126.96, 125.1, 122.8, 121.2, 110.3, 60.7, 51.5, 34.0, 30.0, 20.8 ppm. **IR** (KBr): $\tilde{\nu}$ = 3634, 3387, 2956, 1769, 1710, 1619, 1485, 1472, 1436, 1367, 1228, 1201, 1158, 750, 698, 586 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{37}H_{39}NO_4Na$ $[M + Na]^+$: 584.2771; found: 584.2777. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IB-3, *n*-hexane/2-propanol = 82:3, *v* = 0.85 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 15.0 min, t_{major} = 19.5 min; For minor diastereoisomer: t_{minor} = 23.6 min, t_{major} = 9.1 min).



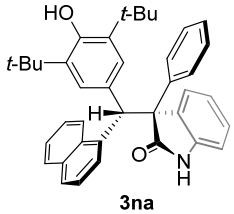
3la

3la: Following the above *General Procedure*, the reaction gave the product **3la** (48 h, white foam, 103.0 mg, 94% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +74 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.12 (br, 1H), 7.59 (d, *J* = 7.3 Hz, 2H), 7.31-7.18 (m, 4H), 7.02-6.93 (m, 1H), 6.83-6.76 (m, 1H), 6.64 (d, *J* = 7.5 Hz, 1H), 6.59 (s, 2H), 6.56 (d, *J* = 8.0 Hz, 1H), 6.47-6.34 (m, 2H), 5.81 (s, 2H), 5.08 (s, 1H), 5.04 (s, 1H), 1.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.4, 152.4, 147.2, 146.0, 141.6, 138.9, 134.24, 134.20, 129.4, 128.7, 128.5 (CH × 2), 128.3 (CH × 2), 128.1 (CH × 2), 127.2, 126.9 (CH × 2), 122.4, 121.1, 110.02, 109.95, 107.8, 100.6, 61.2, 59.2, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3635, 3392, 2956, 1710, 1619, 1503, 1488, 1471, 1438, 1322, 1250, 1233, 1040, 937, 750, 735, 714 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{36}H_{37}NO_4Na$ $[M + Na]^+$: 570.2615; found: 570.2610. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IE-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 13.3 min, t_{major} = 22.2 min; For minor diastereoisomer: t_{minor} = 7.3 min, t_{major} = 11.4 min).



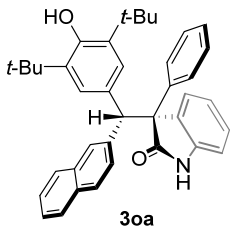
3ma

3ma: Following the above *General Procedure,* the reaction was performed with **1m** (74 mg, 0.21 mmol), **2a** (41.8 mg, 0.20 mmol), **4i** (14.5 mg, 0.02 mmol), and Na_2CO_3 (31.8 mg, 0.3 mmol) in THF (4.0 mL) at −40 °C for 14 h to afford the product **3ma** (white foam, 108.4 mg, 96% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +112 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 7.91 (br, 1H), 7.63 (d, *J* = 7.1 Hz, 2H), 7.30-7.19 (m, 4H), 6.99 (t, *J* = 7.2 Hz, 1H), 6.80 (d, *J* = 7.7 Hz, 1H), 6.69-6.60 (m, 1H), 6.64 (s, 2H), 6.67-6.22 (m, 1H), 6.18-6.12 (m, 2H), 5.06 (s, 1H), 5.05 (s, 1H), 3.51 (s, 6H), 1.20 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.0, 160.1, 152.5, 142.3, 141.9, 138.7, 134.2, 129.6, 128.7, 128.5, 128.3 (CH × 2 + C × 1)), 128.1 (CH × 2), 127.3, 127.0 (CH × 2), 121.0, 109.8, 106.9 (CH × 2), 100.2, 60.9, 59.9, 54.8, 34.2, 30.1 ppm. **IR** (KBr): $\tilde{\nu}$ = 3634, 3390, 2956, 1711, 1594, 1472, 1436, 1205, 1156, 1070, 837, 753, 702 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{37}H_{41}NO_4Na$ $[M + Na]^+$: 586.2928; found: 586.2921. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 93:7, *v* = 1.0 mL·min^{-1}, λ = 226.1 nm; For major diastereoisomer: t_{minor} = 20.3 min, t_{major} = 30.4 min; For minor diastereoisomer: t_{minor} = 6.5 min, t_{major} = 5.0 min).



3na

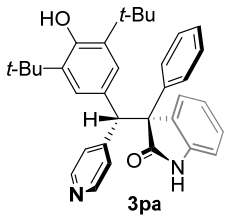
3na: Following the above *General Procedure*, the reaction gave the product **3na** (5 d, white foam, 98.4 mg, 88% yield, >20:1 *dr*, 99% *ee*, $[\alpha]_D^{25}$ = +191 (*c* = 0.5, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.66 (br, 1H), 8.24 (d, *J* = 8.4 Hz, 1H), 7.77 (d, *J* = 7.9 Hz, 1H), 7.67-7.54 (m, 3H), 7.49-7.33 (m, 2H), 7.27-7.08 (m, 5H), 6.97-6.83 (m, 2H), 6.84-6.48 (m, 1H), 6.58 (s, 2H), 6.33 (d, *J* = 7.7 Hz, 1H), 6.03 (s, 1H), 5.00 (s, 1H), 1.14 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 180.2, 152.6, 141.4, 139.6, 137.0, 134.1, 134.0, 132.3, 130.3, 128.7, 128.3 (CH × 2), 128.2, 128.1 (CH × 2 + CH × 1 + C × 1), 127.2, 127.1, 126.9 (CH × 2), 126.1, 125.0, 124.8, 124.7, 123.7, 121.0, 110.3, 61.3, 53.9, 34.1, 30.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3622, 3400, 2956, 1714, 1617, 1596, 1471, 1435, 1392, 1316, 1231, 1152, 1122, 796, 778, 760, 745, 699, 548 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{39}H_{39}NO_2Na$ $[M + Na]^+$: 576.2873; found: 576.2867. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 26.3 min, t_{major} = 13.4 min; For minor diastereoisomer: t_{minor} = 9.3 min, t_{major} = 15.9 min).



3oa

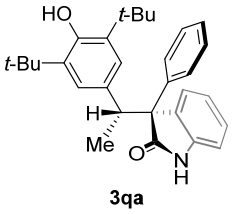
3oa: Following the above *General Procedure*, the reaction gave the product **3oa** (19 h, white foam, 109.1 mg, 98%

yield, >20:1 *dr*, 97% *ee*, $[\alpha]_D^{25}$ = +147 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.00 (br, 1H), 7.81-70 (m, 3H), 7.65-7.54 (m, 2H), 7.50 (br, 1H), 7.46-7.39 (m, 2H), 7.38-7.27 (m, 4H), 7.13-7.05 (m, 2H), 6.81 (d, *J* = 7.7 Hz, 1H), 6.75 (s, 2H), 6.66 (d, *J* = 7.7 Hz, 1H), 5.43 (s, 1H), 5.13 (s, 1H), 1.25 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.2, 152.4, 141.6, 138.9, 137.9, 134.2, 133.2, 132.2, 129.5, 128.6, 128.48, 128.46, 128.35, 128.29 (CH × 2), 128.1 (CH × 2), 128.0, 127.9, 127.3, 127.2 (CH × 2), 127.1 (CH × 2), 125.5, 125.4, 121.0, 109.8, 61.2, 59.6, 34.1, 30.0 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3634, 3395, 2955, 1711, 1619, 1598, 1471, 1437, 1321, 1235, 1209, 1155, 1122, 747, 581 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{39}H_{39}NO_2Na$ $[M + Na]^+$: 576.2873; found: 576.2867. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 95:5, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 13.2 min, t_{major} = 17.2 min; For minor diastereoisomer: t_{minor} = 7.2 min, t_{major} = 5.1 min).



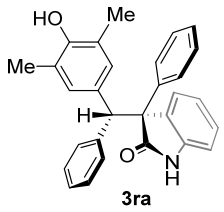
3pa

3pa: Following the above *General Procedure*, the reaction gave the product **3pa** (9 h, white foam, 99.3 mg, 98% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +139 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 9.19 (br, 1H), 8.30 (d, *J* = 5.8 Hz, 2H), 7.58 (d, *J* = 7.3 Hz, 2H), 7.33-7.17 (m, 4H), 6.99 (t, *J* = 7.3 Hz, 1H), 6.96-6.86 (m, 2H), 6.81-6.69 (m, 2H), 6.55 (s, 2H), 5.22 (s, 1H), 5.12 (s, 1H), 1.18 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.1, 152.7, 149.9, 149.0 (CH × 2), 141.8, 138.3, 134.7, 129.3, 128.7, 128.2 (CH × 2), 128.1 (CH × 2 + CH × 1), 127.3, 127.0 (CH × 2), 126.8, 124.8 (CH × 2), 121.1, 110.1, 60.6, 58.9, 34.1, 30.0 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3633, 3387, 3205, 2955, 1716, 1619, 1598, 1472, 1436, 1236, 1200, 1155, 1122, 750, 731, 698, 584 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{34}H_{37}N_2O_2$ $[M + H]^+$: 505.2850; found: 505.2846. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 90:10, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 8.4 min, t_{major} = 17.1 min; For minor diastereoisomer: t_{minor} = 12.1 min, t_{major} = 15.2 min).



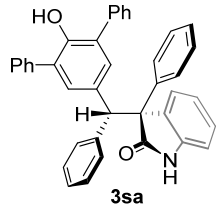
3qa

3qa: Following the above *General Procedure*, the reaction was performed with **1q** (46.5 mg, 0.20 mmol), **2a** (41.8 mg, 0.20 mmol), **4i** (14.5 mg, 0.02 mmol), and Na_2CO_3 (31.8 mg, 0.3 mmol) in THF (4.0 mL) at −60 °C for 18 h to afford the product **3qa** (white foam, 86.4 mg, 98% yield, 5.7:1 *dr*, 93% *ee* (major isomer), 83% *ee* (minor isomer), $[\alpha]_D^{25}$ = −22 (*c* = 0.8, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 9.45 (br, 1H), 7.59 (d, *J* = 7.7 Hz, 2H), 7.30-7.14 (m, 4H), 7.00-6.86 (m, 2H), 6.69-6.56 (m, 1H), 6.62 (s, 2H), 5.04 (br, 1H), 3.95 (q, *J* = 13.7 Hz, 1H), 1.26 (br, 21 H, CH_3 × 6 + CH_3) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 181.1, 152.5, 141.5, 138.7, 134.1, 130.2, 128.9, 128.09, 128.05, 127.97, 127.92, 127.0, 126.1, 120.9, 109.8, 61.8, 47.2, 34.2, 30.2, 15.3 ppm. **IR** (KBr): $\bar{\upsilon}$ = 3639, 3388, 3216, 2959, 1704, 1619, 1471, 1436, 1236, 1214, 1159, 884, 749, 699 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{30}H_{35}NO_2Na$ $[M + Na]^+$: 464.2560; found: 464.2552. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 93:7, *v* = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 7.8 min, t_{major} = 8.6 min; For minor diastereoisomer: t_{minor} = 5.1 min, t_{major} = 13.2 min).



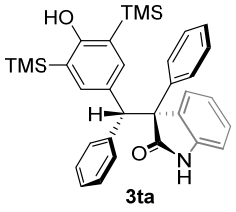
3ra

3ra: Following the above *General Procedure*, the reaction gave the product **3ac** (10 h, white foam, 82.7 mg, 98% yield, >20:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +23 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.28 (br, 1H), 7.63-7.48 (m, 2H), 7.27-7.13 (m, 4H), 7.08-7.01 (m, 3H), 7.01-6.80 (m, 4H), 6.67 (d, *J* = 7.7 Hz, 1H), 6.33 (s, 2H), 5.15 (br, CH × 1+ OH × 1), 1.92 (s, 6H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.8, 150.7, 141.3, 140.4, 139.0, 130.4, 130.1 (CH × 2 + C × 1), 129.5 (CH × 2), 128.2 (CH × 2), 128.1 (CH × 2), 128.0 (CH × 2), 127.94, 127.89, 127.2, 126.5, 122.0 (C × 2), 121.4, 110.1, 61.1, 58.4, 15.9 ppm. **IR** (KBr): $\tilde{\nu}$ = 3399, 1707, 1619, 1489, 1471, 1200, 1144, 752, 734, 700, 592 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{29}H_{25}NO_2Na$ $[M + Na]^+$: 442.1778; found: 442.1776. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 85:15, ν = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 13.1 min, t_{major} = 21.6 min; For minor diastereoisomer: t_{minor} = 6.9 min, t_{major} = 8.0 min).



3sa

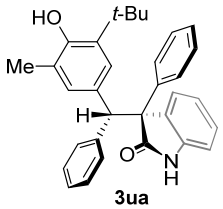
3sa: Following the above *General Procedure*, the reaction was performed with **1s** (67.0 mg, 0.20 mmol), **2a** (41.8 mg, 0.20 mmol), **4i** (14.5 mg, 0.02 mmol), and Na_2CO_3 (31.8 mg, 0.3 mmol) in THF (4.0 mL) at −60 °C for 18 h to afford the product **3sa** (white foam, 107.6 mg, 98% yield, 9:1 *dr*, 96% *ee* (major isomer), 94% *ee* (minor isomer), $[\alpha]_D^{25}$ = +99 (*c* = 0.8, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.30 (br, 1H), 7.91-7.72 (m, 2H), 7.50-7.29 (m, 14H), 7.21-7.04 (m, 7H), 6.88-6.78 (m, 1H), 6.84 (s, 2H), 5.46 (s, 1H), 5.40 (s, 1H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.4, 148.0, 141.5, 139.8, 139.0, 137.4, 131.7, 130.9, 129.7, 129.5, 129.2, 128.6, 128.5, 128.4, 128.3, 128.12, 128.08, 127.39, 127.36, 127.29, 126.7, 121.4, 110.3, 61.1, 58.7 ppm. **IR** (KBr): $\tilde{\nu}$ = 3533, 3380, 3199, 3057, 1706, 1618, 1496, 1470, 1428, 1323, 1229, 1123, 907, 752, 698, 565 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{39}H_{29}NO_2Na$ $[M + Na]^+$: 566.2091; found: 566.2085. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 93:7, ν = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 26.3 min, t_{major} = 49.5 min; For minor diastereoisomer: t_{minor} = 24.9 min, t_{major} = 77.6 min).



3ta

3ta: Following the above *General Procedure*, the reaction was performed with **1t** (65.5 mg, 0.20 mmol), **2a** (41.8 mg, 0.20 mmol), **4i** (14.5 mg, 0.02 mmol), and Na_2CO_3 (31.8 mg, 0.3 mmol) in THF (4.0 mL) at −60 °C for 18 h to afford the product **3ta** (white foam, 105.7 mg, 98% yield, 13:1 *dr*, 99% *ee* (major isomer), 97% *ee* (minor isomer), $[\alpha]_D^{25}$ = +70 (*c* = 1.0, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.36 (br, 1H), 7.68 (d, *J* = 7.5 Hz, 2H), 7.41-7.25 (m, 4H), 7.20-

7.10 (m, 3H), 7.09-7.02 (m, 1H), 7.00-6.92 (m, 2H), 6.87 (s, 2H), 6.85-6.75 (m, 2H), 5.26 (s, 1H), 4.99 (br, 1H), 0.19 (s, 18H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.5, 163.9, 141.7, 140.2, 138.7, 138.6, 129.8, 129.5, 129.3, 128.5, 128.3, 128.24, 128.16, 128.0, 127.4, 126.6, 122.4, 121.1, 110.1, 60.9, 58.9, -0.7 ppm. **IR** (KBr): $\tilde{\nu}$ = 3608, 3391, 3256, 2952, 1710, 1619, 1471, 1413, 1317, 1246, 1229, 1167, 1130, 859, 838, 753, 699, 570 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{33}H_{37}NO_2Si_2Na$ $[M + Na]^+$: 558.2255; found: 558.2250. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 93:7, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 7.3 min, t_{major} = 13.4 min; For minor diastereoisomer: t_{minor} = 4.9 min, t_{major} = 8.1 min).



3ua

3ua: Following the above *General Procedure*, the reaction was performed with **1u** (50.5 mg, 0.20 mmol; Z/E ≈ 1:1), **2a** (41.8 mg, 0.20 mmol), **4i** (14.5 mg, 0.02 mmol), and Na_2CO_3 (31.8 mg, 0.3 mmol) in THF (4.0 mL) at −40 °C for 16 h to afford the product **3ua** (white foam, 90.7 mg, 98% yield, 18:1 *dr*, 98% *ee*, $[\alpha]_D^{25}$ = +34 (*c* = 0.4, EtOH)). **^{1}H NMR** (400 MHz, $CDCl_3$) δ = 8.23 (br, 1H), 7.65-7.52 (m, 2H), 7.31-7.15 (m, 4H), 7.10-7.02 (m, 3H), 7.01-6.90 (m, 3H), 6.87-6.80 (m, 1H), 6.69 (d, *J* = 7.7 Hz, 1H), 6.55 (s, 1H), 6.41 (s, 1H), 5.18 (s, 1H), 4.94 (br, 1H), 1.93 (s, 3H), 1.14 (s, 9H) ppm. **^{13}C NMR** (100 MHz, $CDCl_3$) δ = 179.7, 151.2, 141.4, 140.5, 139.0, 134.0, 130.2, 130.0, 129.7, 129.5 (CH × 2), 128.3, 128.1 (CH × 4), 128.0, 127.9 (CH × 2), 127.3, 127.2, 126.5, 122.1, 121.3, 110.0, 61.2, 58.7, 34.3, 29.5, 16.0 ppm. **IR** (KBr): $\tilde{\nu}$ = 3381, 3259, 2295, 1710, 1619, 1482, 1471, 1433, 1325, 1222, 1197, 1164, 751, 729, 699, 587 cm^{-1}. **HRMS** (ESI): *m/z* calcd for $C_{32}H_{31}NO_2Na$ $[M + Na]^+$: 484.2247; found: 484.2242. The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IA-3, *n*-hexane/2-propanol = 85:15, v = 1.0 mL·min^{-1}, λ = 254 nm; For major diastereoisomer: t_{minor} = 10.0 min, t_{major} = 14.4 min; For minor diastereoisomer: t_{minor} = 5.6 min, t_{major} = 21.0 min).

7. General Procedure for the Synthesis of 3aa on Gram Scale

A gram scale reaction for the synthesis of **3aa** was conducted under the optimized condition as follows:

A mixture of *para*-quinone methides **1a** (1.0 g, 3.4 mmol), 3-phenyl-oxindole **2a** (707.2 mg, 3.4 mmol), and the catalyst **4i** (247.0 mg, 0.34 mmol) in THF (70.0 mL) was cooled to −40 °C, and then Na_2CO_3 (500.0 mg, 4.7 mmol) was added. The resulting reaction mixture was kept under vigorous stirring for 18 h. Then the solvent was concentrated under reduced pressure, and the residue was purified by flash column chromatography on silica gel (petroleum ether/ethyl acetate = 8:1) to furnish the corresponding addition product **3aa** (white foam, 1.68 g, 98% yield, >20:1 *dr*, 96% *ee*). The *dr* and *ee* values were determined by the chiral HPLC analysis (Daicel Chiralpak IC-3, *n*-hexane/2-propanol = 95:5, v = 1.0 mL·min^{-1}, λ = 254.0 nm; For major diastereoisomer: t_{minor} = 12.7 min, t_{major} = 8.2 min; For minor diastereoisomer: t_{minor} = 6.2 min, t_{major} = 4.6 min).

8. Absolute Configuration of 3ab by X-Ray Crystallographic Analysis

The single crystal of **3ab**, which was used for the determination of its absolute configuration via X-ray crystallography (see below, **Figure S-1**), was recrystallized from CH_2Cl_2 and petroleum ether (1:8). The intensity data were collected on an Agilent SuperNova (Dual, Cu at zero, Eos) diffractometer using graphite-monochromated Cu Kα radiation.

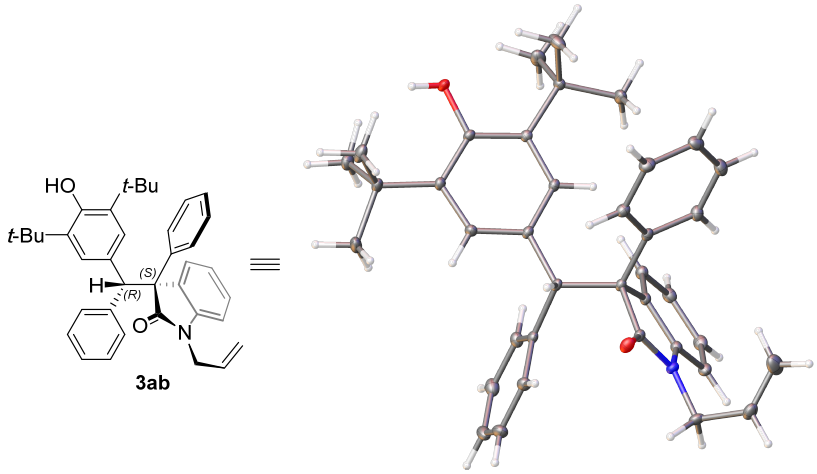


Figure S-1. ORTEP Drawing (20% probability ellipsoids) of **3ab** (CCDC 1441998)

9. References

(1) (a) W. -D. Chu, L.-F. Zhang, X. Bao, X. -H. Zhao, C. Zeng, J. -Y. Du, G. -B. Zhang, F. -X. Wang, X. -Y. Ma, C. -A. Fan, *Angew.Chem., Int. Ed.,* 2013, **52**, 9229. (b) M. Mäurer, H. B. Stegmann, W. Hiller, B. Müller, *Chem. Ber.,* 1992, **125**, 857. (c) T. Uno, M. Minari, M. Kubo, T. Itoh, *J. Polym. Sci., Part A: Polym. Chem.,* 2004, **42**, 4548. (d) D. Richter, N. Hampel, T. Singer, A. R. Ofial, H. Mayr, *Eur. J. Org. Chem.,* 2009, 3203.

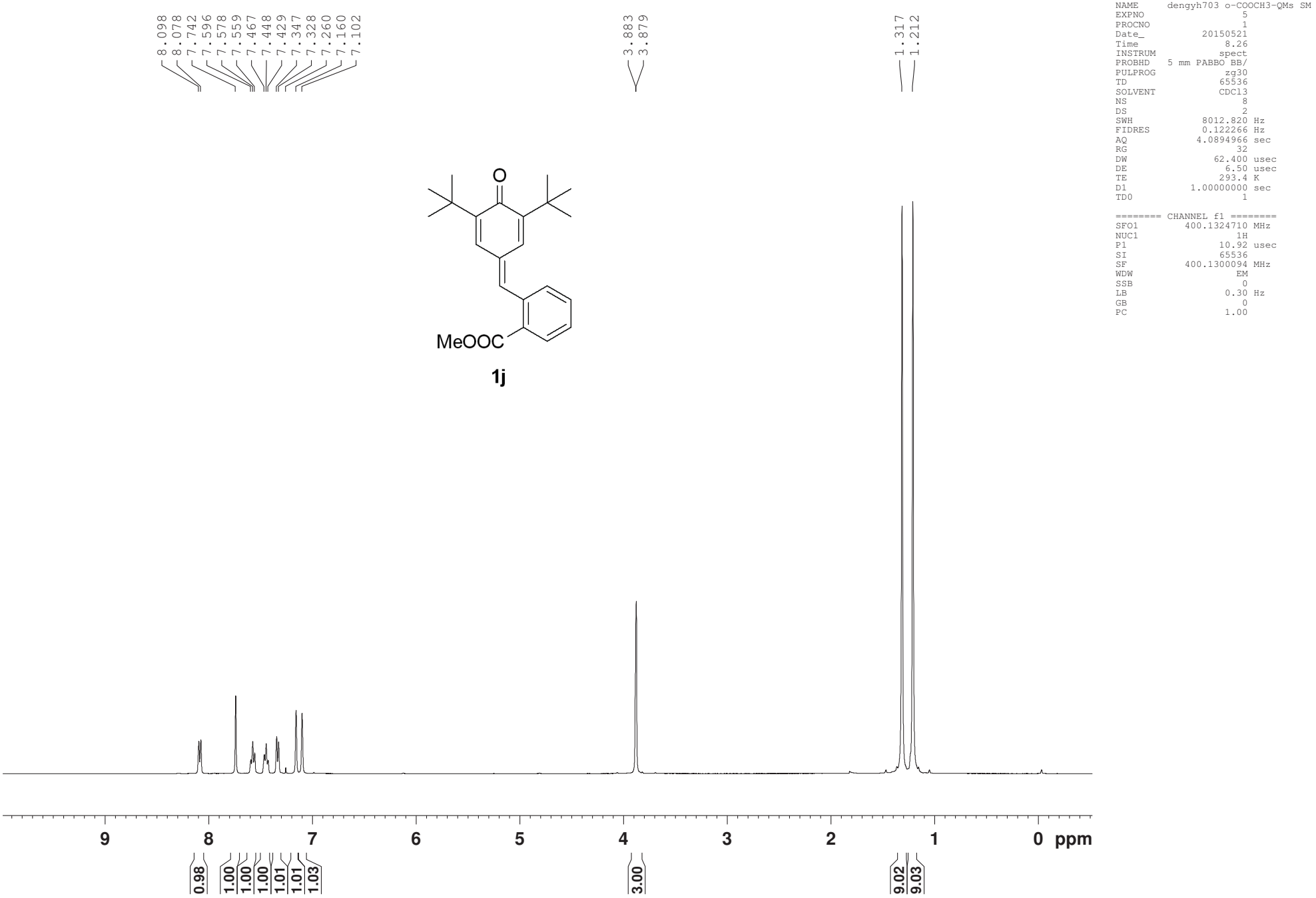
(2) (a) B. M. Trost, L. C. Czabaniuk, *J. Am. Chem. Soc.,* 2010, **132**, 15534. (b) B. M. Trost, Y. Zhang, T Zhang, *J. Org. Chem.* 2009, **74**, 5115. (c) Y. Hamashima, T. Suzuki, H. Takano, Y. Shimura, M. Sodeoka, *J. Am. Chem. Soc.,* 2005, **127**, 10164. (d) N. A. A. Ahmad, S. M. Rokade, A. M. Garande, P. M. Bhate, *Tetrahedron Lett.,* 2014, **55**, 5458. (e) H. Mandai, T. Fujiwara, K. Noda, K. Fujii, K. Mitsudo, T. Korenaga, S. Suga, *Org. Lett.,* 2015, **17**, 4436.

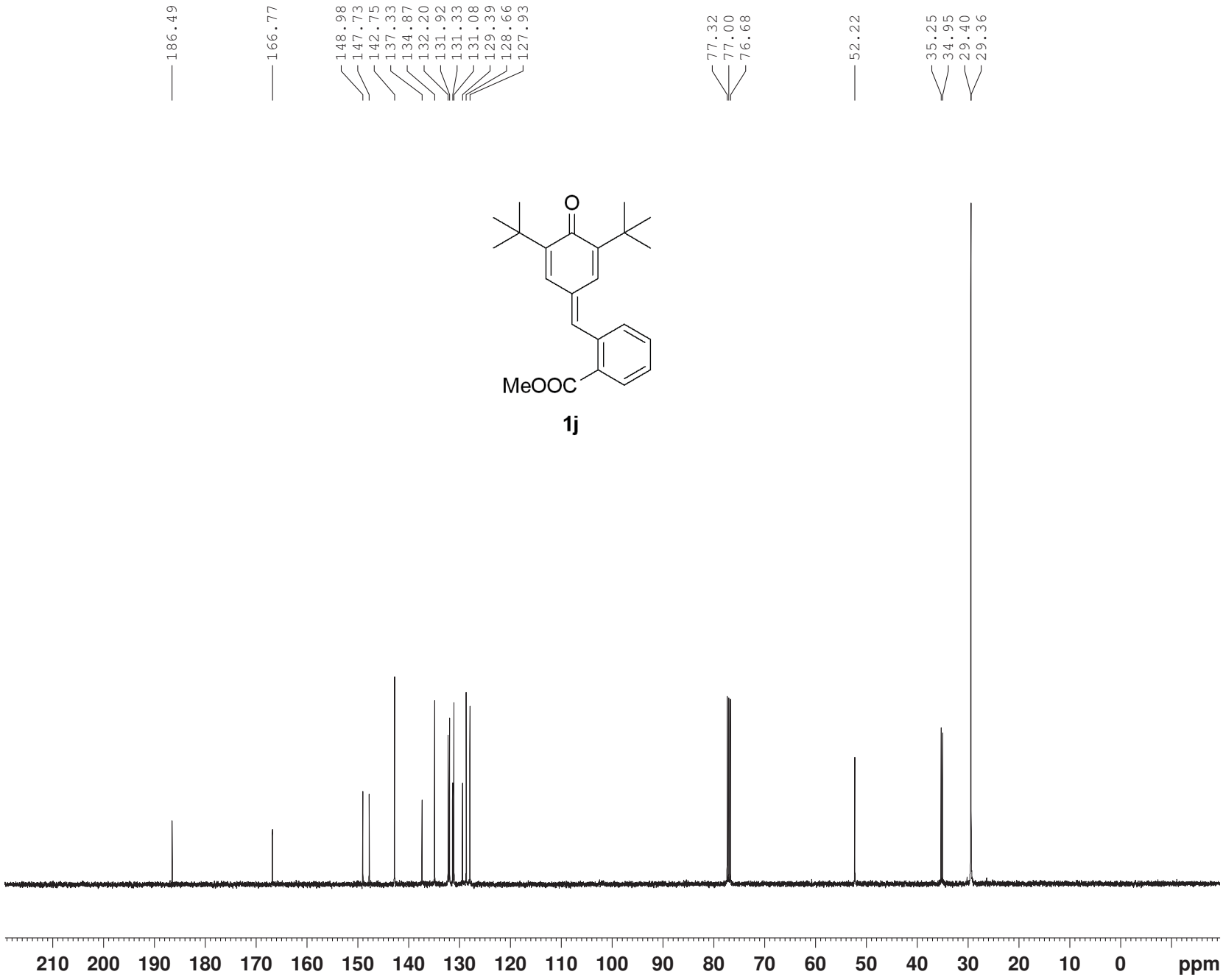
(3) (a) B. Vakulya, S. Varga, A. Csámpai, T. Soós, *Org. Lett.,* 2005, **7**, 1967. (b) F.-Z. Peng, Z.-H. Shao, B.-M. Fan, H. Song, G.-P. Li, H.-B. Zhang, *J. Org. Chem.,* 2008, **73**, 5202.

(4) (a) Y. Qian, G. Ma, A. Lv, H. L. Zhu, J. Zhao, V. H. Rawal, *Chem. Commun.,* 2010, **46**, 3004. (b) W. Yang, D.-M. Du, *Adv. Synth. Catal.,* 2011, **353**, 1241. (c) J. P. Malerich, K. Hagihara, V. H. Rawal, *J. Am. Chem. Soc.*, 2008, **130**, 14416. (d) G. Kardos, T. Soós, *Eur. J. Org. Chem.,* 2013, **21**, 4490. (e) D. Q. Xu, Y. F. Wang, W. Zhang, S. P. Luo, A. G. Zhong, A. B. Xia, Z. Y. Xu, *Chem. -Eur. J.*, 2010, **16**, 4177. (f) Z. Dong, G. Qiu, H.-B. Zhou, C. Dong, *Tetrahedron: Asymmetry,* 2012, **23**, 1550. (g) J. W. Lee, T. H. Ryu, J. S. Oh, H. Y. Bae, H. B. Jang, C. E. Song, *Chem. Commun.,* 2009, 7224. (h) C. Sogn, J. Lee, T. Ryu, H. Bae, J. Oh, WO 2010131881 (A2), 2010.

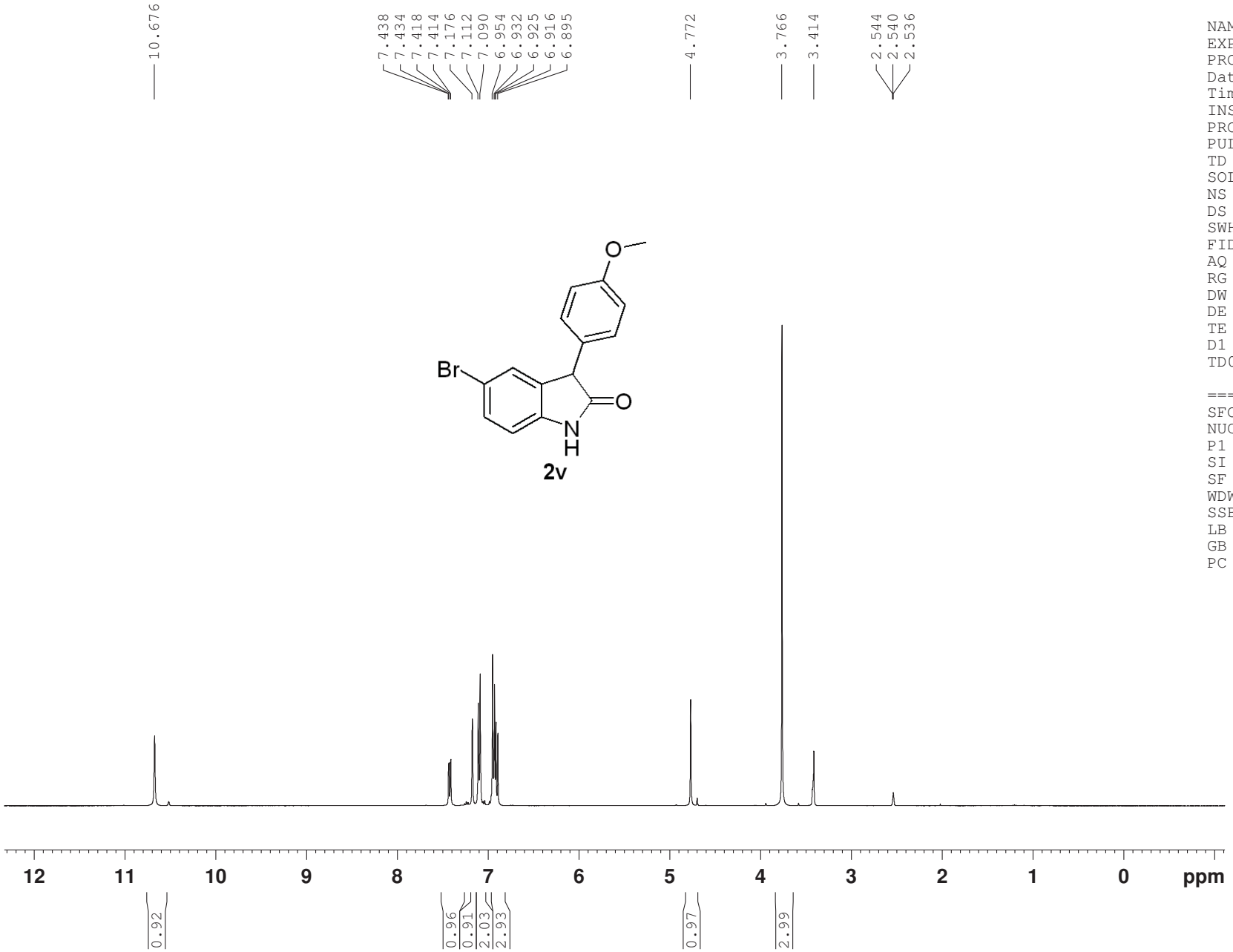
10. Copies of NMR Spectra and HPLC Spectra

Please see the next page!

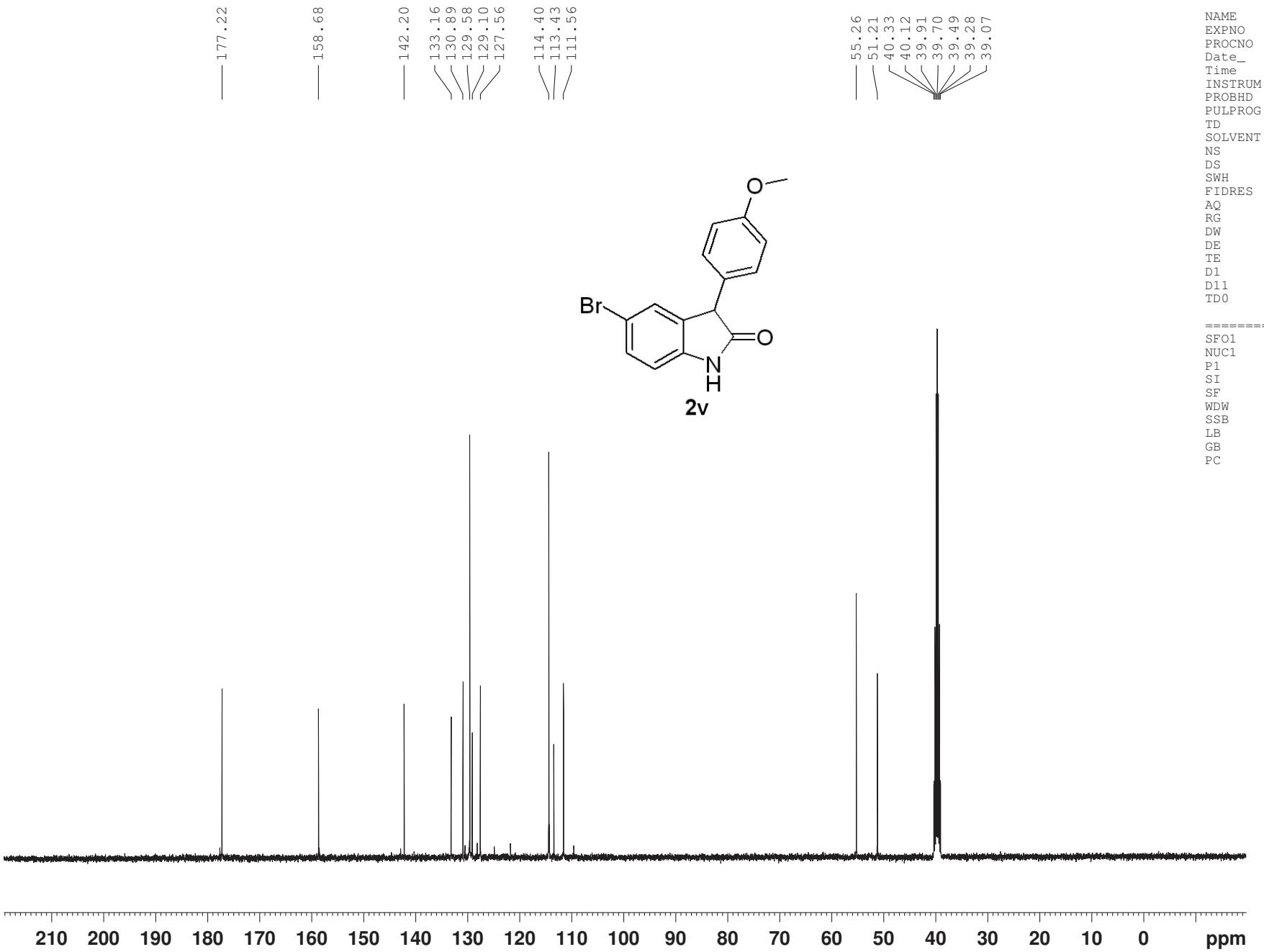

8.098
8.078
7.742
7.596
7.578
7.559
7.467
7.448
7.429
7.347
7.328
7.260
7.160
7.102
3.883
3.879
1.317
1.212
NAME dengyh703 o-COOCH3-QMs SM
EXPNO 5
PROCNO 1
Date_ 20150521
Time 8.26
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 293.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300094 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
O
MeOOC
1j
9
8
7
6
5
4
3
2
1
0 ppm
0.98
1.00
1.00
1.00
1.01
1.01
1.03
3.00
9.02
9.03



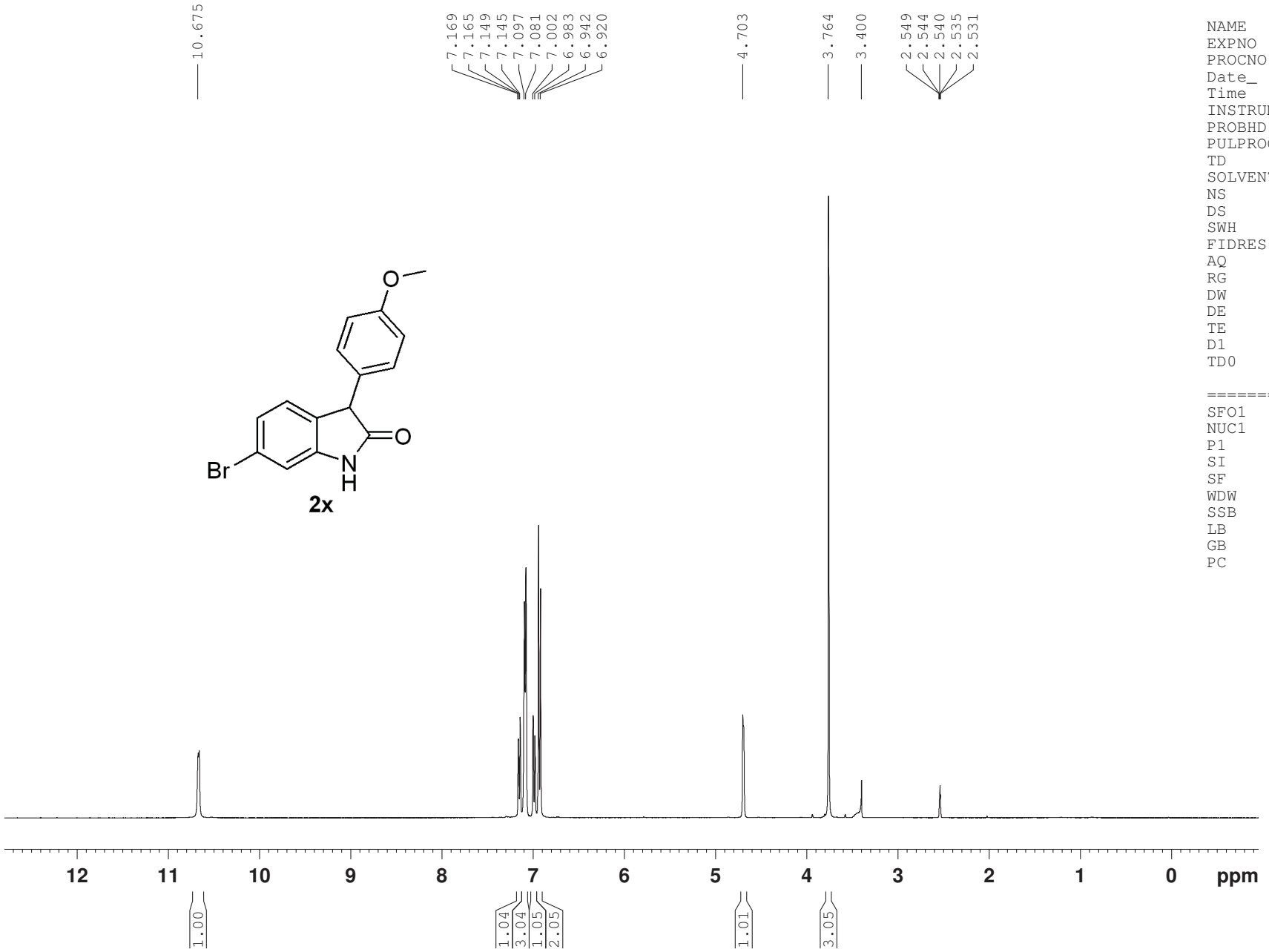

```
NAME      dengyh703 o-COOCH3-QMs SM
EXPNO                6
PROCNO               1
Date_         20150521
Time              8.34
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG       zgpg30
TD             65536
SOLVENT         CDCl3
NS               120
DS                 2
SWH          24038.461 Hz
FIDRES        0.366798 Hz
AQ            1.3631988 sec
RG                2050
DW              20.800 usec
DE               6.50 usec
TE              294.2 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                1

======== CHANNEL f1 ========
SFO1       100.6228298 MHz
NUC1              13C
P1              14.70 usec
SI               32768
SF         100.6127776 MHz
WDW                EM
SSB                0
LB              1.00 Hz
GB                 0
PC              1.40
```



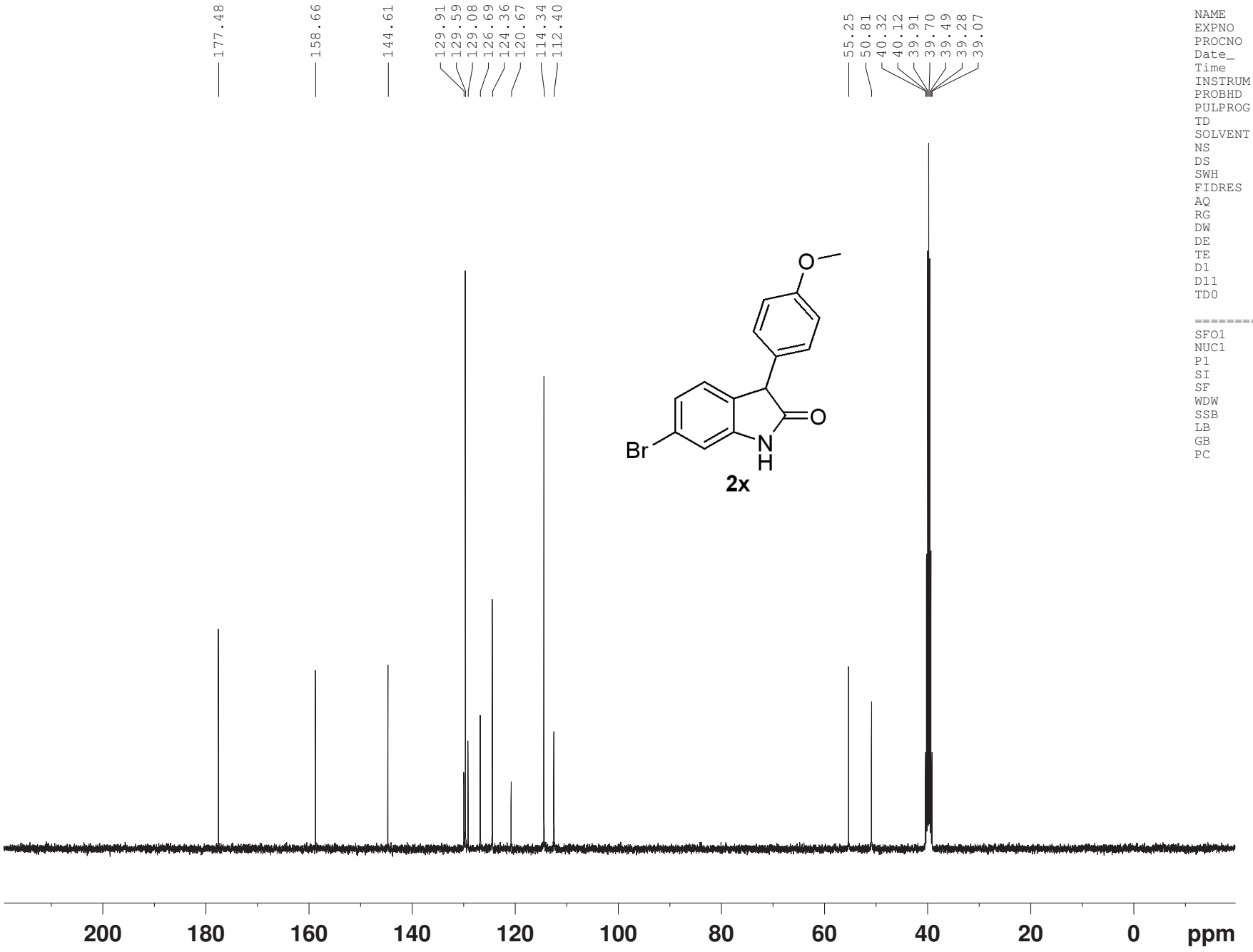

```
NAME      dengyh633 5-Br-3-PMP
EXPNO                       10
PROCNO                       1
Date_              20150531
Time                    12.16
INSTRUM                 spect
PROBHD    5 mm PABBO BB/
PULPROG                  zg30
TD                      65536
SOLVENT                   DMSO
NS                          16
DS                           2
SWH                  8012.820 Hz
FIDRES               0.122266 Hz
AQ                   4.0894966 sec
RG                         101
DW                      62.400 usec
DE                       6.50 usec
TE                      294.1 K
D1                 1.00000000 sec
TD0                          1

======== CHANNEL f1 ========
SFO1            400.1324710 MHz
NUC1                       1H
P1                      10.92 usec
SI                      65536
SF               400.1299871 MHz
WDW                        EM
SSB                         0
LB                       0.30 Hz
GB                          0
PC                       1.00
```

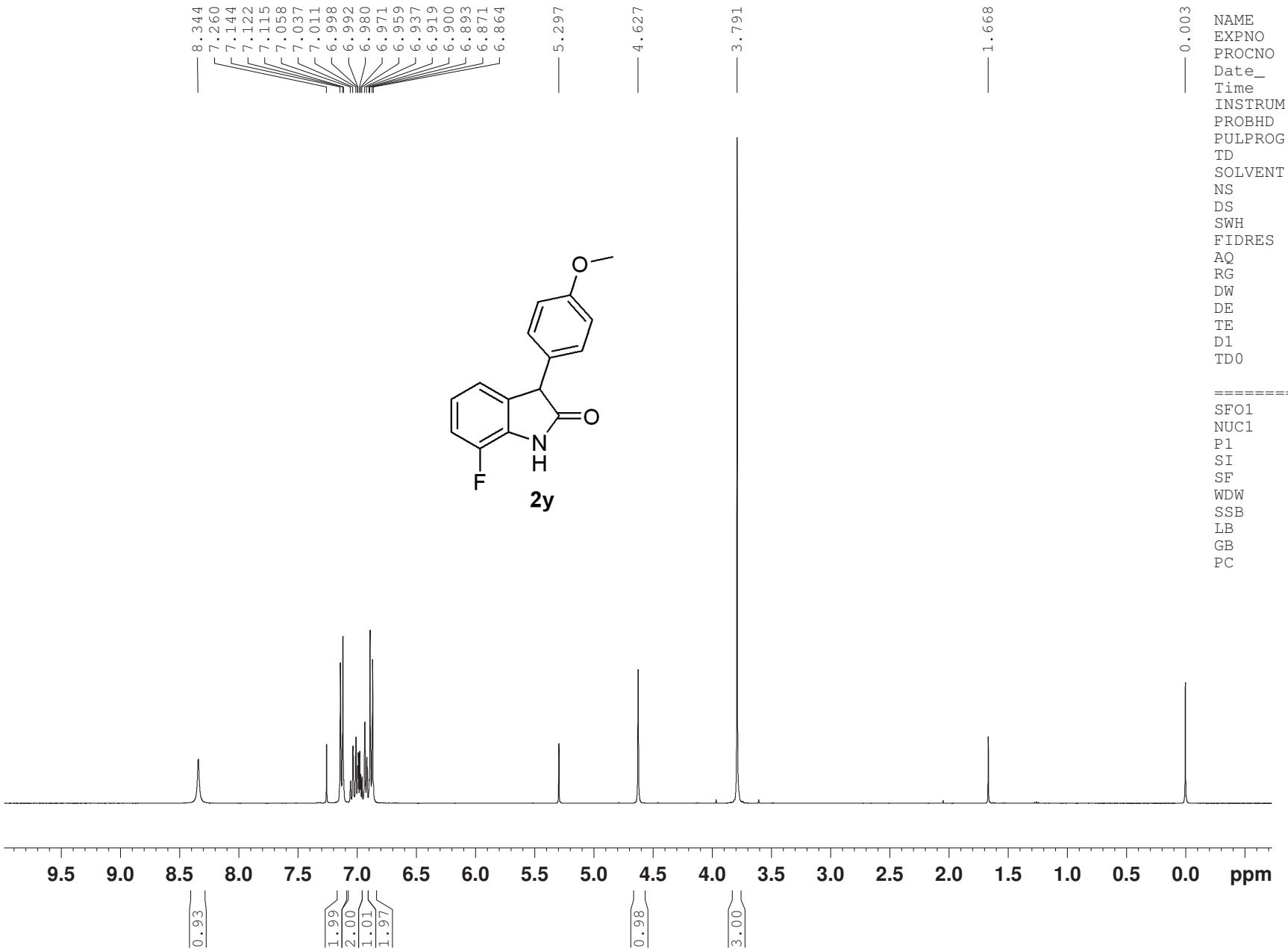



```
NAME      dengyh633 5-Br-3-PMP
EXPNO                   11
PROCNO                   1
Date_              20150531
Time                  12.30
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT                DMSO
NS                       240
DS                         2
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                 1.3631988 sec
RG                      2050
DW                    20.800 usec
DE                     6.50 usec
TE                    295.0 K
D1                2.00000000 sec
D11               0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1           100.6228298 MHz
NUC1                    13C
P1                    14.70 usec
SI                     32768
SF             100.6127972 MHz
WDW                      EM
SSB                       0
LB                     1.00 Hz
GB                        0
PC                     1.40
```

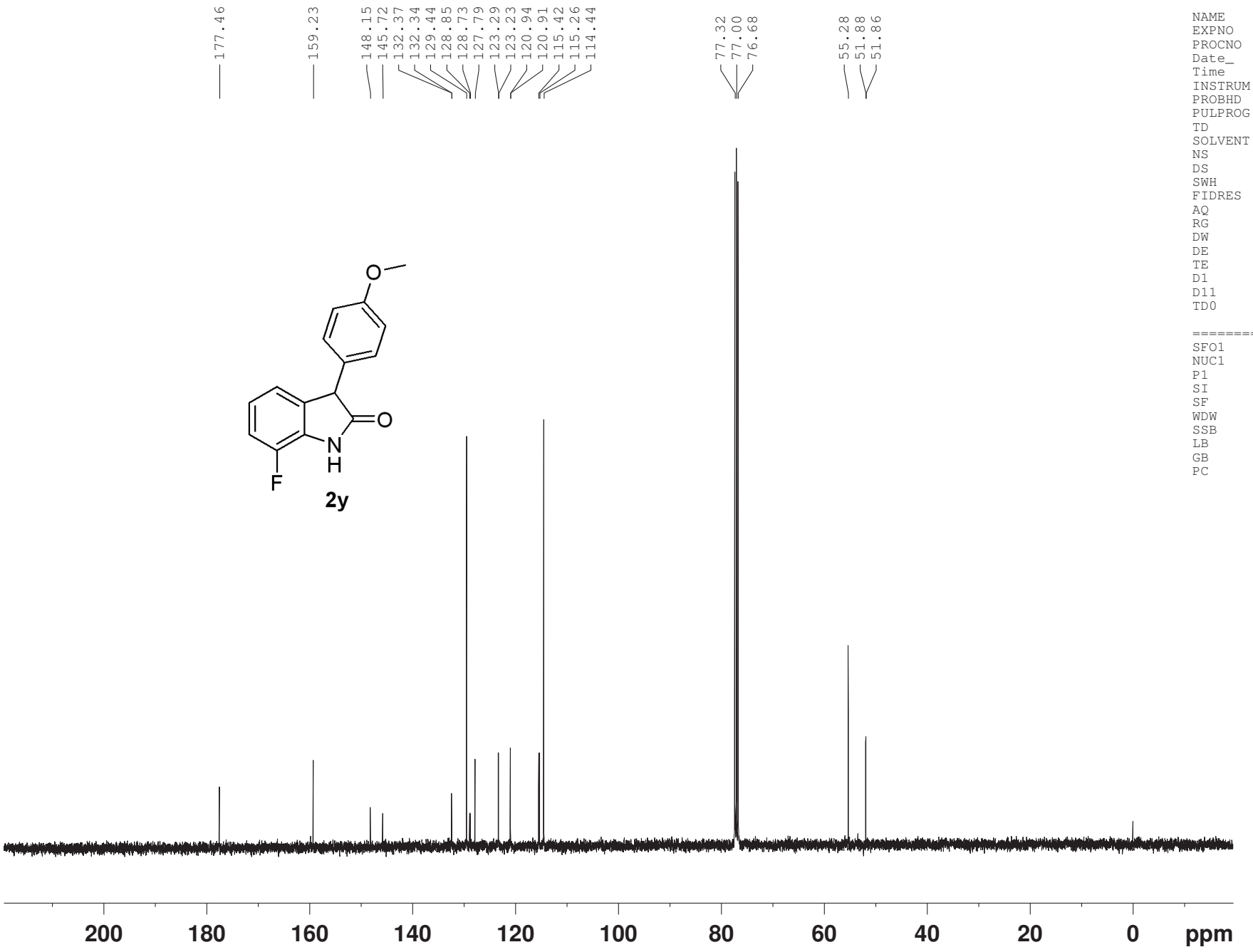


NAME	dengyh651 6-Br-3-PMP
EXPNO	10
PROCNO	1
Date_	20150515
Time	14.23
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zg30
TD	65536
SOLVENT	DMSO
NS	16
DS	2
SWH	8012.820 Hz
FIDRES	0.122266 Hz
AQ	4.0894966 sec
RG	128
DW	62.400 usec
DE	6.50 usec
TE	293.1 K
D1	1.00000000 sec
TD0	1
========	CHANNEL f1 ========
SFO1	400.1324710 MHz
NUC1	1H
P1	10.79 usec
SI	65536
SF	400.1299871 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

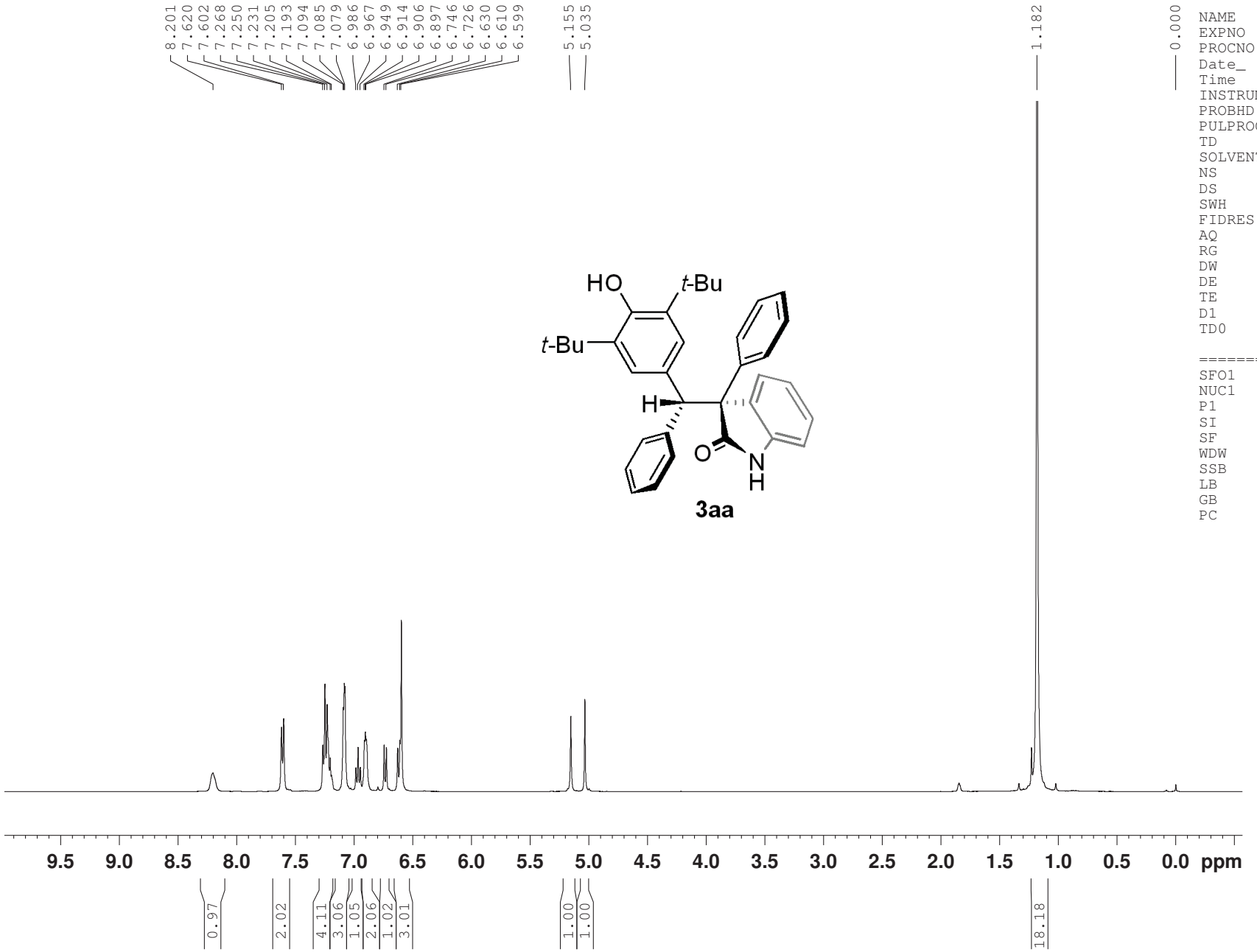

177.48
158.66
144.61
129.91
129.59
129.08
126.69
124.36
120.67
114.34
112.40
55.25
50.81
40.32
40.12
39.91
39.70
39.49
39.28
39.07
NAME dengyh651 6-Br-3-PMP
EXPNO 11
PROCNO 1
Date_ 20150515
Time 14.36
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 200
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 2050
DW 20.800 usec
DE 6.50 usec
TE 294.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 12.00 usec
SI 32768
SF 100.6127970 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
O
O
N
H
Br
2x
200
180
160
140
120
100
80
60
40
20
0
ppm



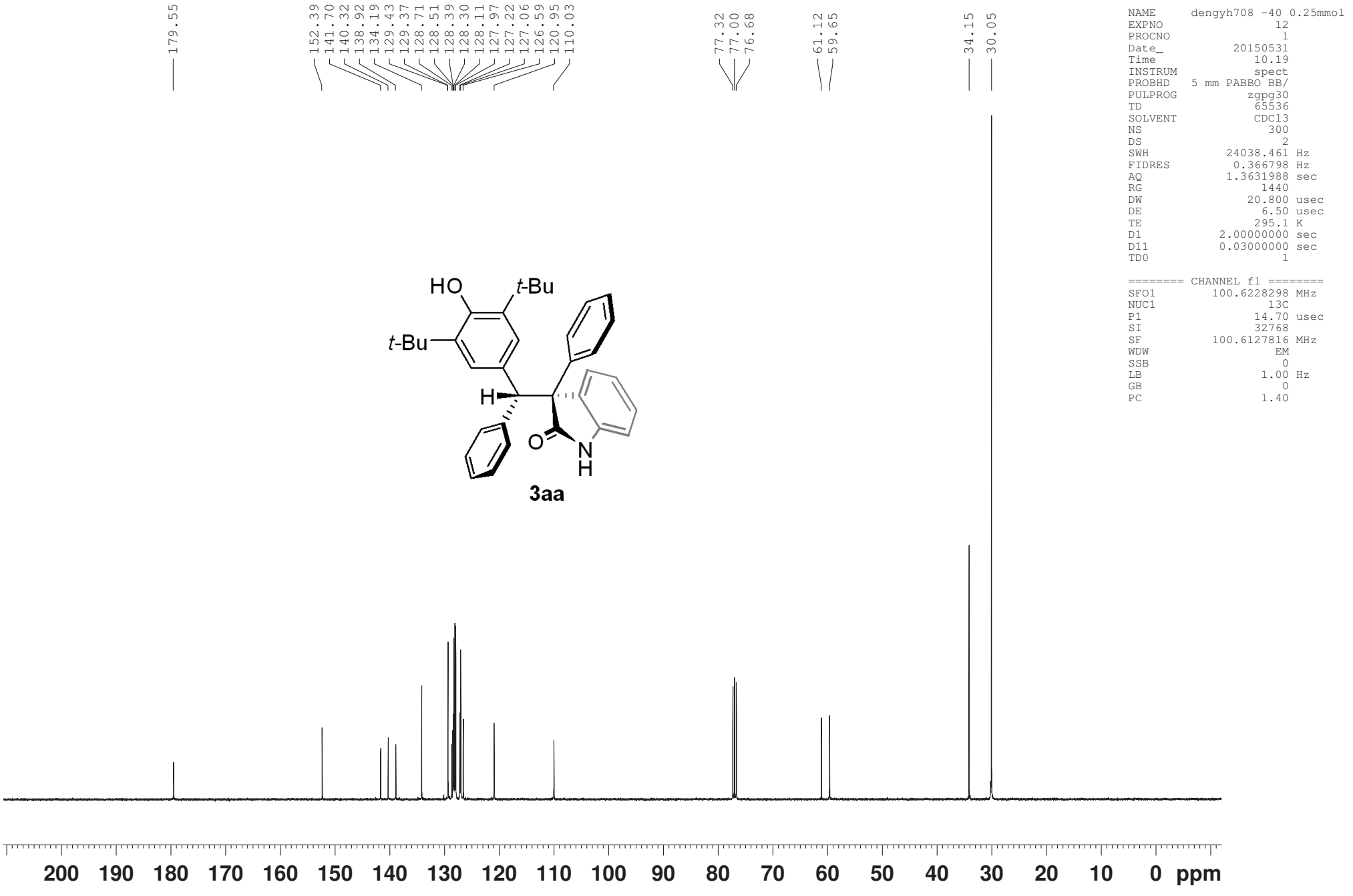
NAME	dengyh653 7-F-3-PMP
EXPNO	11
PROCNO	1
Date_	20150515
Time	11.03
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	8012.820 Hz
FIDRES	0.122266 Hz
AQ	4.0894966 sec
RG	256
DW	62.400 usec
DE	6.50 usec
TE	293.5 K
D1	1.00000000 sec
TD0	1
========	CHANNEL f1 ========
SFO1	400.1324710 MHz
NUC1	1H
P1	10.92 usec
SI	65536
SF	400.1300097 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00




```
NAME      dengyh653 7-F-3-PMP
EXPNO                  12
PROCNO                  1
Date_            20150515
Time                11.21
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT             CDCl3
NS                    300
DS                      2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ            1.3631988 sec
RG                 1030
DW                20.800 usec
DE                 6.50 usec
TE                294.4 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1       100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF         100.6127722 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```



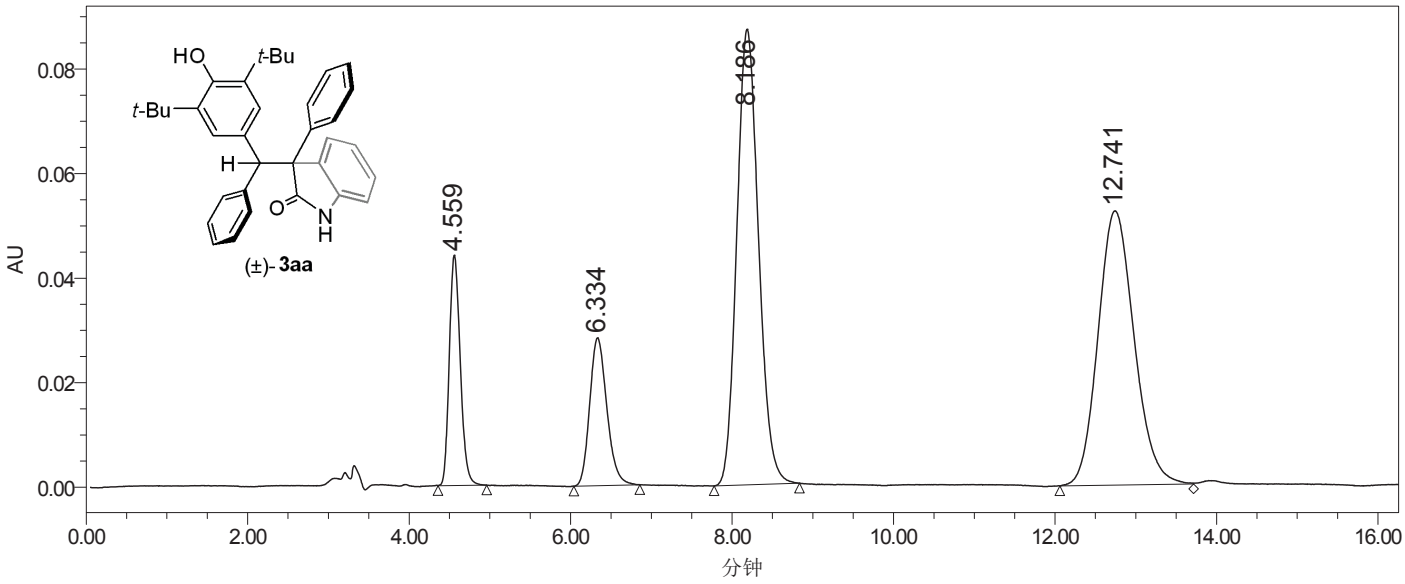
NAME	dengyh708 -40 0.25mmol
EXPNO	11
PROCNO	1
Date_	20150531
Time	10.01
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	8
DS	2
SWH	8012.820 Hz
FIDRES	0.122266 Hz
AQ	4.0894966 sec
RG	32
DW	62.400 usec
DE	6.50 usec
TE	294.2 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	400.1324710 MHz
NUC1	1H
P1	10.92 usec
SI	65536
SF	400.1300361 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00


179.55
152.39
141.70
140.32
138.92
134.19
129.43
129.37
128.71
128.51
128.39
128.30
128.11
127.97
127.22
127.06
126.59
120.95
110.03
77.32
77.00
76.68
61.12
59.65
34.15
30.05
NAME dengyh708 -40 0.25mmol
EXPNO 12
PROCNO 1
Date_ 20150531
Time 10.19
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 300
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 1440
DW 20.800 usec
DE 6.50 usec
TE 295.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127816 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
O
N
H
3aa
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: DYH
用户名称: FanChunAn

样品信息

样品名称:	dengyh509c	采集者:	FanChunAn
样品类型:	未知	样品组名称:	dengyh
瓶号:	1:A,6	采集方法组:	dyh Ic3 IPAvsHex 5vs95 190 1ml
进样次数:	1	处理方法:	dengyh479 race
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	40.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2014/12/30 14:55:47 CST		
处理时间:	2014/12/30 21:49:49 CST		



——— Channel: 254.0 纳米; Channel Desc.: PDA 254.0 纳米; Processing Method: dengyh479 race

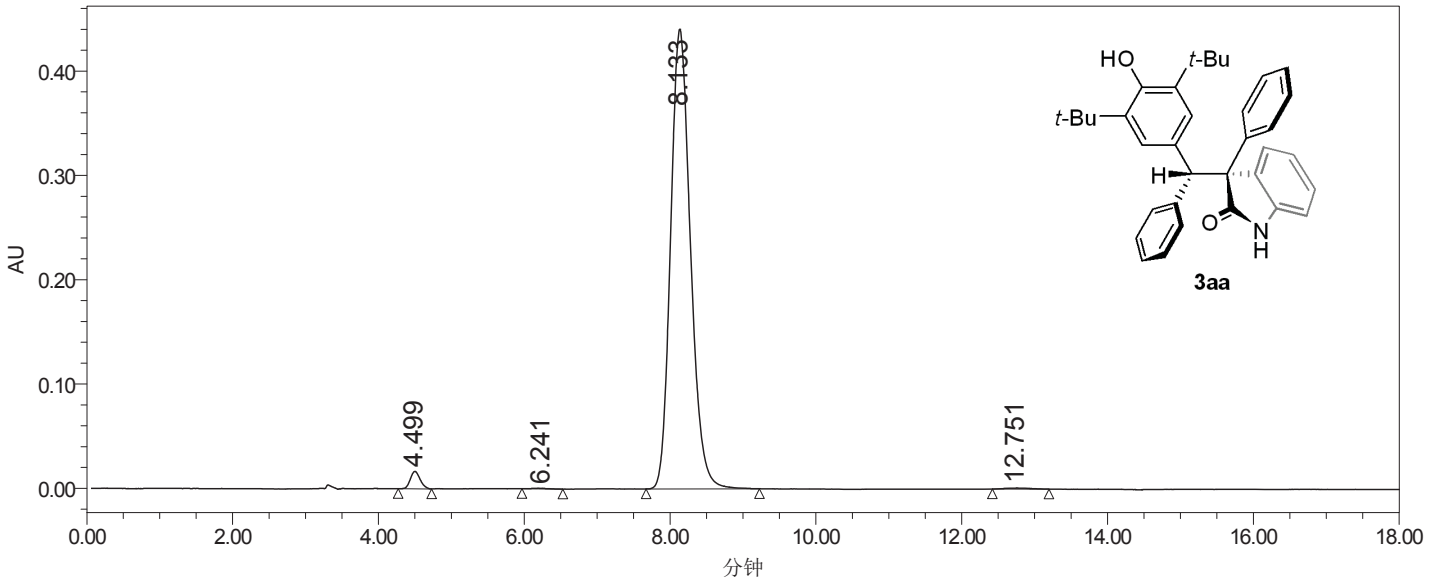
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	PDA 254.0 纳米	4.559	418640	10.23	44073
2	PDA 254.0 纳米	6.334	418225	10.22	28280
3	PDA 254.0 纳米	8.186	1627839	39.77	87158
4	PDA 254.0 纳米	12.741	1628673	39.79	52461

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh607d -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	DENGYH
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh599c
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	18.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/3/30 9:52:02 CST		
处理时间:	2015/3/30 10:22:29 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh599c

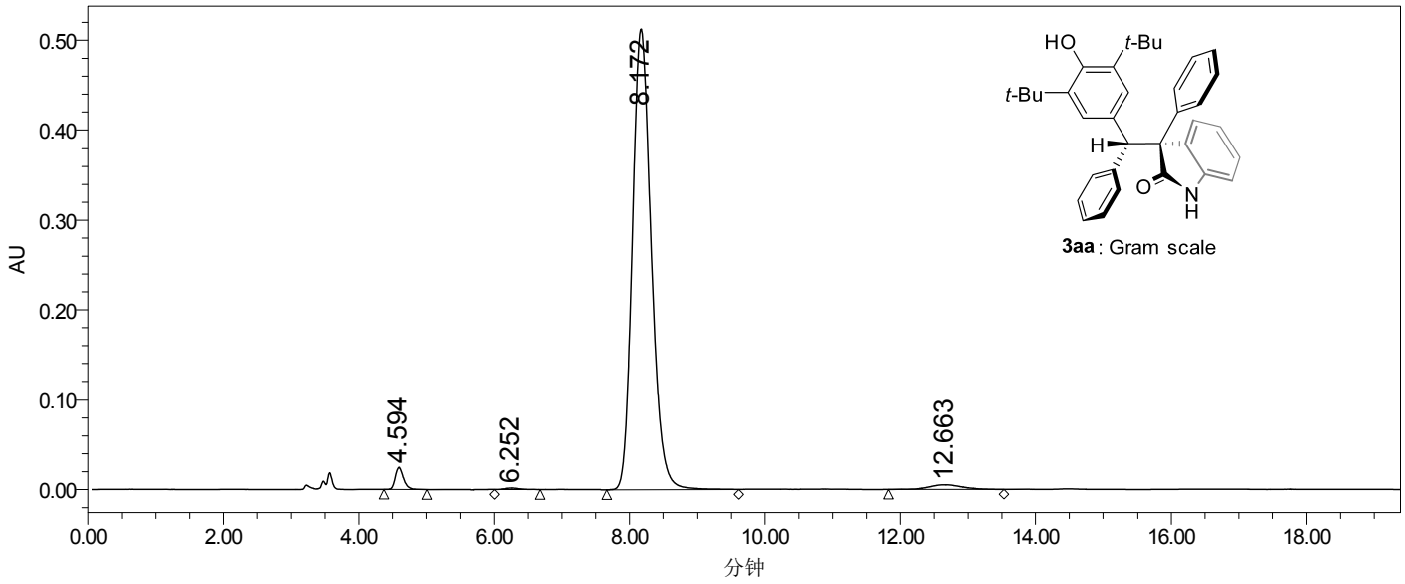
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.499	154047	1.81	16585
2	2998 (190-400)纳米	6.241	7436	0.09	497
3	2998 (190-400)纳米	8.133	8346798	97.84	440595
4	2998 (190-400)纳米	12.751	22522	0.26	923

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

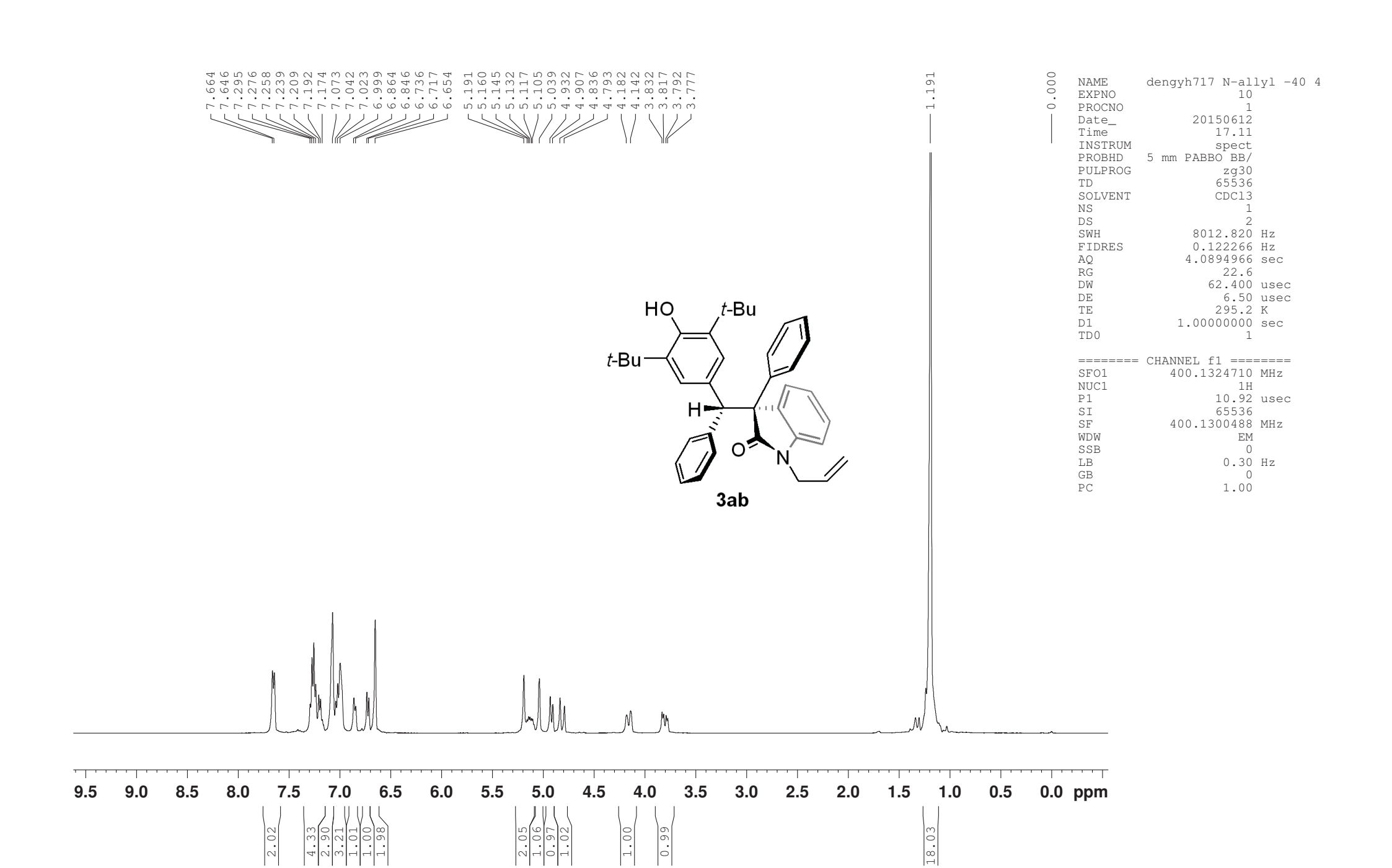
样品名称:	dengyh p-QMs Oxindoles 1g	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:F,2	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	2.00 ul	通道名称:	254.0 纳米@2
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2016/1/16 21:24:31 CST		
处理时间:	2016/1/18 22:00:39 CST		

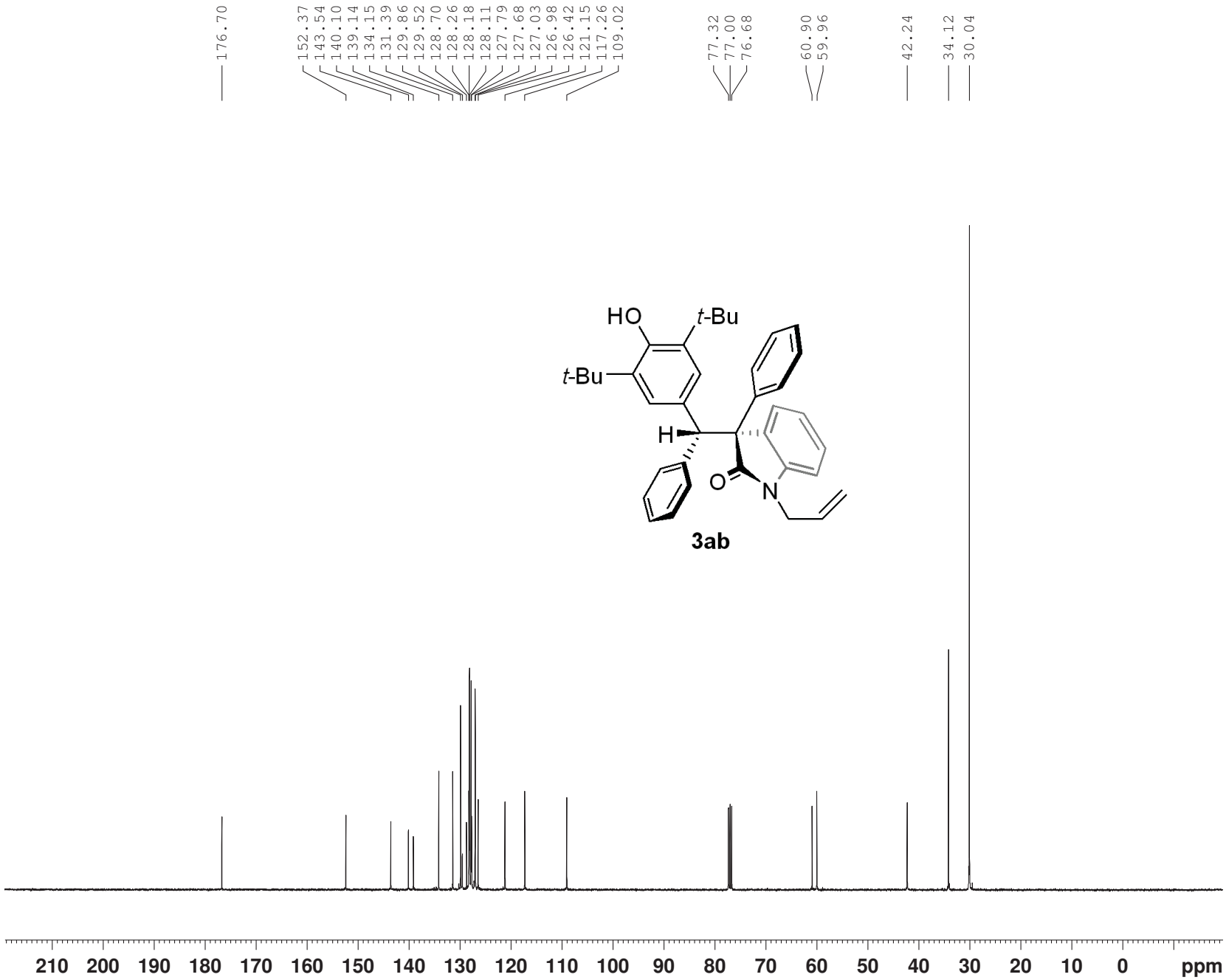


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.594	208437	2.01	24569
2	2998 (190-400)纳米	6.252	28349	0.27	1776
3	2998 (190-400)纳米	8.172	9935983	96.00	512557
4	2998 (190-400)纳米	12.663	177641	1.72	5209

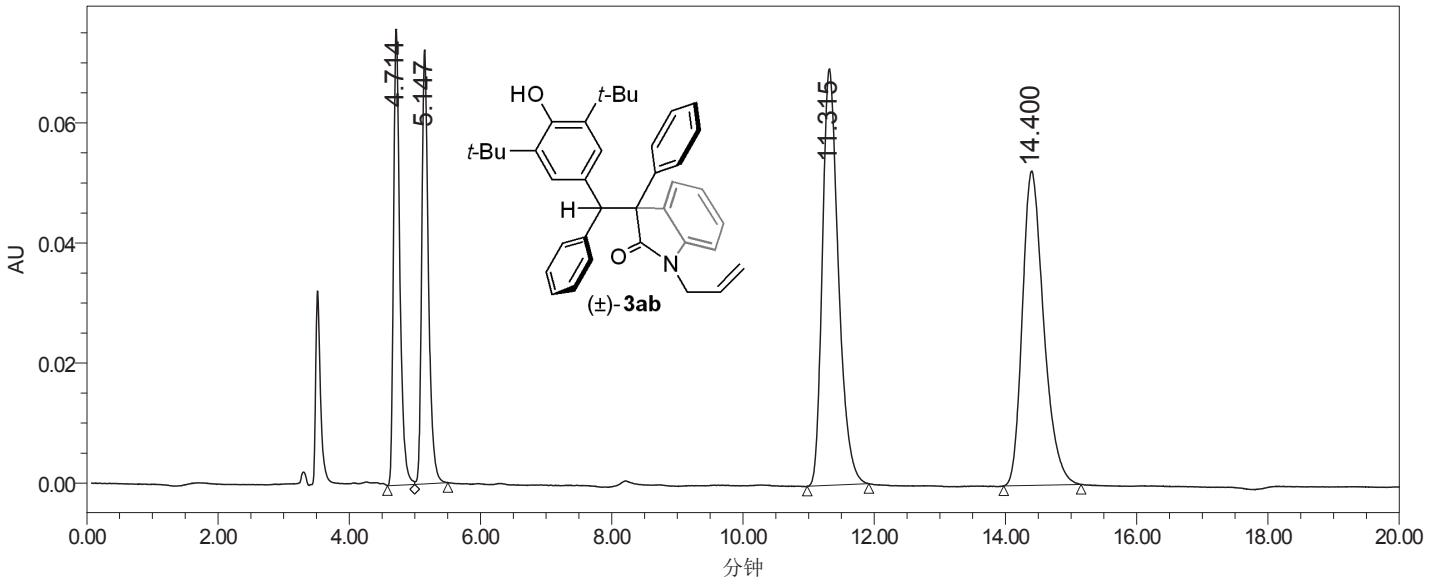

7.664
7.646
7.295
7.276
7.258
7.239
7.209
7.192
7.174
7.073
7.042
7.023
6.999
6.864
6.846
6.736
6.717
6.654
5.191
5.160
5.145
5.132
5.117
5.105
5.039
4.932
4.907
4.836
4.793
4.182
4.142
3.832
3.817
3.792
3.777
1.191
0.000
HO
t-Bu
t-Bu
H
O
N
3ab
NAME dengyh717 N-allyl -40 4
EXPNO 10
PROCNO 1
Date_ 20150612
Time 17.11
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 1
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 22.6
DW 62.400 usec
DE 6.50 usec
TE 295.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300488 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
2.02
4.33
2.90
3.21
1.01
1.00
1.98
2.05
1.06
0.97
1.02
1.00
0.99
18.03


176.70
152.37
143.54
140.10
139.14
134.15
131.39
129.86
129.52
128.70
128.26
128.18
128.11
127.79
127.68
127.03
126.98
126.42
121.15
117.26
109.02
77.32
77.00
76.68
60.90
59.96
42.24
34.12
30.04
NAME dengyh717 N-allyl -40 4
EXPNO 11
PROCNO 1
Date_ 20150612
Time 17.29
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 300
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 1030
DW 20.800 usec
DE 6.50 usec
TE 296.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127889 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
O
N
3ab
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh717 N-allyl race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IA3 IPA vs Hex 3vs97 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	2.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/11 21:58:31 CST		
处理时间:	2015/6/11 22:22:15 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

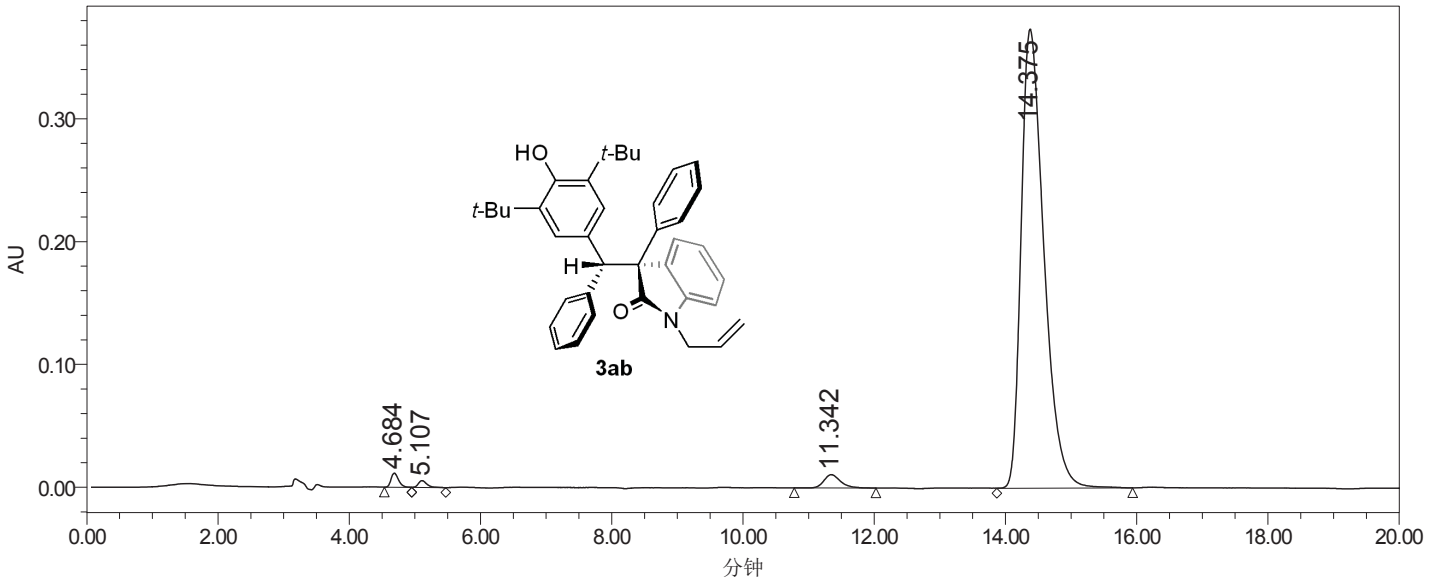
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.714	504205	14.93	75967
2	2998 (190-400)纳米	5.147	510659	15.13	72275
3	2998 (190-400)纳米	11.315	1178926	34.92	69351
4	2998 (190-400)纳米	14.400	1182237	35.02	52339

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

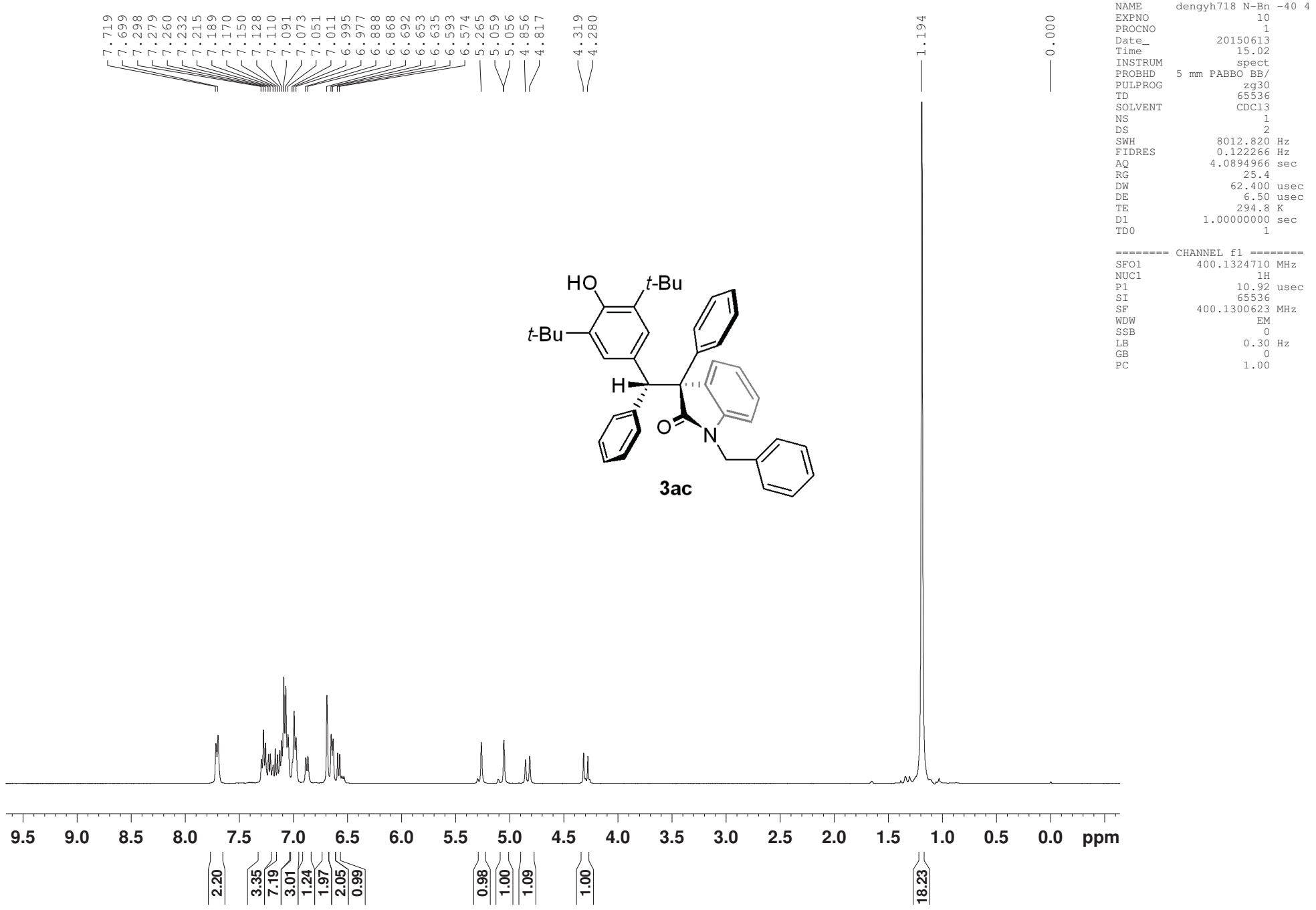
样品名称:	dengyh717b N-allyl -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,4	采集方法组:	IA3 IPA vs Hex 3vs97 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/11 21:17:47 CST		
处理时间:	2015/6/11 22:48:56 CST		

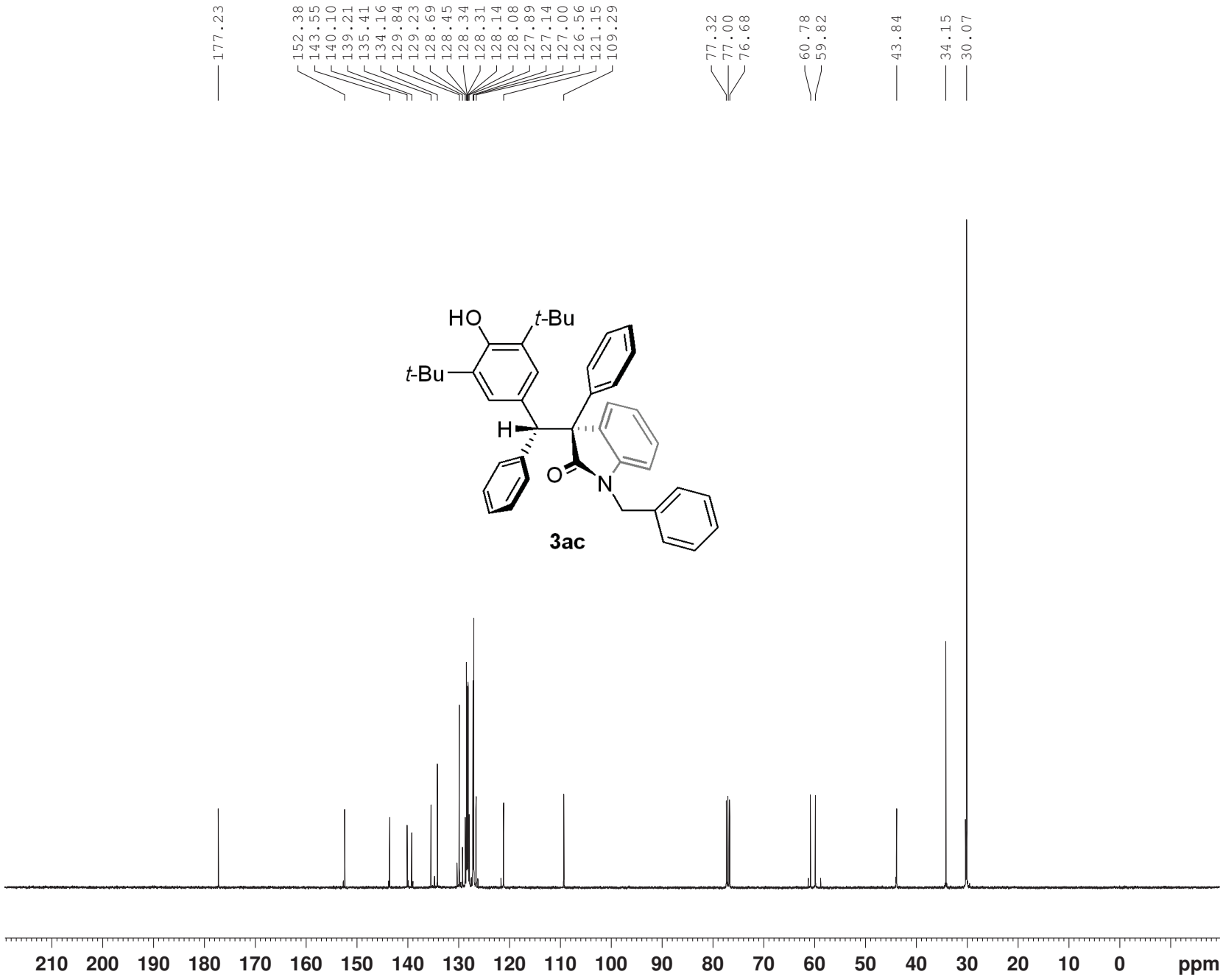


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.684	92559	0.99	11442
2	2998 (190-400)纳米	5.107	51287	0.55	5554
3	2998 (190-400)纳米	11.342	190143	2.04	10810
4	2998 (190-400)纳米	14.375	9002549	96.42	373667

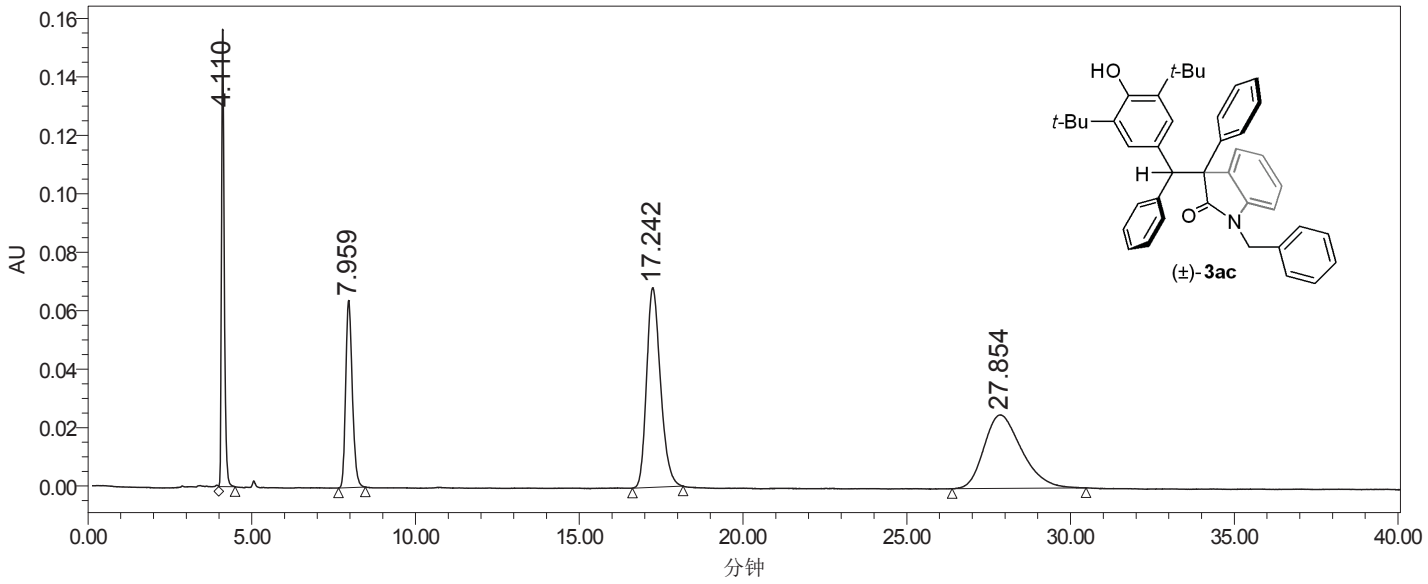

7.719
7.699
7.298
7.279
7.260
7.232
7.215
7.189
7.170
7.150
7.128
7.110
7.091
7.073
7.051
7.011
6.995
6.977
6.888
6.868
6.692
6.653
6.635
6.593
6.574
5.265
5.059
5.056
4.856
4.817
4.319
4.280
1.194
0.000
HO
t-Bu
t-Bu
H
O
N
3ac
NAME dengyh718 N-Bn -40 4
EXPNO 10
PROCNO 1
Date_ 20150613
Time 15.02
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 1
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 25.4
DW 62.400 usec
DE 6.50 usec
TE 294.8 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300623 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
2.20
3.35
7.19
3.01
1.24
1.97
2.05
0.99
0.98
1.00
1.09
1.00
18.23


177.23
152.38
143.55
140.10
139.21
135.41
134.16
129.84
129.23
128.69
128.45
128.34
128.31
128.14
128.08
127.89
127.14
127.00
126.56
121.15
109.29
77.32
77.00
76.68
60.78
59.82
43.84
34.15
30.07
NAME dengyh718 N-Bn -40 4
EXPNO 15
PROCNO 1
Date_ 20150613
Time 18.47
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 240
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 1030
DW 20.800 usec
DE 6.50 usec
TE 295.8 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127919 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
O
N
3ac
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh718 N-Bn race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,2	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	50.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/12 13:51:39 CST		
处理时间:	2015/6/12 15:31:31 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

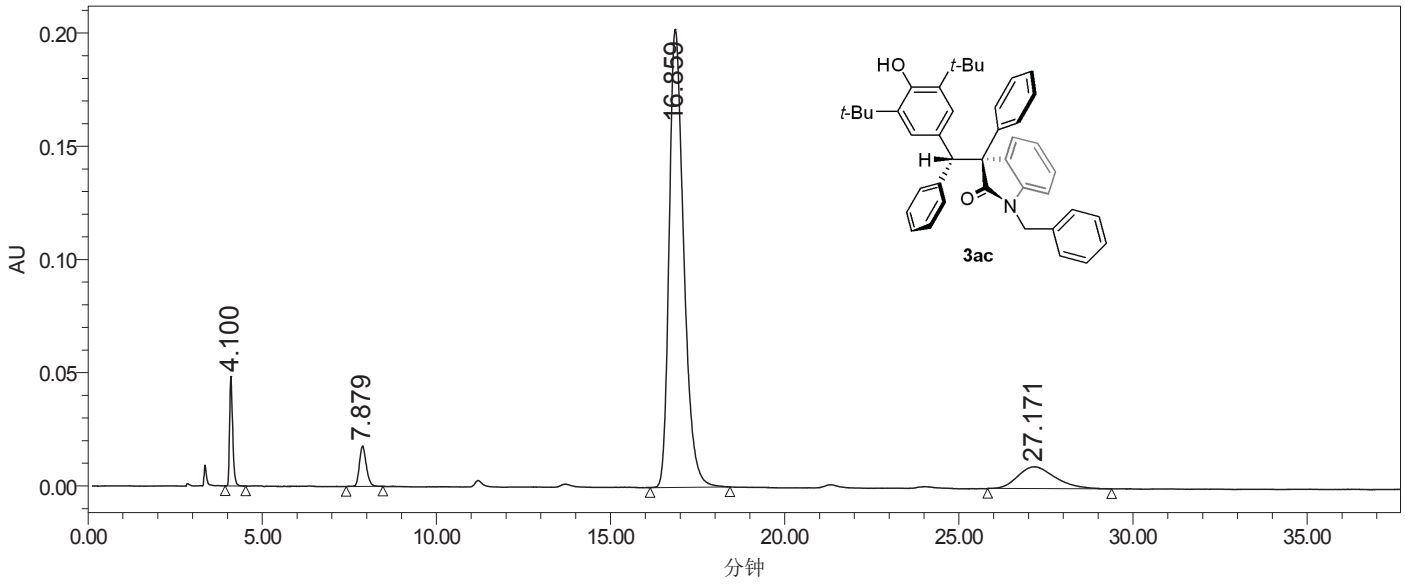
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.110	905125	15.54	156531
2	2998 (190-400)纳米	7.959	903405	15.51	64080
3	2998 (190-400)纳米	17.242	2015054	34.60	68320
4	2998 (190-400)纳米	27.854	1999566	34.34	25152

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

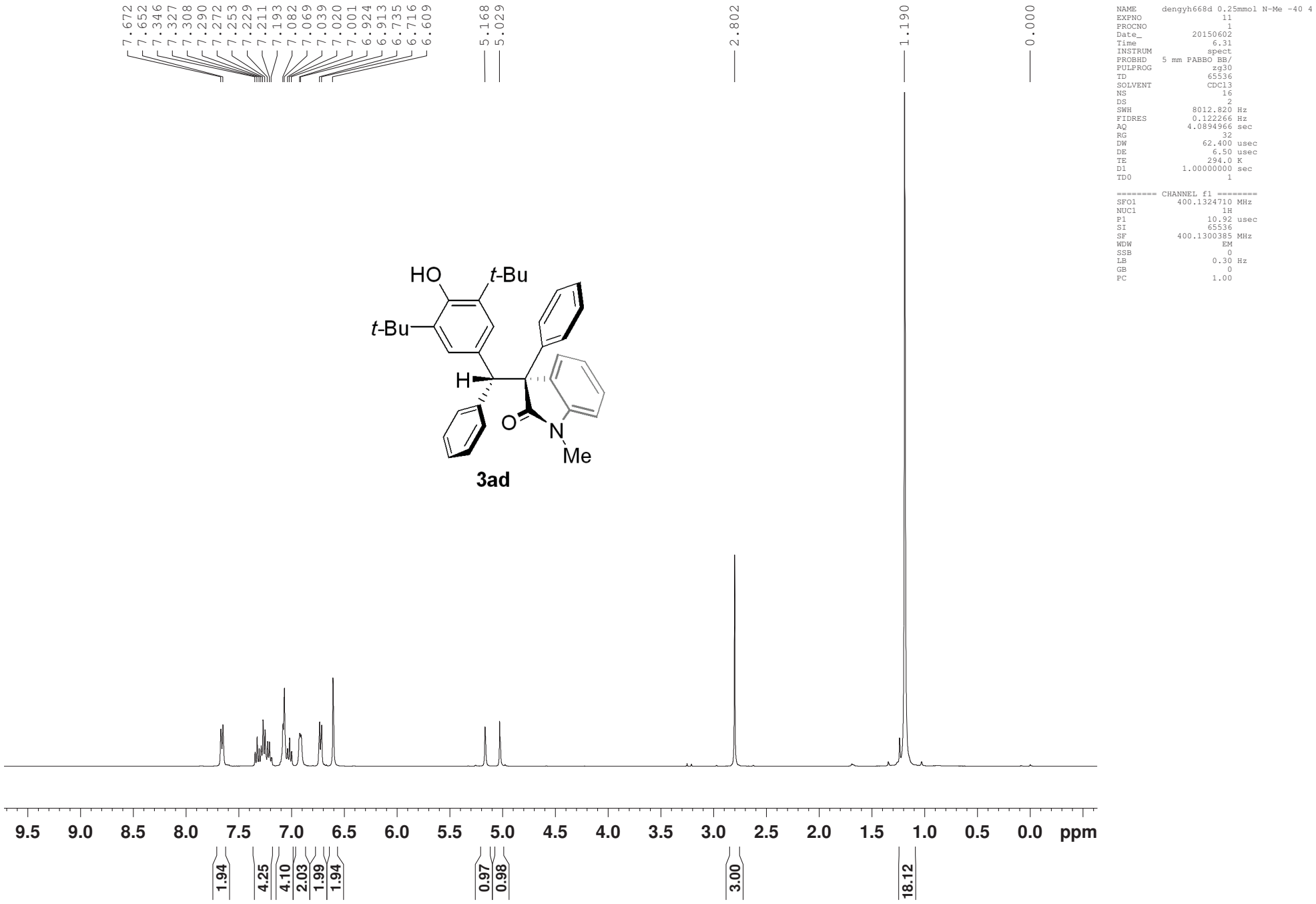
样品名称:	dengyh718b N-Bn -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,5	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	254.0 纳米
运行时间:	40.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/12 15:29:00 CST		
处理时间:	2015/6/16 23:36:56 CST		

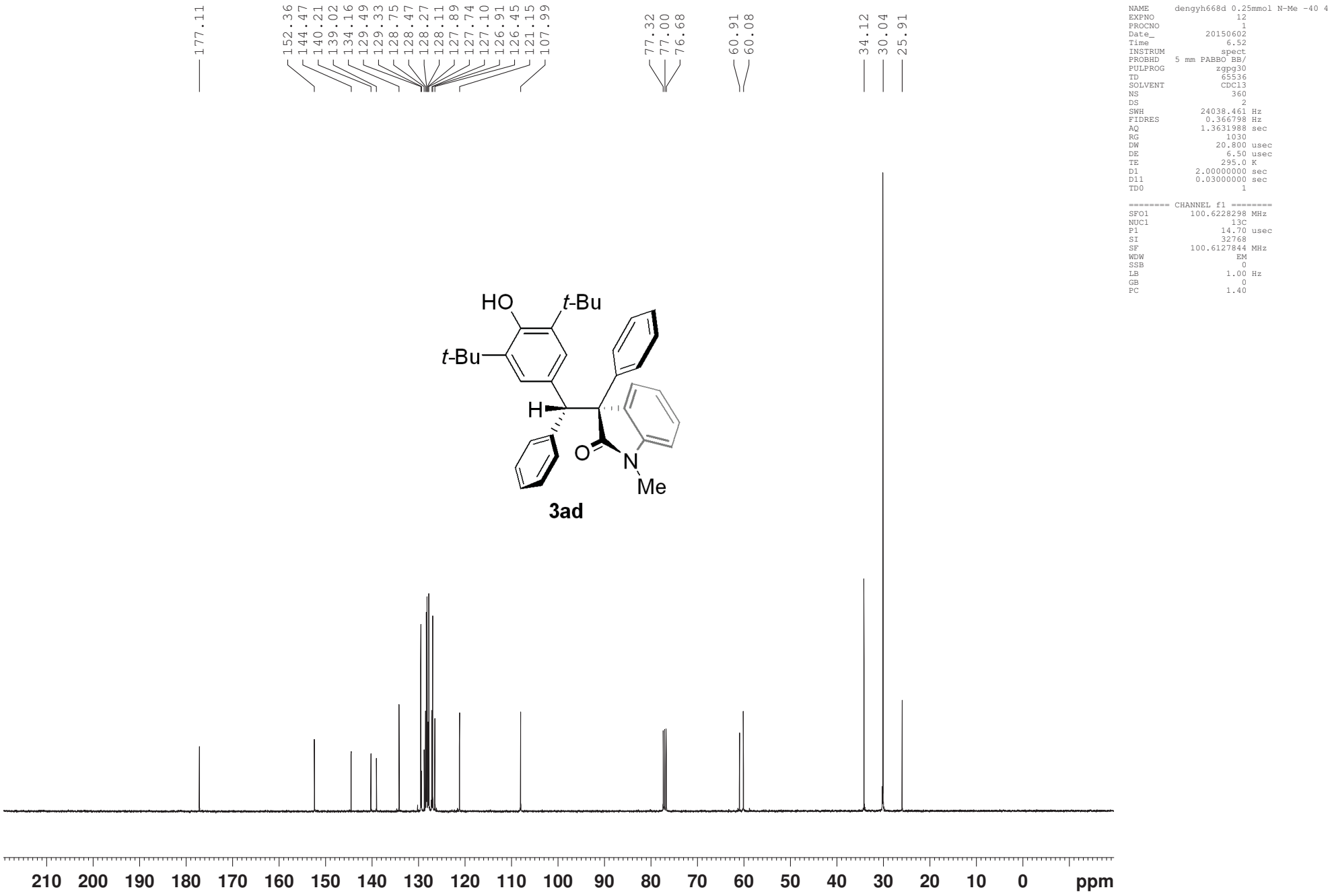


Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.100	295237	4.14	48450
2	2998 (190-400)纳米	7.879	244443	3.43	17789
3	2998 (190-400)纳米	16.859	5875592	82.42	202330
4	2998 (190-400)纳米	27.171	713900	10.01	9637

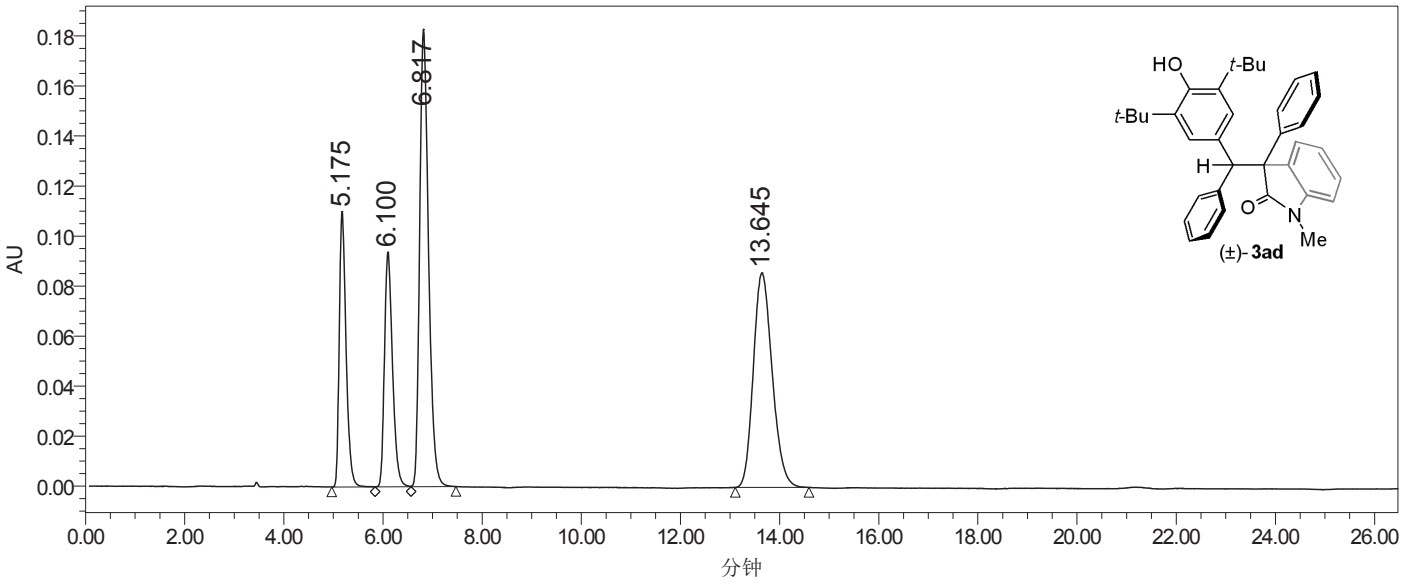

7.672
7.652
7.346
7.327
7.308
7.290
7.272
7.253
7.229
7.211
7.193
7.082
7.069
7.039
7.020
7.001
6.924
6.913
6.735
6.716
6.609
5.168
5.029
2.802
1.190
0.000
NAME dengyh668d 0.25mmol N-Me -40 4
EXPNO 11
PROCNO 1
Date_ 20150602
Time 6.31
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.0 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300385 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
O
N
Me
3ad
9.5 9.0 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 ppm
1.94
4.25
4.10
2.03
1.99
1.94
0.97
0.98
3.00
18.12


177.11
152.36
144.47
140.21
139.02
134.16
129.49
129.33
128.75
128.47
128.27
128.11
127.89
127.74
127.10
126.91
126.45
121.15
107.99
77.32
77.00
76.68
60.91
60.08
34.12
30.04
25.91
NAME dengyh668d 0.25mmol N-Me -40 4
EXPNO 12
PROCNO 1
Date_ 20150602
Time 6.52
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 360
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 1030
DW 20.800 usec
DE 6.50 usec
TE 295.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127844 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
O
N
Me
3ad
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh668 N-Me race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IC3 IPA vs Hex 3vs97 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	60.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/2 11:04:10 CST		
处理时间:	2015/5/2 11:32:43 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

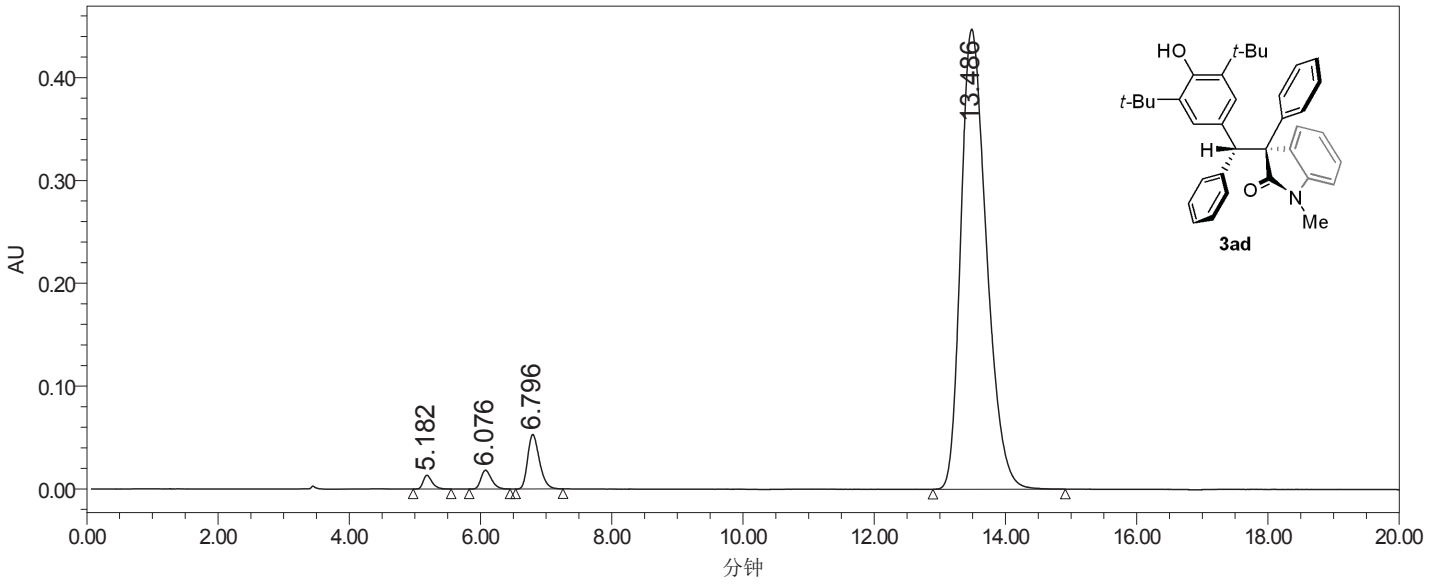
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.175	1047263	15.76	110116
2	2998 (190-400)纳米	6.100	1052614	15.84	93887
3	2998 (190-400)纳米	6.817	2276420	34.26	182901
4	2998 (190-400)纳米	13.645	2268036	34.13	85804

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

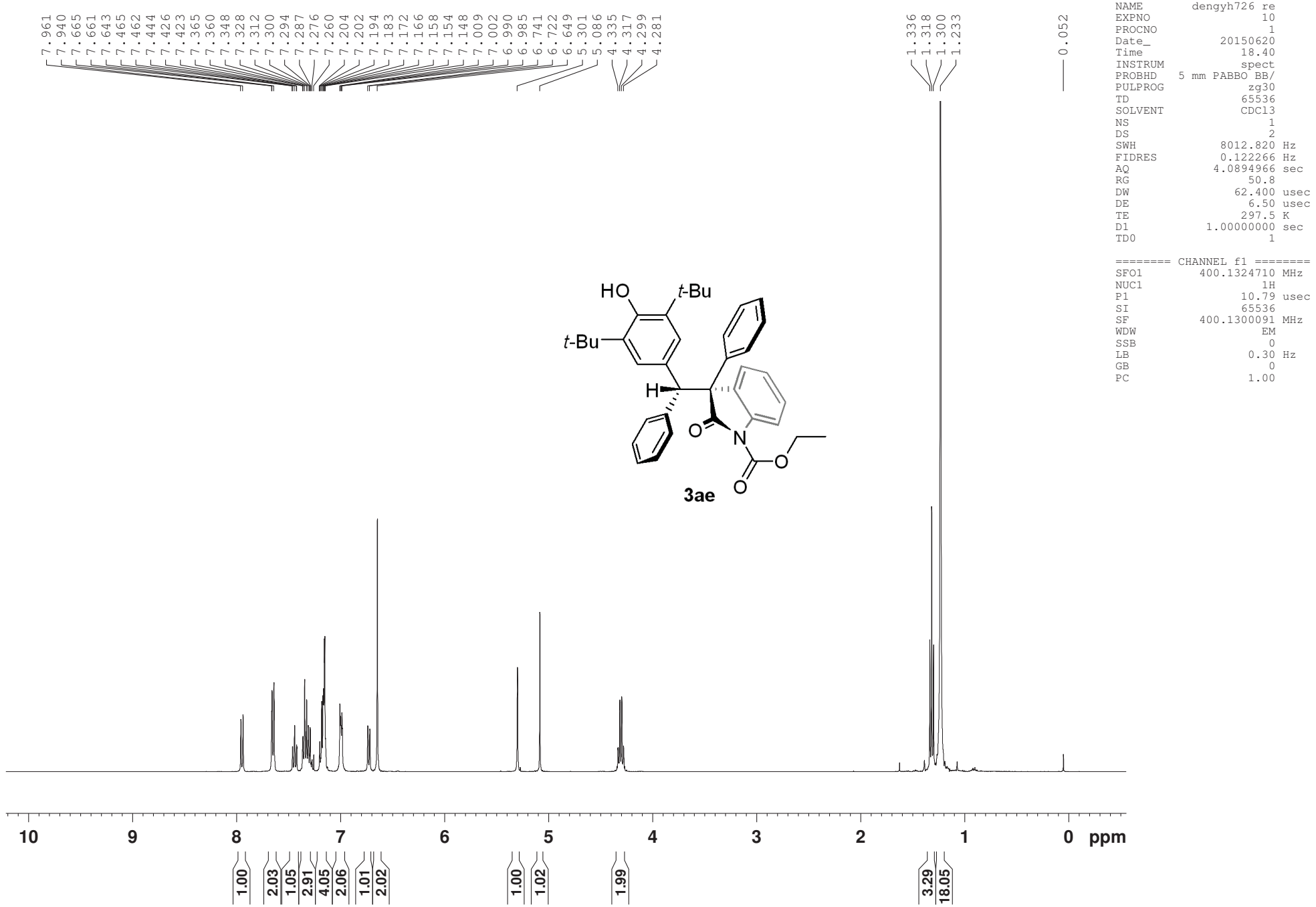
样品名称:	dengyh668 N-Me -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 3vs97 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/2 11:31:55 CST		
处理时间:	2015/5/4 21:09:58 CST		

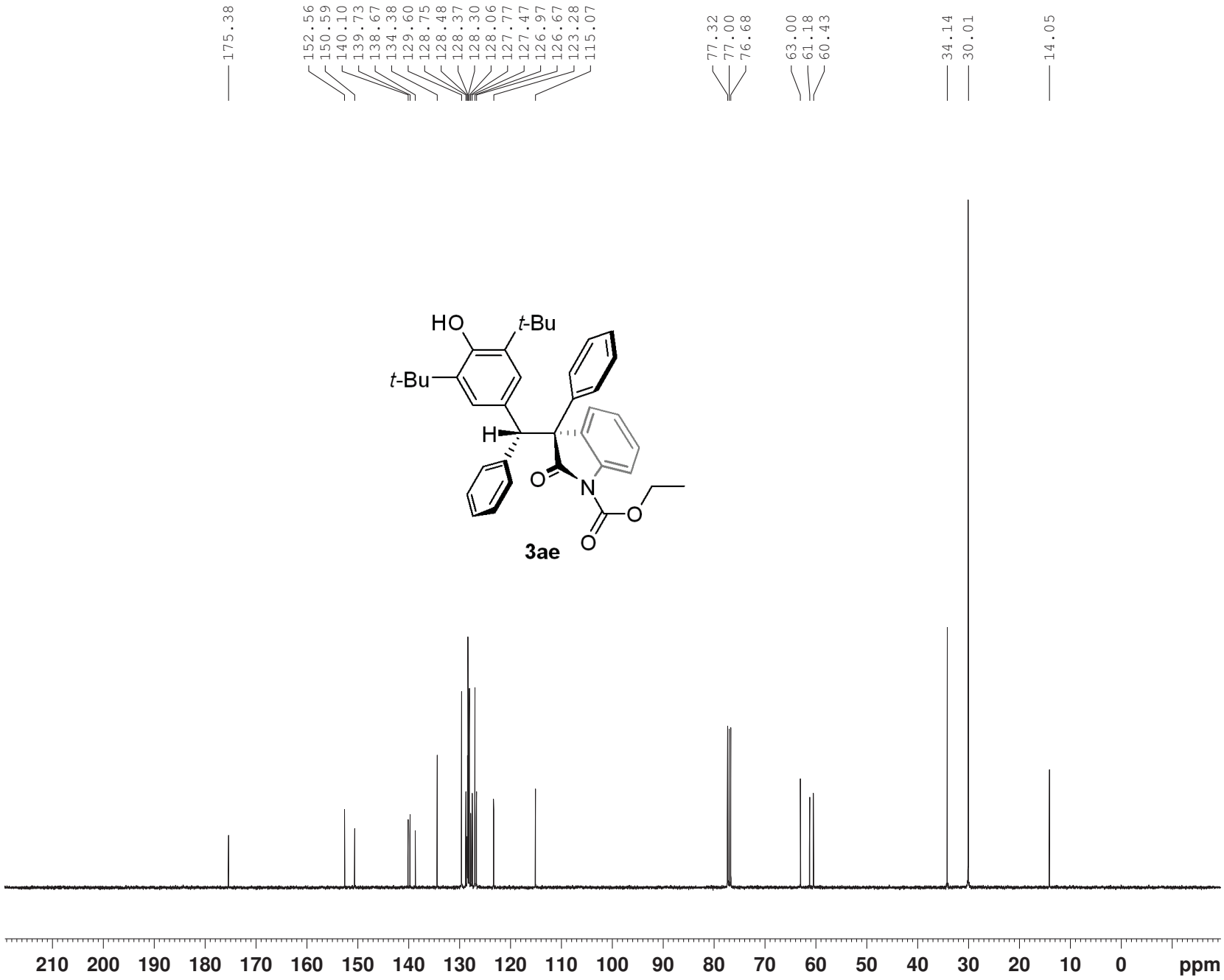


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.182	126735	0.97	13383
2	2998 (190-400)纳米	6.076	204706	1.56	18272
3	2998 (190-400)纳米	6.796	659036	5.02	52967
4	2998 (190-400)纳米	13.486	12131293	92.45	447411


7.961
7.940
7.665
7.661
7.643
7.465
7.462
7.444
7.426
7.423
7.365
7.360
7.348
7.328
7.312
7.300
7.294
7.287
7.276
7.260
7.204
7.202
7.194
7.183
7.172
7.166
7.158
7.154
7.148
7.009
7.002
6.990
6.985
6.741
6.722
6.649
5.301
5.086
4.335
4.317
4.299
4.281
1.336
1.318
1.300
1.233
0.052
NAME dengyh726 re
EXPNO 10
PROCNO 1
Date_ 20150620
Time 18.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 1
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 50.8
DW 62.400 usec
DE 6.50 usec
TE 297.5 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300091 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
O
N
O
O
3ae
10
9
8
7
6
5
4
3
2
1
0
ppm
1.00
2.03
1.05
2.91
4.05
2.06
1.01
2.02
1.00
1.02
1.99
3.29
18.05

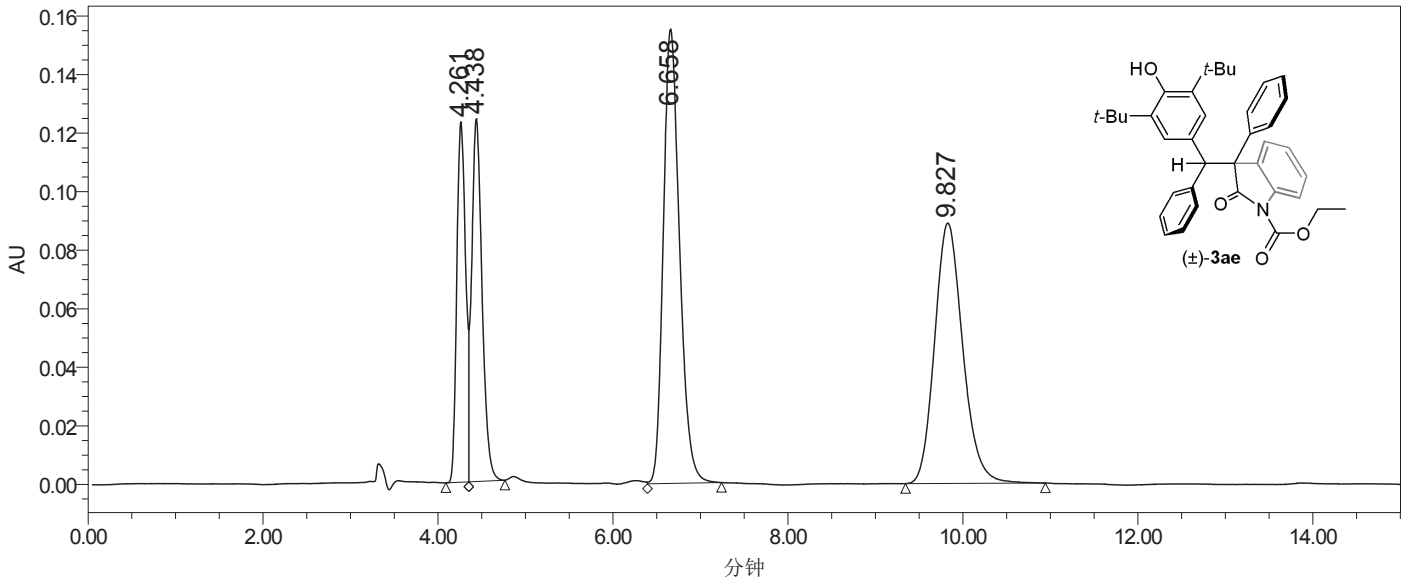


NAME	dengyh726 re
EXPNO	11
PROCNO	1
Date_	20150620
Time	18.53
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	200
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.50 usec
TE	298.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	12.00 usec
SI	32768
SF	100.6127805 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh726 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,1	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@2
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/16 22:55:22 CST		
处理时间:	2015/11/22 14:06:24 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

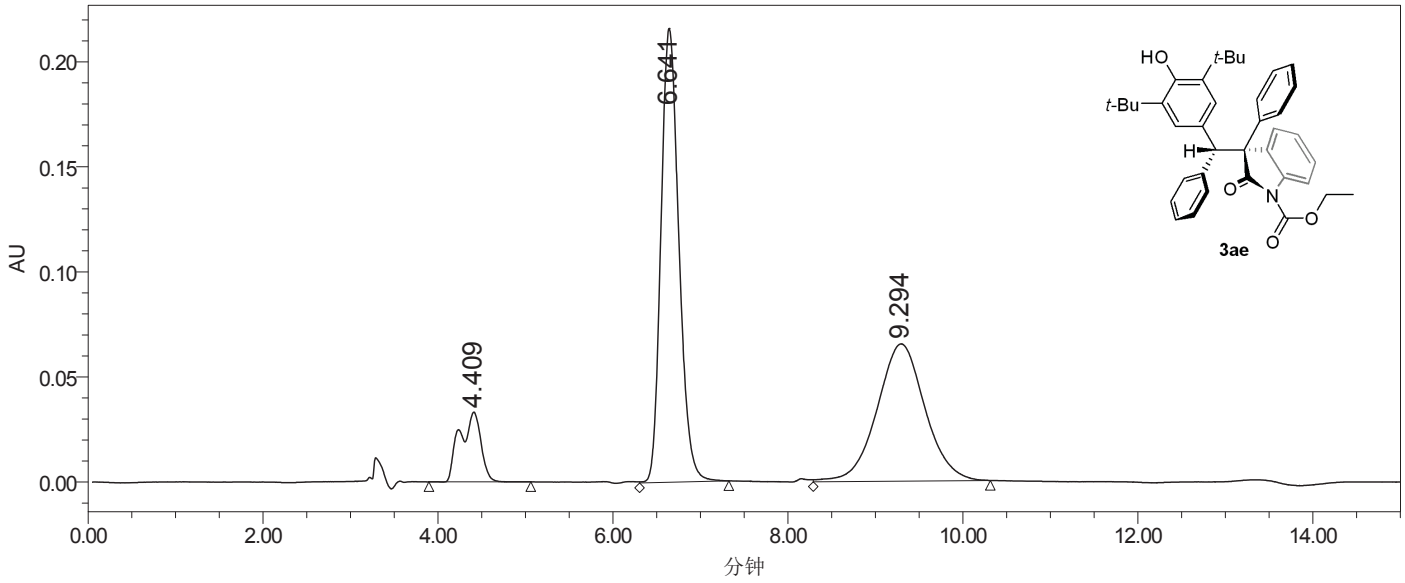
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.261	872107	14.82	123069
2	2998 (190-400)纳米	4.438	1023672	17.39	123926
3	2998 (190-400)纳米	6.658	2001090	34.00	155149
4	2998 (190-400)纳米	9.827	1988124	33.78	88931

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

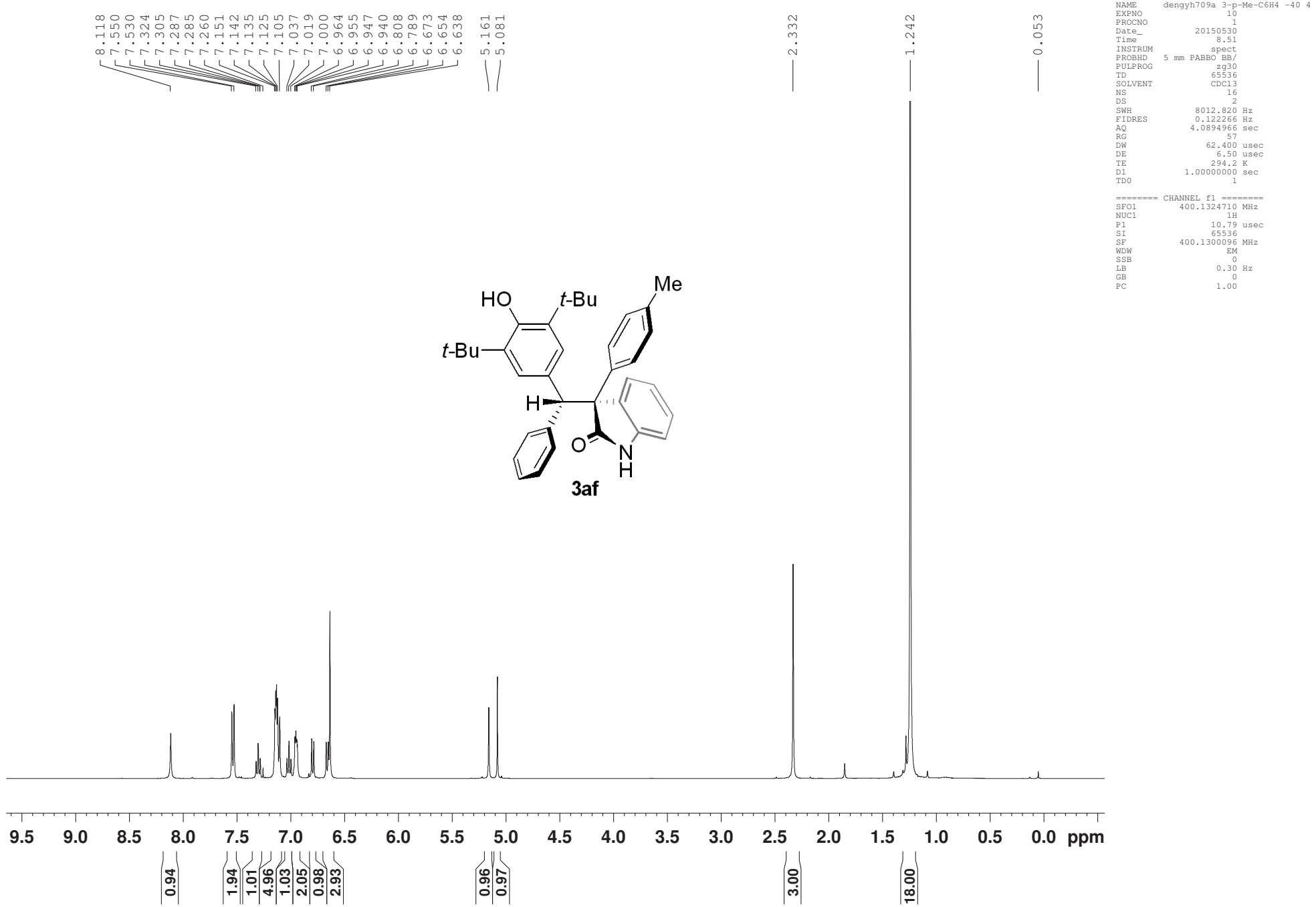
样品名称:	dengyh726b NCOOEt -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,3	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	10.00 ul	通道名称:	254.0 纳米@2
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/16 23:10:46 CST		
处理时间:	2015/6/16 23:29:54 CST		

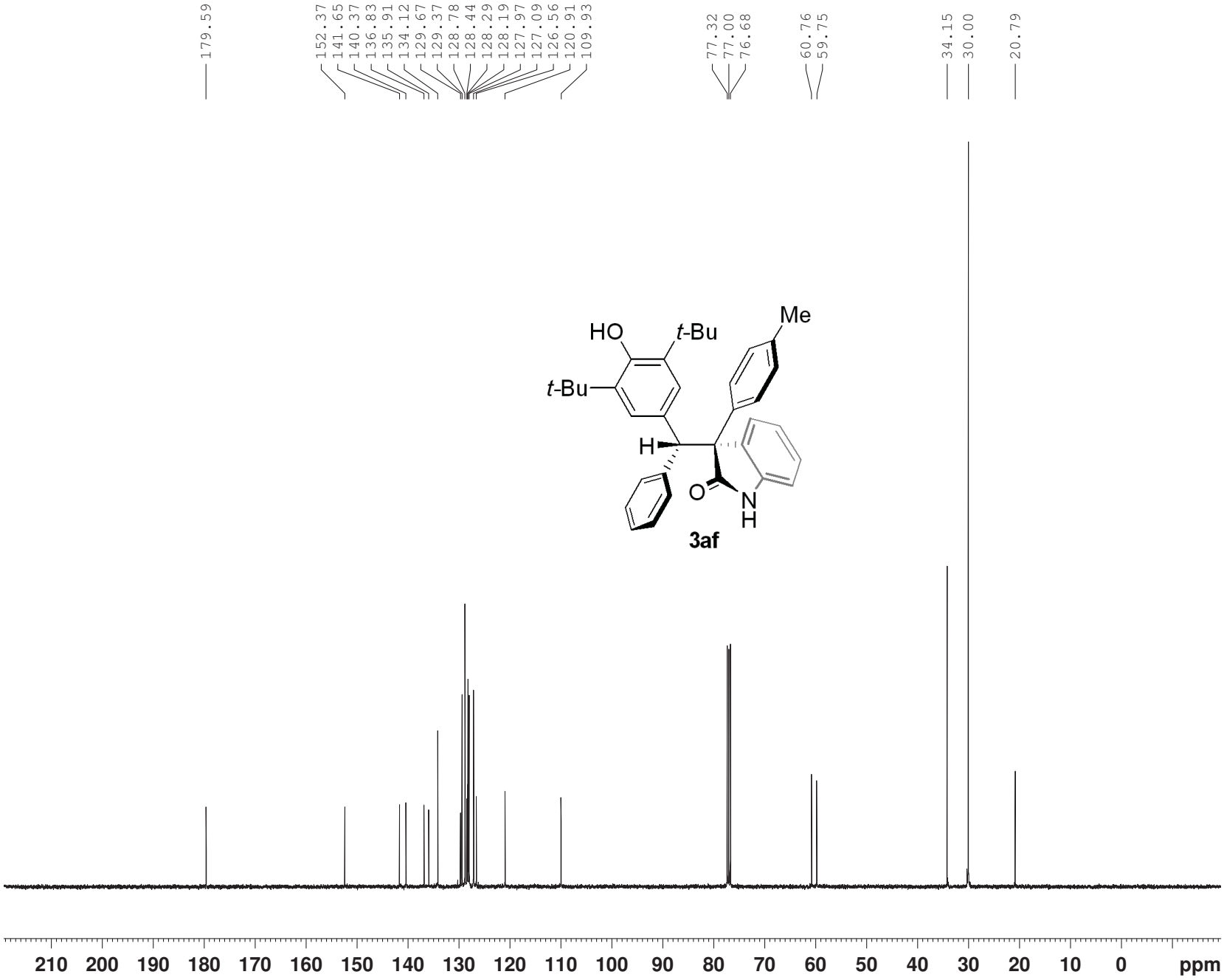


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.409	556458	9.09	33111
2	2998 (190-400)纳米	6.641	3077890	50.30	215970
3	2998 (190-400)纳米	9.294	2484522	40.60	65329


8.118
7.550
7.530
7.324
7.305
7.287
7.285
7.260
7.151
7.142
7.135
7.125
7.105
7.037
7.019
7.000
6.964
6.955
6.947
6.940
6.808
6.789
6.673
6.654
6.638
5.161
5.081
2.332
1.242
0.053
HO
t-Bu
t-Bu
Me
H
O
N
H
3af
NAME dengyh709a 3-p-Me-C6H4 -40 4
EXPNO 10
PROCNO 1
Date_ 20150530
Time 8.51
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 57
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300096 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.94
1.94
1.01
4.96
1.03
2.05
0.98
2.93
0.96
0.97
3.00
18.00

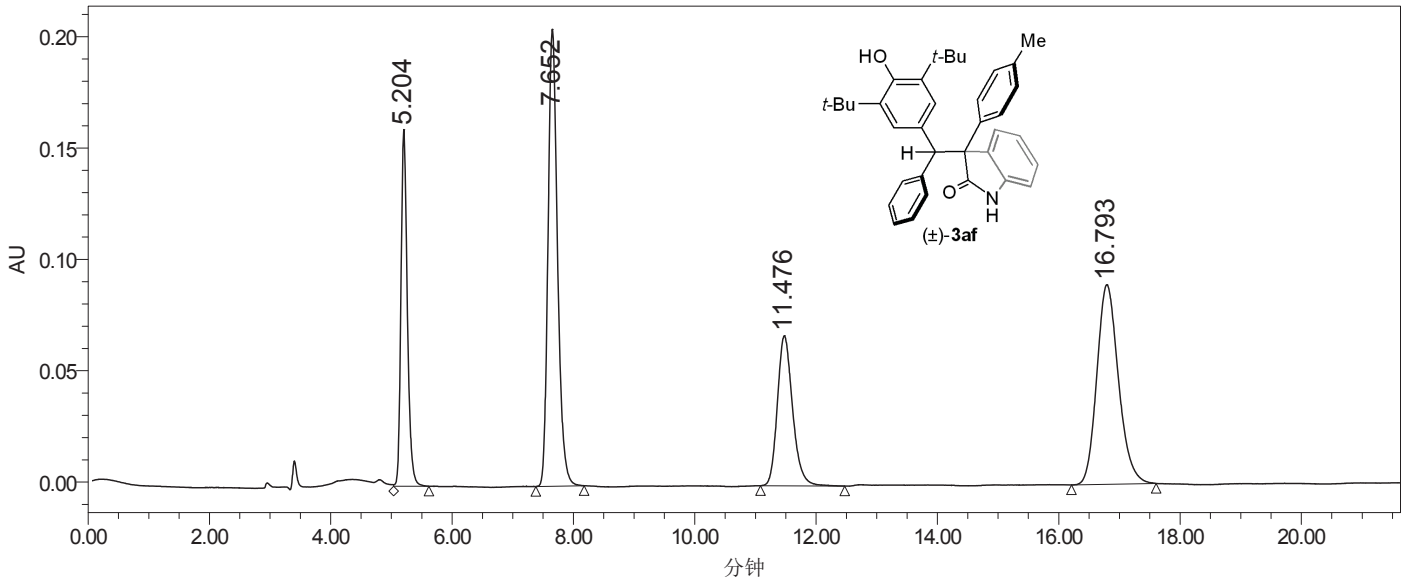



```
NAME      dengyh709a 3-p-Me-C6H4 -40 4
EXPNO                 11
PROCNO                 1
Date_           20150530
Time                9.09
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   300
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                  2050
DW                20.800 usec
DE                 6.50 usec
TE                295.4 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1               13C
P1                12.00 usec
SI                32768
SF           100.6127792 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh615 3-p-Me-c6h4 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,6	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@1
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/3 16:19:31 CST		
处理时间:	2015/11/21 22:05:29 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

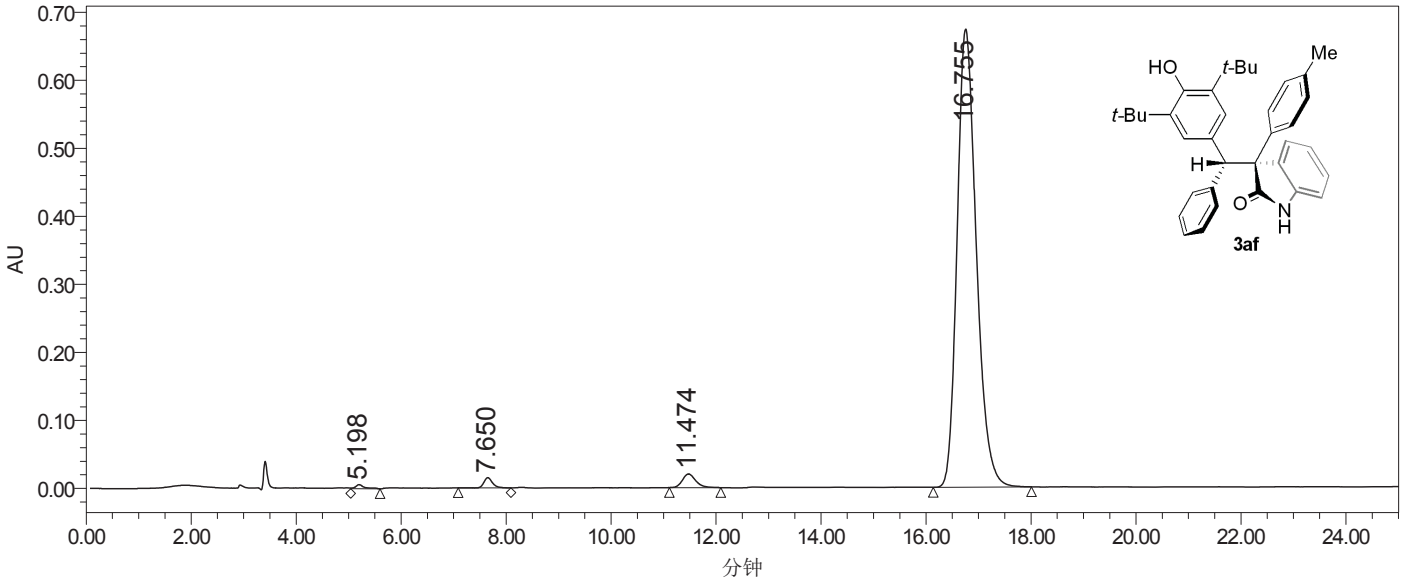
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.204	1173991	17.29	160192
2	2998 (190-400)纳米	7.652	2222714	32.74	205169
3	2998 (190-400)纳米	11.476	1175346	17.31	67409
4	2998 (190-400)纳米	16.793	2216472	32.65	89643

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

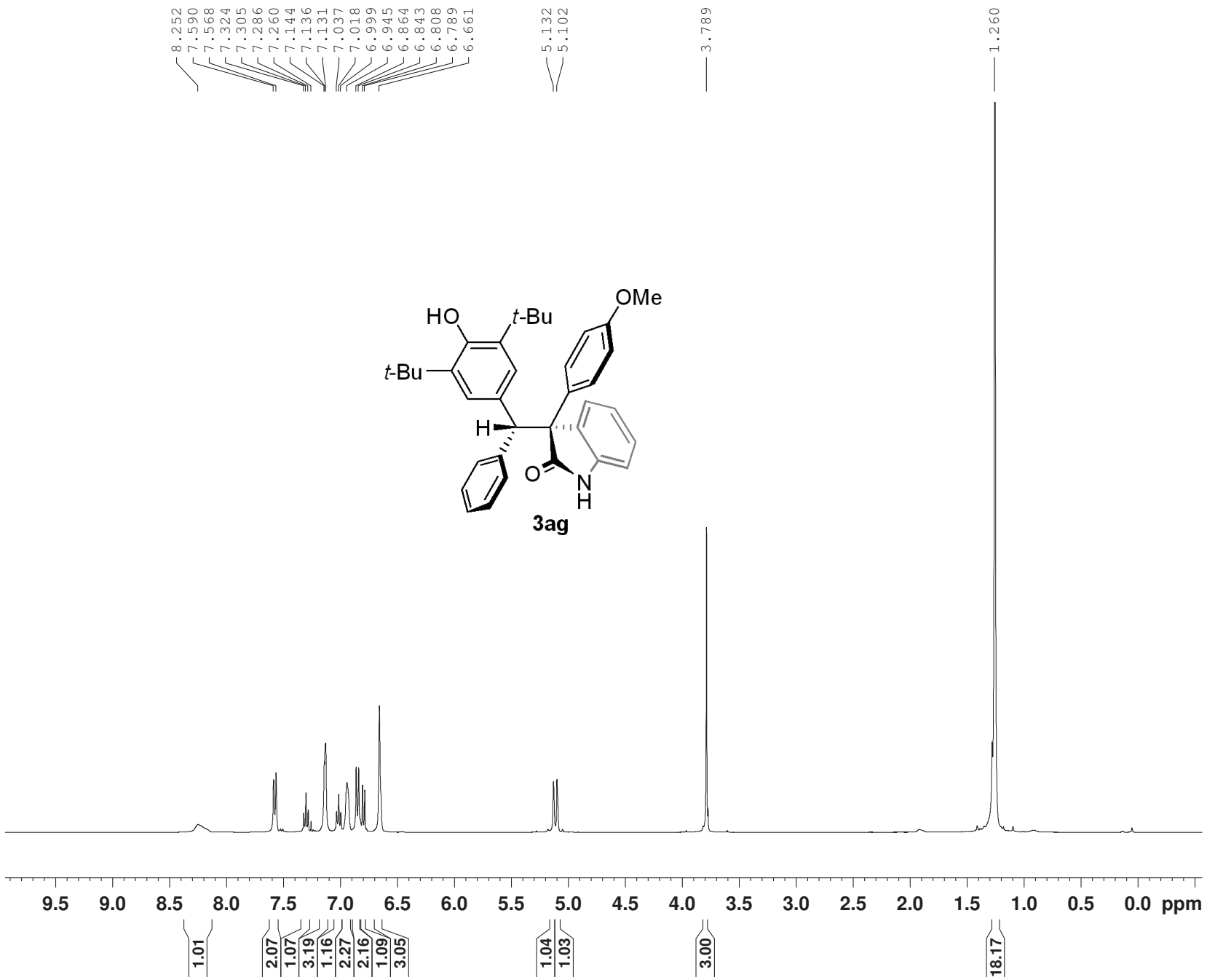
样品名称:	dengyh615d 3-p-Me-c6h4 -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,5	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	254.0 纳米@1
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/3 15:54:10 CST		
处理时间:	2015/11/21 22:06:27 CST		



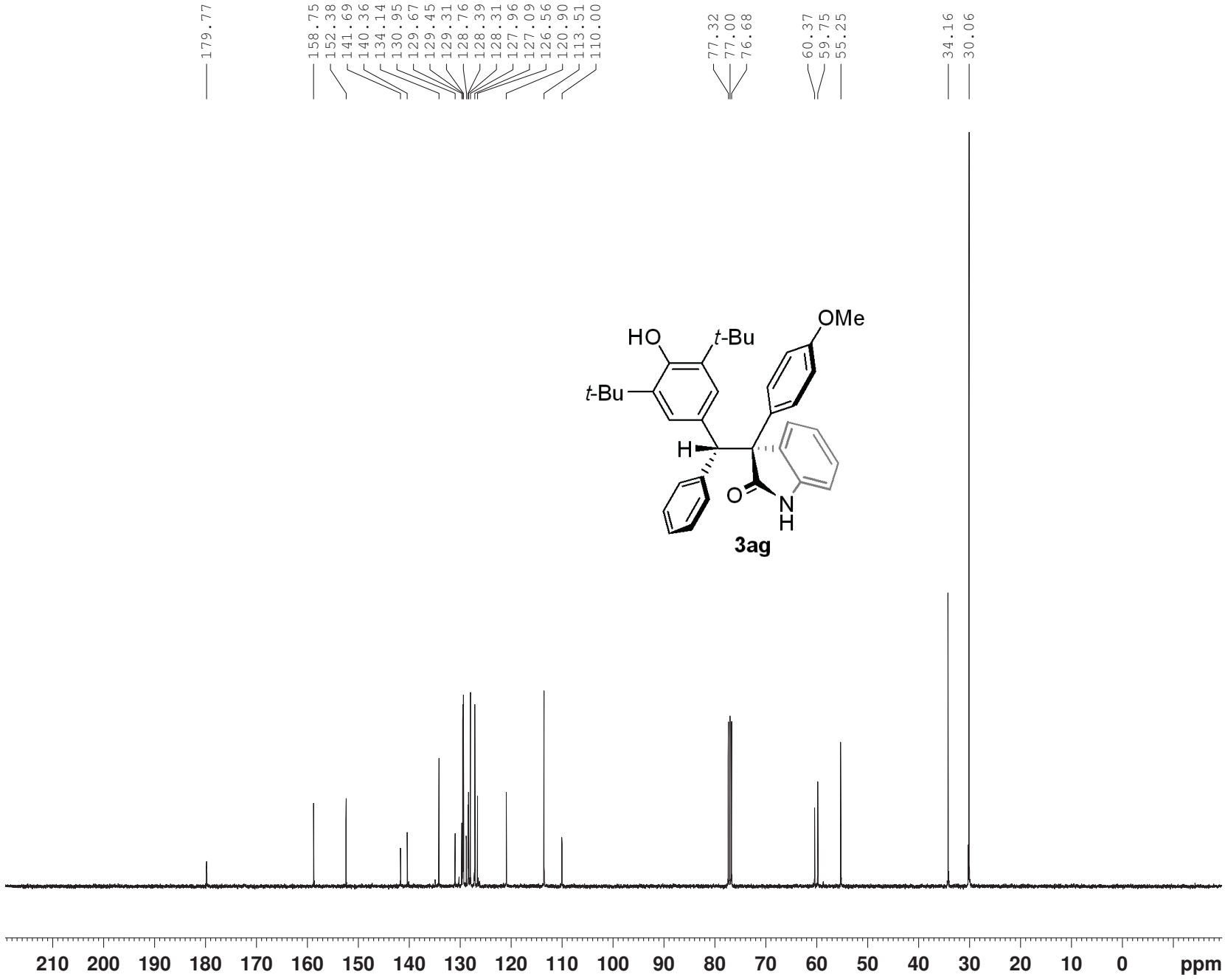
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.198	69790	0.40	5913
2	2998 (190-400)纳米	7.650	172289	0.98	14995
3	2998 (190-400)纳米	11.474	349295	1.98	19962
4	2998 (190-400)纳米	16.755	17068251	96.65	673280




```
NAME      dengyh612 3-p-MeO-C6H4 -40 4
EXPNO                 10
PROCNO                 1
Date_           20150531
Time               12.07
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH             8012.820 Hz
FIDRES             0.122266 Hz
AQ              4.0894966 sec
RG                  50.8
DW                62.400 usec
DE                 6.50 usec
TE                294.2 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          400.1324710 MHz
NUC1                  1H
P1                 10.79 usec
SI                 65536
SF            400.1300094 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

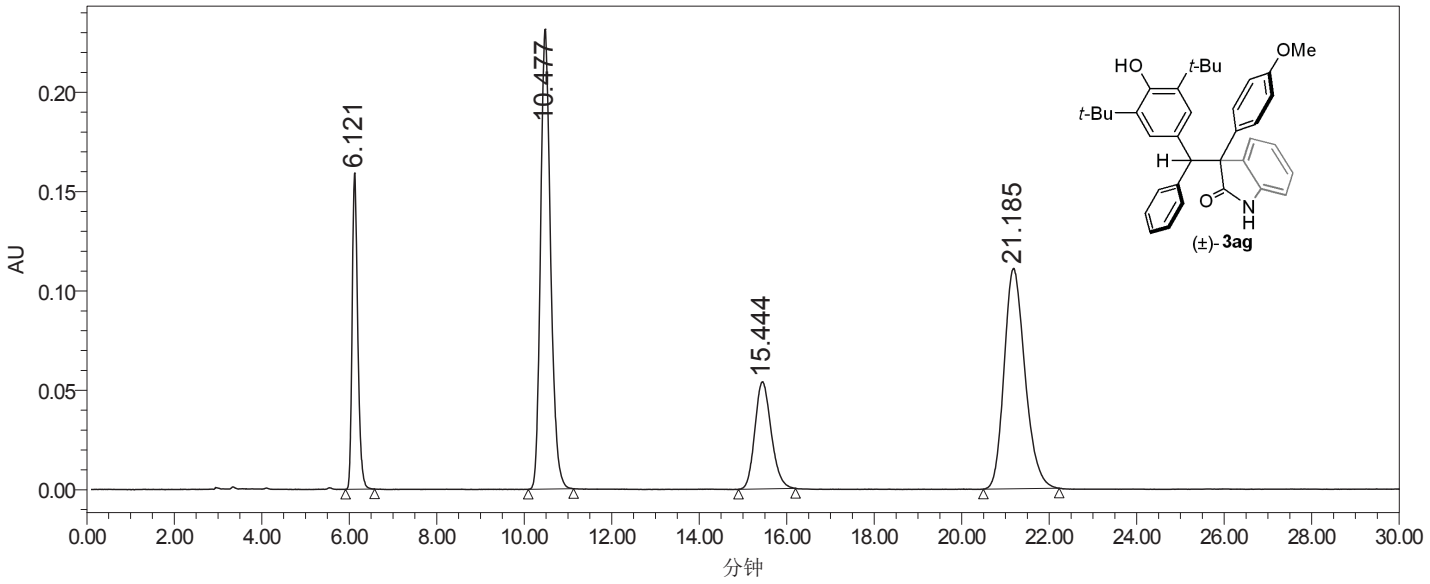



```
NAME      dengyh612 3-p-MeO-C6H4 -40 4
EXPNO                 11
PROCNO                 1
Date_           20150531
Time               12.25
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   300
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                  2050
DW                 20.800 usec
DE                  6.50 usec
TE                 295.4 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1               13C
P1                 12.00 usec
SI                 32768
SF          100.6127810 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh612a 3-p-OMeC6H5 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	DENGYH
瓶号:	1:B,2	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@1
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/3/31 23:21:37 CST		
处理时间:	2015/5/22 0:06:17 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

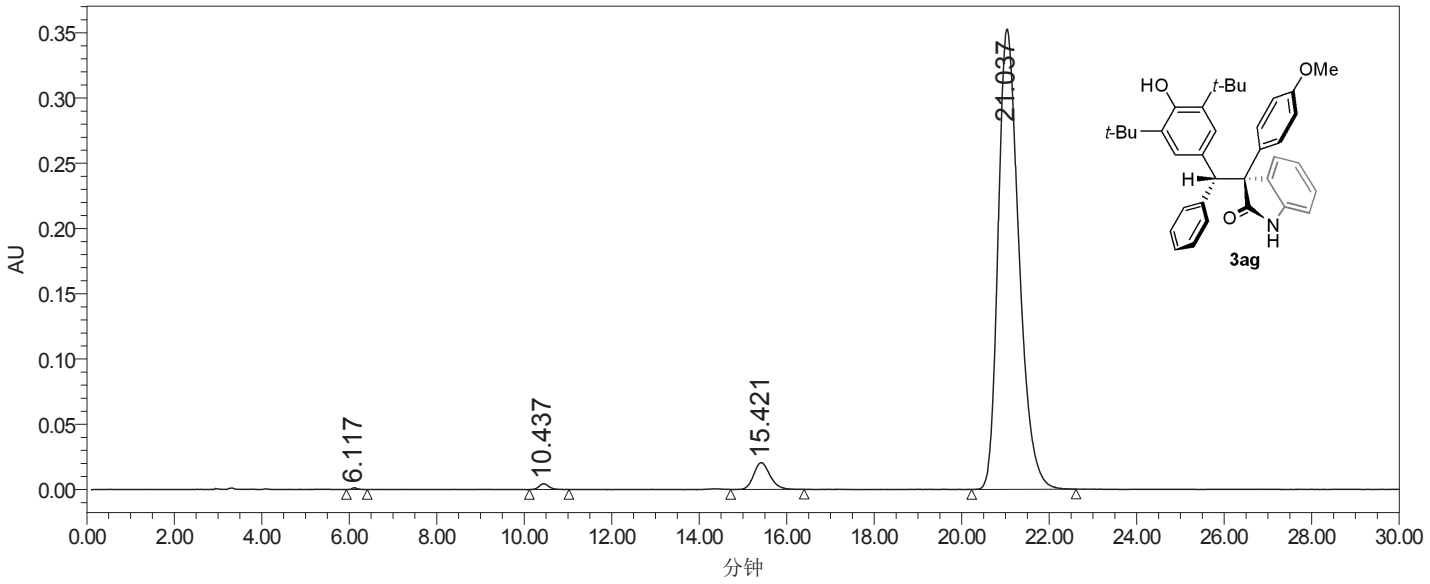
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.121	1421022	13.94	159214
2	2998 (190-400)纳米	10.477	3694295	36.25	231426
3	2998 (190-400)纳米	15.444	1401210	13.75	53879
4	2998 (190-400)纳米	21.185	3674749	36.06	110848

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

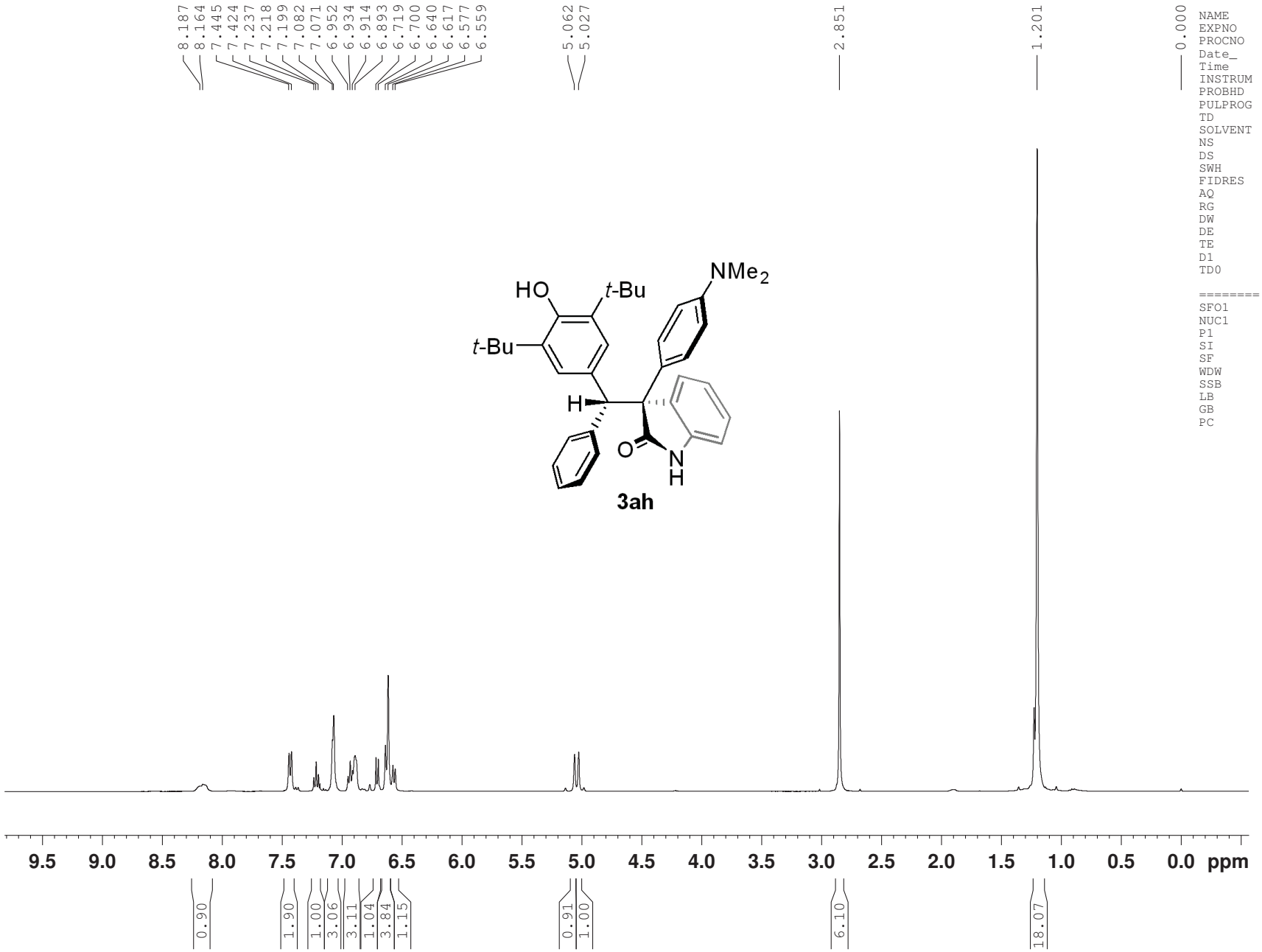
样品名称:	dengyh612a 3-p-OMeC6H5	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	DENGYH
瓶号:	1:B,1	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@1
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/3/31 22:51:15 CST		
处理时间:	2015/4/6 22:44:11 CST		

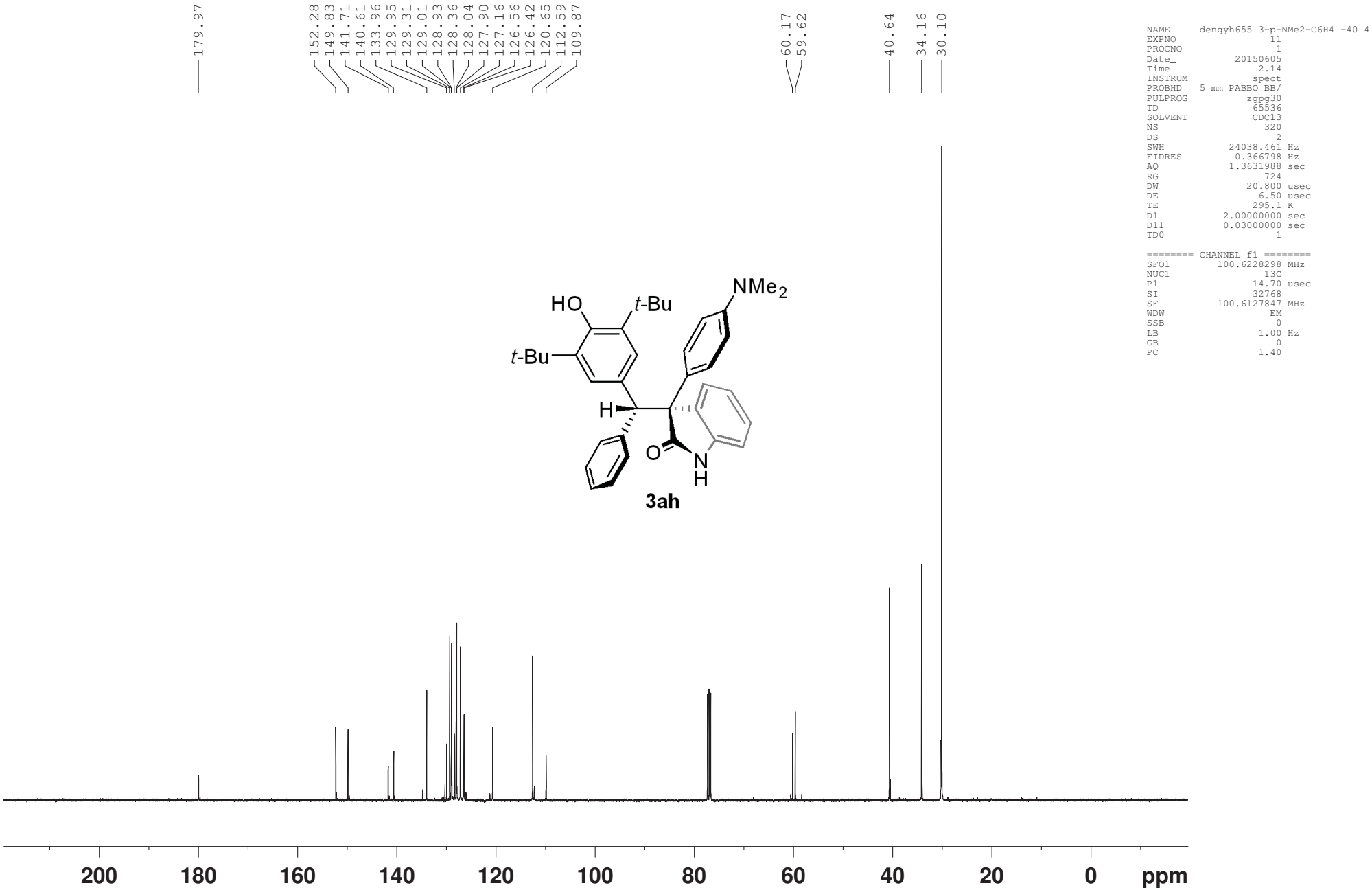


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.117	13337	0.11	1395
2	2998 (190-400)纳米	10.437	72035	0.59	4491
3	2998 (190-400)纳米	15.421	535439	4.36	20592
4	2998 (190-400)纳米	21.037	11661569	94.95	352541

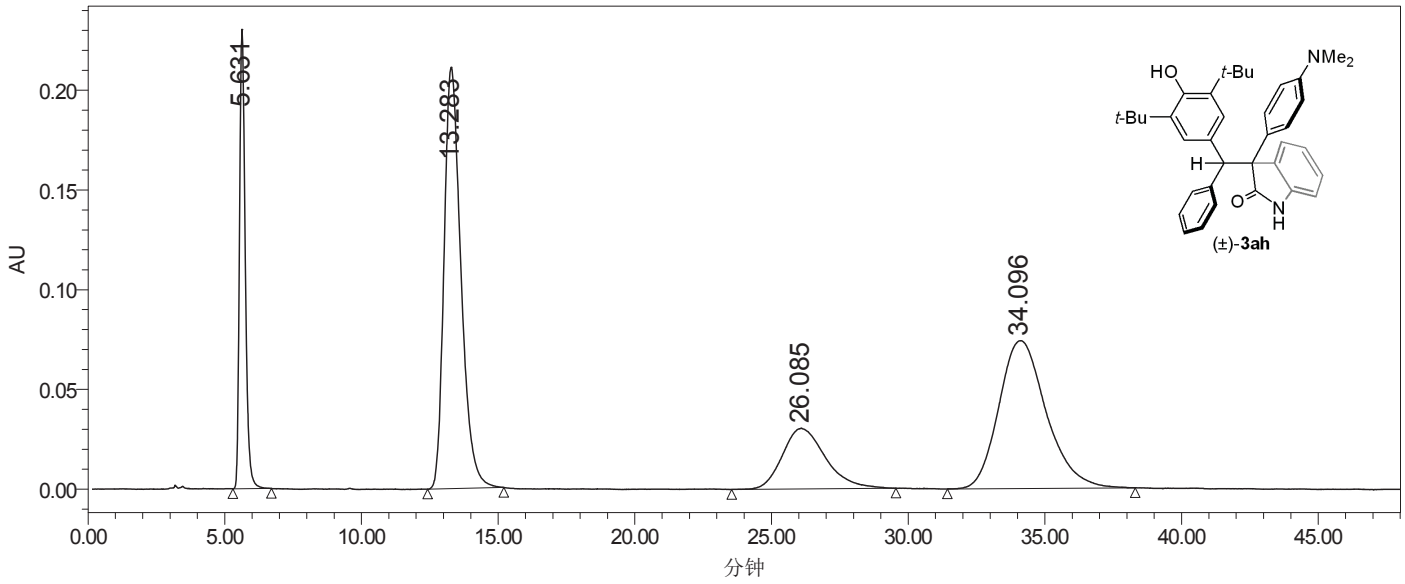

8.187
8.164
7.445
7.424
7.237
7.218
7.199
7.082
7.071
6.952
6.934
6.914
6.893
6.719
6.700
6.640
6.617
6.577
6.559
5.062
5.027
2.851
1.201
0.000
NAME dengyh655 3-p-NMe2-C6H4 -40 4
EXPNO 10
PROCNO 1
Date_ 20150605
Time 1.55
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300388 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
NMe2
H
O
N
H
3ah
9.5 9.0 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 ppm
0.90
1.90
1.00
3.06
3.11
1.04
3.84
1.15
0.91
1.00
6.10
18.07


179.97
152.28
149.83
141.71
140.61
133.96
129.95
129.31
129.01
128.93
128.36
128.04
127.90
127.16
126.56
126.42
120.65
112.59
109.87
60.17
59.62
40.64
34.16
30.10
NAME dengyh655 3-p-NMe2-C6H4 -40 4
EXPNO 11
PROCNO 1
Date_ 20150605
Time 2.14
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 320
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 724
DW 20.800 usec
DE 6.50 usec
TE 295.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127847 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
NMe2
H
O
N
H
3ah
200
180
160
140
120
100
80
60
40
20
0
ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh655 3-4-Me2NC6H4 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IC3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	48.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/23 21:54:40 CST		
处理时间:	2015/4/23 22:50:35 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

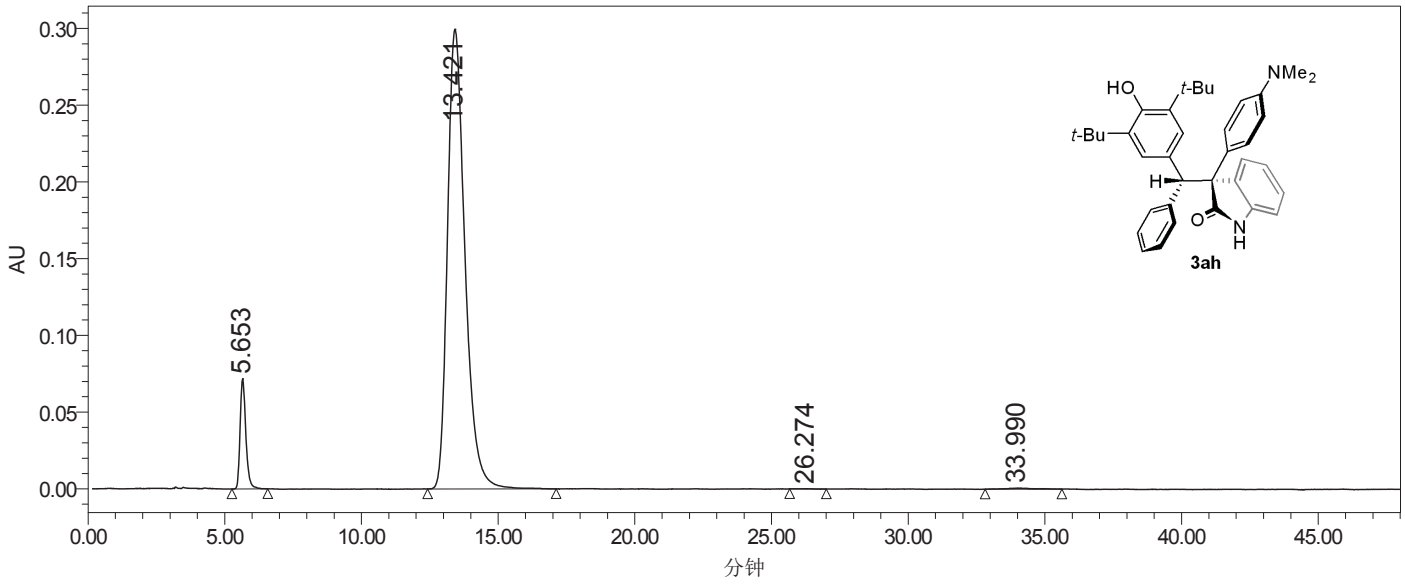
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.631	3377446	13.68	230324
2	2998 (190-400)纳米	13.283	9032963	36.59	211295
3	2998 (190-400)纳米	26.085	3338598	13.52	30426
4	2998 (190-400)纳米	34.096	8936735	36.20	74115

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

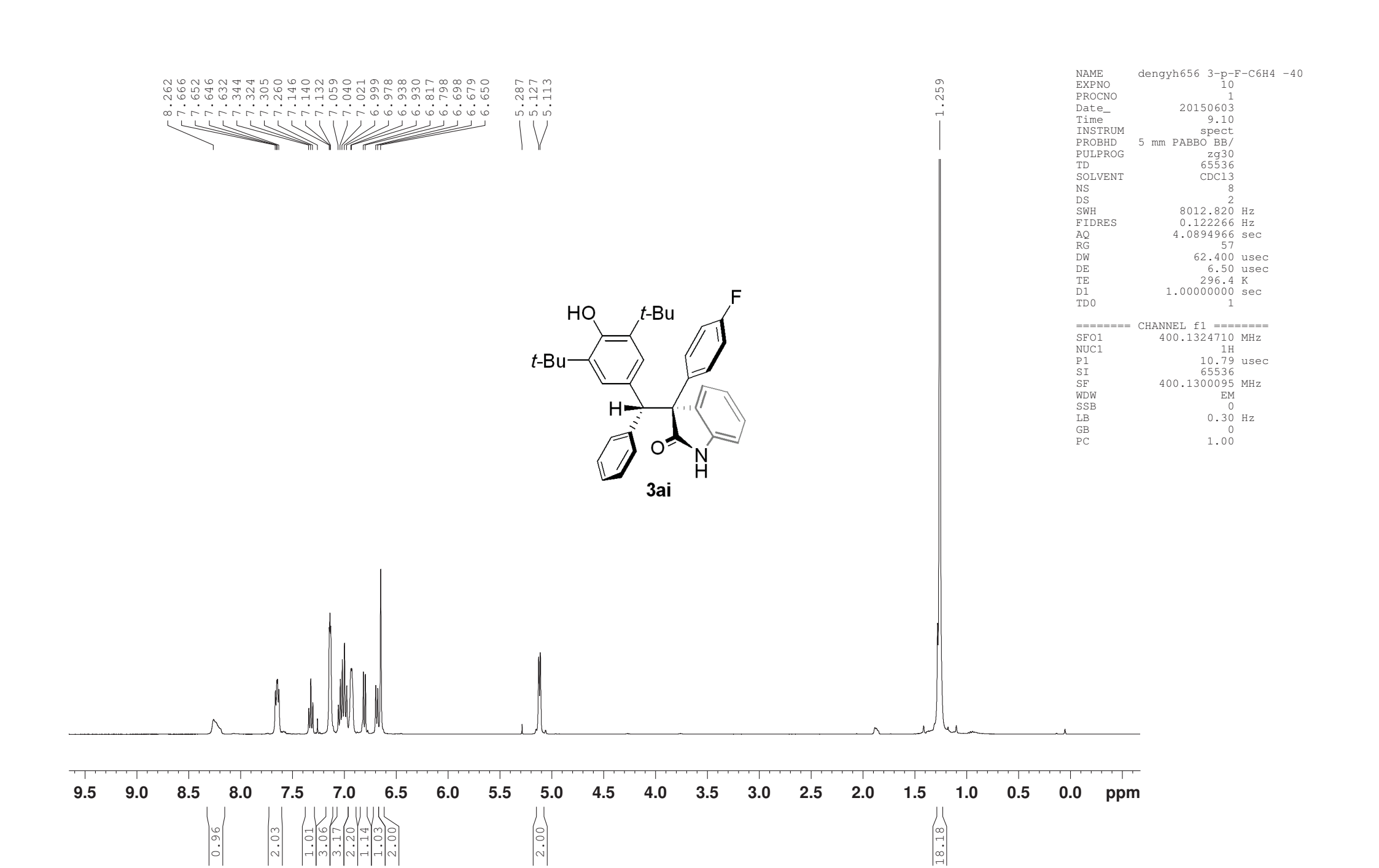
样品名称:	dengyh655a 3-4-Me2NC6H4	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	48.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/23 21:06:17 CST		
处理时间:	2015/4/23 22:57:51 CST		

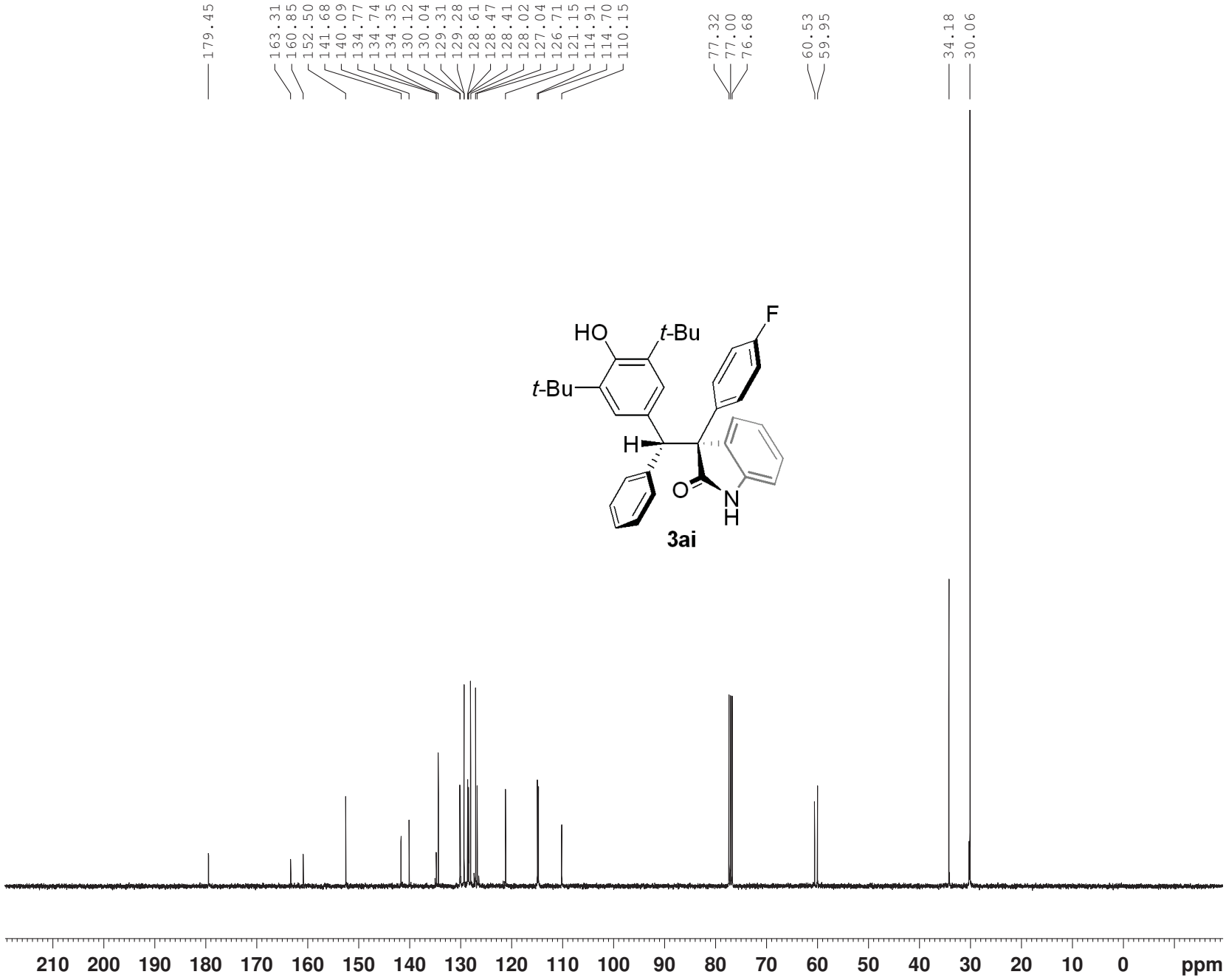


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.653	1056339	7.32	71796
2	2998 (190-400)纳米	13.421	13311739	92.29	299513
3	2998 (190-400)纳米	26.274	5351	0.04	155
4	2998 (190-400)纳米	33.990	50978	0.35	663


8.262
7.666
7.652
7.646
7.632
7.344
7.324
7.305
7.260
7.146
7.140
7.132
7.059
7.040
7.021
6.999
6.978
6.938
6.930
6.817
6.798
6.698
6.679
6.650
5.287
5.127
5.113
1.259
NAME dengyh656 3-p-F-C6H4 -40
EXPNO 10
PROCNO 1
Date_ 20150603
Time 9.10
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 57
DW 62.400 usec
DE 6.50 usec
TE 296.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300095 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
F
H
O
N
H
3ai
9.5 9.0 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 ppm
0.96
2.03
1.01
3.06
3.17
2.20
1.14
1.03
2.00
2.00
18.18

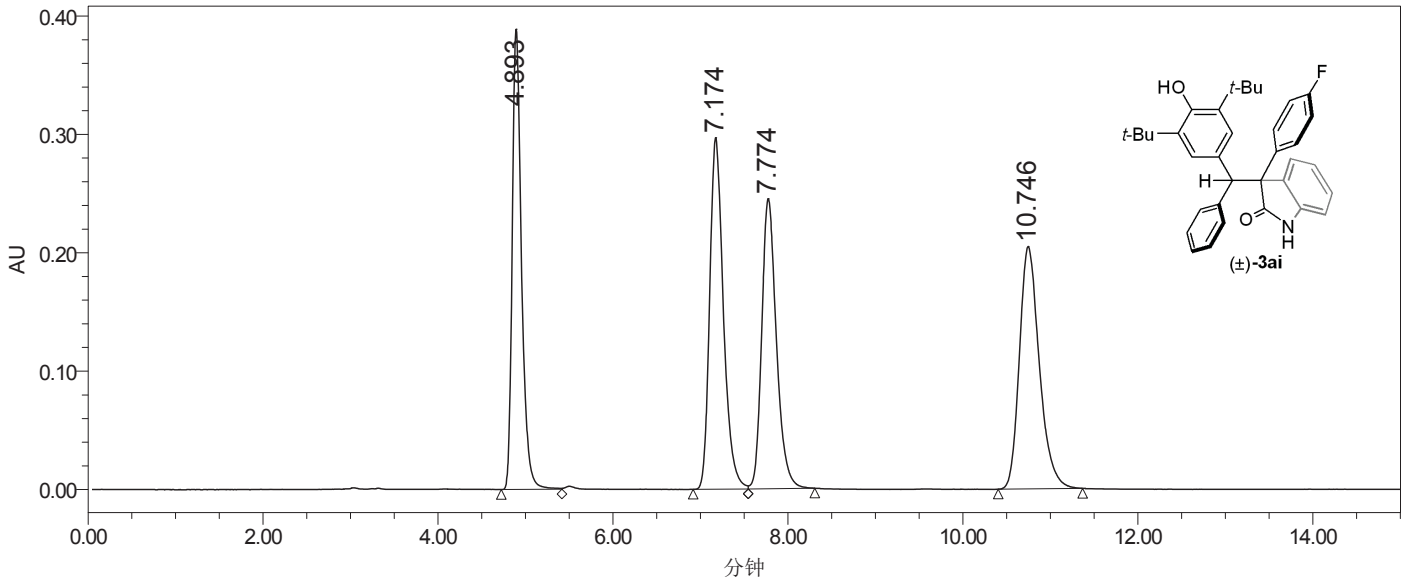



```
NAME      dengyh656 3-p-F-C6H4 -40 4
EXPNO                 11
PROCNO                 1
Date_           20150603
Time                9.23
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG            zgpg30
TD                  65536
SOLVENT             CDCl3
NS                    200
DS                      2
SWH             24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                   2050
DW                 20.800 usec
DE                  6.50 usec
TE                 297.2 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1                13C
P1                12.00 usec
SI                32768
SF           100.6127783 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh656 3-4-FC6H4 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米@1
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/24 15:36:09 CST		
处理时间:	2015/4/24 16:08:39 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

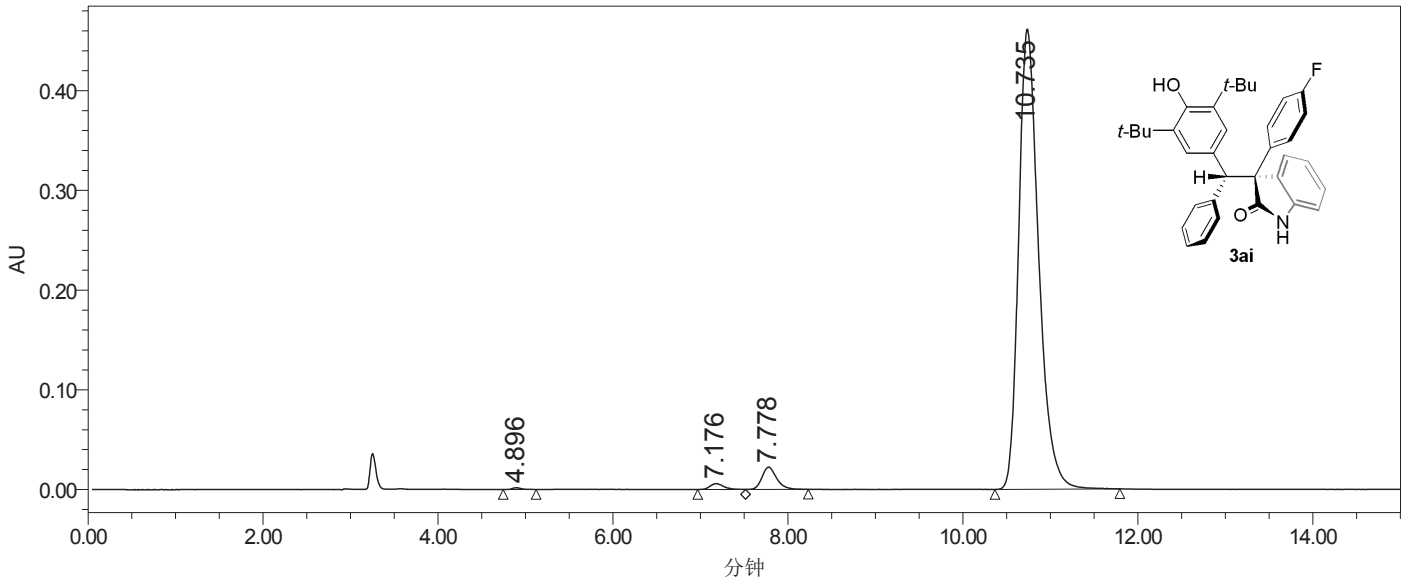
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.893	2862675	23.45	388762
2	2998 (190-400)纳米	7.174	3238326	26.53	297031
3	2998 (190-400)纳米	7.774	2862156	23.45	245031
4	2998 (190-400)纳米	10.746	3242227	26.56	204724

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

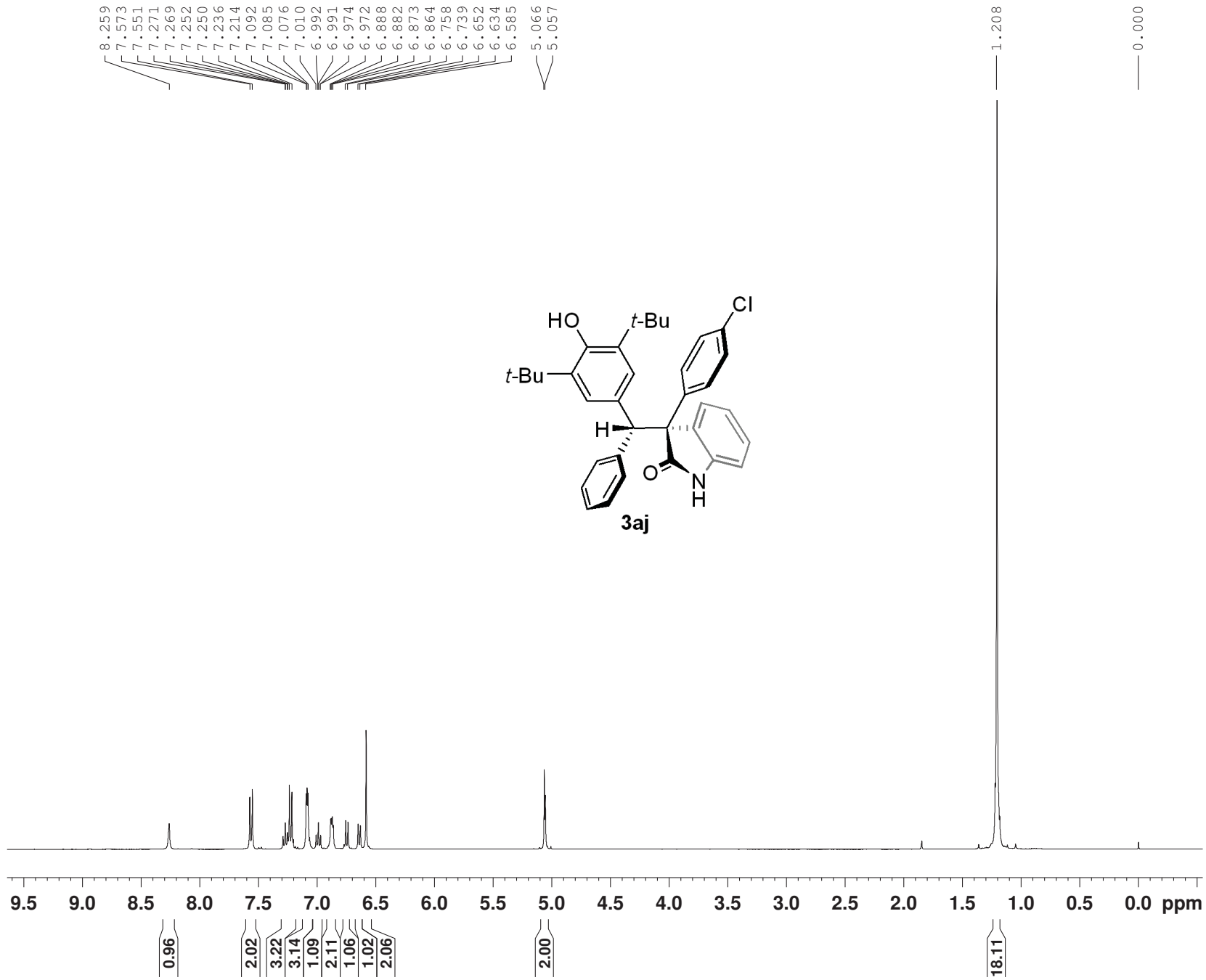
样品名称:	dengyh656a 3-4-FC6H4 -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,3	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@1
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/24 15:20:48 CST		
处理时间:	2015/4/24 16:09:02 CST		



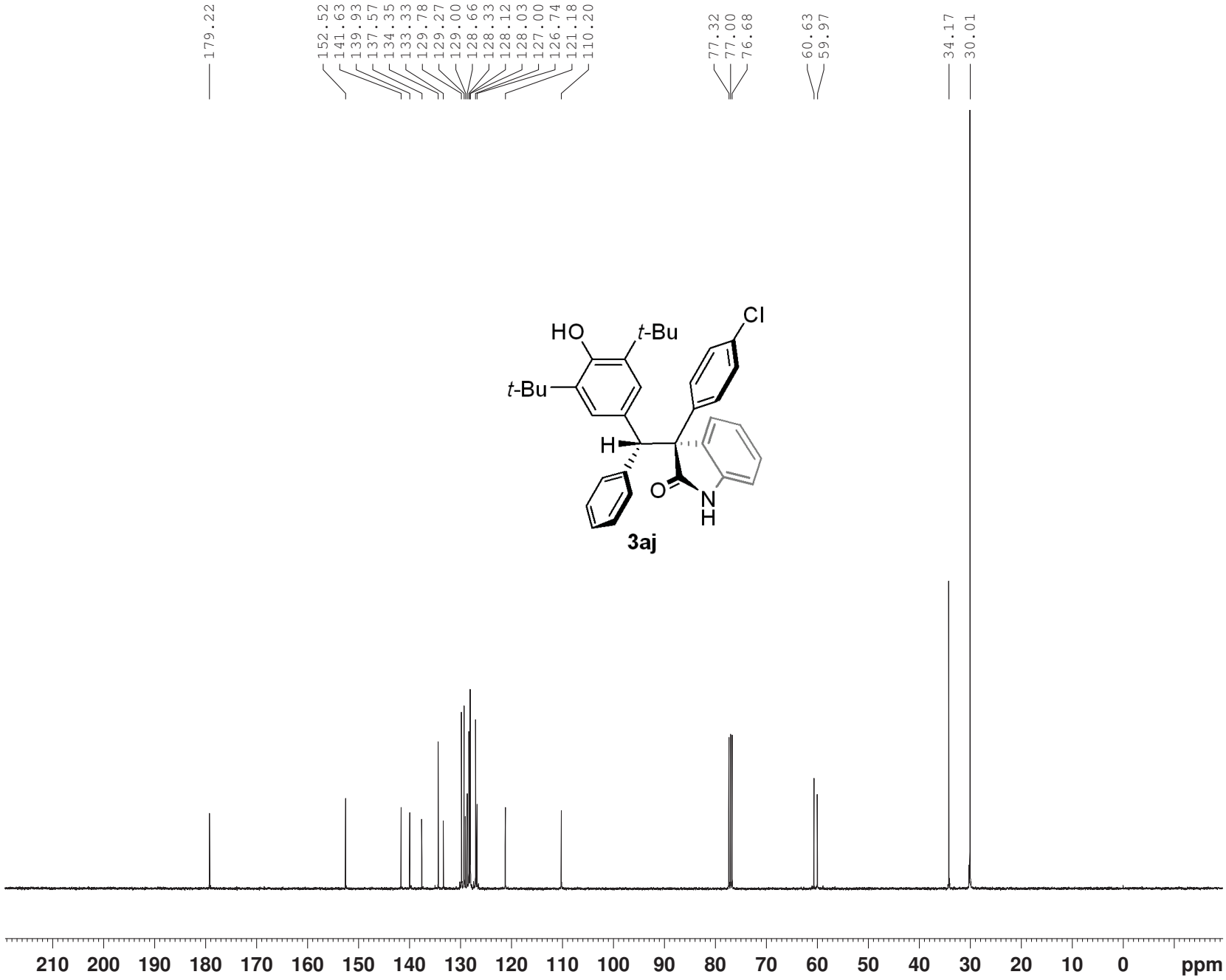
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.896	13642	0.18	1863
2	2998 (190-400)纳米	7.176	65194	0.85	5907
3	2998 (190-400)纳米	7.778	260474	3.39	22338
4	2998 (190-400)纳米	10.735	7346047	95.58	461466




```
NAME      dengyh634 3-p-Cl-C6H4 -40
EXPNO                3
PROCNO               1
Date_         20150605
Time              0.57
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                   8
DS                   2
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894966 sec
RG                  32
DW                62.400 usec
DE                 6.50 usec
TE                294.2 K
D1          1.00000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1       400.1324710 MHz
NUC1               1H
P1                10.92 usec
SI               65536
SF         400.1300329 MHz
WDW                EM
SSB                 0
LB               0.30 Hz
GB                  0
PC               1.00
```

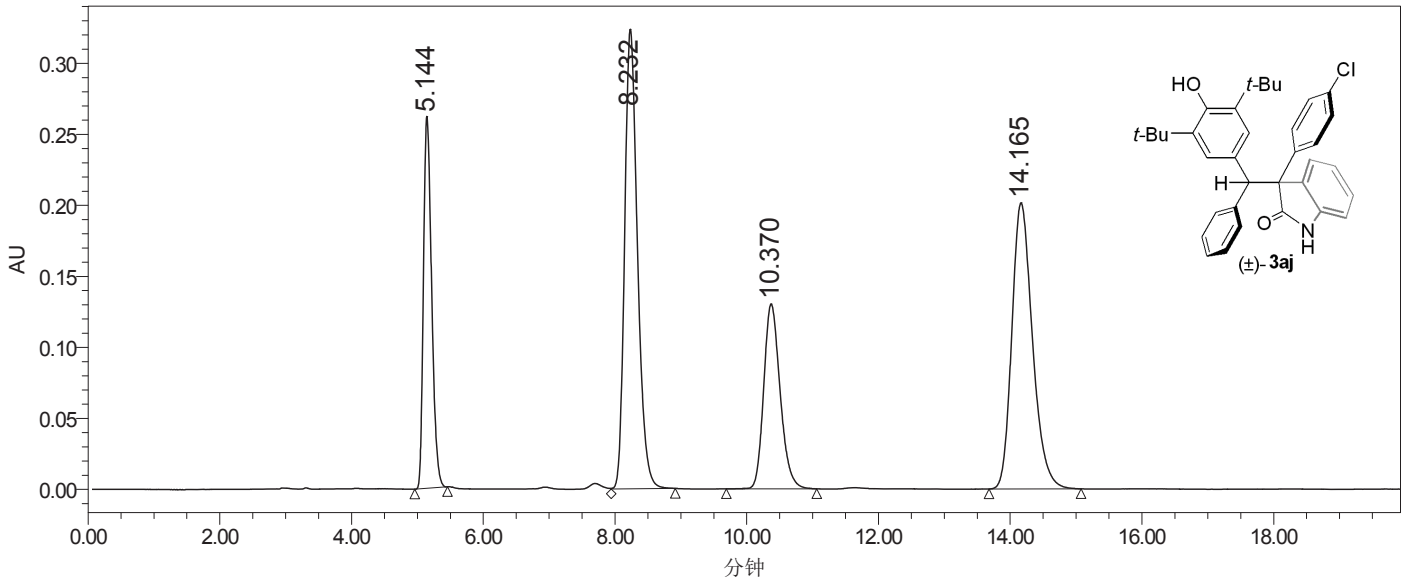



```
NAME      dengyh634 3-p-Cl-C6H4 -40
EXPNO                4
PROCNO               1
Date_         20150605
Time              1.18
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                  360
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                 1030
DW                20.800 usec
DE                 6.50 usec
TE                295.5 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF          100.6127808 MHz
WDW                 EM
SSB                  0
LB                1.00 Hz
GB                   0
PC                1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh634c 3-p-ClC6H4 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,3	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@1
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/13 17:43:16 CST		
处理时间:	2015/4/13 19:50:44 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

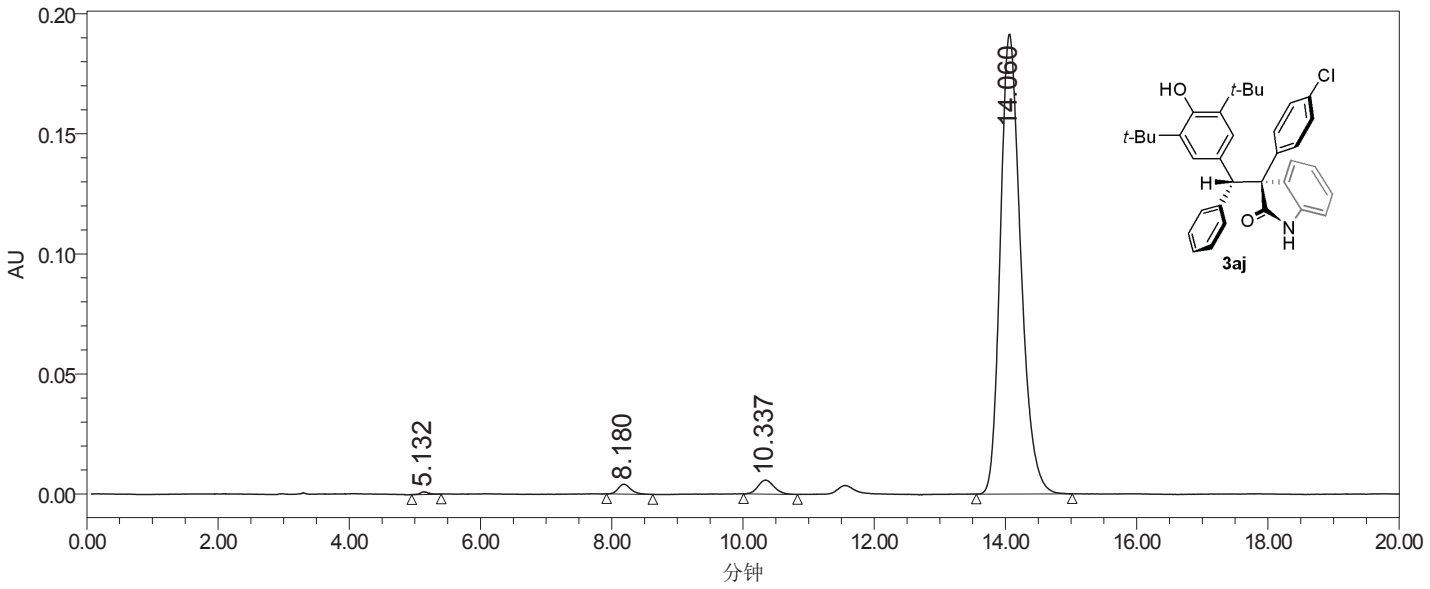
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.144	2264053	17.05	261946
2	2998 (190-400)纳米	8.232	4377652	32.97	323578
3	2998 (190-400)纳米	10.370	2252069	16.96	130202
4	2998 (190-400)纳米	14.165	4384424	33.02	201402

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

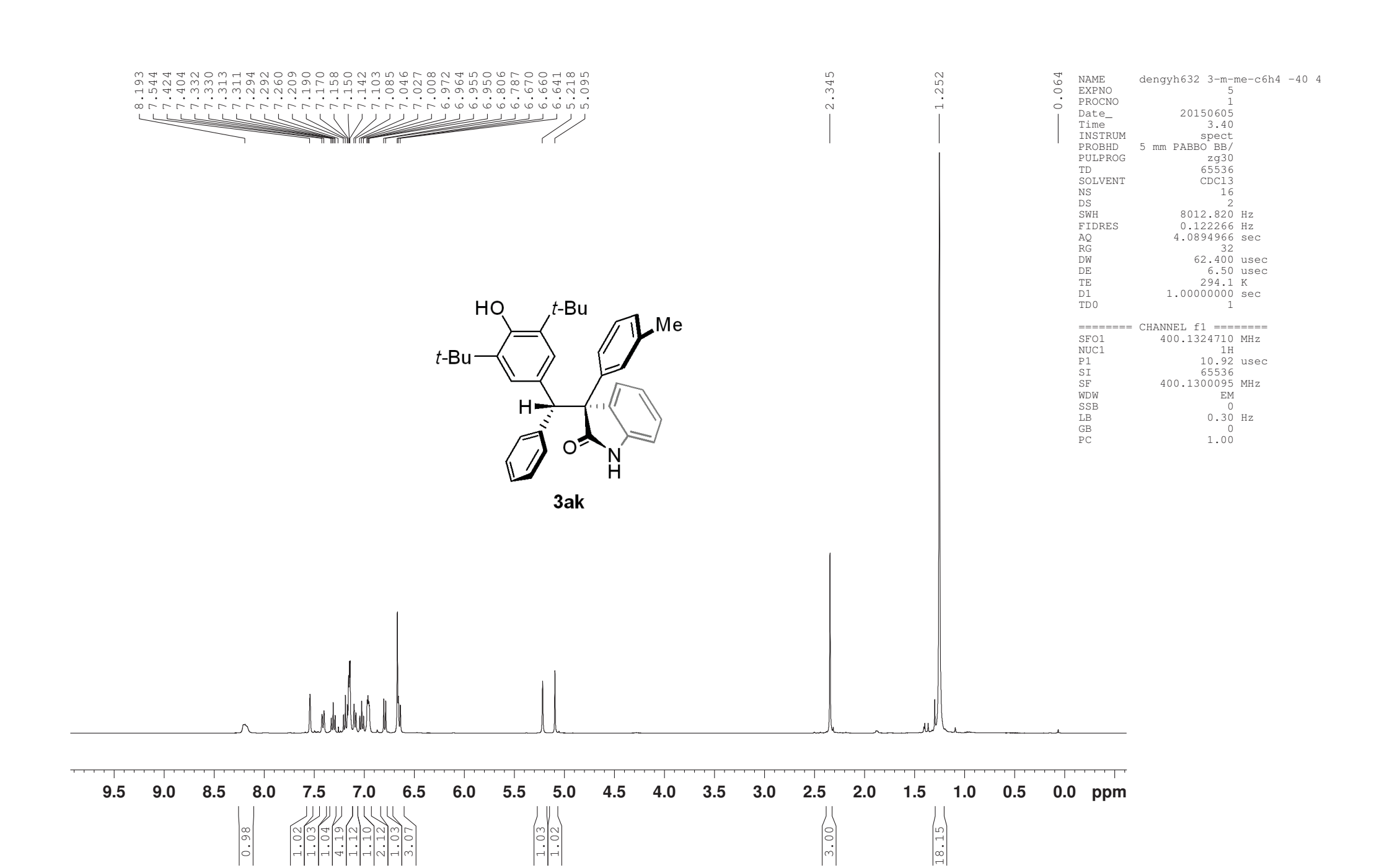
样品名称:	dengyh634a 3-p-ClC6H4 -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,1	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米@1
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/13 17:02:32 CST		
处理时间:	2015/4/13 19:51:56 CST		

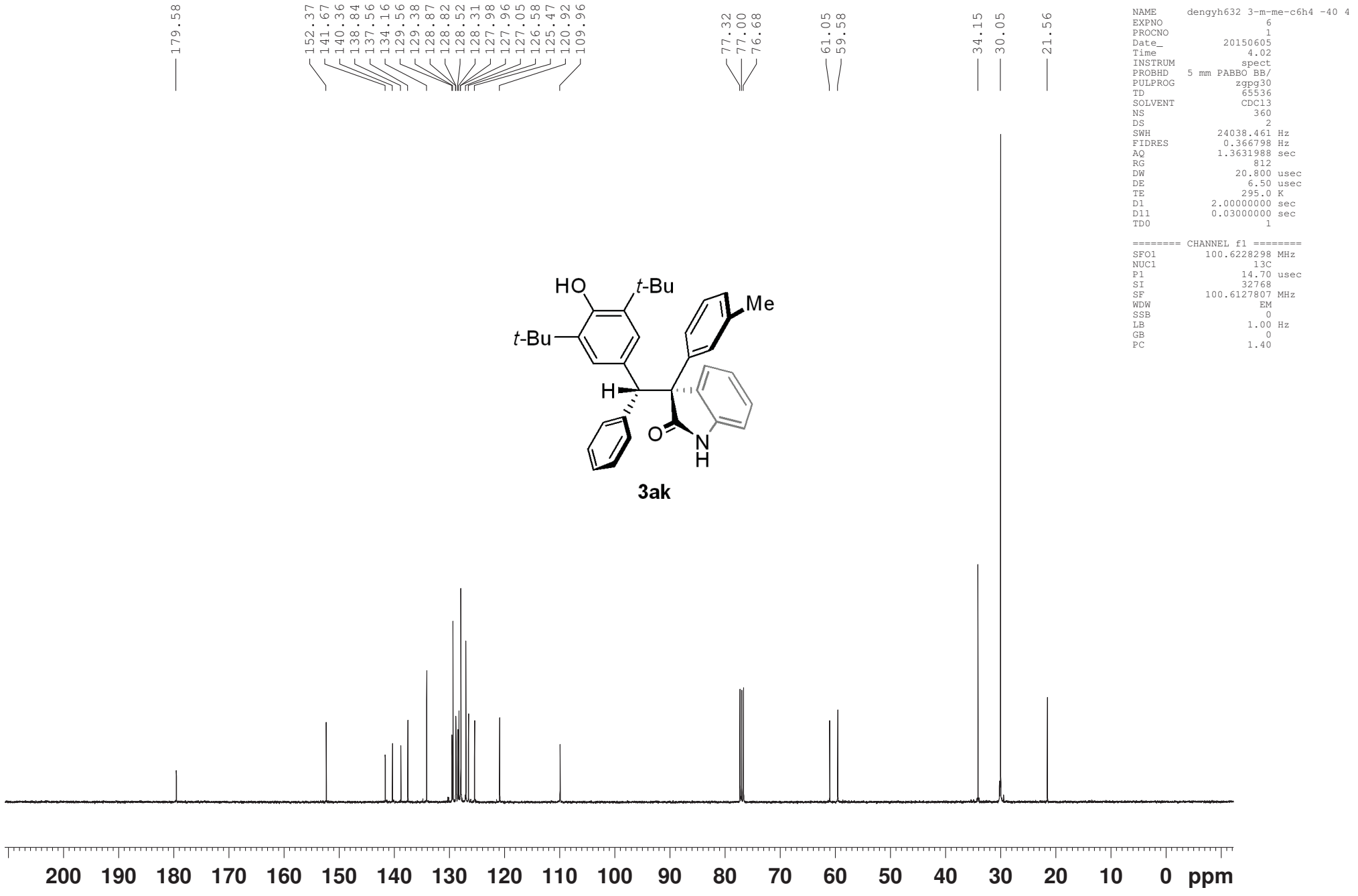


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.132	9154	0.21	1063
2	2998 (190-400)纳米	8.180	55054	1.28	4123
3	2998 (190-400)纳米	10.337	99078	2.31	5823
4	2998 (190-400)纳米	14.060	4131918	96.20	191459

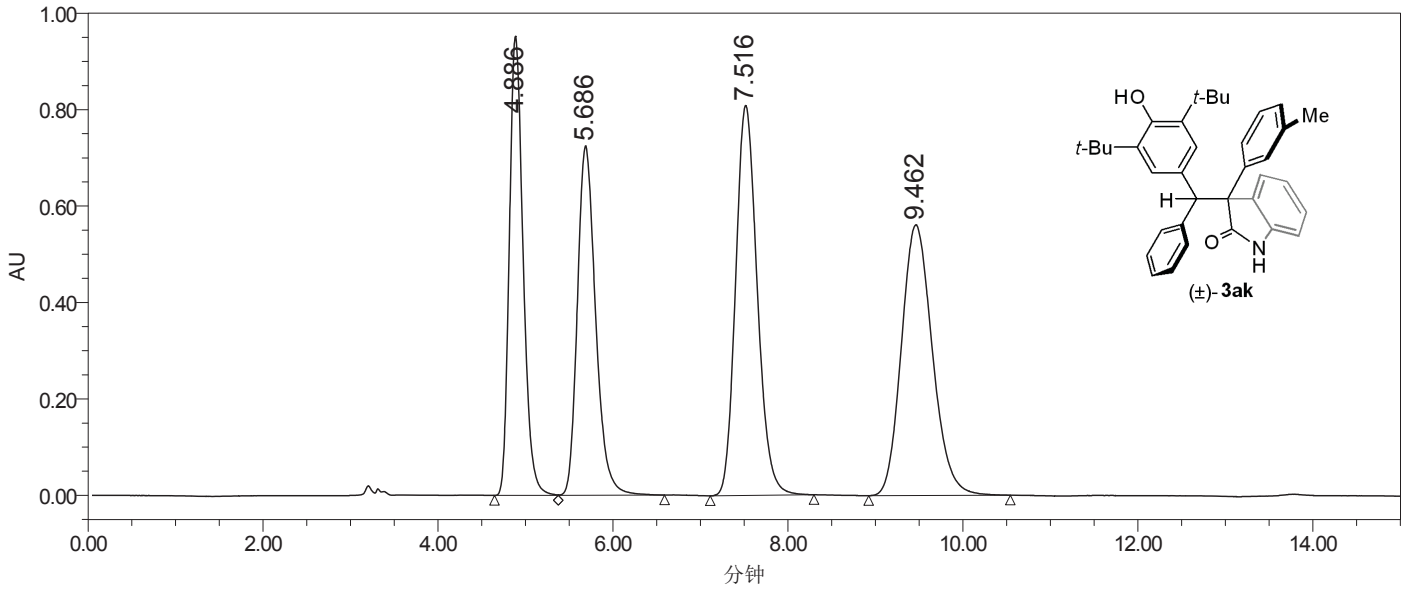

8.193
7.544
7.424
7.404
7.332
7.330
7.313
7.311
7.294
7.292
7.260
7.209
7.190
7.170
7.158
7.150
7.142
7.103
7.085
7.046
7.027
7.008
6.972
6.964
6.955
6.950
6.806
6.787
6.670
6.660
6.641
5.218
5.095
2.345
1.252
0.064
NAME dengyh632 3-m-me-c6h4 -40 4
EXPNO 5
PROCNO 1
Date_ 20150605
Time 3.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300095 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
Me
H
O
N
H
3ak
9.5 9.0 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 ppm
0.98
1.02
1.03
1.04
4.19
1.12
1.10
2.12
1.03
3.07
1.03
1.02
3.00
18.15


179.58
152.37
141.67
140.36
138.84
137.56
134.16
129.56
129.38
128.87
128.82
128.52
128.31
127.98
127.96
127.05
126.58
125.47
120.92
109.96
77.32
77.00
76.68
61.05
59.58
34.15
30.05
21.56
NAME dengyh632 3-m-me-c6h4 -40 4
EXPNO 6
PROCNO 1
Date_ 20150605
Time 4.02
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDC13
NS 360
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 812
DW 20.800 usec
DE 6.50 usec
TE 295.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127807 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
Me
H
O
N
H
3ak
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh632c 3-m-MeC6H4 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	215.3 纳米
运行时间:	15.0 Minutes	处理通道注释:	PDA 215.3 纳米
采集时间:	2015/4/13 15:14:33 CST		
处理时间:	2015/4/13 15:54:50 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

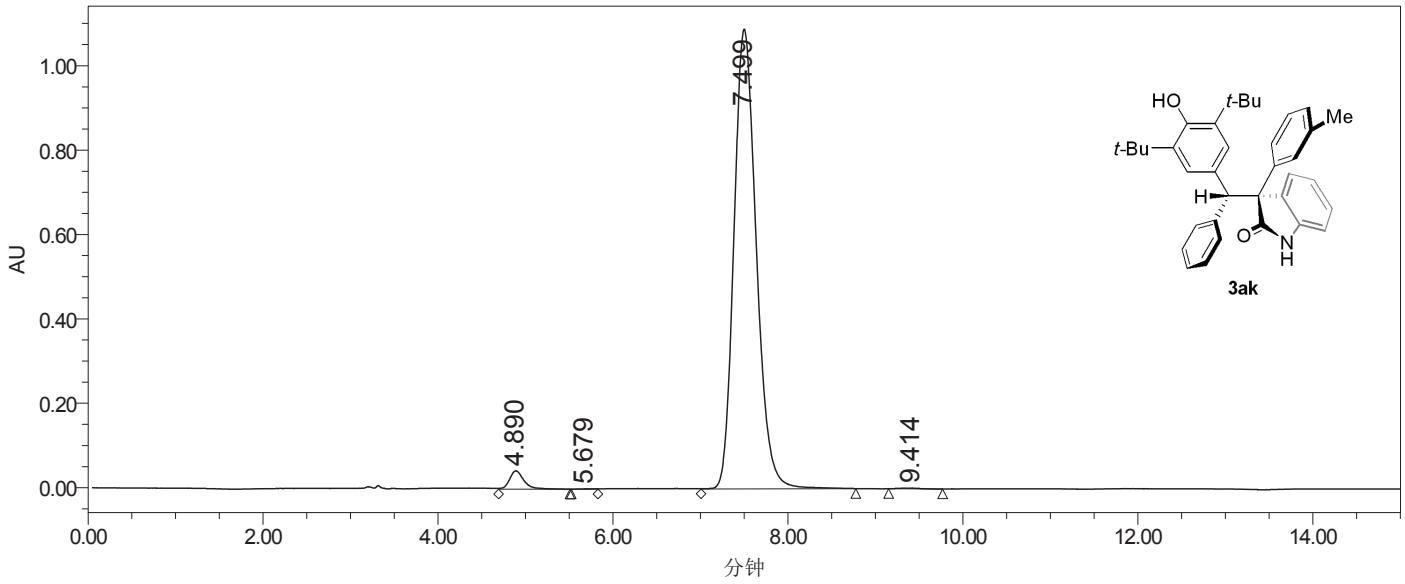
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.886	10443987	21.48	952519
2	2998 (190-400)纳米	5.686	10497055	21.59	724290
3	2998 (190-400)纳米	7.516	13877137	28.54	808963
4	2998 (190-400)纳米	9.462	13808322	28.40	561188

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

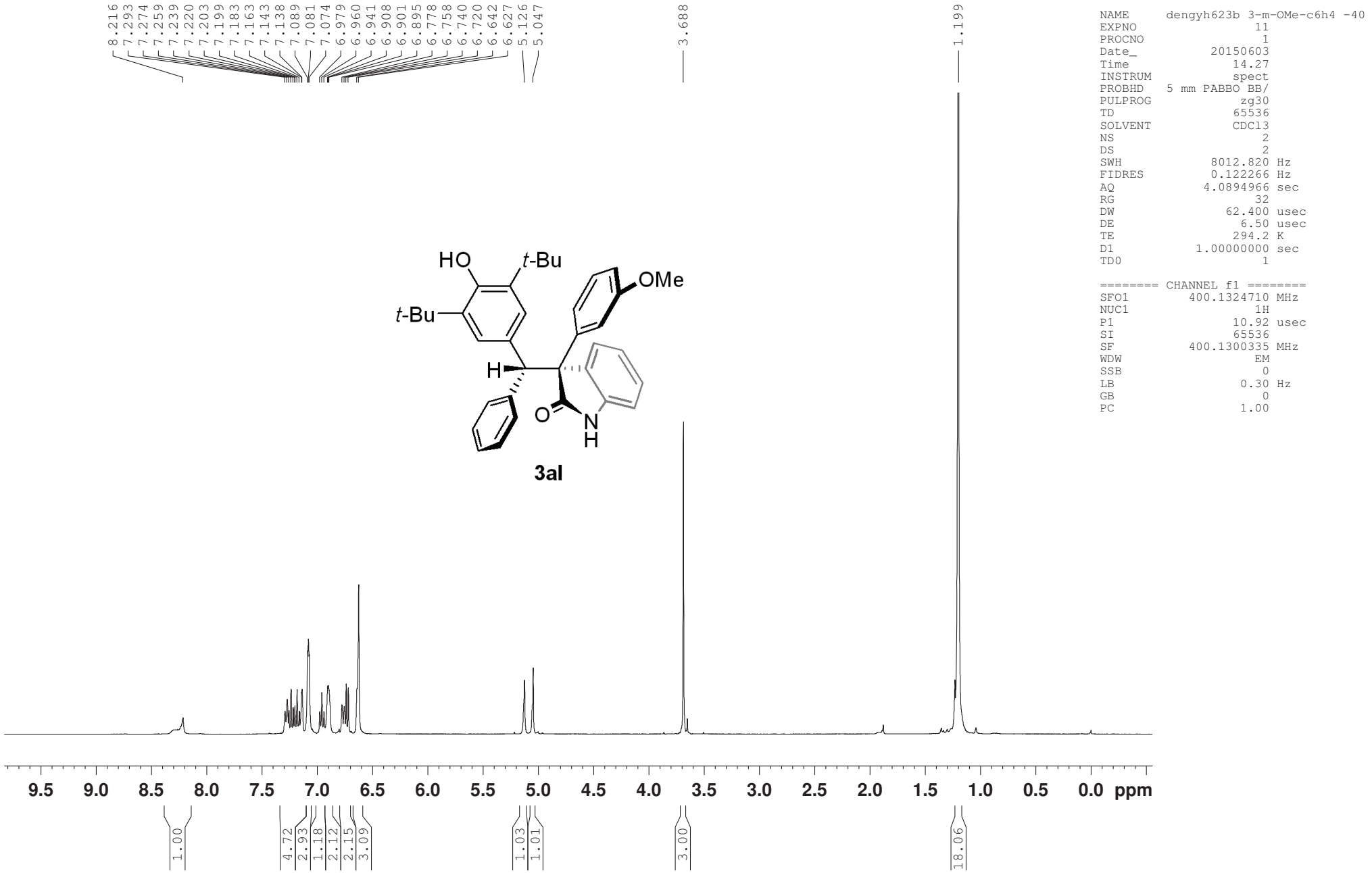
样品名称:	dengyh632a 3-m-MeC6H4 -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	215.3 纳米
运行时间:	15.0 Minutes	处理通道注释:	PDA 215.3 纳米
采集时间:	2015/4/13 14:38:59 CST		
处理时间:	2015/4/13 14:59:21 CST		

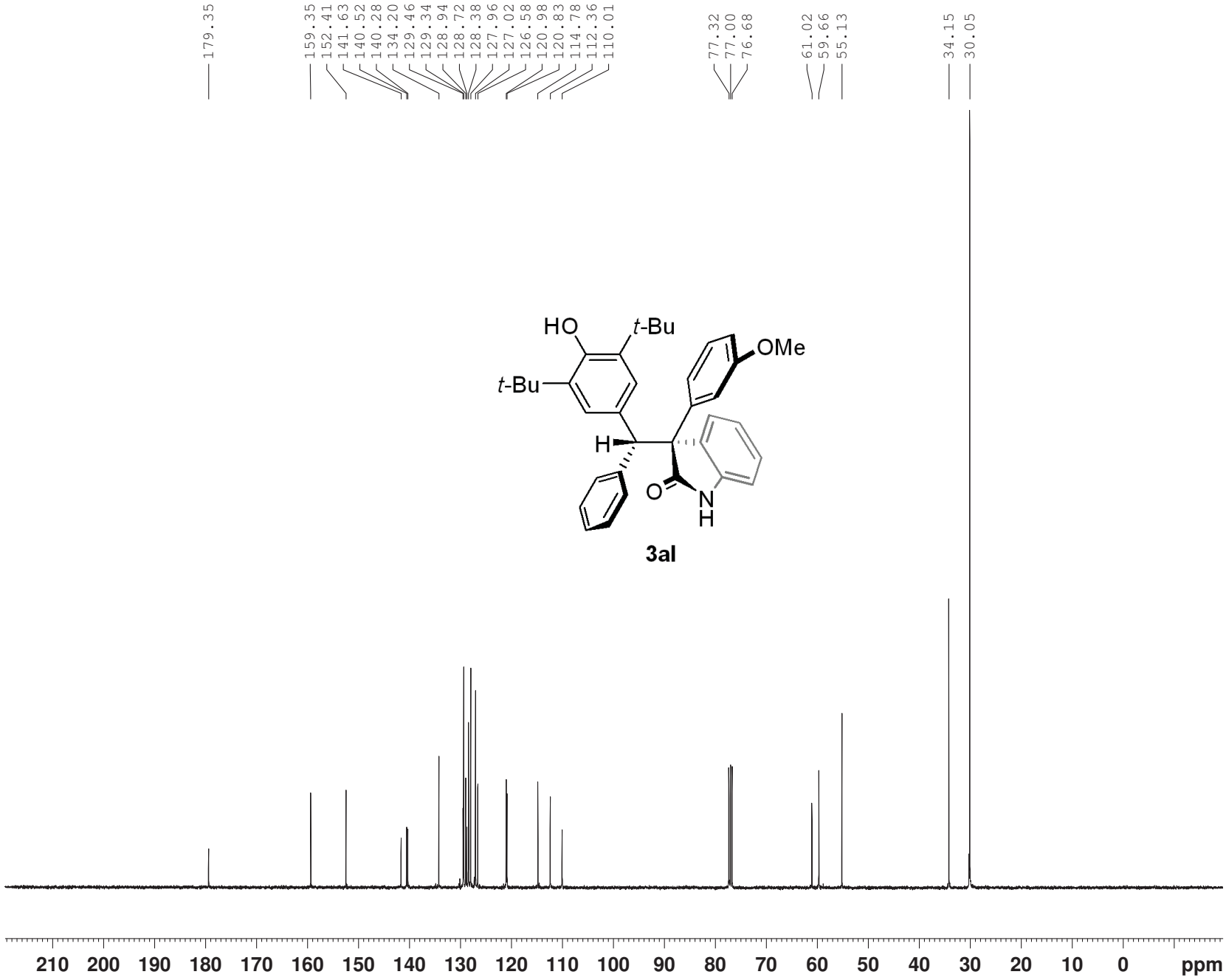


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.890	503702	2.54	43456
2	2998 (190-400)纳米	5.679	10134	0.05	823
3	2998 (190-400)纳米	7.499	19256161	97.28	1088993
4	2998 (190-400)纳米	9.414	24791	0.13	1464


8.216
7.293
7.274
7.259
7.239
7.220
7.203
7.199
7.183
7.163
7.143
7.138
7.089
7.081
7.074
6.979
6.960
6.941
6.908
6.901
6.895
6.778
6.758
6.740
6.720
6.642
6.627
5.126
5.047
3.688
1.199
HO
t-Bu
t-Bu
OMe
H
O
N
H
3al
NAME dengyh623b 3-m-OMe-c6h4 -40
EXPNO 11
PROCNO 1
Date_ 20150603
Time 14.27
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 2
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300335 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
1.00
4.72
2.93
1.18
2.12
2.15
3.09
1.03
1.01
3.00
18.06

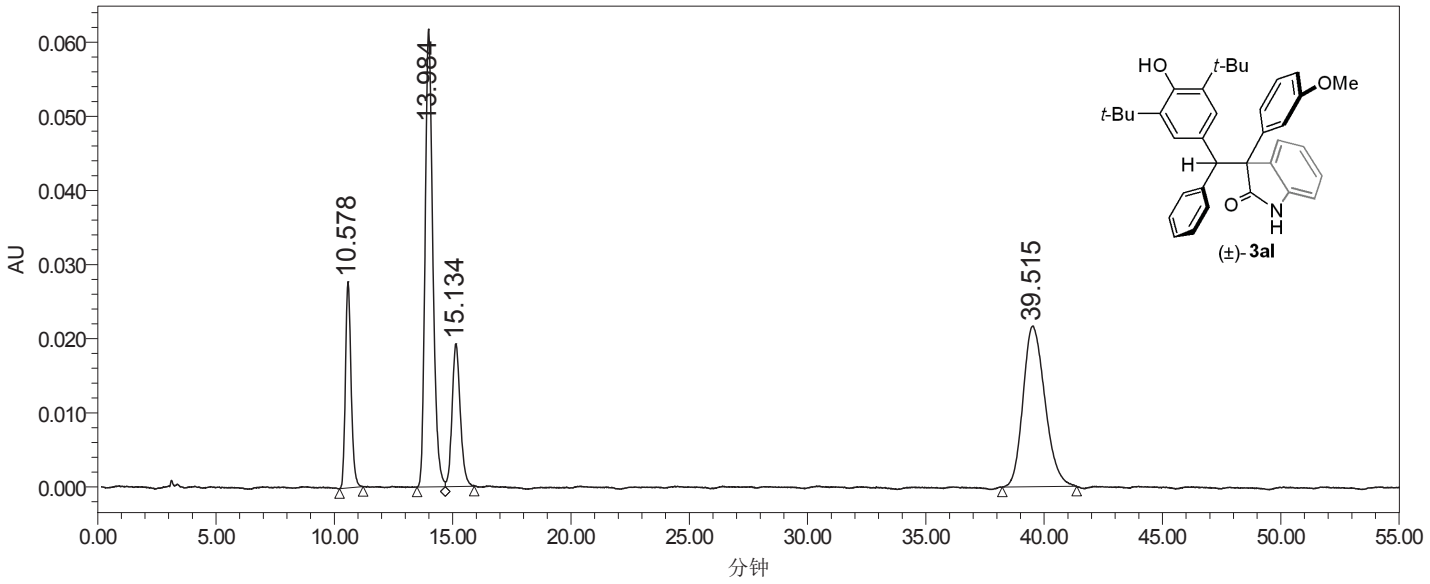



```
NAME      dengyh623b 3-m-OMe-c6h4 -40
EXPNO                12
PROCNO                1
Date_          20150603
Time              14.45
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                  300
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                 1030
DW                20.800 usec
DE                 6.50 usec
TE                295.5 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF           100.6127823 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh623 3-m-MeOC6H4 race	采集者:	FanChunAn
样品类型:	未知	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh623 race
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	55.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/4 16:36:59 CST		
处理时间:	2015/4/4 17:55:53 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh623 race

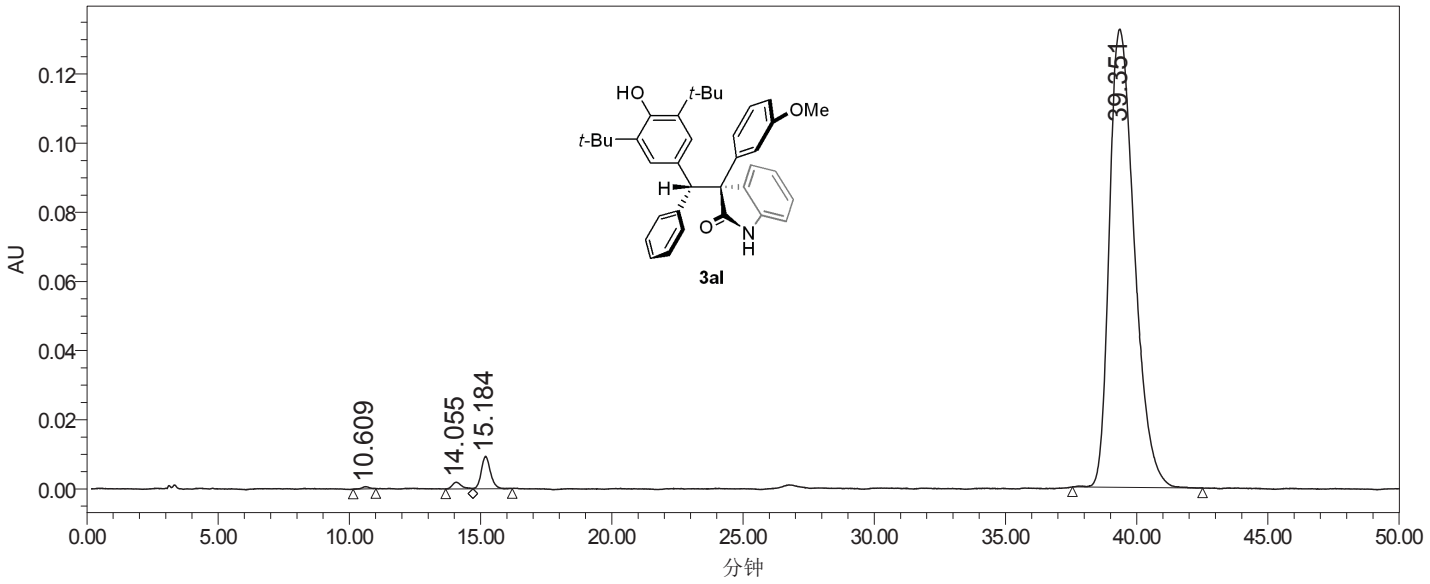
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	10.578	460676	12.40	27816
2	2998 (190-400)纳米	13.984	1395801	37.56	61755
3	2998 (190-400)纳米	15.134	465044	12.51	19242
4	2998 (190-400)纳米	39.515	1394811	37.53	21679

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

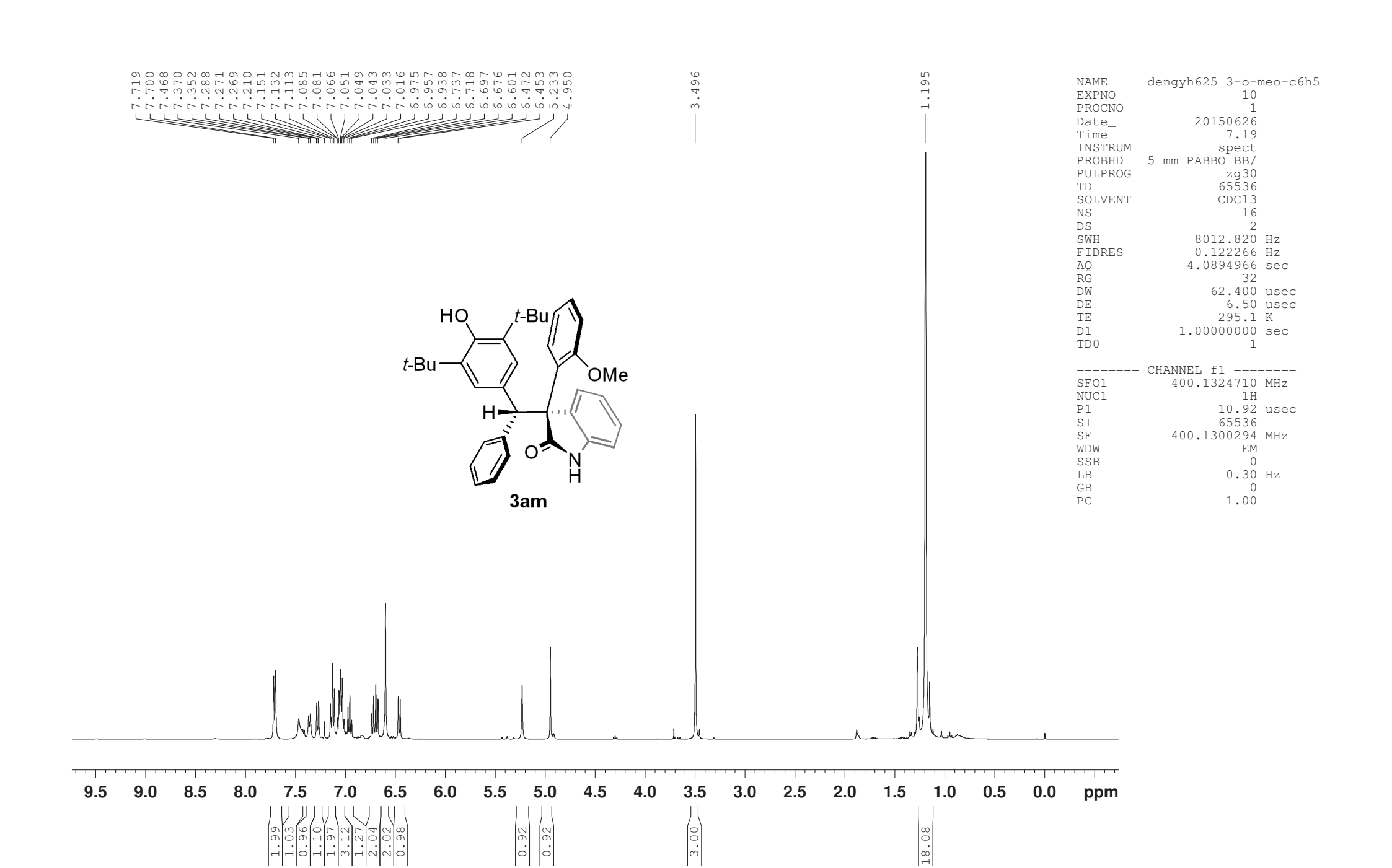
样品名称:	dengyh623b 3-m-MeOC6H4	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	50.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/4 19:41:30 CST		
处理时间:	2015/11/21 20:15:49 CST		

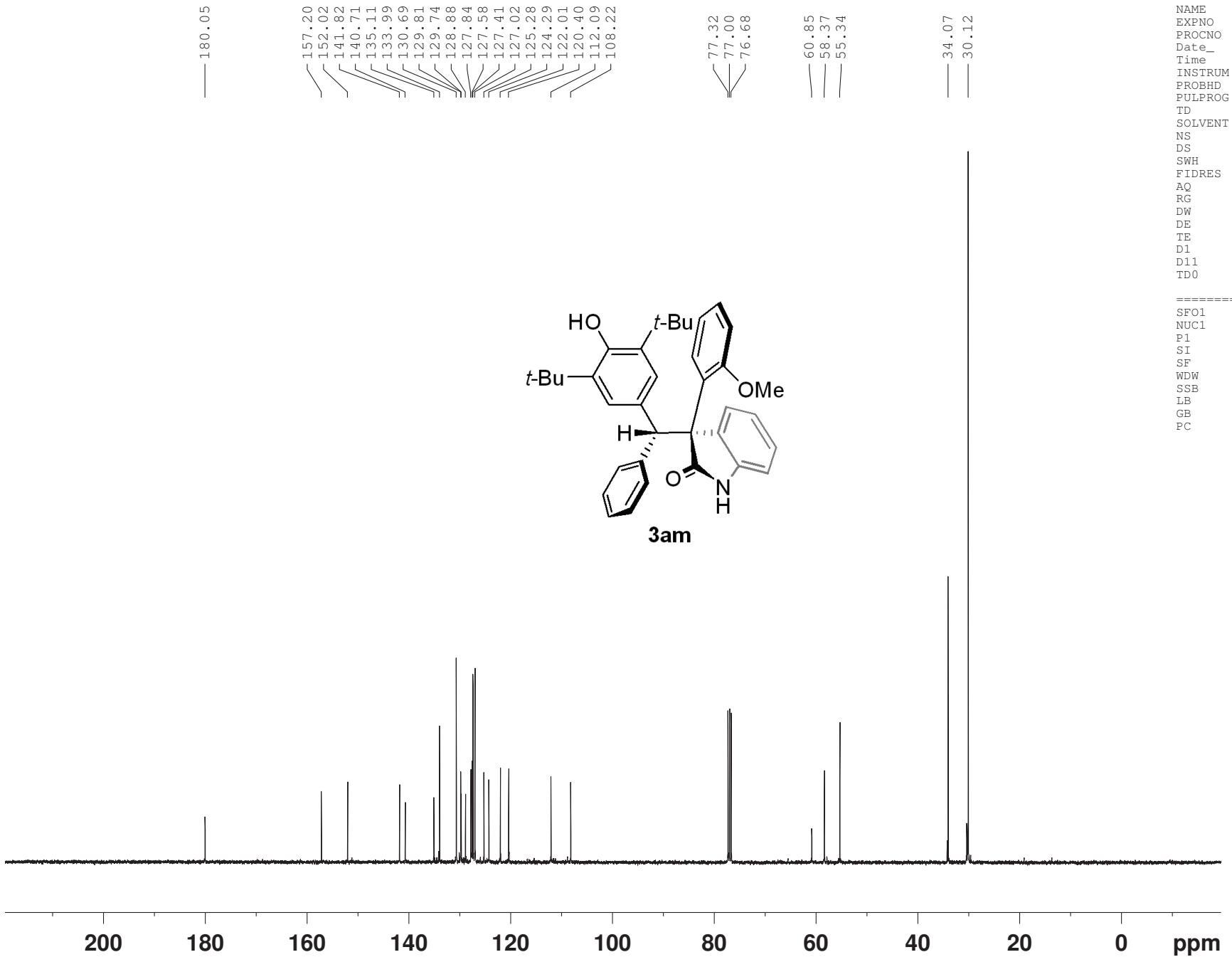


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	10.609	12974	0.14	673
2	2998 (190-400)纳米	14.055	48213	0.53	1954
3	2998 (190-400)纳米	15.184	226761	2.51	9372
4	2998 (190-400)纳米	39.351	8761131	96.82	132518


7.719
7.700
7.468
7.370
7.352
7.288
7.271
7.269
7.210
7.151
7.132
7.113
7.085
7.081
7.066
7.051
7.049
7.043
7.033
7.016
6.975
6.957
6.938
6.737
6.718
6.697
6.676
6.601
6.472
6.453
5.233
4.950
3.496
1.195
NAME dengyh625 3-o-meo-c6h5
EXPNO 10
PROCNO 1
Date_ 20150626
Time 7.19
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 295.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300294 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
OMe
H
O
N
H
3am
9.5 9.0 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 ppm
1.99
1.03
0.96
1.10
1.97
3.12
1.27
2.04
2.02
0.98
0.92
0.92
3.00
18.08

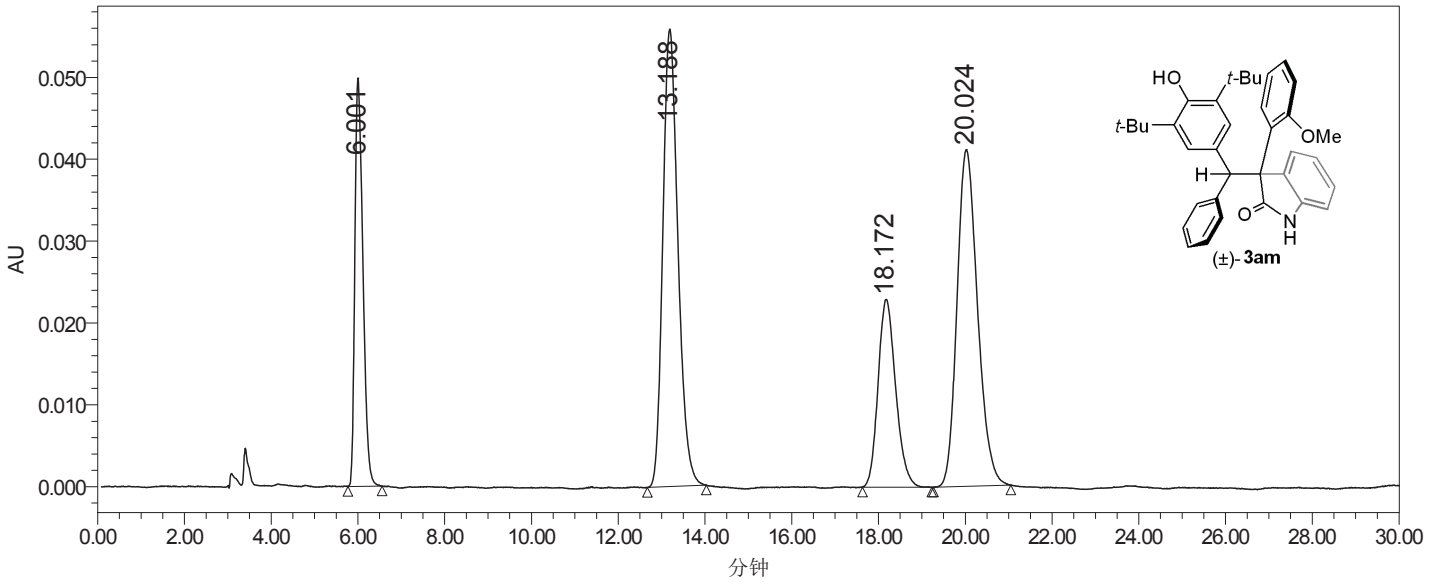


NAME	dengyh625 3-o-meo-c6h5
EXPNO	11
PROCNO	1
Date_	20150626
Time	7.37
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	300
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	912
DW	20.800 usec
DE	6.50 usec
TE	295.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	14.70 usec
SI	32768
SF	100.6127789 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh614a 3-o-MeOPh race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh614a1
进样体积:	5.00 ul	通道名称:	254.0 纳米@3
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/6 16:58:45 CST		
处理时间:	2015/4/6 22:34:24 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh614a1

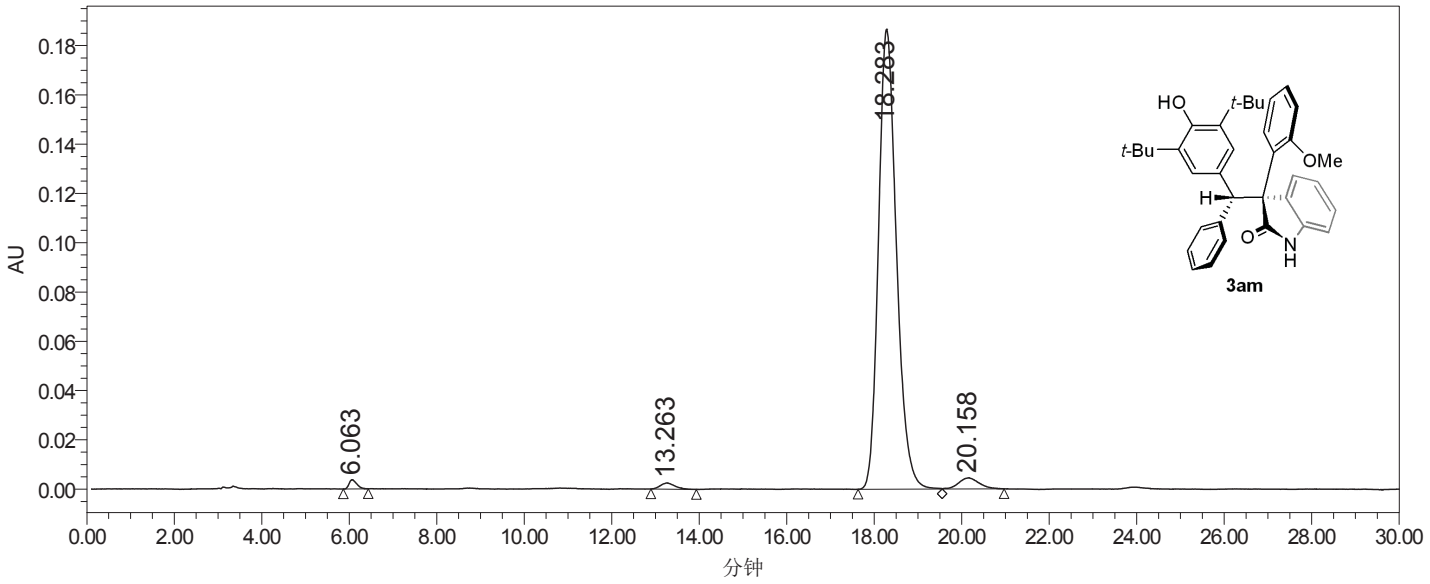
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.001	643117	16.10	49869
2	2998 (190-400)纳米	13.188	1354085	33.90	55880
3	2998 (190-400)纳米	18.172	647525	16.21	22946
4	2998 (190-400)纳米	20.024	1349992	33.79	41124

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

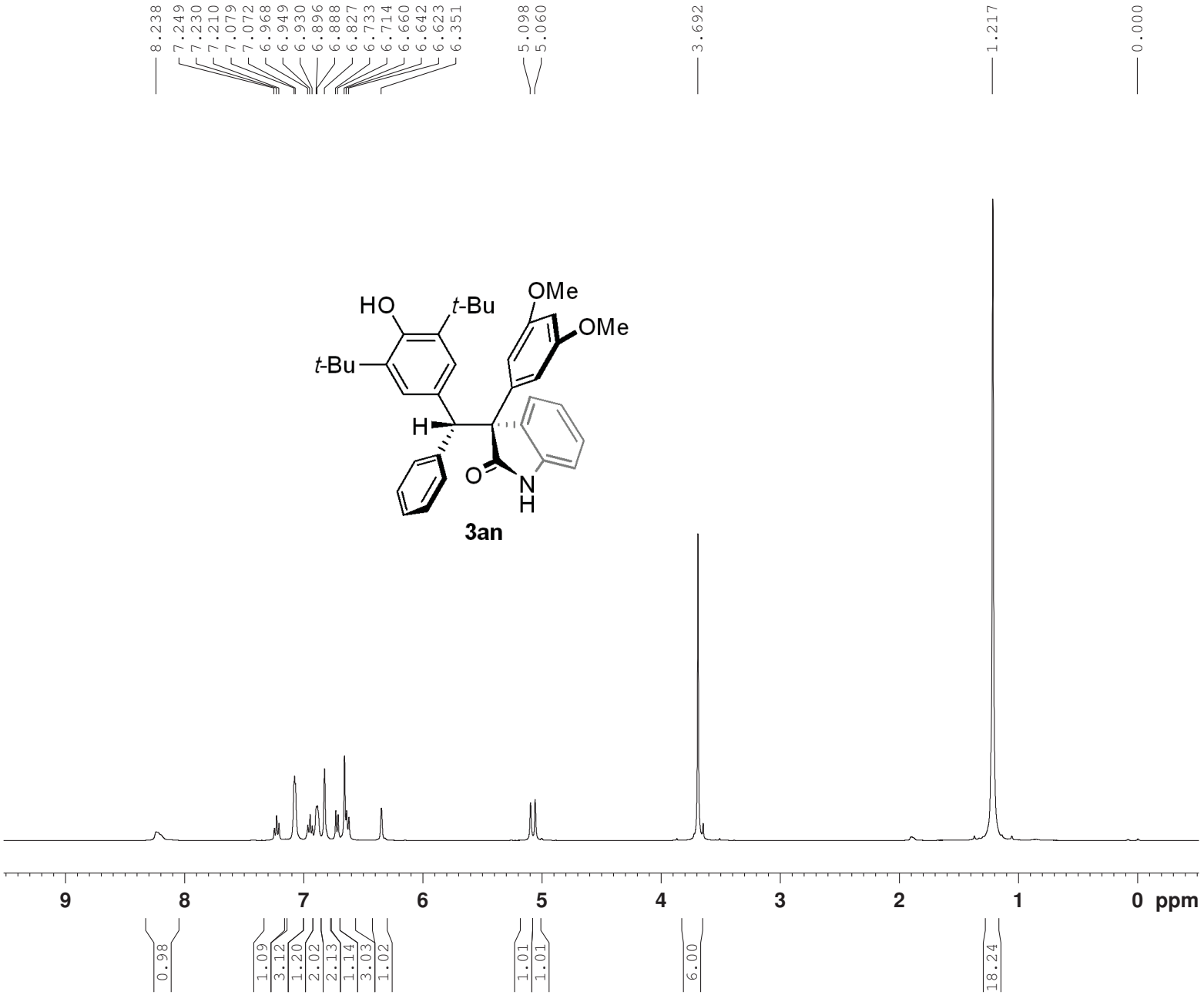
样品名称:	dengyh625b 3-o-MeOPh K2CO3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/6 16:28:22 CST		
处理时间:	2015/11/21 20:07:33 CST		



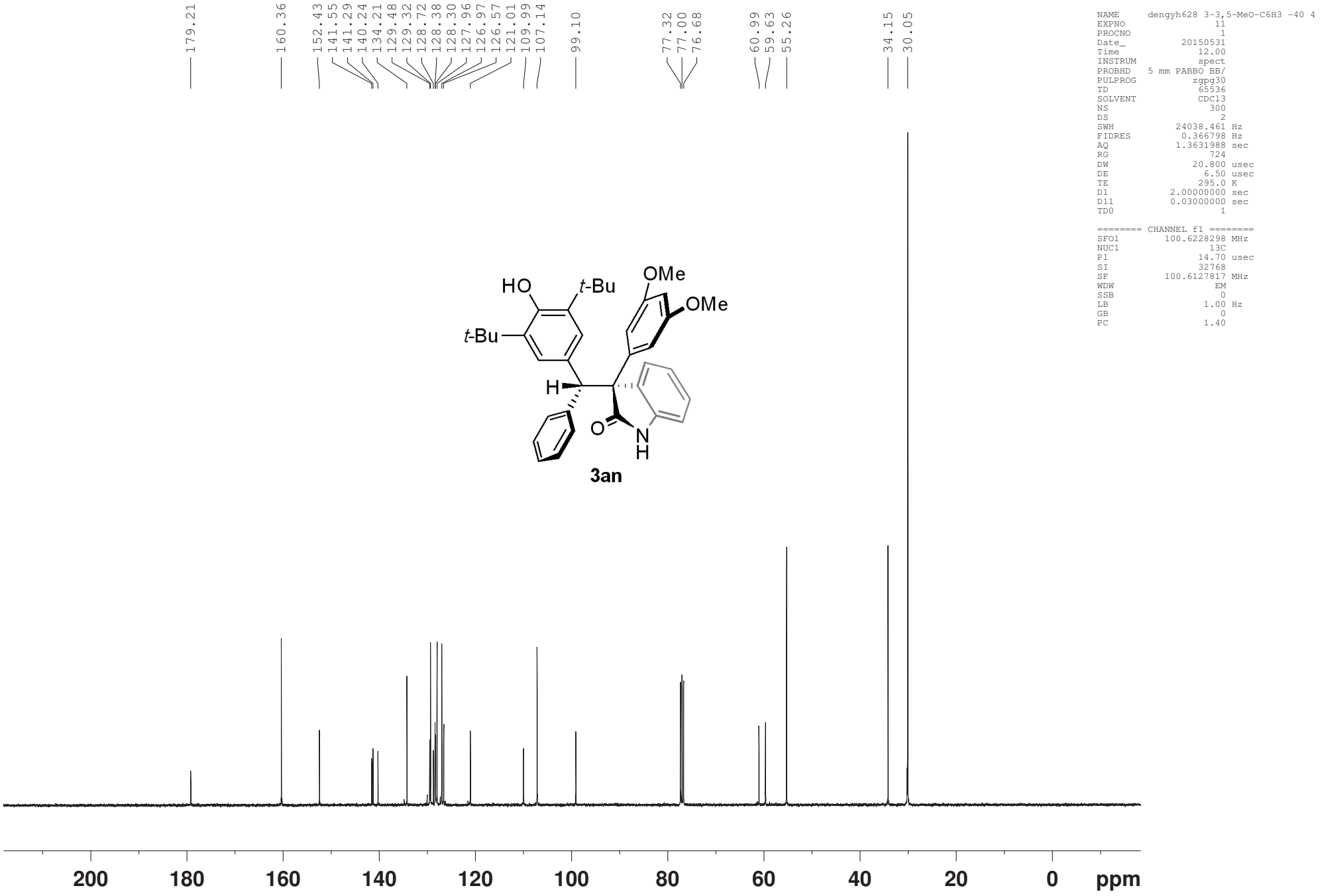
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.063	45836	0.82	3758
2	2998 (190-400)纳米	13.263	58218	1.04	2473
3	2998 (190-400)纳米	18.283	5324159	95.53	186706
4	2998 (190-400)纳米	20.158	145361	2.61	4474



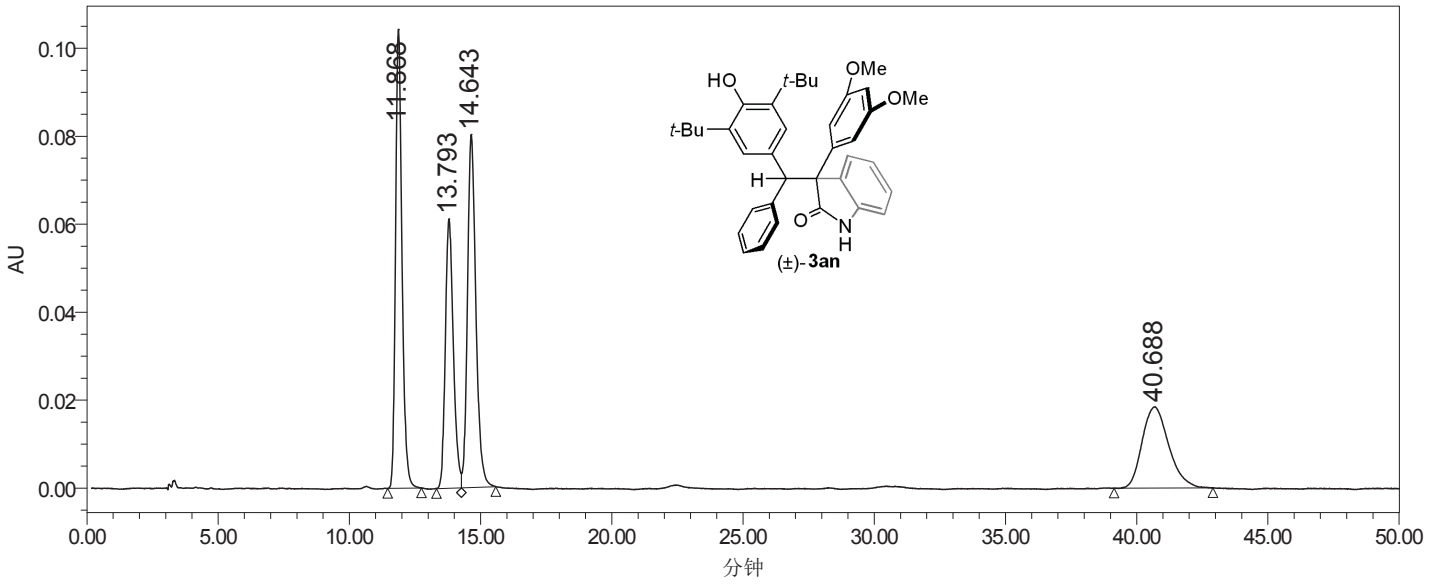

```
NAME      dengyh628 3-3,5-MeO-C6
EXPNO                 10
PROCNO                 1
Date_           20150531
Time                11.42
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     16
DS                      2
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ             4.0894966 sec
RG                     32
DW                 62.400 usec
DE                  6.50 usec
TE                 294.0 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                 10.92 usec
SI                 65536
SF           400.1300299 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```


179.21
160.36
152.43
141.55
141.29
140.24
134.21
129.48
129.32
128.72
128.38
128.30
127.96
126.97
126.57
121.01
109.99
107.14
99.10
77.32
77.00
76.68
60.99
59.63
55.26
34.15
30.05
NAME dengyh628 3-3,5-MeO-C6H3 -40 4
EXPNO 11
PROCNO 1
Date_ 20150531
Time 12.00
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 300
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 724
DW 20.800 usec
DE 6.50 usec
TE 295.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127817 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
OMe
OMe
t-Bu
H
O
N
H
3an
200
180
160
140
120
100
80
60
40
20
0
ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh628c 3-3,5-MeOPh race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,5	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	50.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/8 20:33:21 CST		
处理时间:	2015/4/8 22:44:26 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

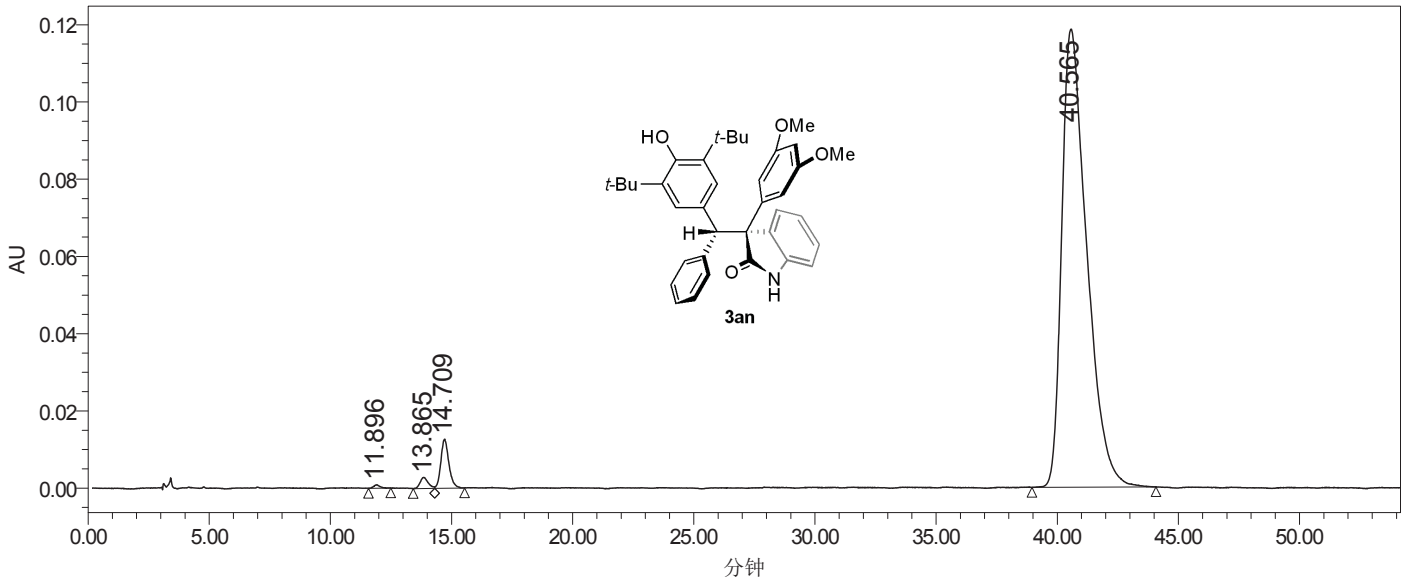
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	11.868	1776060	28.84	104363
2	2998 (190-400)纳米	13.793	1297126	21.07	61211
3	2998 (190-400)纳米	14.643	1784719	28.98	80247
4	2998 (190-400)纳米	40.688	1299551	21.11	18453

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

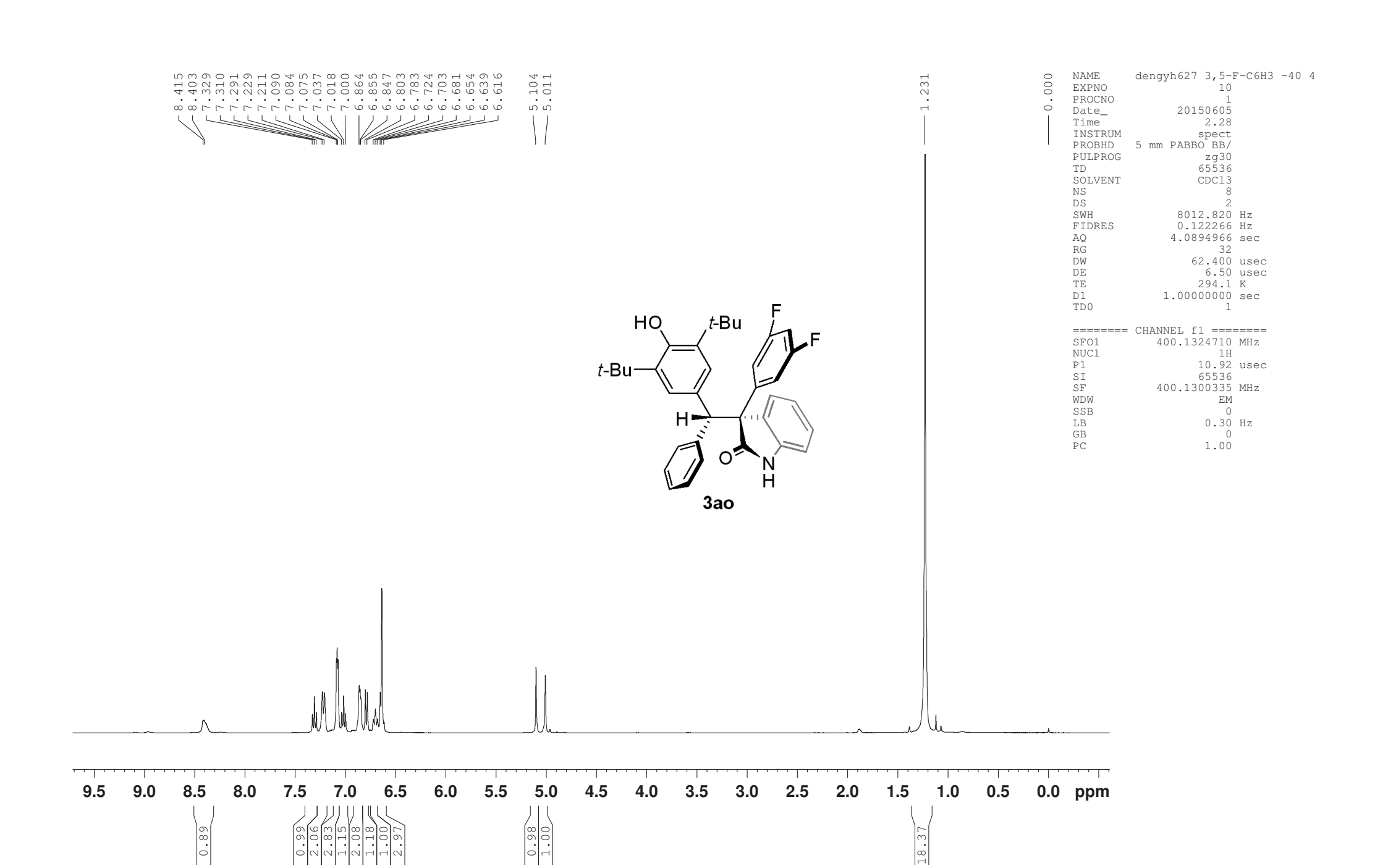
样品名称:	dengyh628a 3-3,5-MeOPh	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,8	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	55.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/8 22:43:33 CST		
处理时间:	2015/4/8 23:39:02 CST		

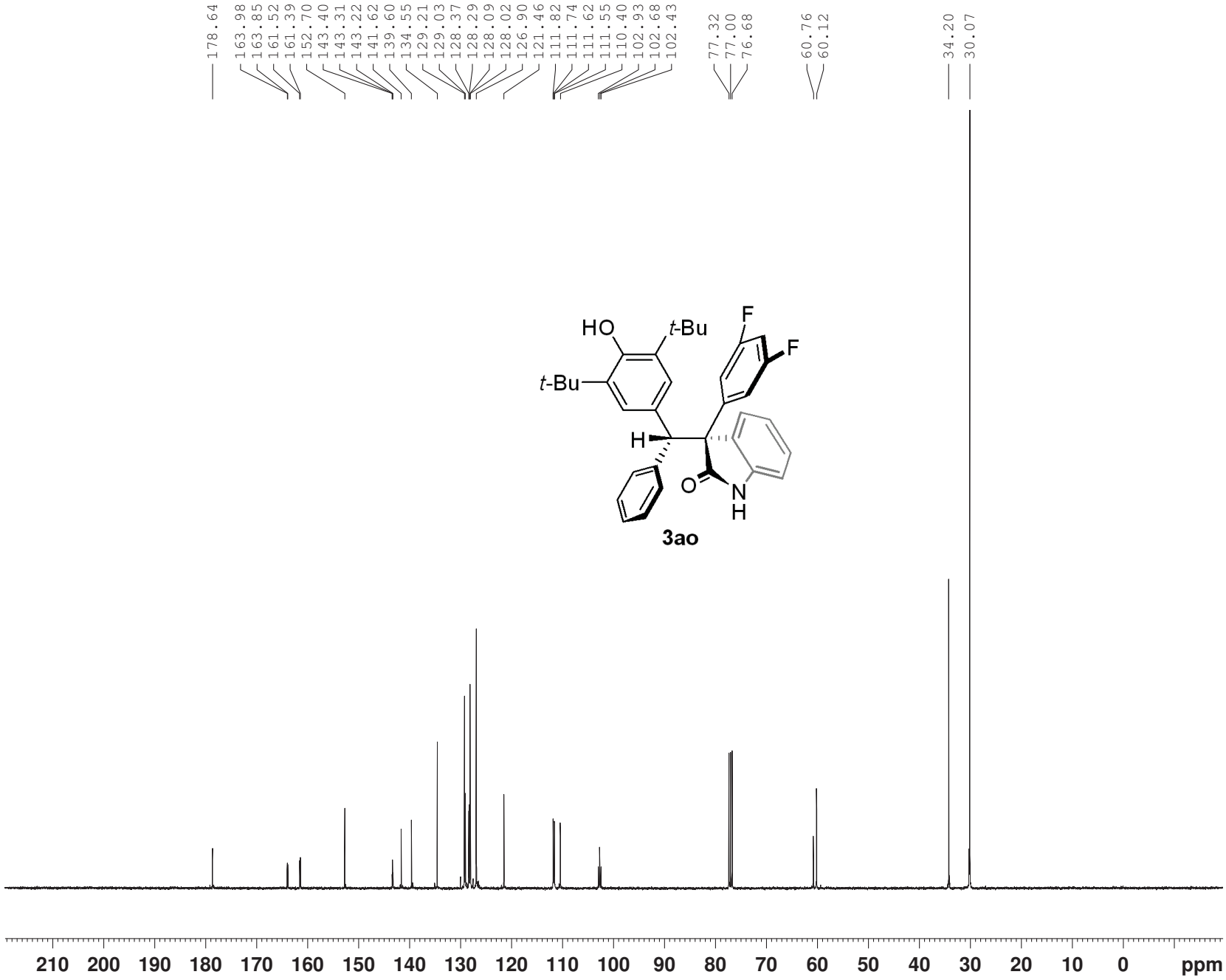


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	11.896	16908	0.19	889
2	2998 (190-400)纳米	13.865	66369	0.75	2873
3	2998 (190-400)纳米	14.709	292133	3.29	12705
4	2998 (190-400)纳米	40.565	8492552	95.77	118580


8.415
8.403
7.329
7.310
7.291
7.229
7.211
7.090
7.084
7.075
7.037
7.018
7.000
6.864
6.855
6.847
6.803
6.783
6.724
6.703
6.681
6.654
6.639
6.616
5.104
5.011
1.231
0.000
HO
t-Bu
t-Bu
F
F
H
O
N
H
3ao
NAME dengyh627 3,5-F-C6H3 -40 4
EXPNO 10
PROCNO 1
Date_ 20150605
Time 2.28
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300335 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.89
0.99
2.06
2.83
1.15
2.08
1.18
1.00
2.97
0.98
1.00
18.37

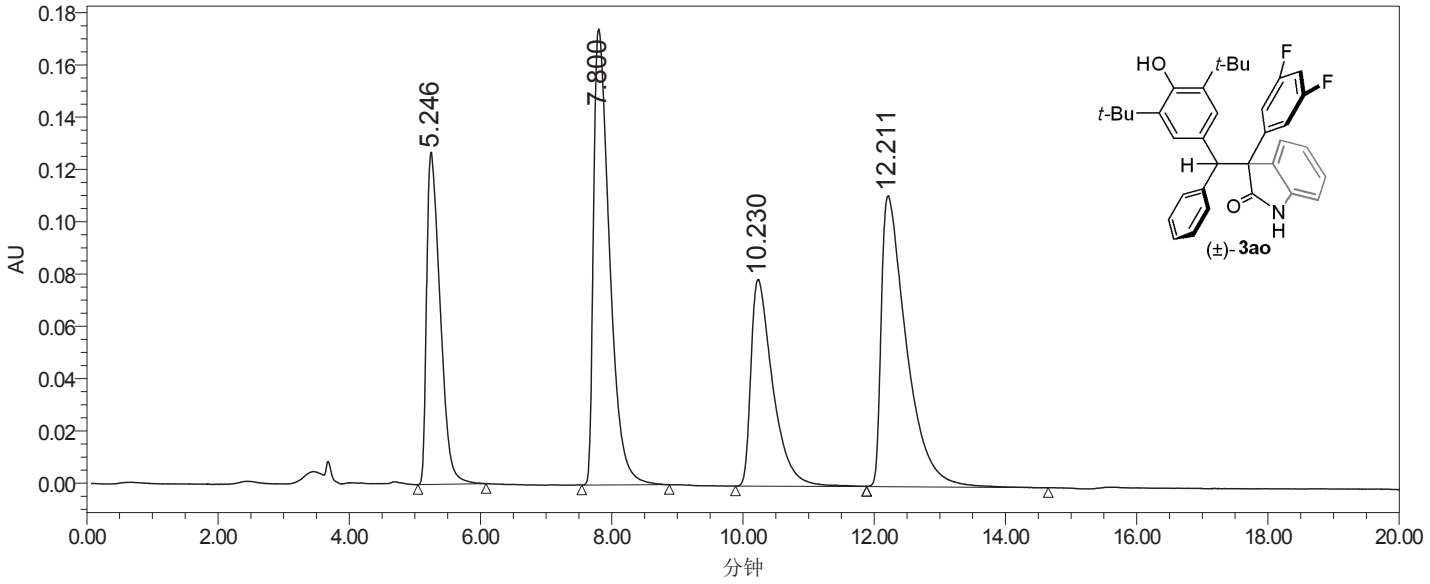



```
NAME      dengy627 3,5-F-C6H3 -40 4
EXPNO                 11
PROCNO                 1
Date_           20150605
Time                2.49
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG            zgpg30
TD                  65536
SOLVENT             CDCl3
NS                    360
DS                      2
SWH             24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                   1290
DW                 20.800 usec
DE                  6.50 usec
TE                 295.1 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 14.70 usec
SI                 32768
SF            100.6127793 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh627c 3-3,5-2FC6H4 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IB3 IPA vs Hex 2vs98 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/7 21:19:22 CST		
处理时间:	2015/11/21 20:20:20 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

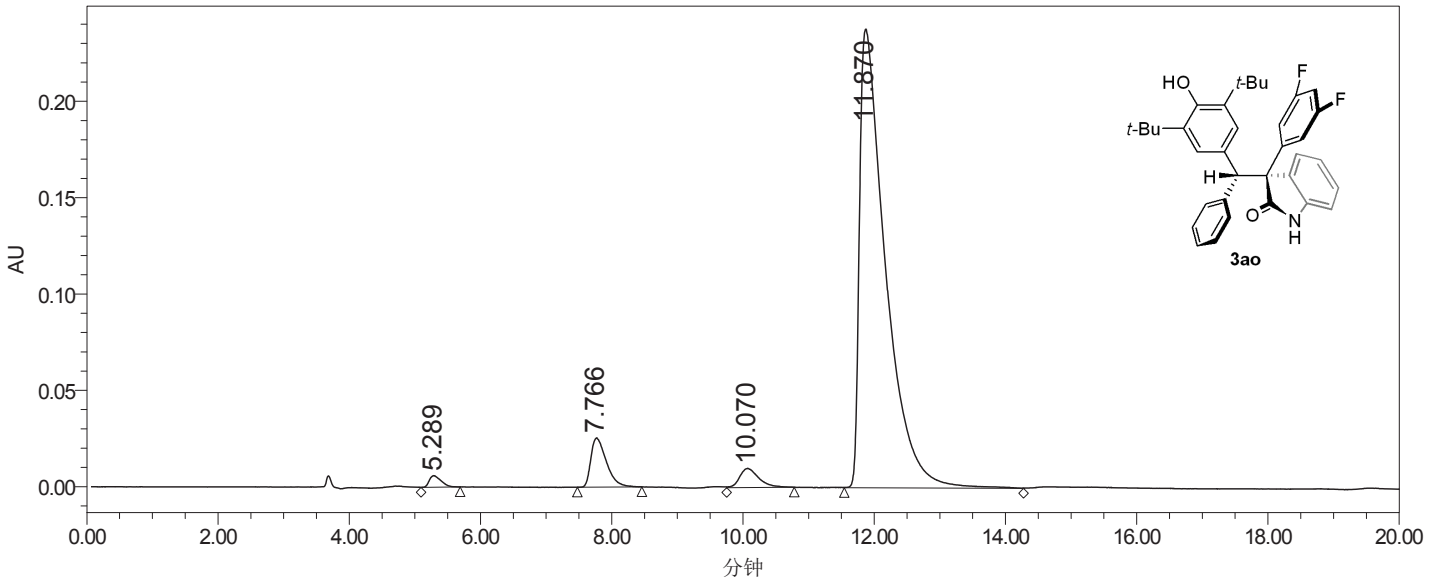
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.246	1820729	19.05	127098
2	2998 (190-400)纳米	7.800	2952989	30.90	174360
3	2998 (190-400)纳米	10.230	1827321	19.12	79082
4	2998 (190-400)纳米	12.211	2956801	30.94	111173

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

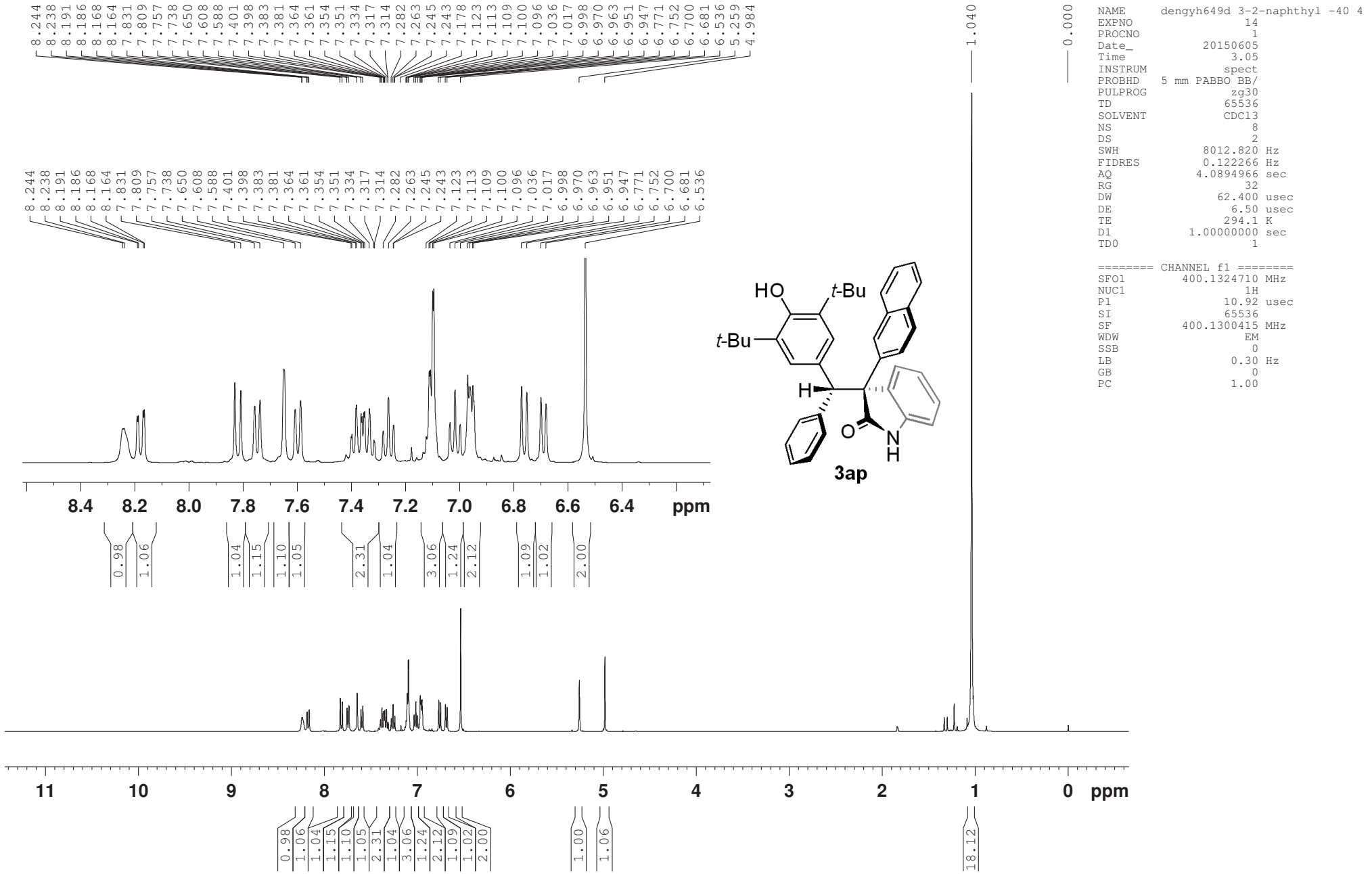
样品名称:	dengyh627a 3-3,5-2FC6H3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IB3 IPA vs Hex 2vs98 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/7 22:00:07 CST		
处理时间:	2015/11/21 20:20:56 CST		

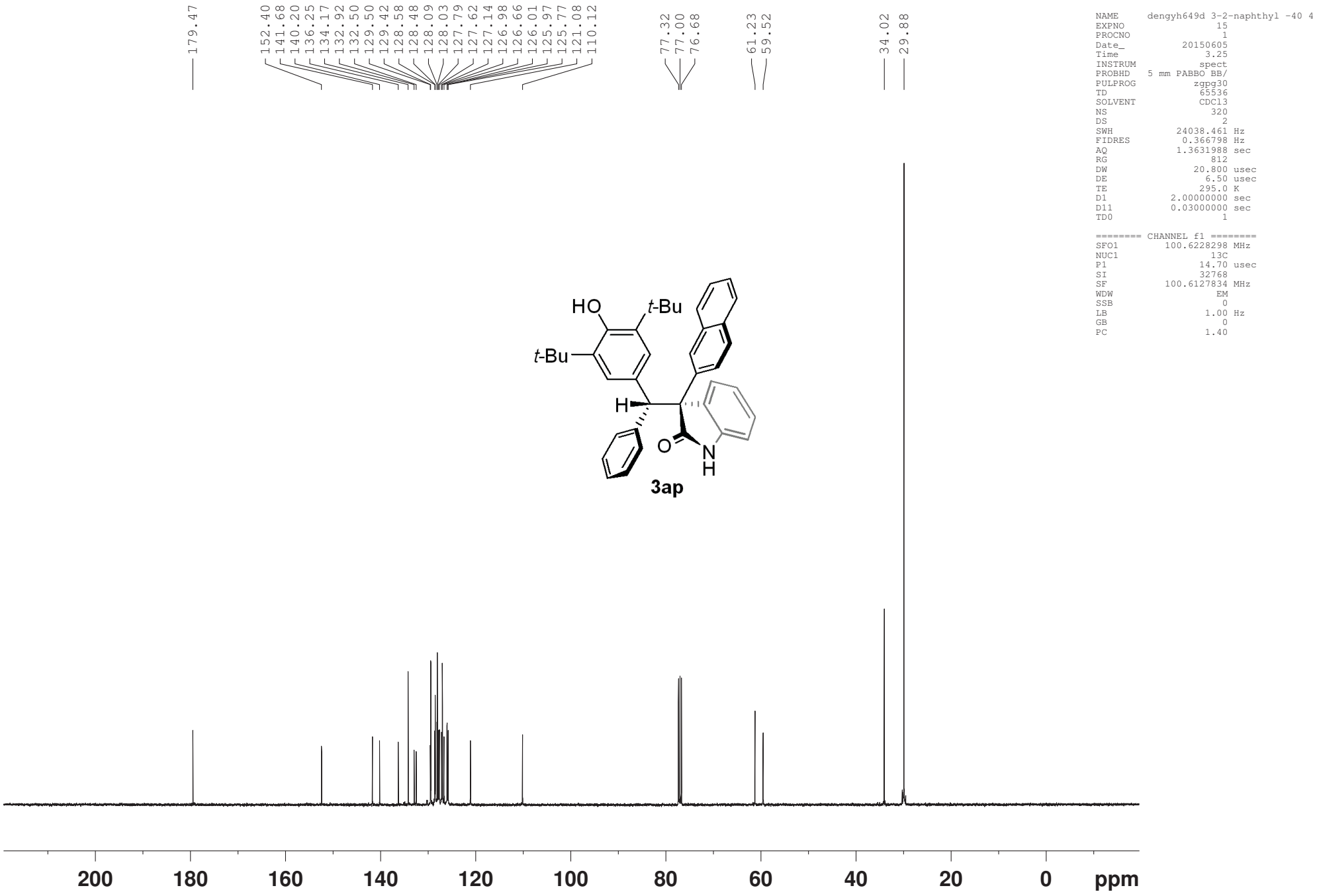


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.289	75513	1.05	5977
2	2998 (190-400)纳米	7.766	421250	5.84	25480
3	2998 (190-400)纳米	10.070	202386	2.81	9918
4	2998 (190-400)纳米	11.870	6511397	90.30	237906

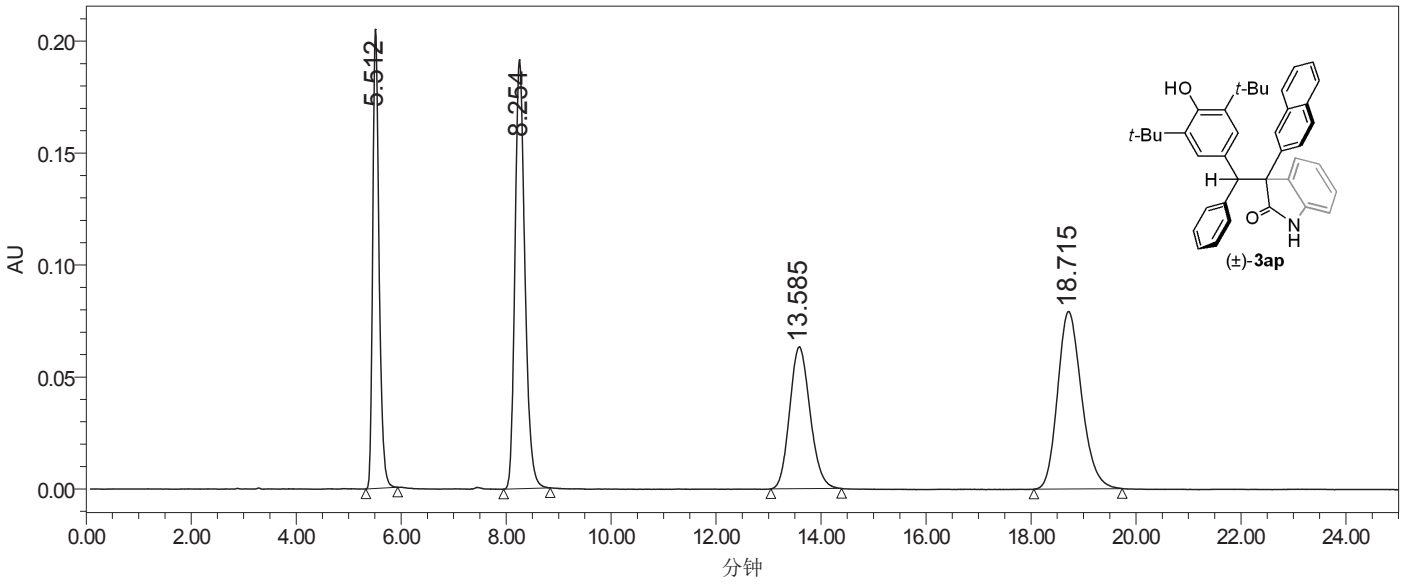

8.244 8.238 8.191 8.186 8.168 8.164 7.831 7.809 7.757 7.738 7.650 7.608 7.588 7.401 7.398 7.383 7.381 7.364 7.361 7.354 7.351 7.334 7.317 7.314 7.282 7.263 7.245 7.243 7.178 7.123 7.113 7.109 7.100 7.096 7.036 7.017 6.998 6.970 6.963 6.951 6.947 6.771 6.752 6.700 6.681 6.536 5.259 4.984
1.040
0.000
NAME dengyh649d 3-2-naphthyl -40 4
EXPNO 14
PROCNO 1
Date_ 20150605
Time 3.05
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300415 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
O
N
H
3ap
8.4 8.2 8.0 7.8 7.6 7.4 7.2 7.0 6.8 6.6 6.4 ppm
0.98 1.06 1.04 1.15 1.10 1.05 2.31 1.04 3.06 1.24 2.12 1.09 1.02 2.00
11 10 9 8 7 6 5 4 3 2 1 0 ppm
0.98 1.06 1.04 1.15 1.10 1.05 2.31 1.04 3.06 1.24 2.12 1.09 1.02 2.00 1.00 1.06 18.12


179.47
152.40
141.68
140.20
136.25
134.17
132.92
132.50
129.50
129.42
128.58
128.48
128.09
128.03
127.79
127.62
127.14
126.98
126.66
126.01
125.97
125.77
121.08
110.12
77.32
77.00
76.68
61.23
59.52
34.02
29.88
NAME dengyh649d 3-2-naphthyl -40 4
EXPNO 15
PROCNO 1
Date_ 20150605
Time 3.25
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 320
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 812
DW 20.800 usec
DE 6.50 usec
TE 295.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127834 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
O
N
H
3ap
200
180
160
140
120
100
80
60
40
20
0
ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh649 3-2-naphthyl race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/24 12:25:56 CST		
处理时间:	2015/4/24 15:23:10 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

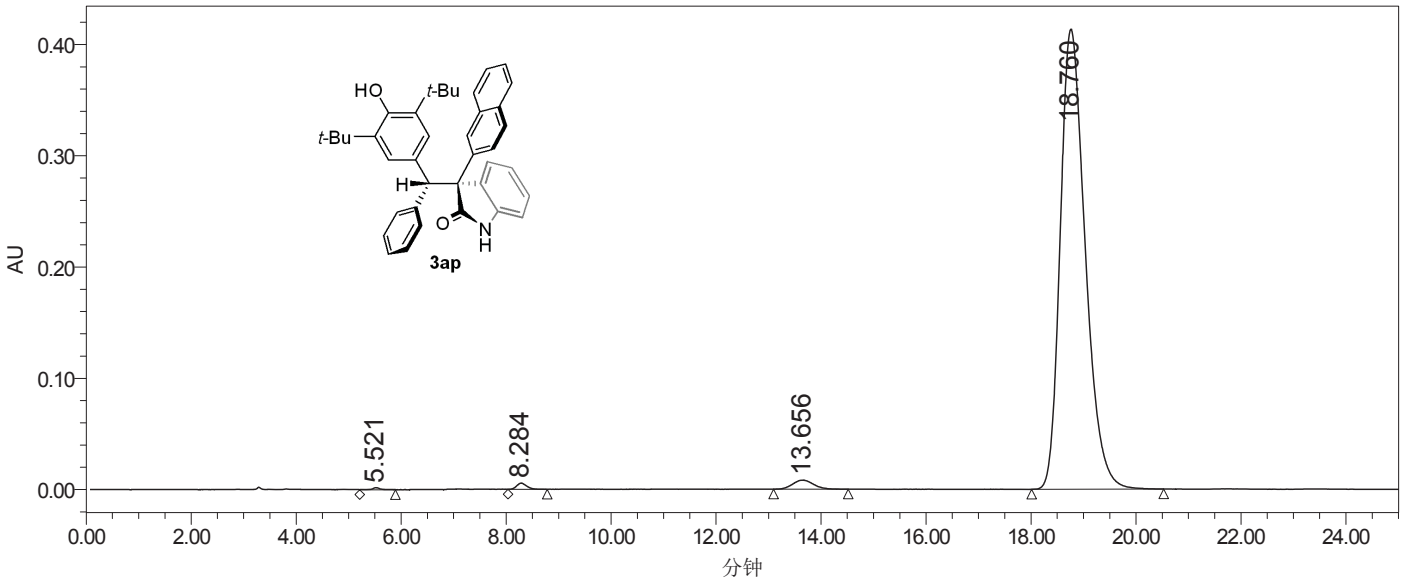
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.512	1716079	20.28	205134
2	2998 (190-400)纳米	8.254	2516243	29.74	191578
3	2998 (190-400)纳米	13.585	1714946	20.27	63362
4	2998 (190-400)纳米	18.715	2512797	29.70	79268

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

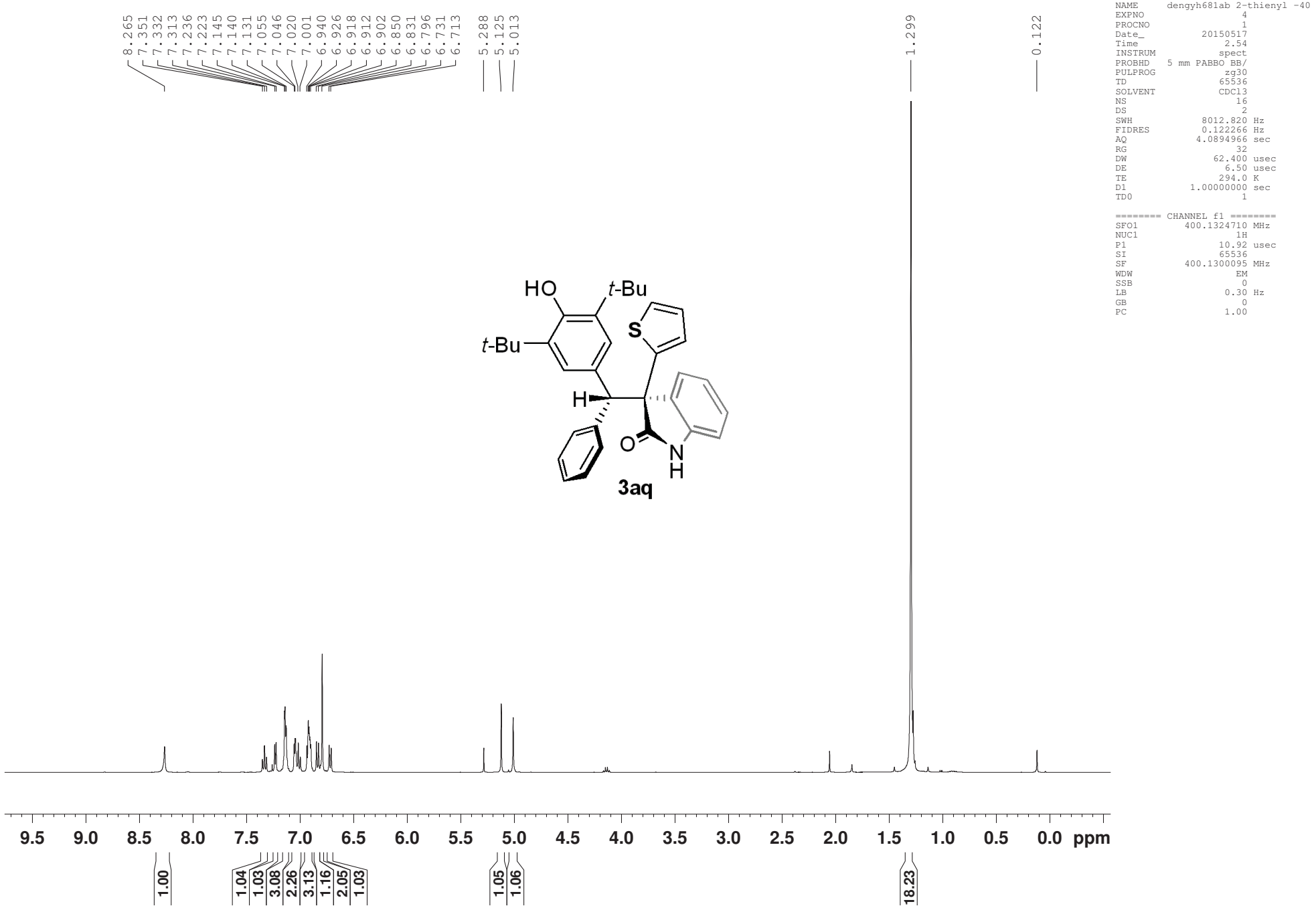
样品名称:	dengyh649a 3-2-naphthyl -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/24 12:00:34 CST		
处理时间:	2015/4/24 15:22:37 CST		

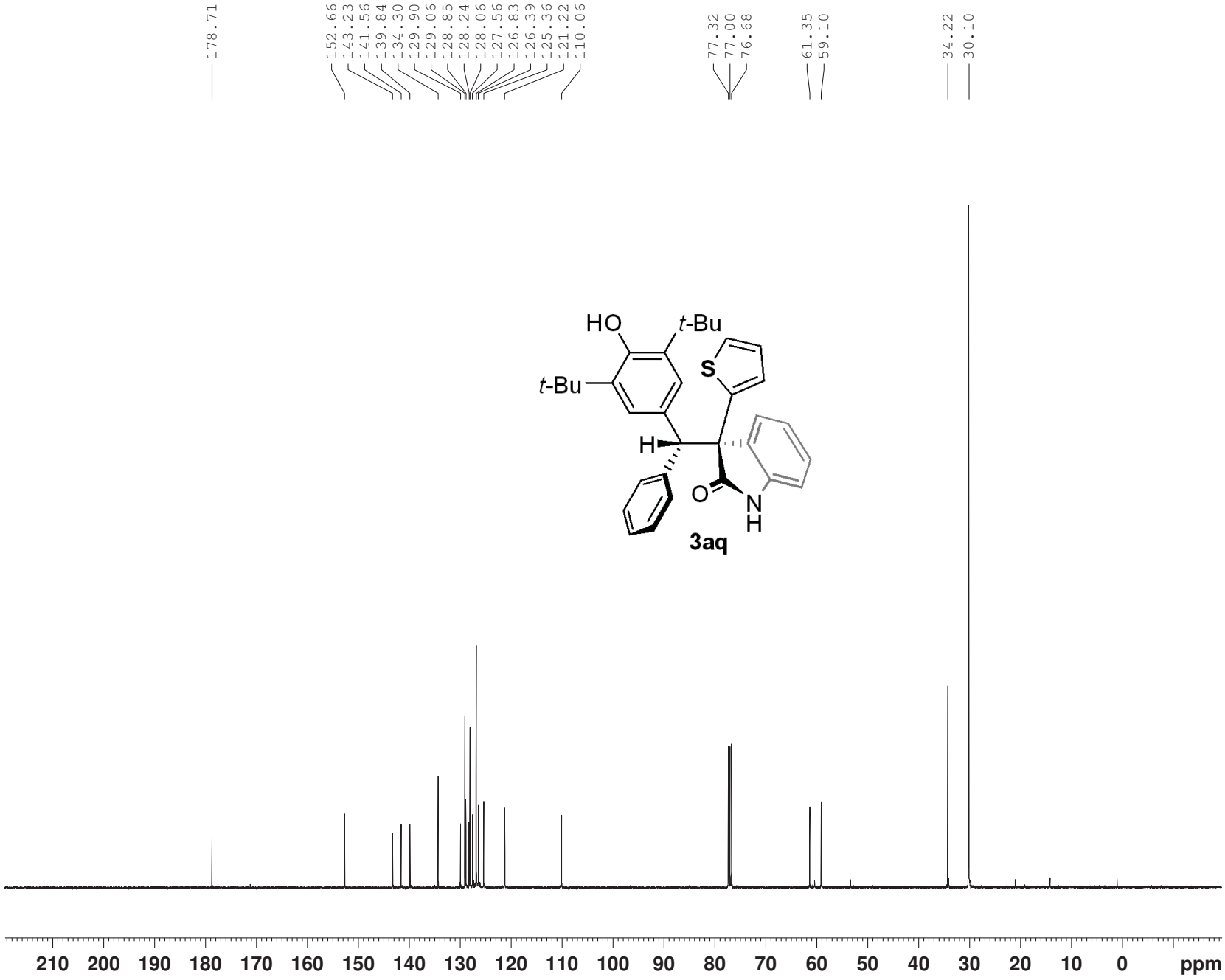


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.521	17439	0.12	1838
2	2998 (190-400)纳米	8.284	76167	0.55	5602
3	2998 (190-400)纳米	13.656	225904	1.62	8136
4	2998 (190-400)纳米	18.760	13633257	97.71	413465


8.265
7.351
7.332
7.313
7.236
7.223
7.145
7.140
7.131
7.055
7.046
7.020
7.001
6.940
6.926
6.918
6.912
6.902
6.850
6.831
6.796
6.731
6.713
5.288
5.125
5.013
1.299
0.122
NAME dengyh681ab 2-thienyl -40
EXPNO 4
PROCNO 1
Date_ 20150517
Time 2.54
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.0 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300095 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
S
H
O
N
H
3aq
9.5 9.0 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 ppm
1.00
1.04
1.03
3.08
2.26
3.13
1.16
2.05
1.03
1.05
1.06
18.23

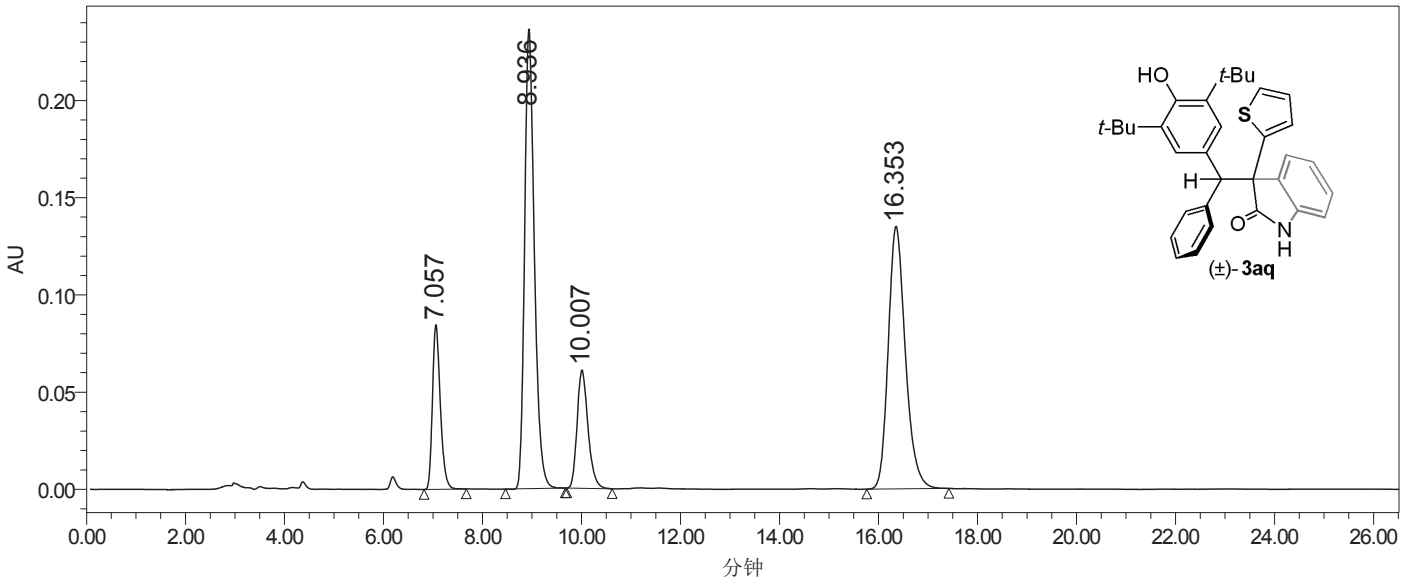



```
NAME      dengyh681ab 2-thienyl -40
EXPNO                5
PROCNO               1
Date_         20150517
Time              3.15
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                  360
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ            1.3631988 sec
RG                 1030
DW               20.800 usec
DE                6.50 usec
TE               294.8 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1               13C
P1               14.70 usec
SI                32768
SF          100.6127792 MHz
WDW                EM
SSB                 0
LB               1.00 Hz
GB                  0
PC               1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh681 2-thio race.	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	254.0 纳米
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/11 21:47:46 CST		
处理时间:	2015/5/11 22:16:31 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

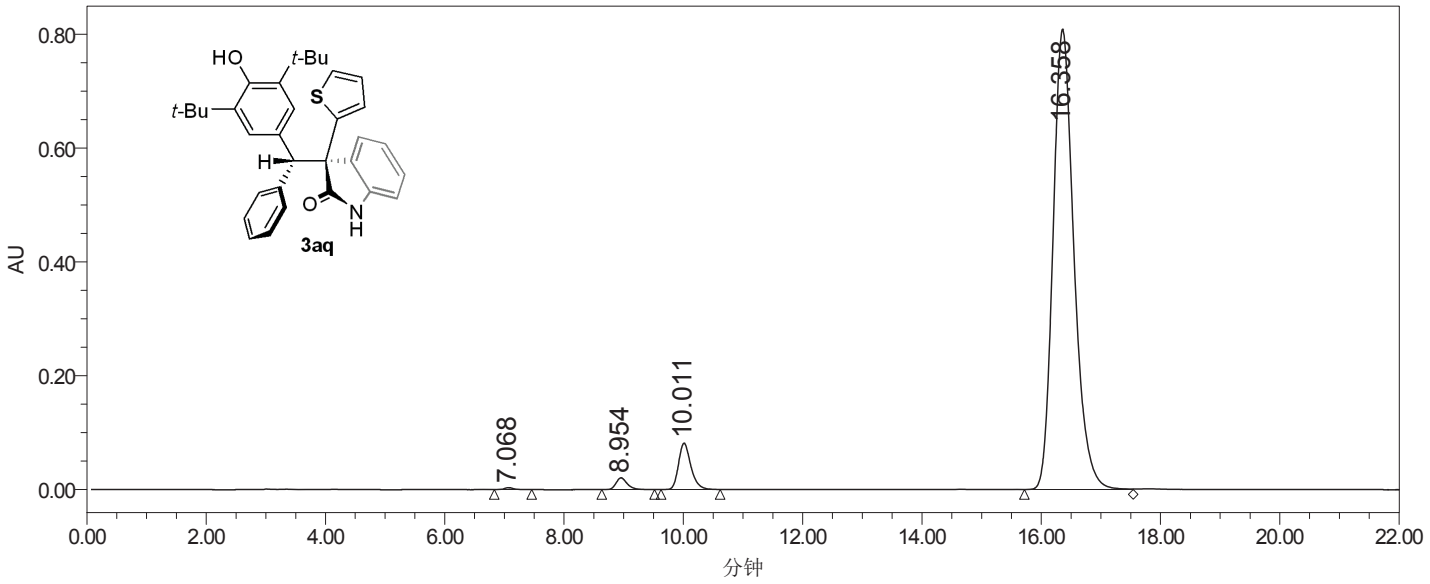
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	7.057	939702	11.25	84562
2	2998 (190-400)纳米	8.936	3235318	38.72	236250
3	2998 (190-400)纳米	10.007	932703	11.16	60789
4	2998 (190-400)纳米	16.353	3248209	38.87	134911

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

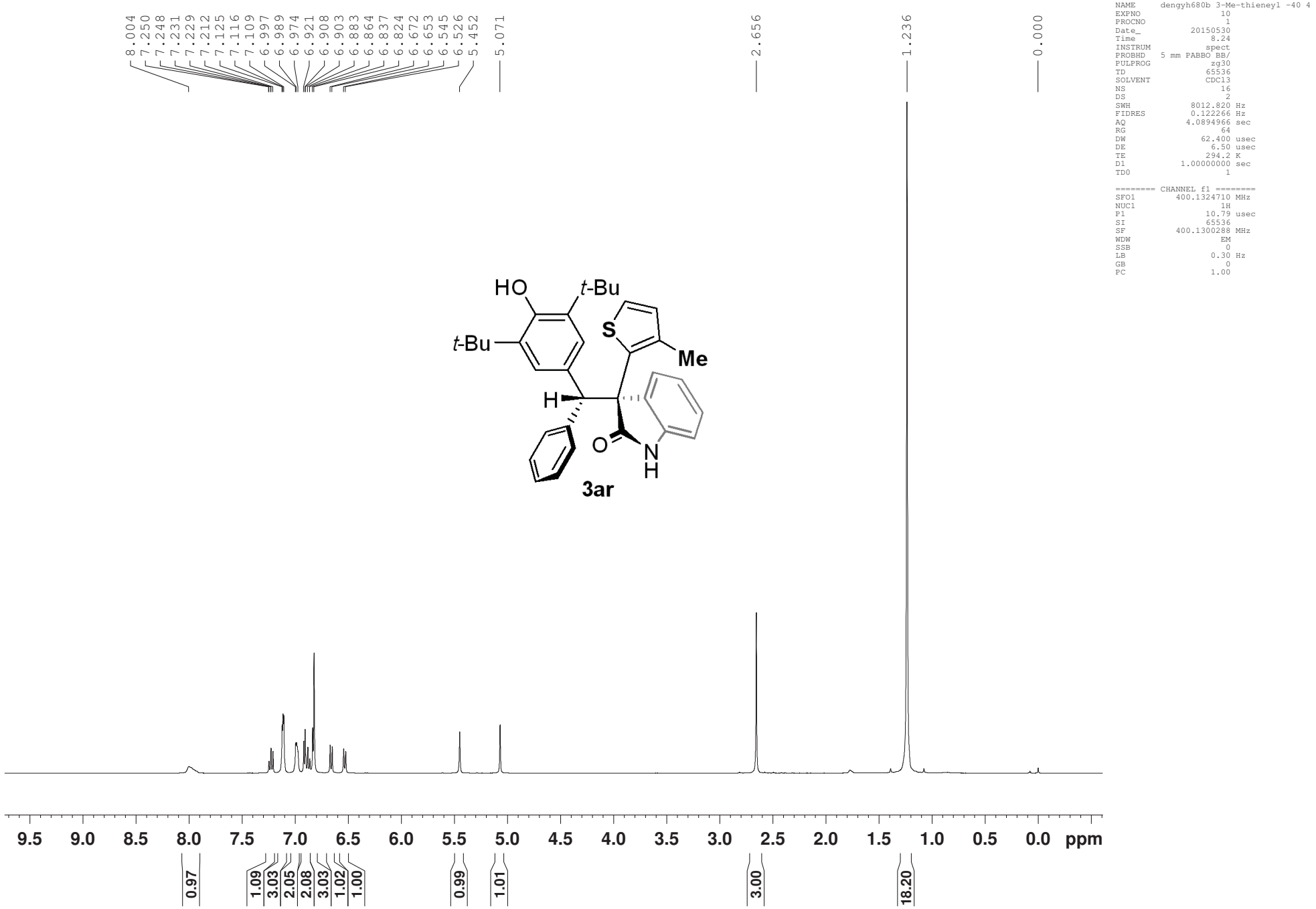
样品名称:	dengyh681a 2-thio -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	22.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/11 22:15:06 CST		
处理时间:	2015/5/13 9:53:14 CST		

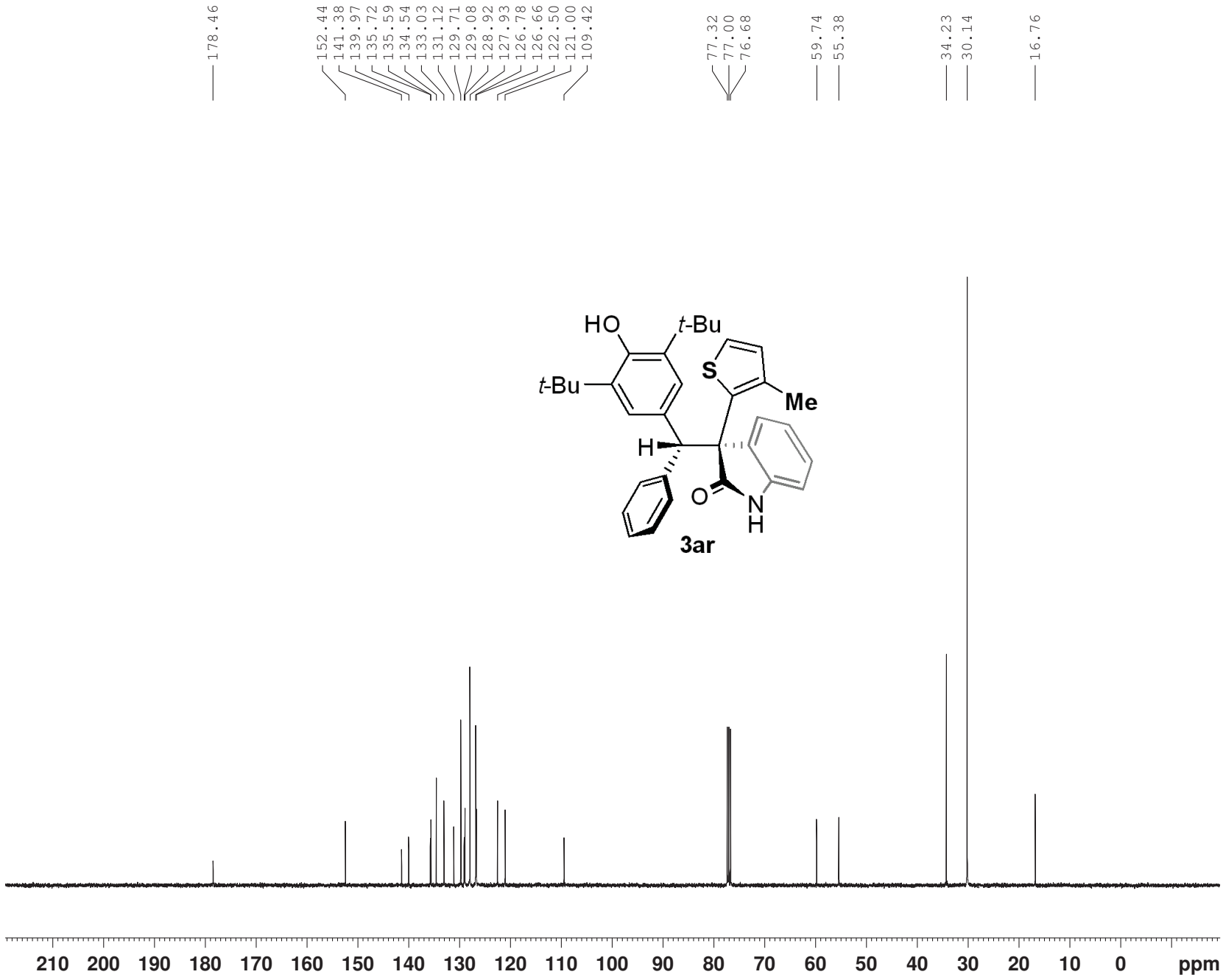


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	7.068	36257	0.17	3623
2	2998 (190-400)纳米	8.954	270367	1.28	20626
3	2998 (190-400)纳米	10.011	1172410	5.54	81385
4	2998 (190-400)纳米	16.358	19684433	93.01	808575


8.004
7.250
7.248
7.231
7.229
7.212
7.125
7.116
7.109
6.997
6.989
6.974
6.921
6.908
6.903
6.883
6.864
6.837
6.824
6.672
6.653
6.545
6.526
5.452
5.071
2.656
1.236
0.000
NAME dengyh680b 3-Me-thieneyl -40 4
EXPNO 10
PROCNO 1
Date_ 20150530
Time 8.24
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 64
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300288 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
S
Me
H
O
N
H
3ar
9.5 9.0 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 ppm
0.97
1.09
3.03
2.05
2.08
3.03
1.02
1.00
0.99
1.01
3.00
18.20

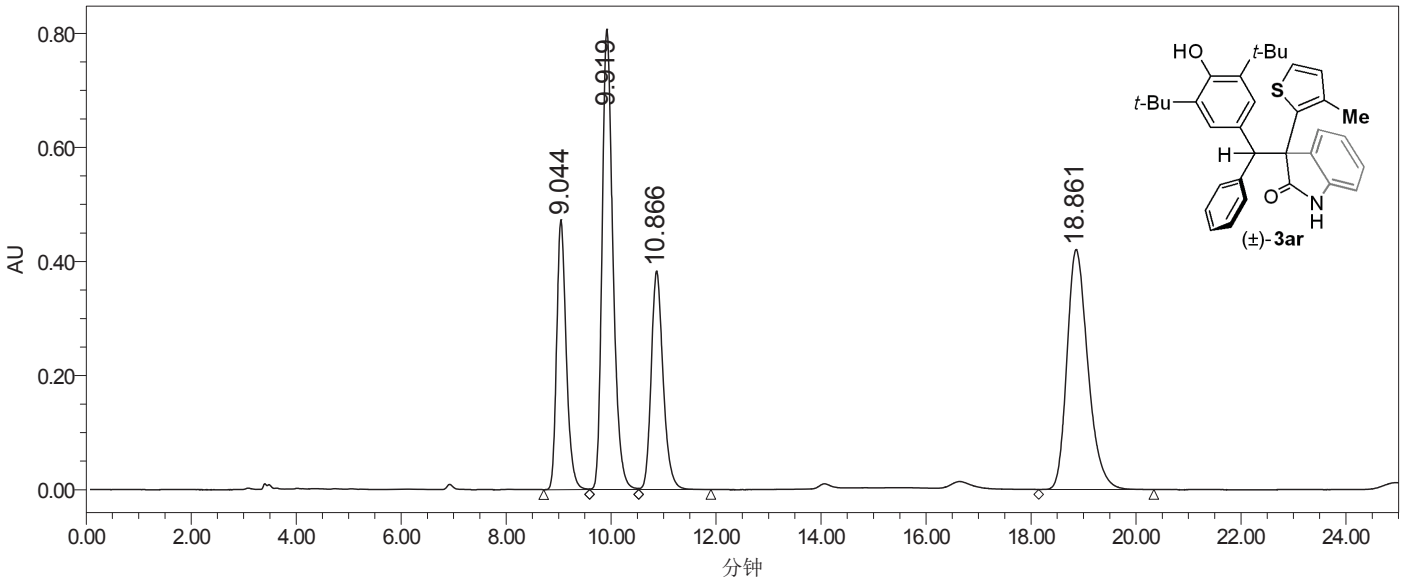



```
NAME      dengyh680b 3-Me-thieneyl -40 4
EXPNO                 11
PROCNO                 1
Date_           20150530
Time                8.37
INSTRUM             spect
PROBHD   5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   200
DS                     2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                  2050
DW                20.800 usec
DE                 6.50 usec
TE                295.5 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 12.00 usec
SI                 32768
SF           100.6127790 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh680 2-(3-Me)-thio race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@4
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/14 23:14:04 CST		
处理时间:	2015/5/15 0:17:07 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

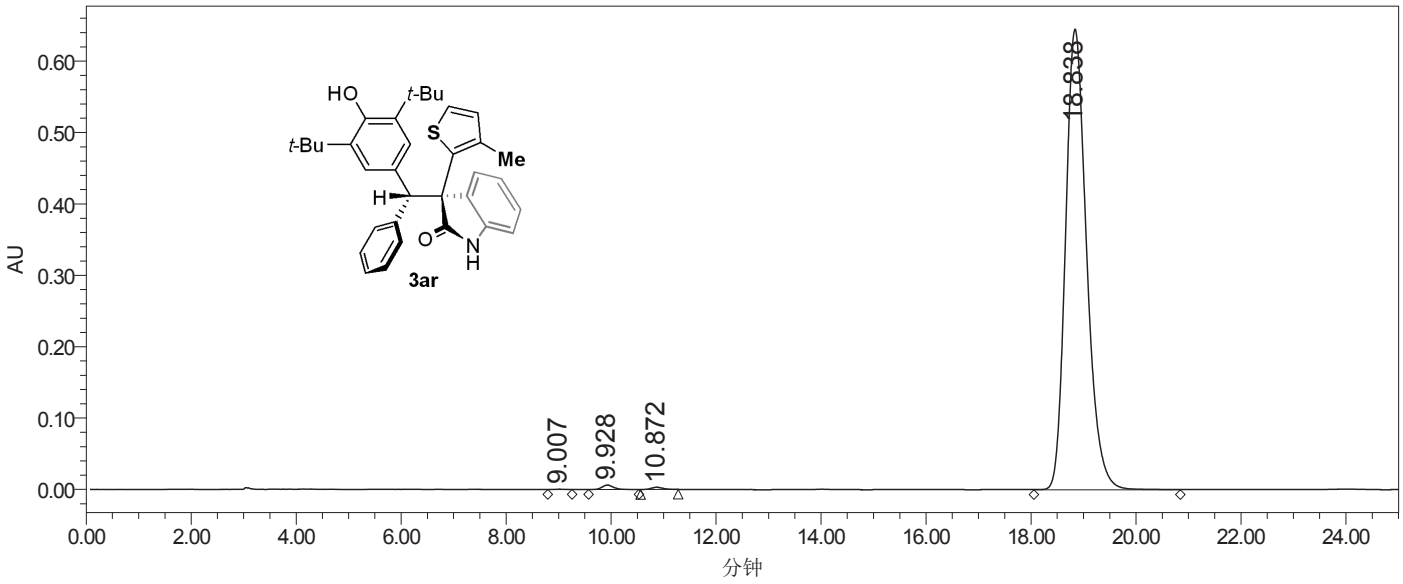
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.044	6015854	17.01	473138
2	2998 (190-400)纳米	9.919	11613122	32.84	807163
3	2998 (190-400)纳米	10.866	6069617	17.16	383159
4	2998 (190-400)纳米	18.861	11664318	32.98	420881

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

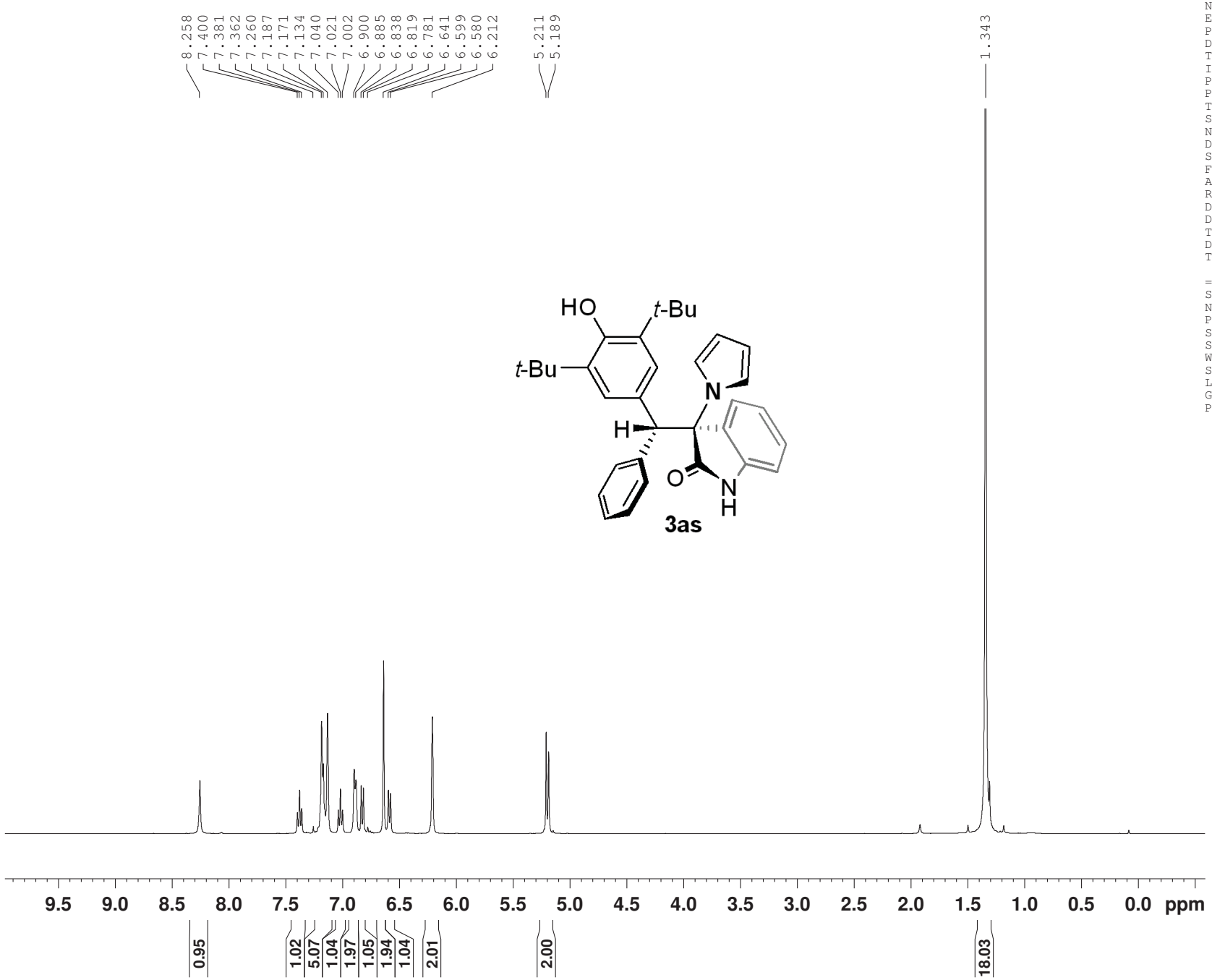
样品名称:	dengyh680a 2-(3-Me)-thio -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	254.0 纳米@4
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/14 22:48:42 CST		
处理时间:	2015/5/15 0:18:45 CST		



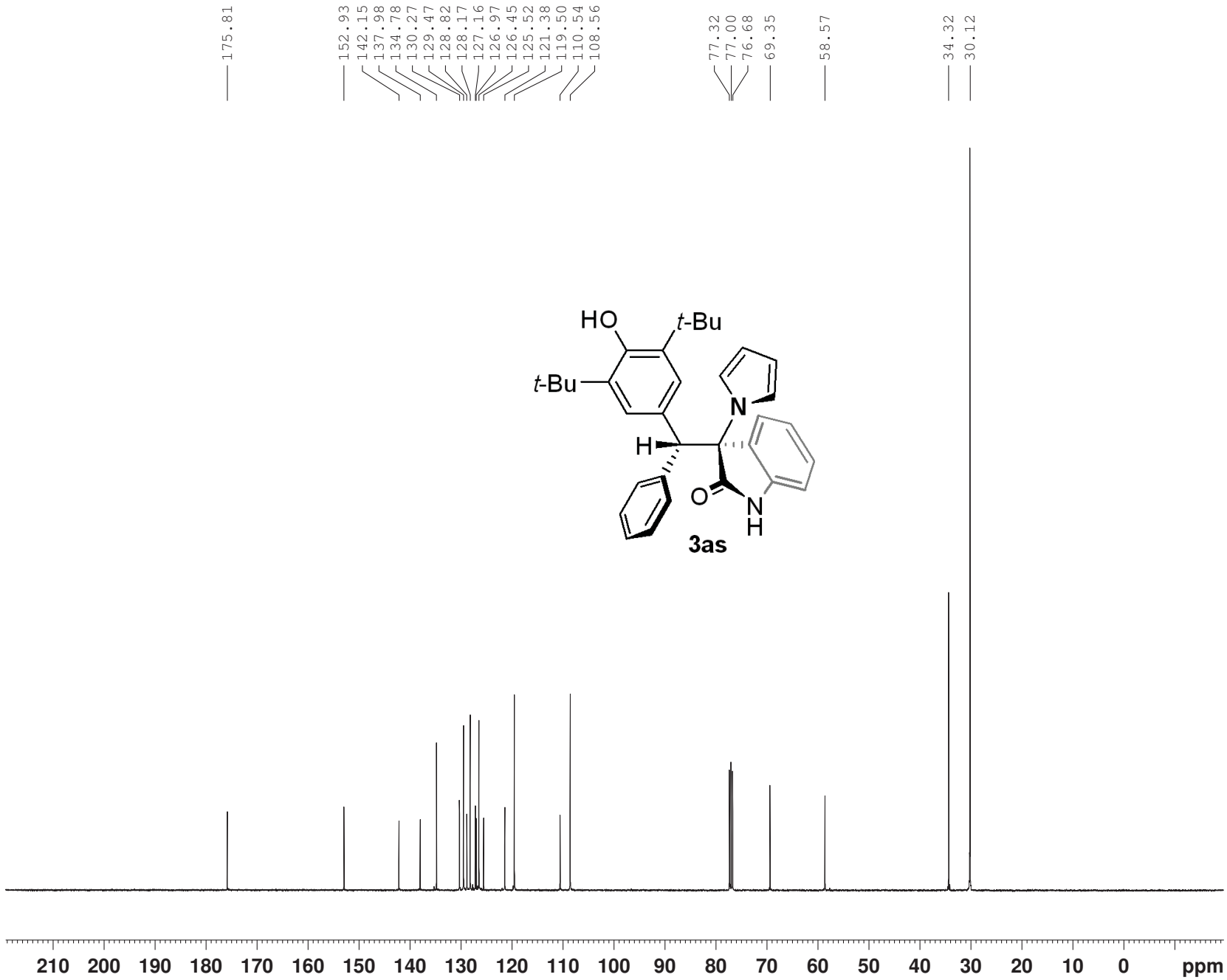
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.007	6246	0.03	471
2	2998 (190-400)纳米	9.928	99650	0.55	6272
3	2998 (190-400)纳米	10.872	48569	0.27	3081
4	2998 (190-400)纳米	18.838	17938125	99.15	645052




```
NAME      dengyh798a biluo
EXPNO                17
PROCNO                1
Date_          20150917
Time              15.01
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                    8
DS                    2
SWH            8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894966 sec
RG                   32
DW               62.400 usec
DE                6.50 usec
TE                295.2 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                 1H
P1                10.92 usec
SI                65536
SF           400.1300094 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

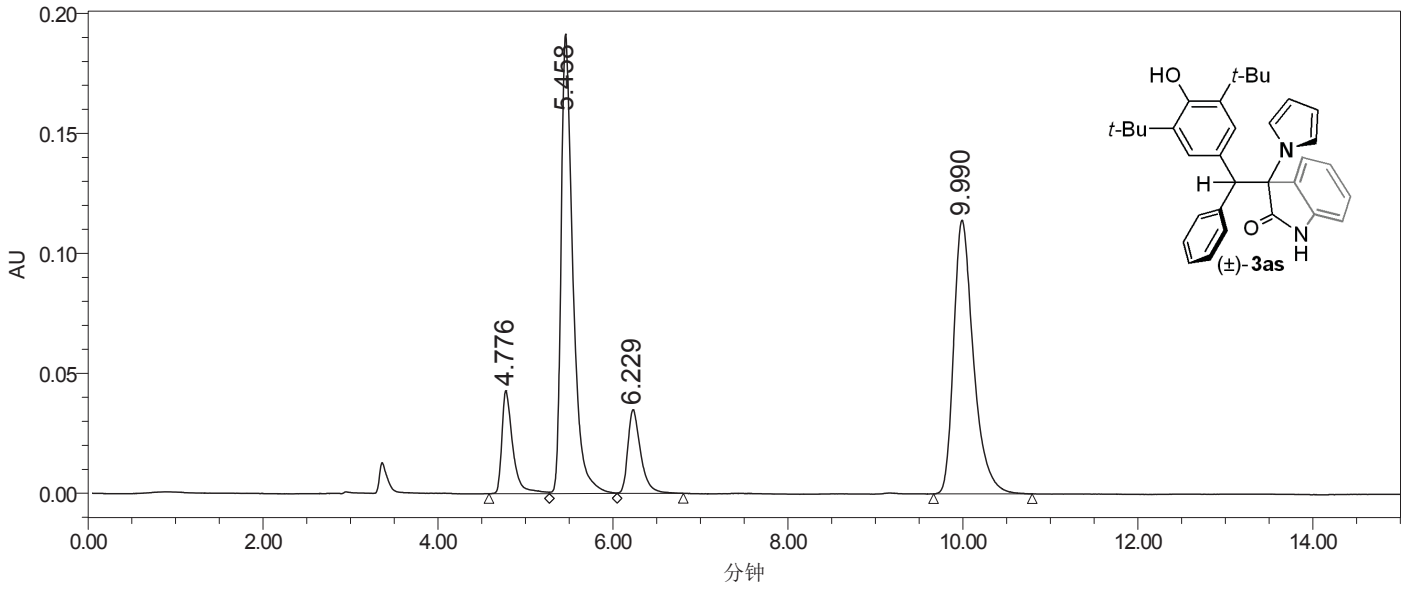


NAME	dengyh798a biluo
EXPNO	12
PROCNO	1
Date_	20150917
Time	14.41
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	550
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	1030
DW	20.800 usec
DE	6.50 usec
TE	295.8 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	14.70 usec
SI	32768
SF	100.6127839 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh798 biluo race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,1	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米@1
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/9/14 11:02:51 CST		
处理时间:	2015/9/14 14:42:41 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

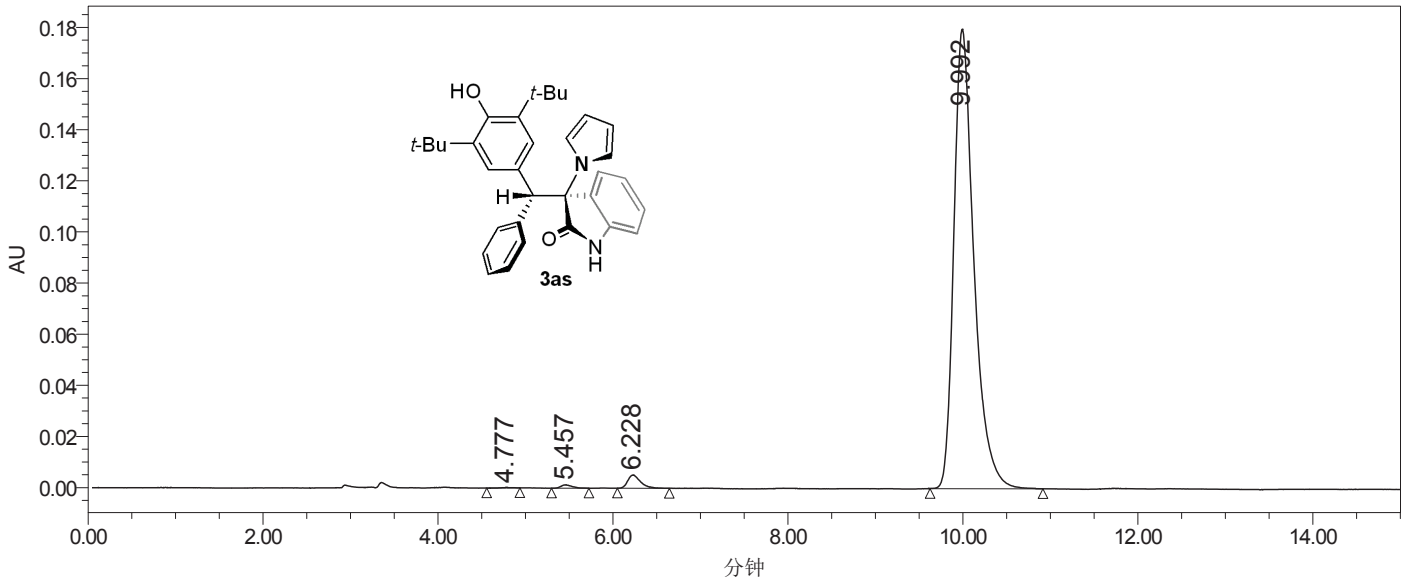
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.776	372575	8.64	42987
2	2998 (190-400)纳米	5.458	1794398	41.63	191440
3	2998 (190-400)纳米	6.229	355255	8.24	34882
4	2998 (190-400)纳米	9.990	1788382	41.49	114045

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

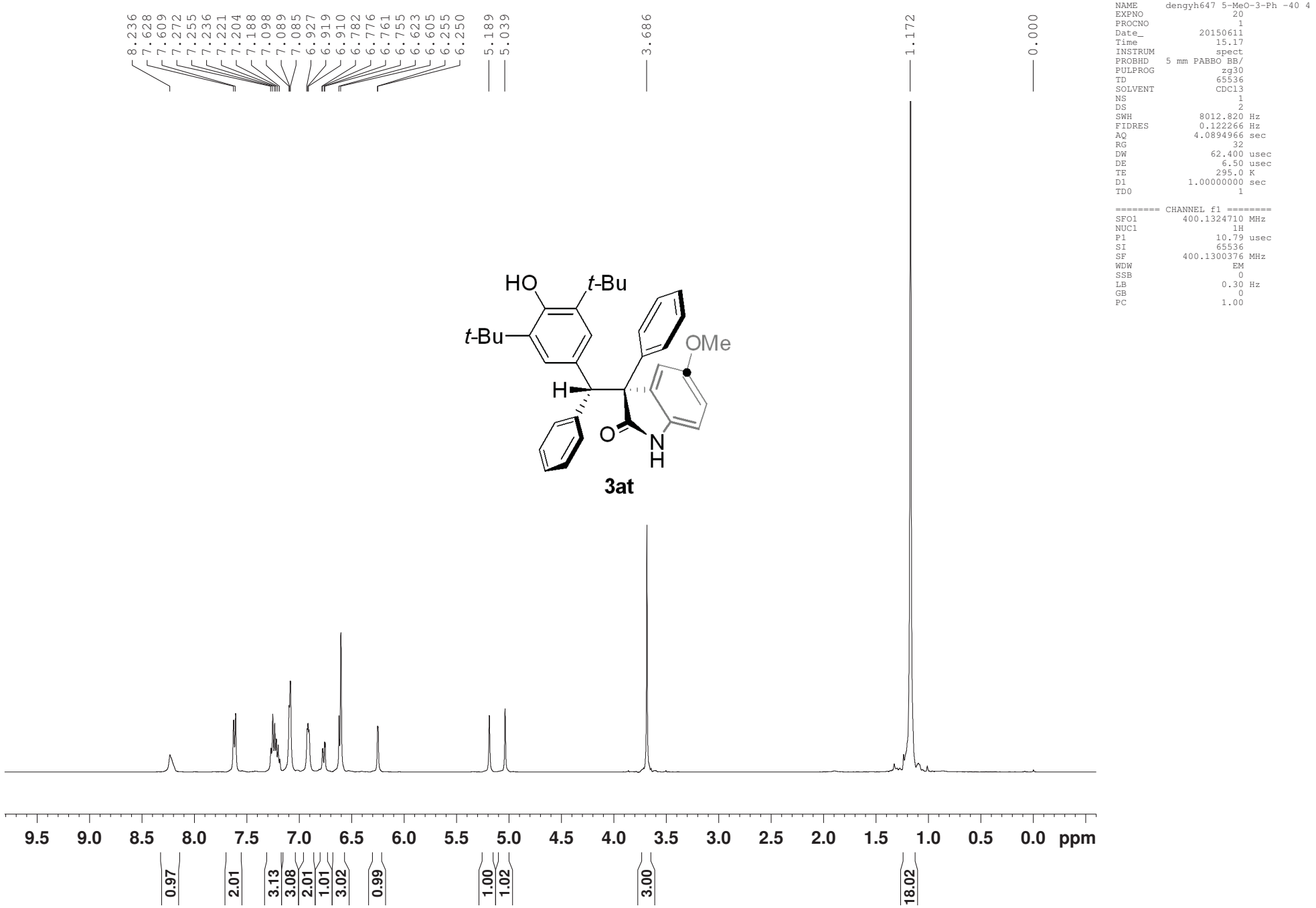
样品名称:	dengyh789a biluo -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,4	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@1
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/9/14 10:32:11 CST		
处理时间:	2015/9/14 14:43:37 CST		

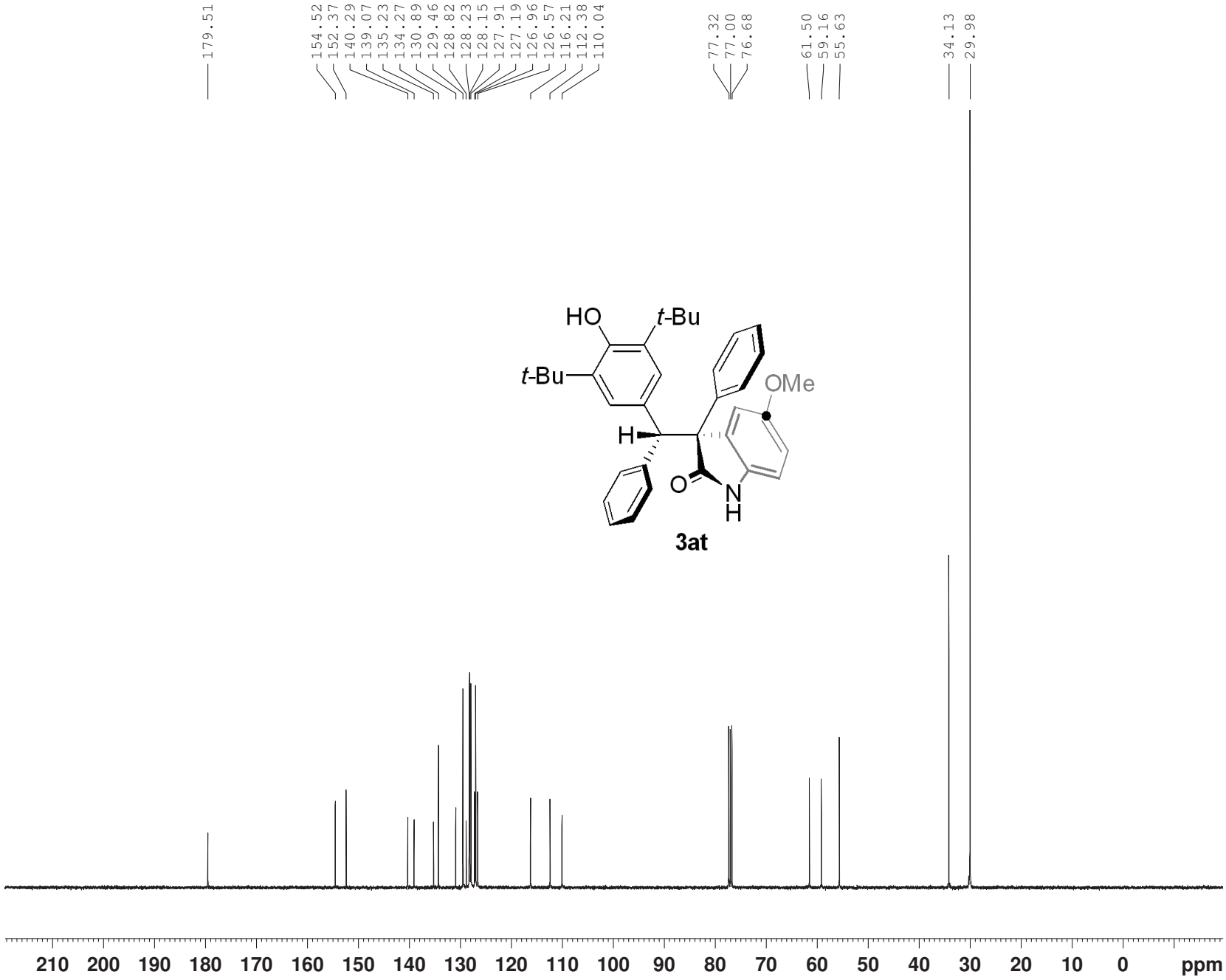


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.777	1455	0.05	183
2	2998 (190-400)纳米	5.457	11941	0.41	1284
3	2998 (190-400)纳米	6.228	52773	1.81	5184
4	2998 (190-400)纳米	9.992	2853171	97.73	179684


8.236
7.628
7.609
7.272
7.255
7.236
7.221
7.204
7.188
7.098
7.089
7.085
6.927
6.919
6.910
6.782
6.776
6.761
6.755
6.623
6.605
6.255
6.250
5.189
5.039
3.686
1.172
0.000
HO
t-Bu
t-Bu
OMe
H
O
N
H
3at
NAME dengyh647 5-MeO-3-Ph -40 4
EXPNO 20
PROCNO 1
Date_ 20150611
Time 15.17
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 1
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300376 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.97
2.01
3.13
3.08
2.01
1.01
3.02
0.99
1.00
1.02
3.00
18.02

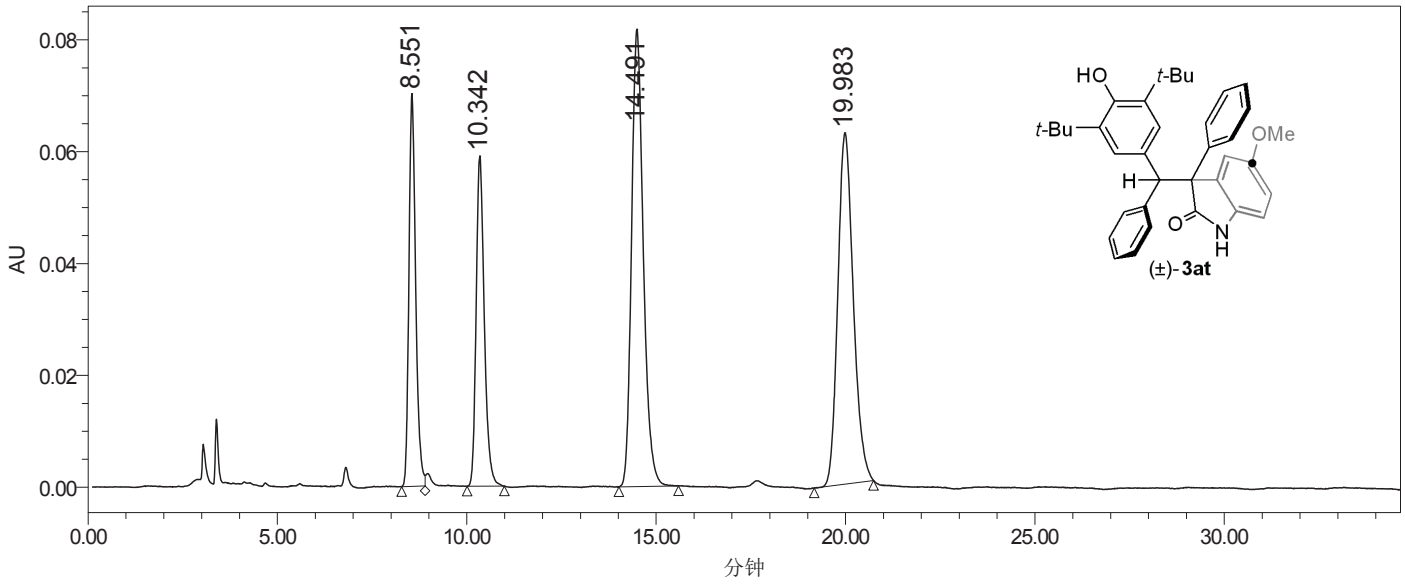



```
NAME      dengyh647 5-MeO-3-Ph -40 4
EXPNO                 21
PROCNO                 1
Date_           20150611
Time                15.37
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   320
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                  2050
DW                20.800 usec
DE                 6.50 usec
TE                296.2 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1                13C
P1                12.00 usec
SI                32768
SF           100.6127835 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh647 5-MeO-3-Ph race IA3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米@4
运行时间:	40.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/19 20:12:45 CST		
处理时间:	2015/4/19 22:37:29 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

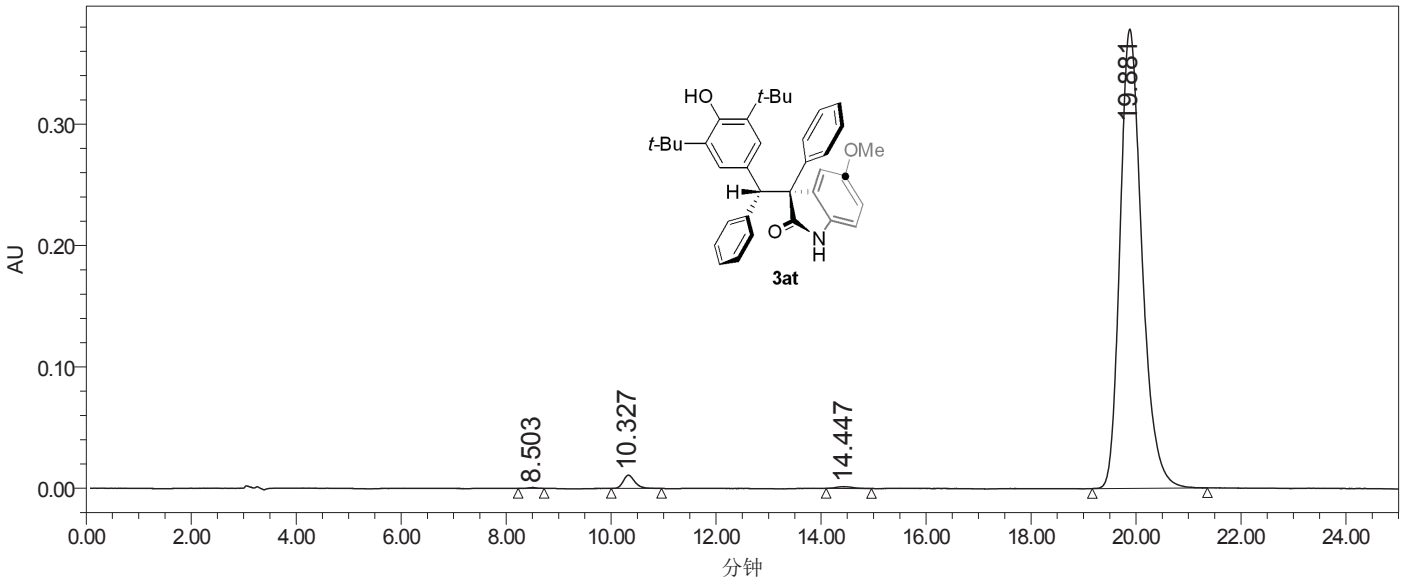
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.551	873383	16.46	70237
2	2998 (190-400)纳米	10.342	884418	16.67	59010
3	2998 (190-400)纳米	14.491	1761700	33.20	81775
4	2998 (190-400)纳米	19.983	1786553	33.67	62802

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

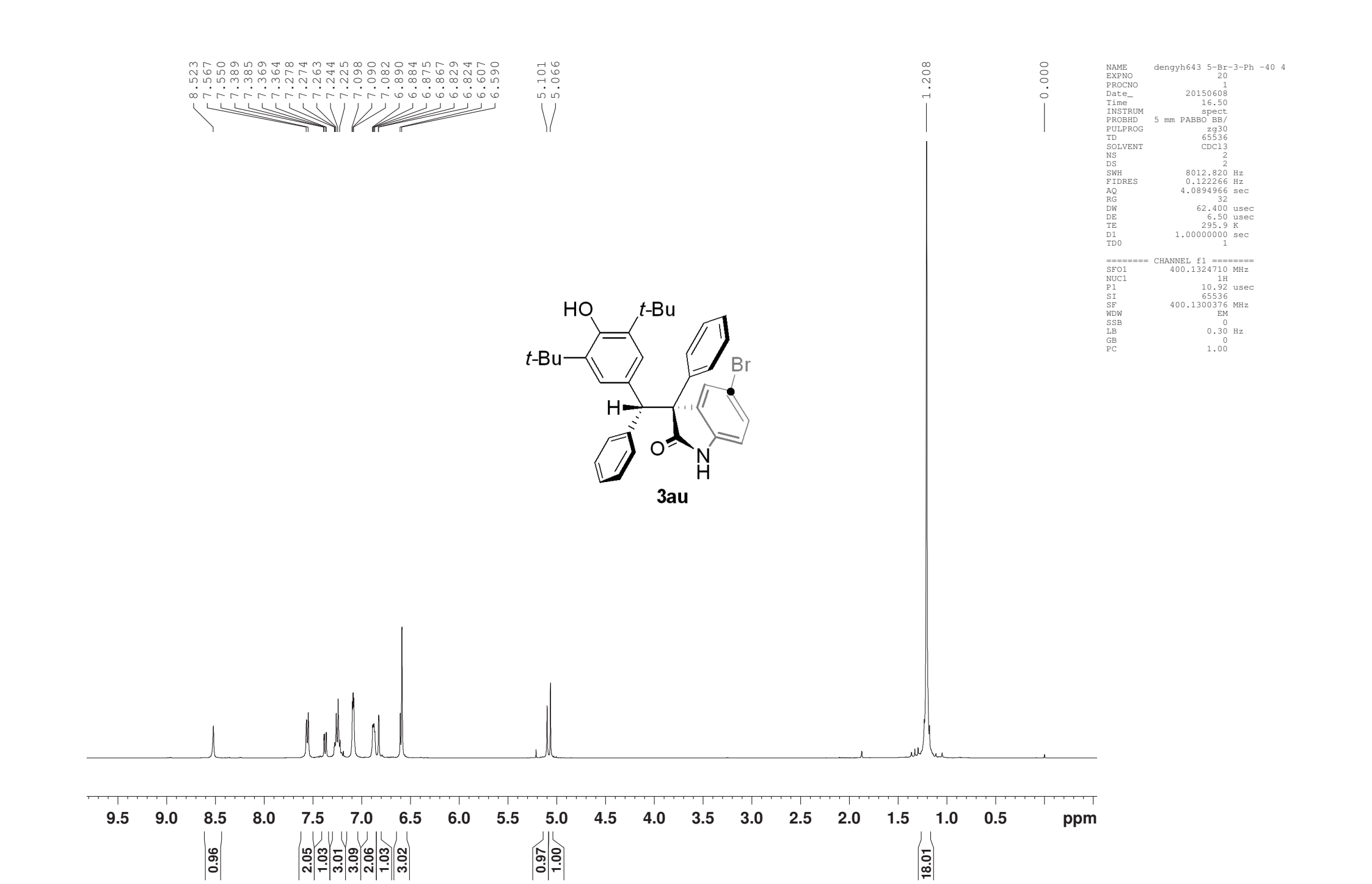
样品名称:	dengyh647a 5-MeO-3-Ph -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/19 20:49:51 CST		
处理时间:	2015/4/19 22:40:02 CST		

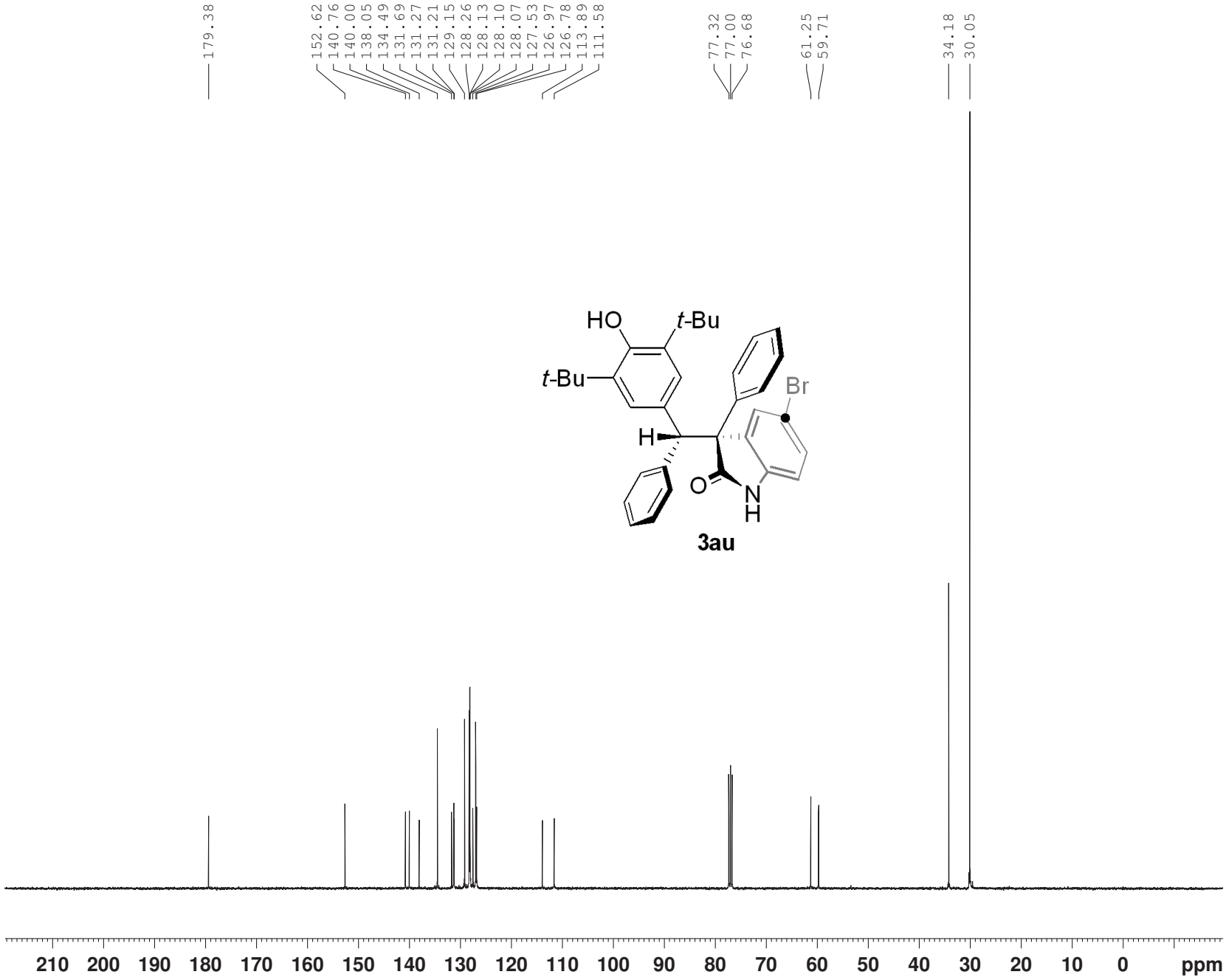


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.503	8351	0.07	754
2	2998 (190-400)纳米	10.327	168230	1.51	10951
3	2998 (190-400)纳米	14.447	32807	0.29	1528
4	2998 (190-400)纳米	19.881	10957777	98.12	378295


8.523
7.567
7.550
7.389
7.385
7.369
7.364
7.278
7.274
7.263
7.244
7.225
7.098
7.090
7.082
6.890
6.884
6.875
6.867
6.829
6.824
6.607
6.590
5.101
5.066
1.208
0.000
NAME dengyh643 5-Br-3-Ph -40 4
EXPNO 20
PROCNO 1
Date_ 20150608
Time 16.50
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 2
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 295.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300376 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
Br
H
O
N
H
3au
9.5 9.0 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 ppm
0.96
2.05
1.03
3.01
3.09
2.06
1.03
3.02
0.97
1.00
18.01

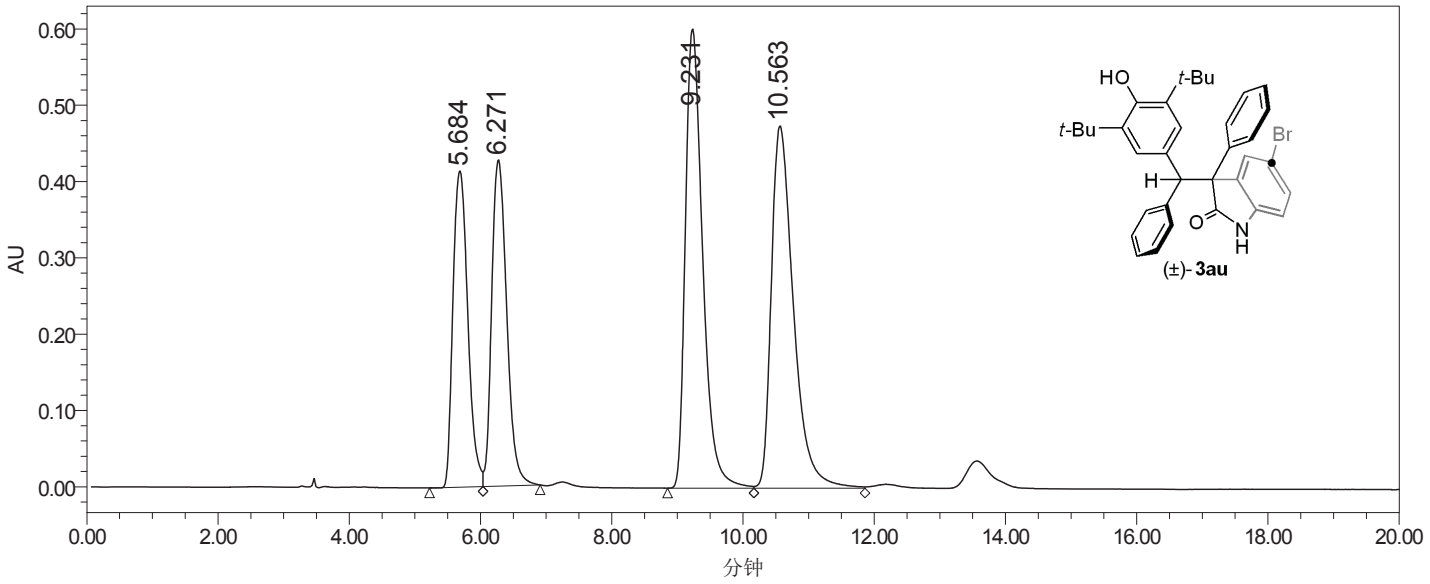



```
NAME      dengyh643 5-Br-3-Ph -40 4
EXPNO                 21
PROCNO                 1
Date_           20150608
Time              17.09
INSTRUM            spect
PROBHD    5 mm PABBO BB/
PULPROG           zgpg30
TD                65536
SOLVENT           CDCl3
NS                  320
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                  912
DW               20.800 usec
DE                6.50 usec
TE                296.9 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF          100.6127824 MHz
WDW                 EM
SSB                  0
LB                1.00 Hz
GB                   0
PC                1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh 5-Br-3-Ph RACE IE3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IPA vs Hex 3vs97 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/18 21:58:11 CST		
处理时间:	2015/11/21 20:47:14 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

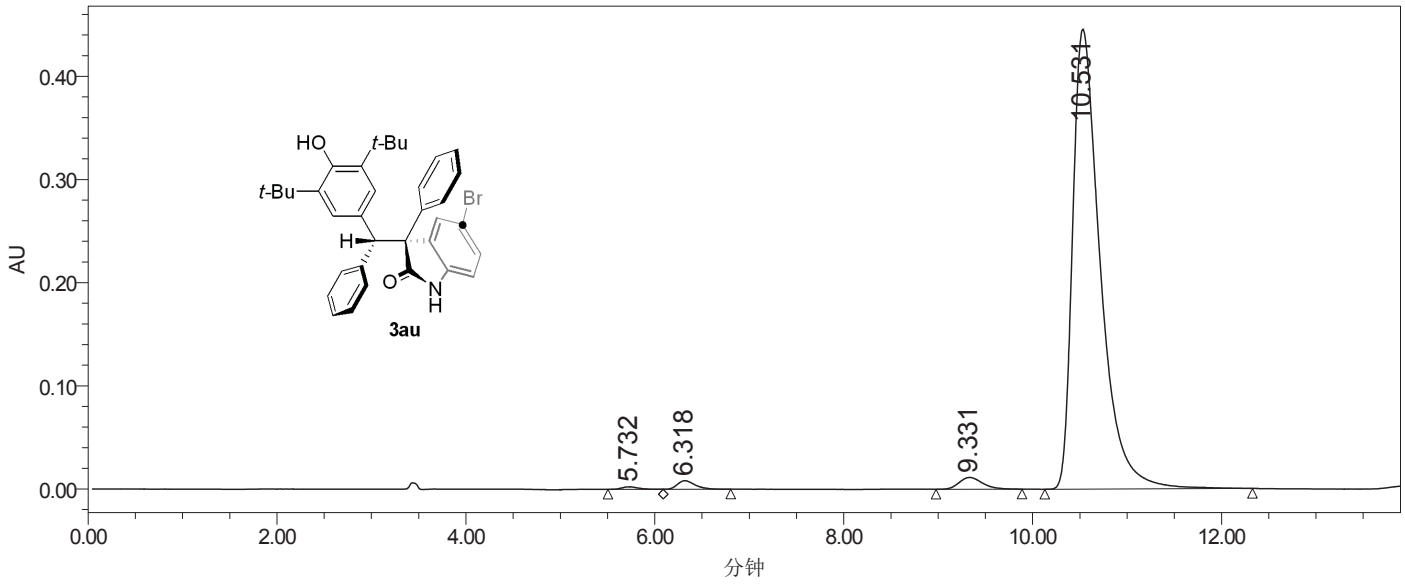
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.684	6518264	18.38	414151
2	2998 (190-400)纳米	6.271	6808726	19.20	427171
3	2998 (190-400)纳米	9.231	11024159	31.09	601390
4	2998 (190-400)纳米	10.563	11103925	31.32	474473

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

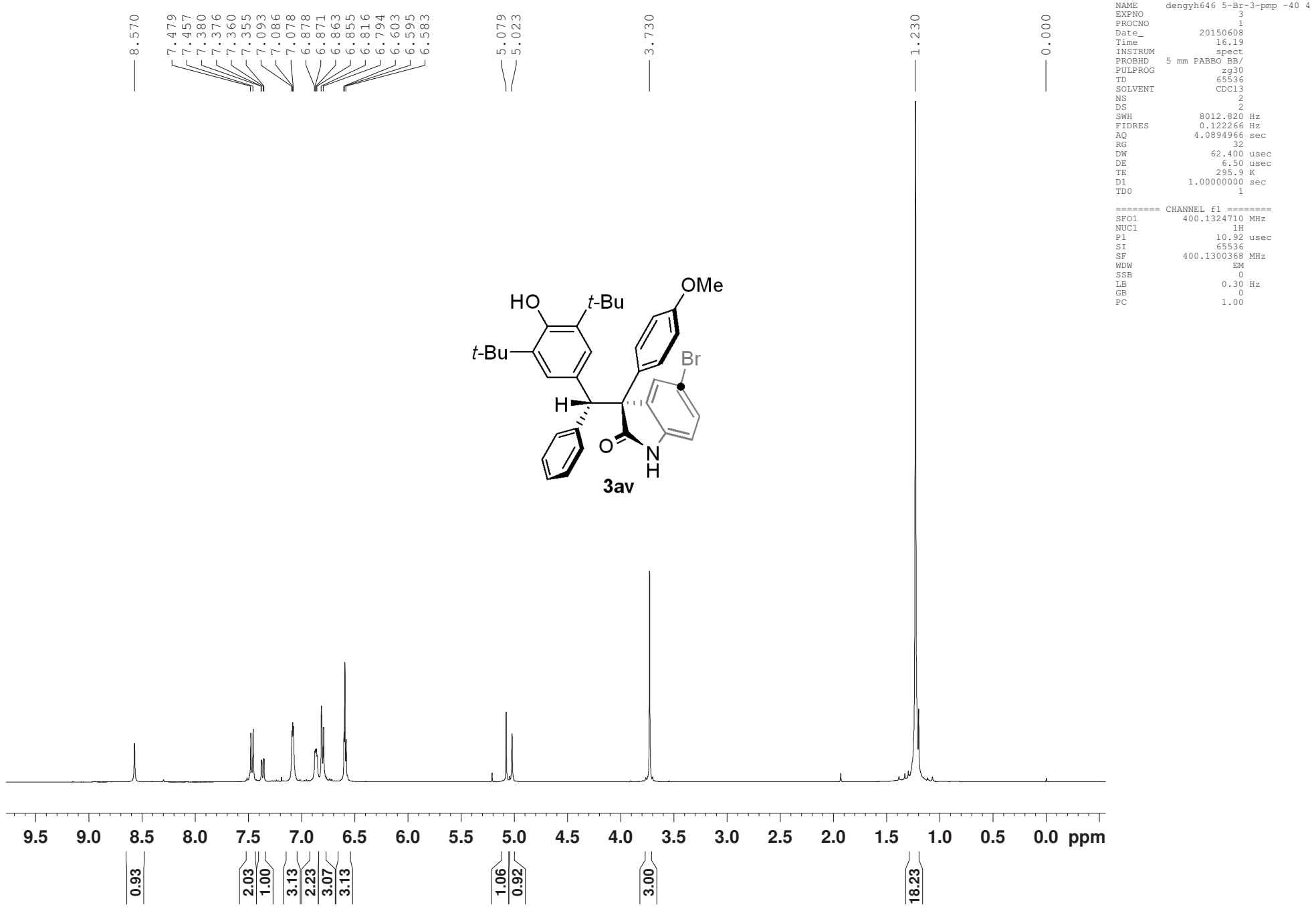
样品名称:	dengyh643a 5-Br-3-Ph -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IPA vs Hex 3vs97 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	14.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/18 22:36:13 CST		
处理时间:	2015/4/18 22:52:37 CST		



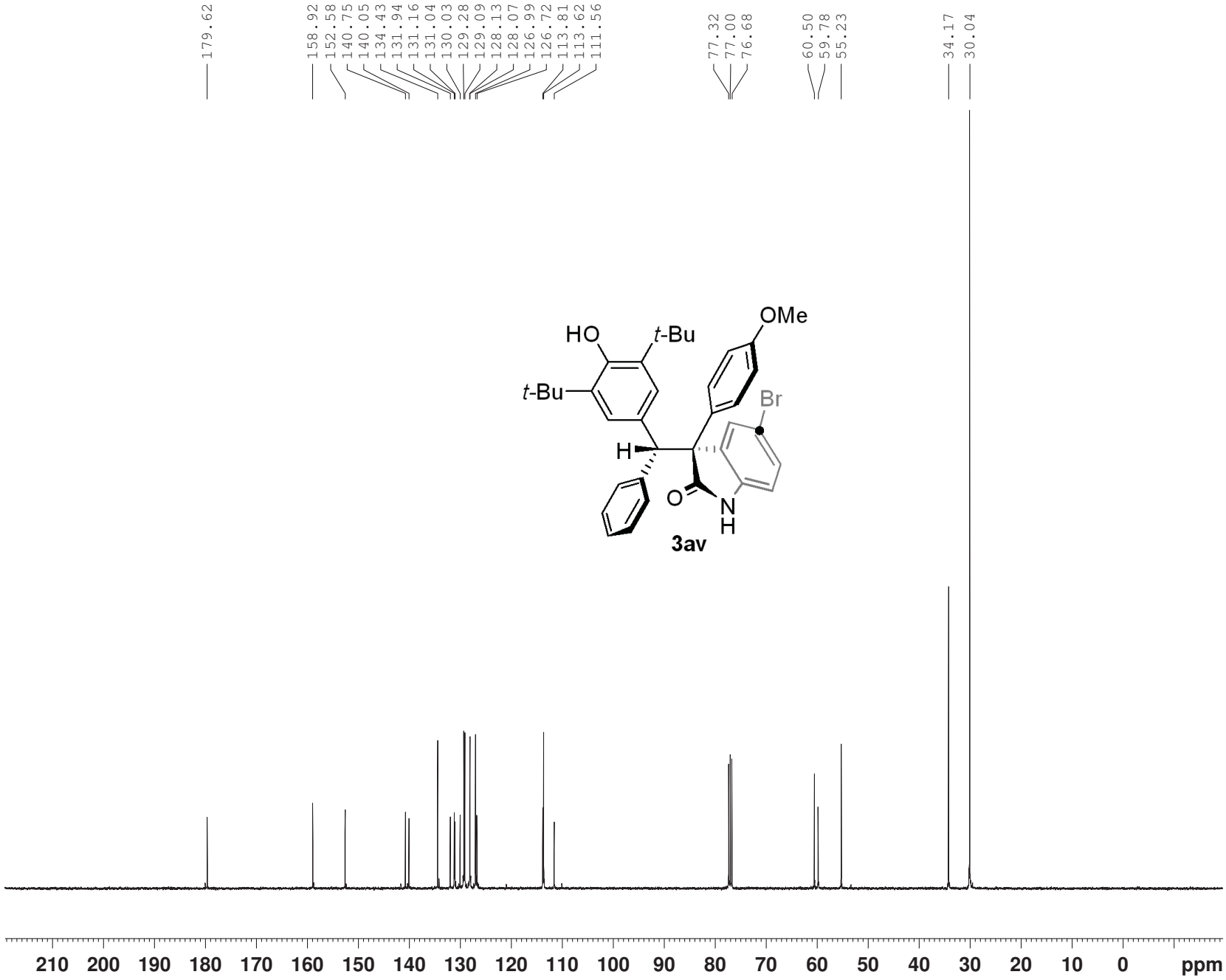
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.732	30213	0.32	2469
2	2998 (190-400)纳米	6.318	108808	1.16	8340
3	2998 (190-400)纳米	9.331	196392	2.09	11423
4	2998 (190-400)纳米	10.531	9042905	96.42	445774




```
NAME      dengyh646 5-Br-3-pmp -40 4
EXPNO                3
PROCNO               1
Date_         20150608
Time             16.19
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG           zg30
TD               65536
SOLVENT          CDCl3
NS                   2
DS                   2
SWH           8012.820 Hz
FIDRES        0.122266 Hz
AQ            4.0894966 sec
RG                  32
DW               62.400 usec
DE                6.50 usec
TE               295.9 K
D1            1.00000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        400.1324710 MHz
NUC1                1H
P1                10.92 usec
SI                65536
SF          400.1300368 MHz
WDW                 EM
SSB                  0
LB                0.30 Hz
GB                   0
PC                1.00
```

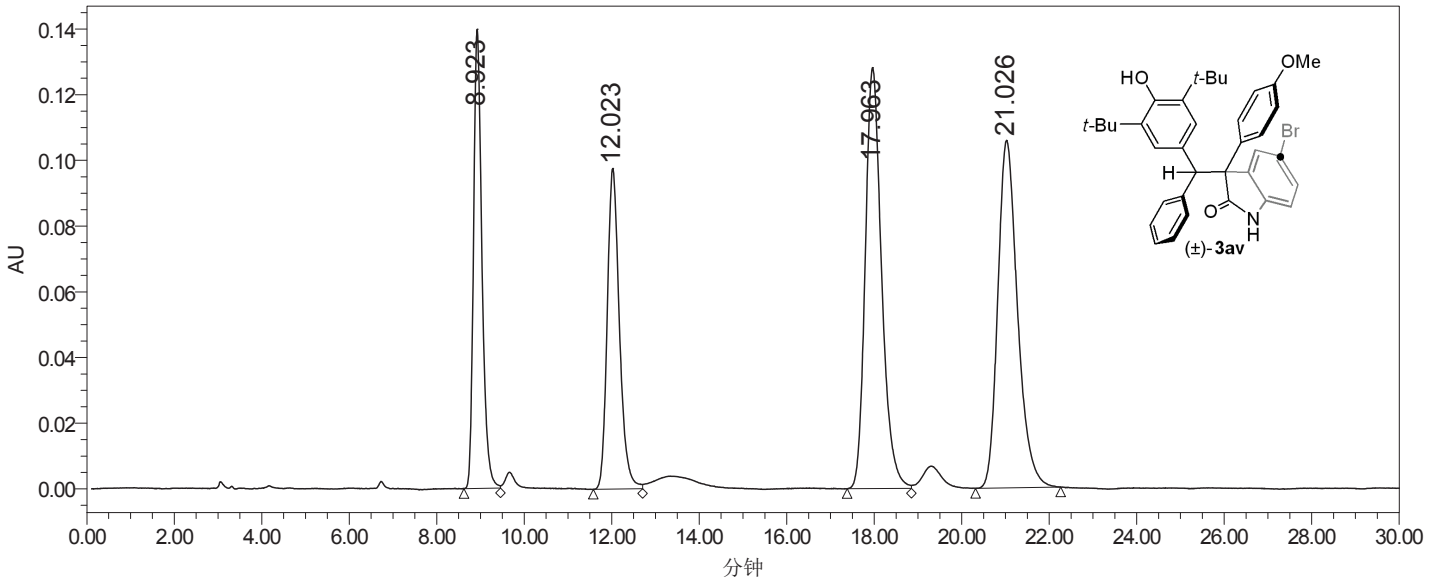



```
NAME      dengyh646 5-Br-3-pmp -40 4
EXPNO                4
PROCNO               1
Date_         20150608
Time             16.38
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  320
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                  912
DW               20.800 usec
DE                6.50 usec
TE               296.8 K
D1          2.00000000 sec
D11         0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF          100.6127845 MHz
WDW                 EM
SSB                  0
LB                1.00 Hz
GB                   0
PC                1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh646 5-Br-3-PMP race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/18 17:50:13 CST		
处理时间:	2015/4/19 22:24:43 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

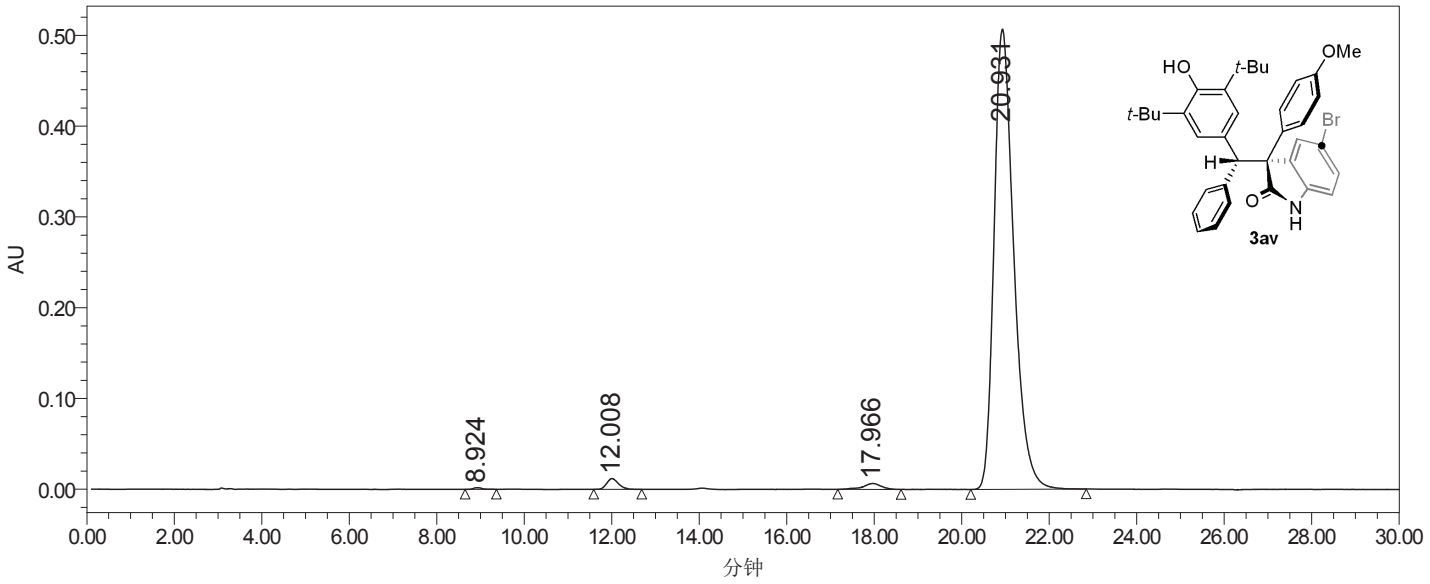
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.923	1867236	17.96	139800
2	2998 (190-400)纳米	12.023	1888596	18.16	97624
3	2998 (190-400)纳米	17.963	3326547	31.99	128175
4	2998 (190-400)纳米	21.026	3315330	31.89	105791

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

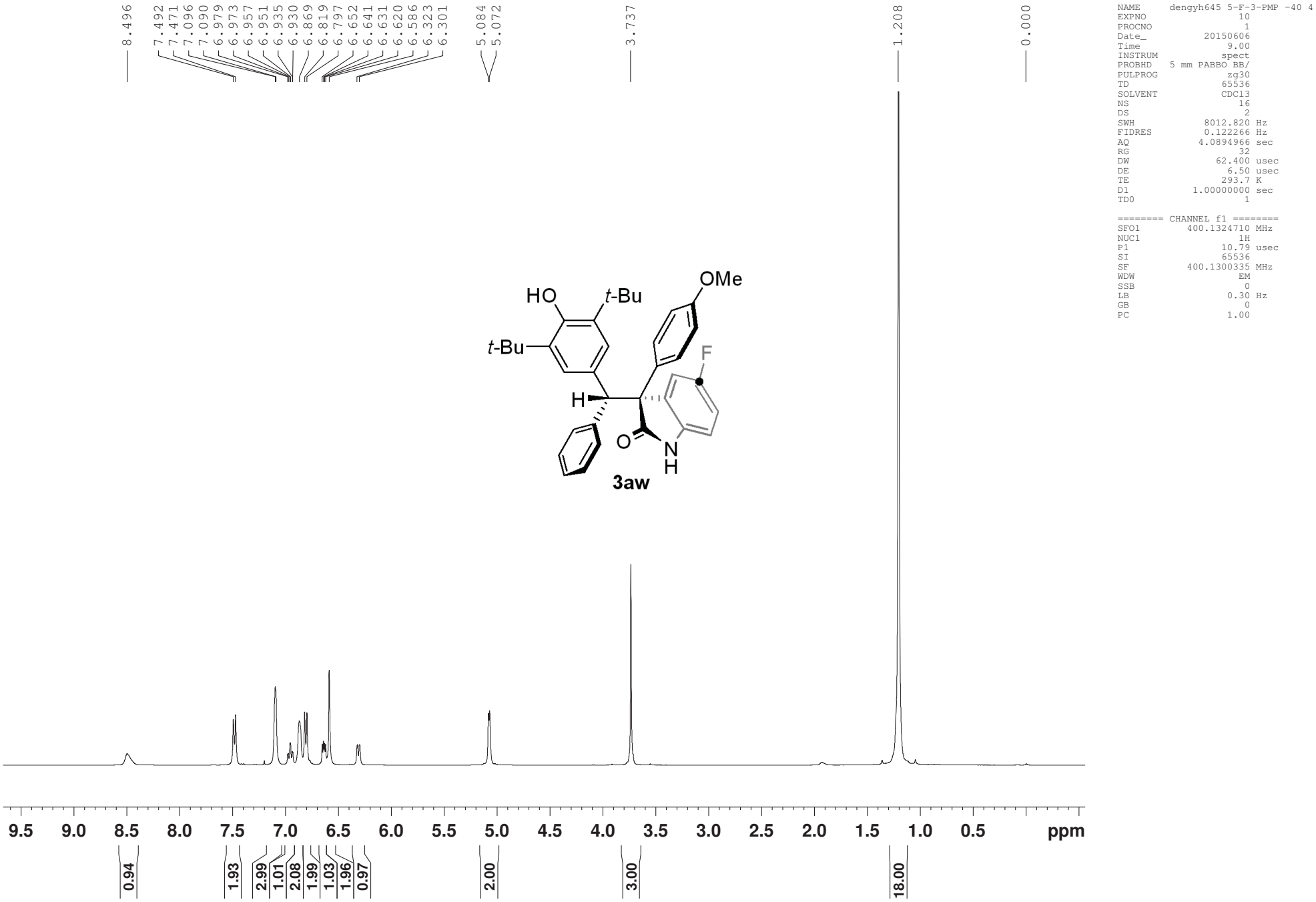
样品名称:	dengyh646a 5-Br-3-PMP -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@4
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/18 17:19:50 CST		
处理时间:	2015/4/19 22:31:46 CST		



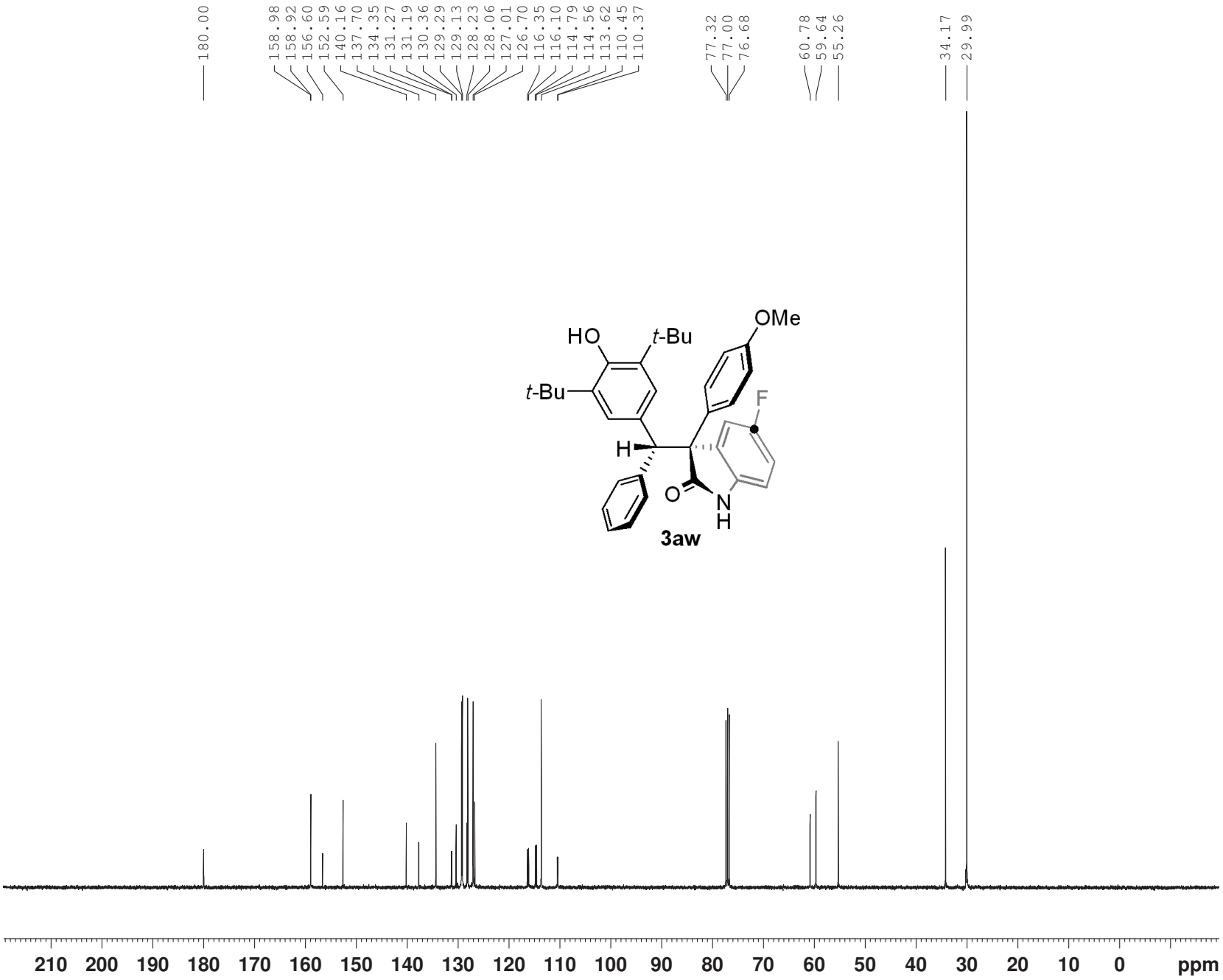
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.924	27727	0.17	2016
2	2998 (190-400)纳米	12.008	226489	1.39	11964
3	2998 (190-400)纳米	17.966	192938	1.18	6567
4	2998 (190-400)纳米	20.931	15852044	97.26	506930




```
NAME      dengyh645 5-F-3-PMP -40 4
EXPNO                 10
PROCNO                 1
Date_           20150606
Time                9.00
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     16
DS                      2
SWH              8012.820 Hz
FIDRES           0.122266 Hz
AQ               4.0894966 sec
RG                     32
DW                 62.400 usec
DE                  6.50 usec
TE                 293.7 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                 10.79 usec
SI                  65536
SF           400.1300335 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```

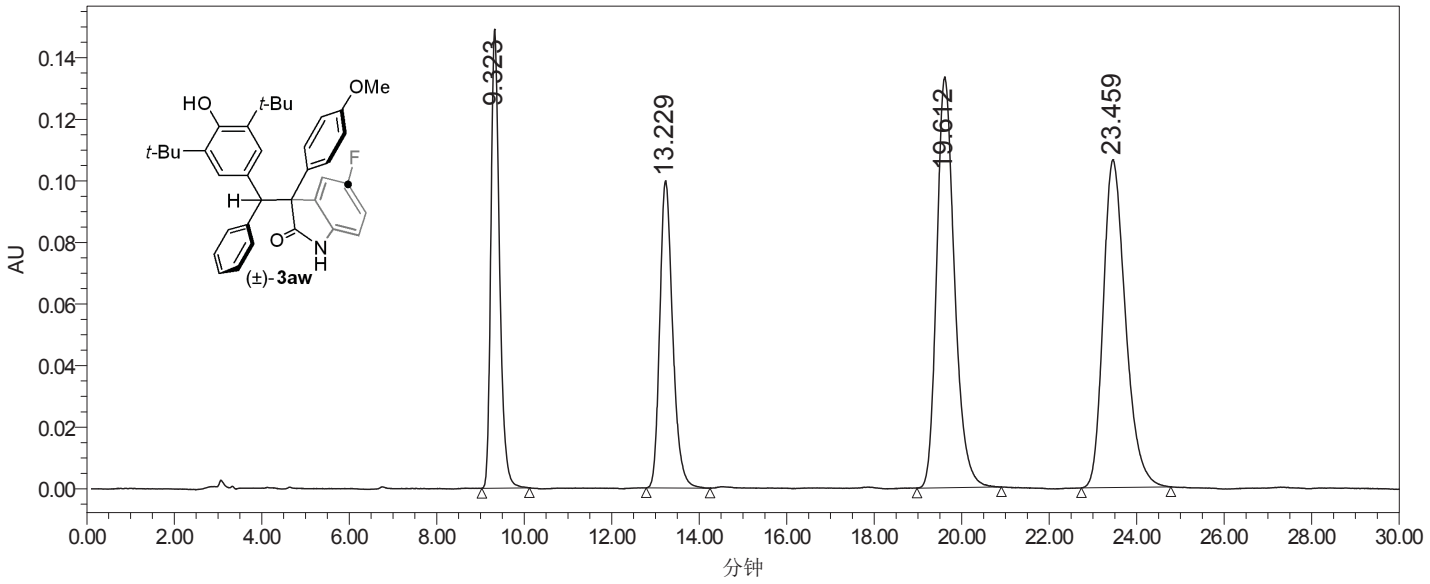



```
NAME        dengyh645 5-F-3-PMP -40 4
EXPNO                 11
PROCNO                 1
Date_           20150606
Time                9.19
INSTRUM            spect
PROBHD    5 mm PABBO BB/
PULPROG            zgpg30
TD                  65536
SOLVENT             CDCl3
NS                    300
DS                      2
SWH             24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                   2050
DW                 20.800 usec
DE                  6.50 usec
TE                 295.0 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 12.00 usec
SI                 32768
SF            100.6127816 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh645 5-F-3-PMP race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@4
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/18 15:19:09 CST		
处理时间:	2015/4/18 16:08:40 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

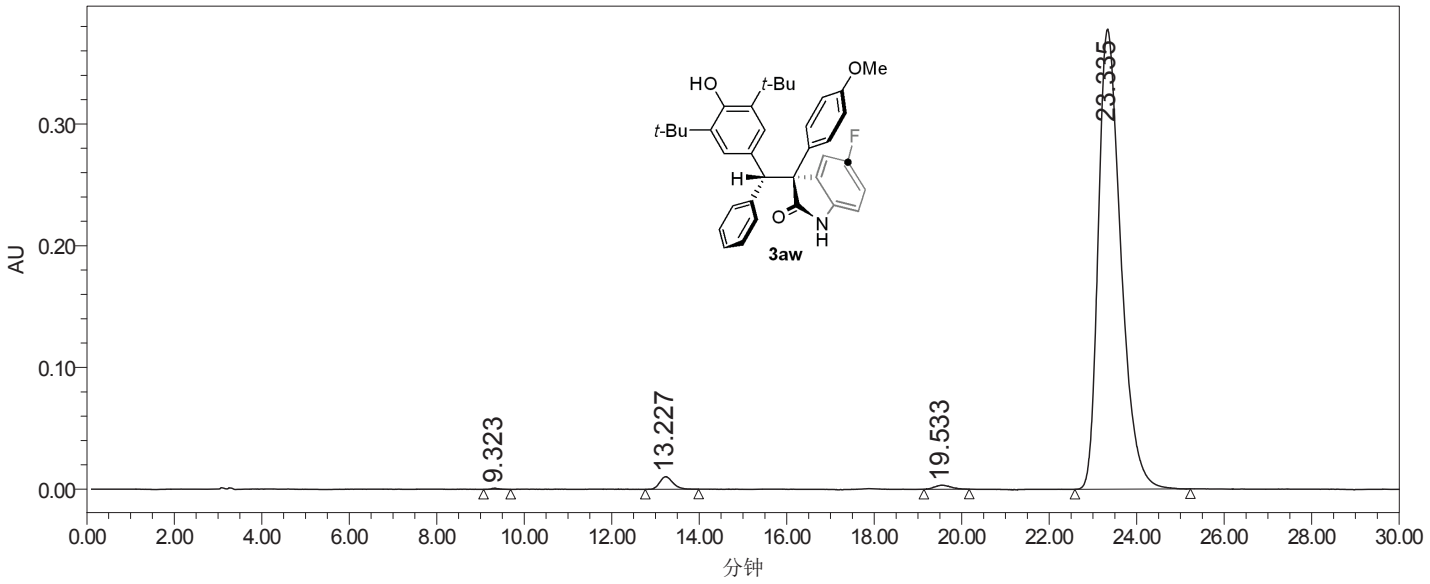
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.323	2040973	17.58	149076
2	2998 (190-400)纳米	13.229	2042015	17.59	99719
3	2998 (190-400)纳米	19.612	3757599	32.37	133370
4	2998 (190-400)纳米	23.459	3767903	32.46	106500

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

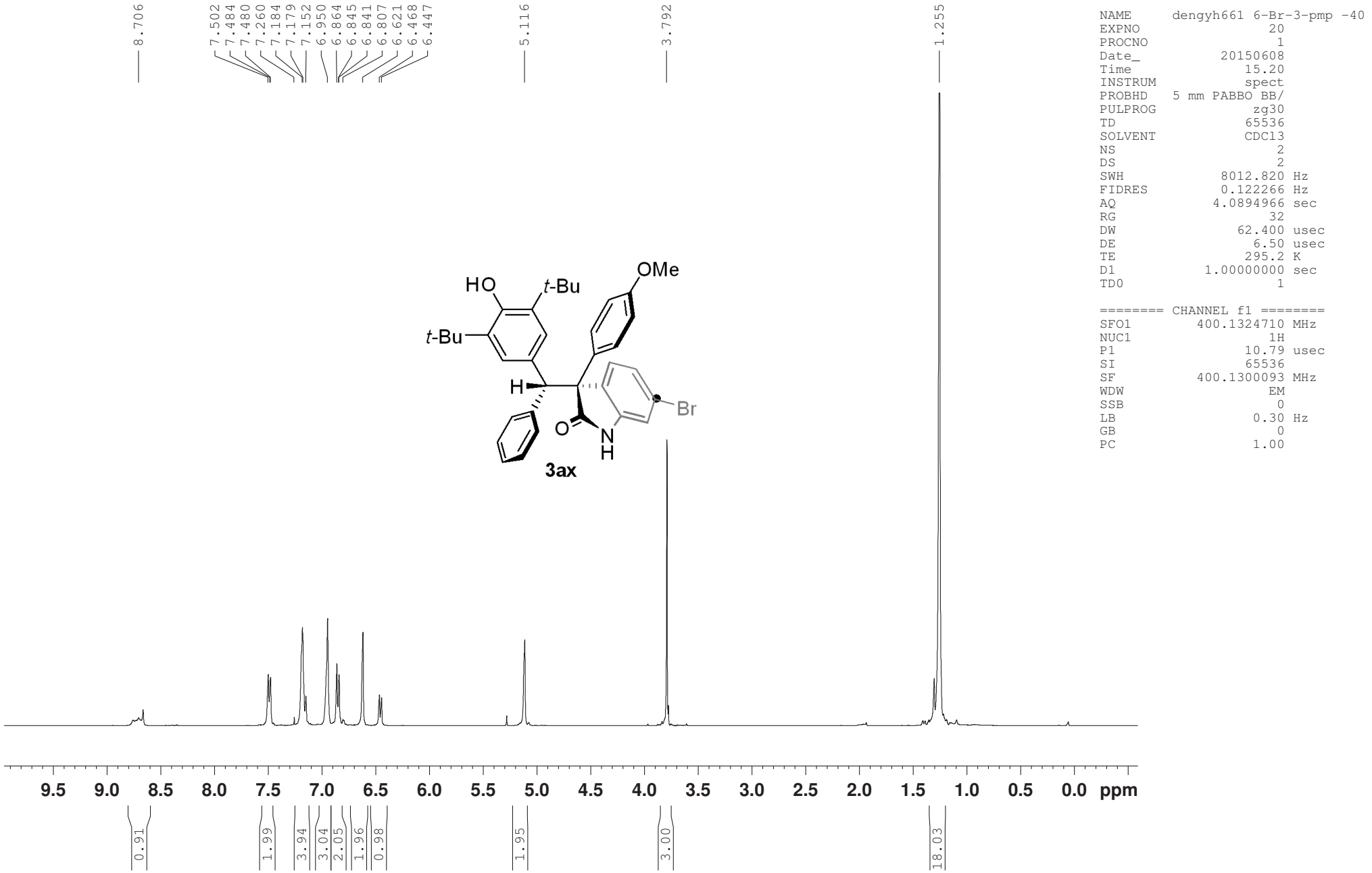
样品名称:	dengyh645a 5-F-3-PMP -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,1	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@4
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/18 14:48:47 CST		
处理时间:	2015/4/18 16:10:11 CST		

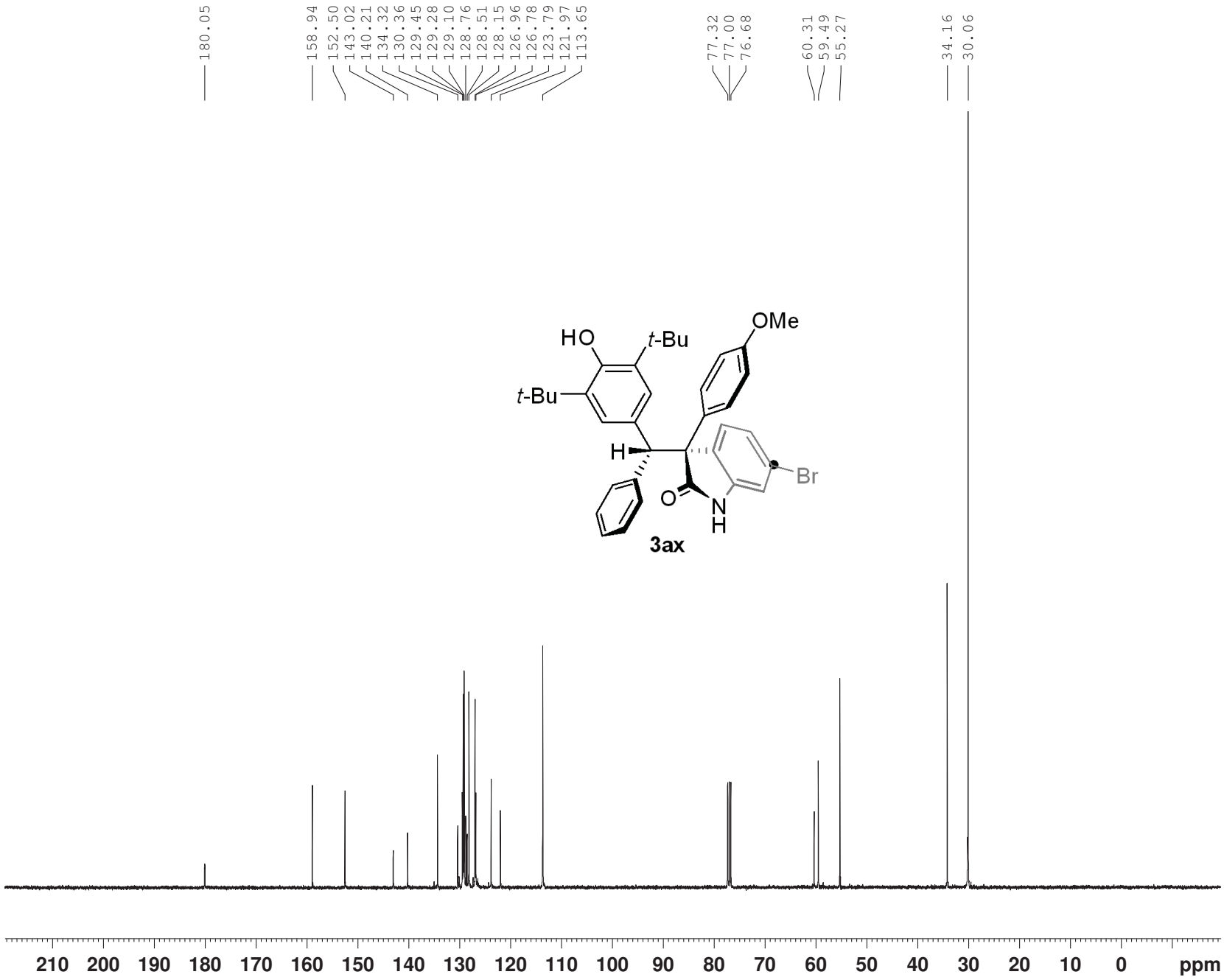


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.323	11984	0.09	915
2	2998 (190-400)纳米	13.227	219393	1.59	10329
3	2998 (190-400)纳米	19.533	87265	0.63	3289
4	2998 (190-400)纳米	23.335	13519168	97.70	377820


8.706
7.502
7.484
7.480
7.260
7.184
7.179
7.152
6.950
6.864
6.845
6.841
6.807
6.621
6.468
6.447
5.116
3.792
1.255
HO
t-Bu
t-Bu
OMe
H
Br
O
N
H
3ax
NAME dengyh661 6-Br-3-pmp -40
EXPNO 20
PROCNO 1
Date_ 20150608
Time 15.20
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 2
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 295.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300093 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.91
1.99
3.94
3.04
2.05
1.96
0.98
1.95
3.00
18.03

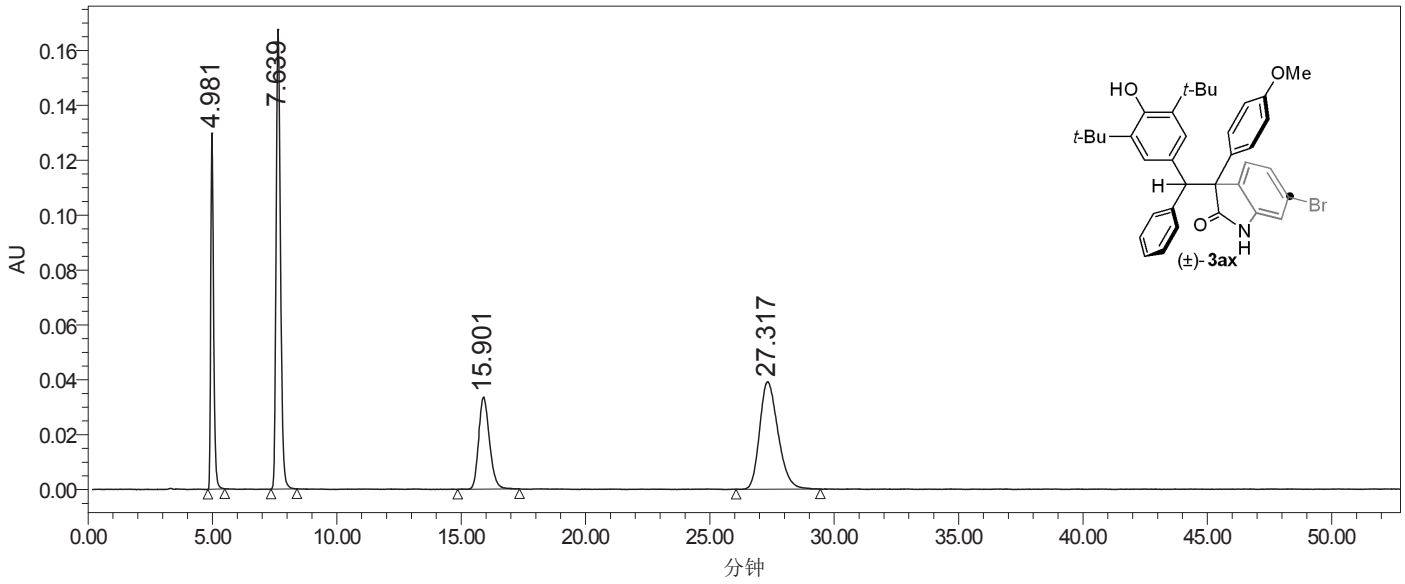



```
NAME      dengyh661 6-Br-3-pmp -40
EXPNO                 11
PROCNO                 1
Date_           20150608
Time                9.26
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG            zgpg30
TD                 65536
SOLVENT            CDC13
NS                   360
DS                     2
SWH            24038.461 Hz
FIDRES             0.366798 Hz
AQ              1.3631988 sec
RG                  1030
DW                 20.800 usec
DE                  6.50 usec
TE                297.0 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 14.70 usec
SI                 32768
SF            100.6127814 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh661 6-Br-3-PMP race IE3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	2.00 ul	通道名称:	254.0 纳米
运行时间:	60.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/28 22:11:14 CST		
处理时间:	2015/4/28 23:11:03 CST		



Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

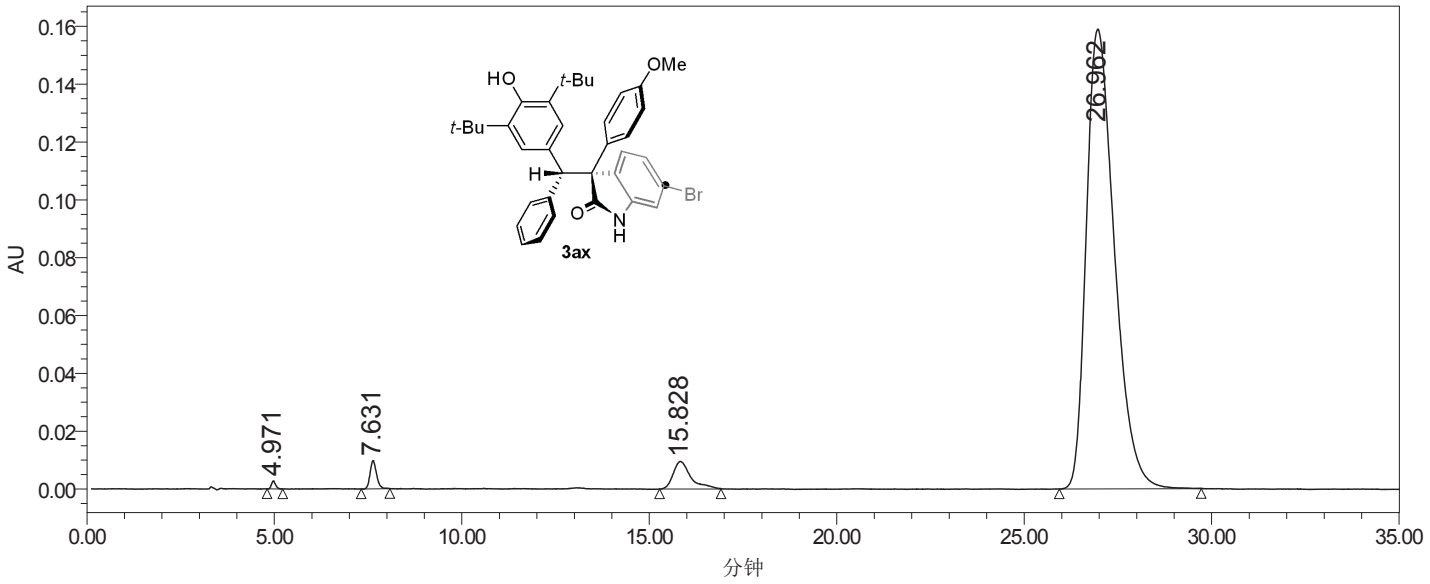
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.981	1018403	16.78	129802
2	2998 (190-400)纳米	7.639	2024211	33.36	167544
3	2998 (190-400)纳米	15.901	1013648	16.70	33529
4	2998 (190-400)纳米	27.317	2012350	33.16	39140

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

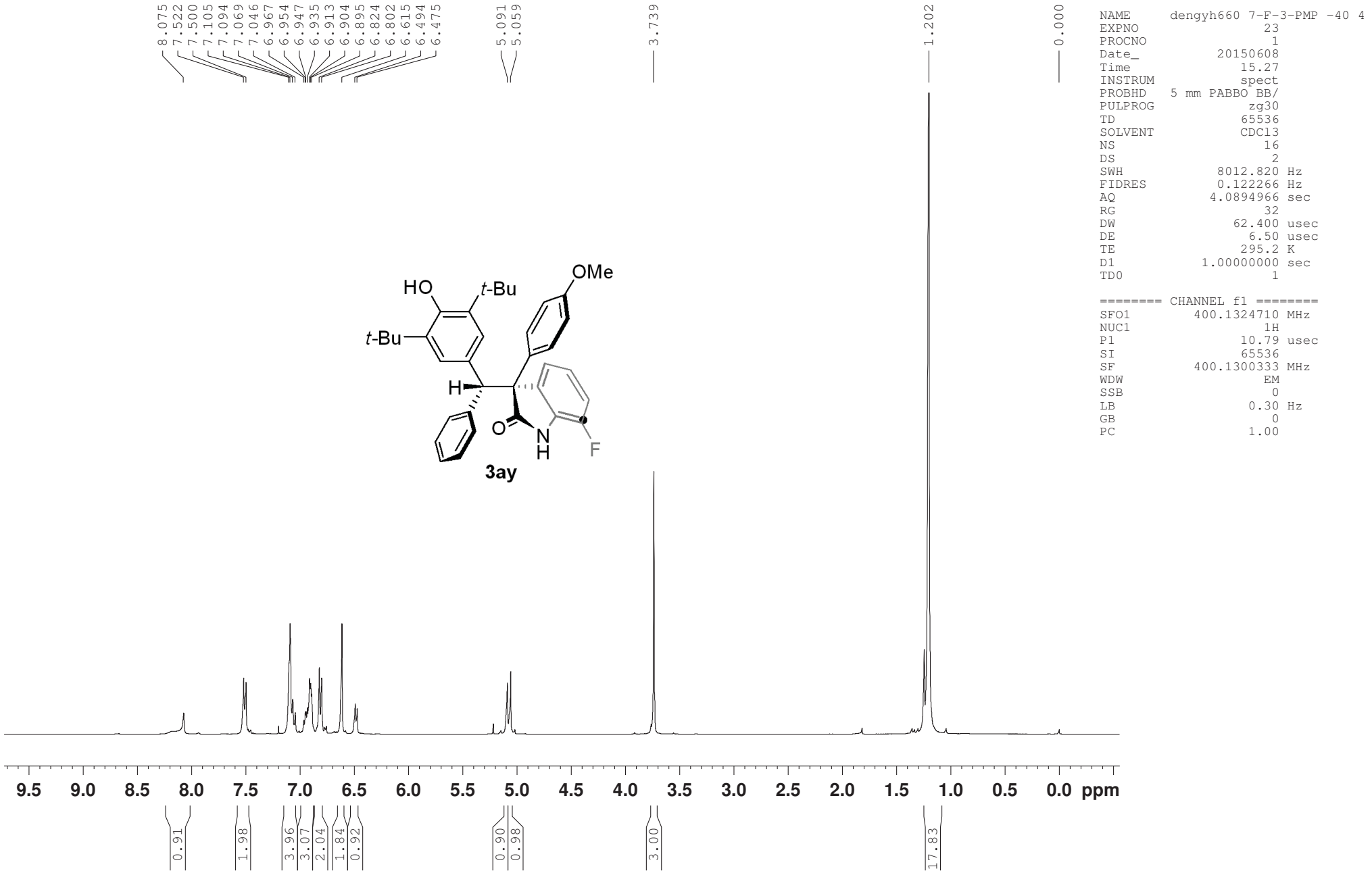
样品名称:	dengyh661 6-Br-3-PMP -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	35.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/28 23:10:44 CST		
处理时间:	2015/4/28 23:48:50 CST		



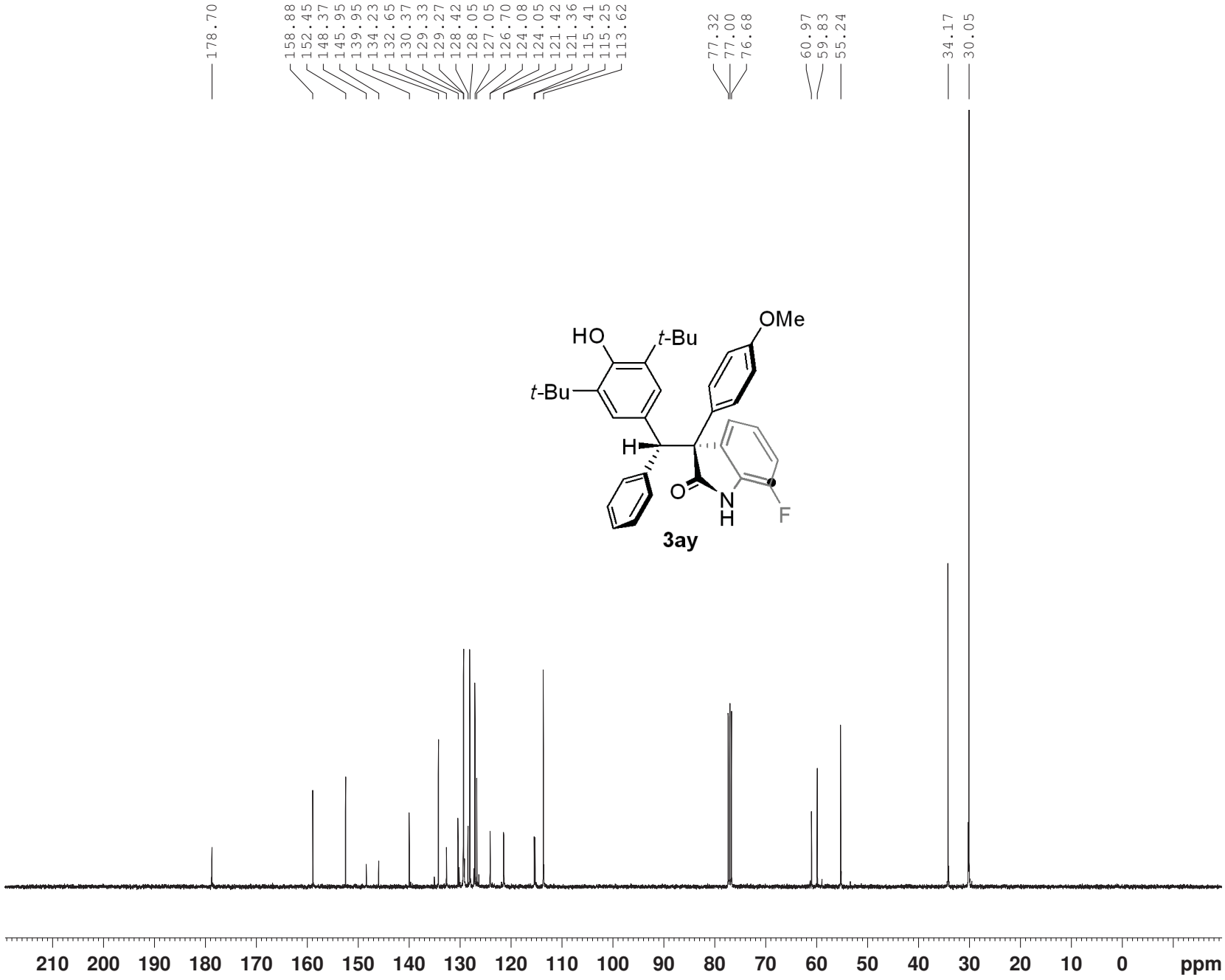
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.971	20950	0.24	2717
2	2998 (190-400)纳米	7.631	116953	1.34	9726
3	2998 (190-400)纳米	15.828	310878	3.57	9544
4	2998 (190-400)纳米	26.962	8261179	94.85	158955



NAME	dengyh660 7-F-3-PMP -40 4
EXPNO	23
PROCNO	1
Date_	20150608
Time	15.27
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	8012.820 Hz
FIDRES	0.122266 Hz
AQ	4.0894966 sec
RG	32
DW	62.400 usec
DE	6.50 usec
TE	295.2 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	400.1324710 MHz
NUC1	1H
P1	10.79 usec
SI	65536
SF	400.1300333 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

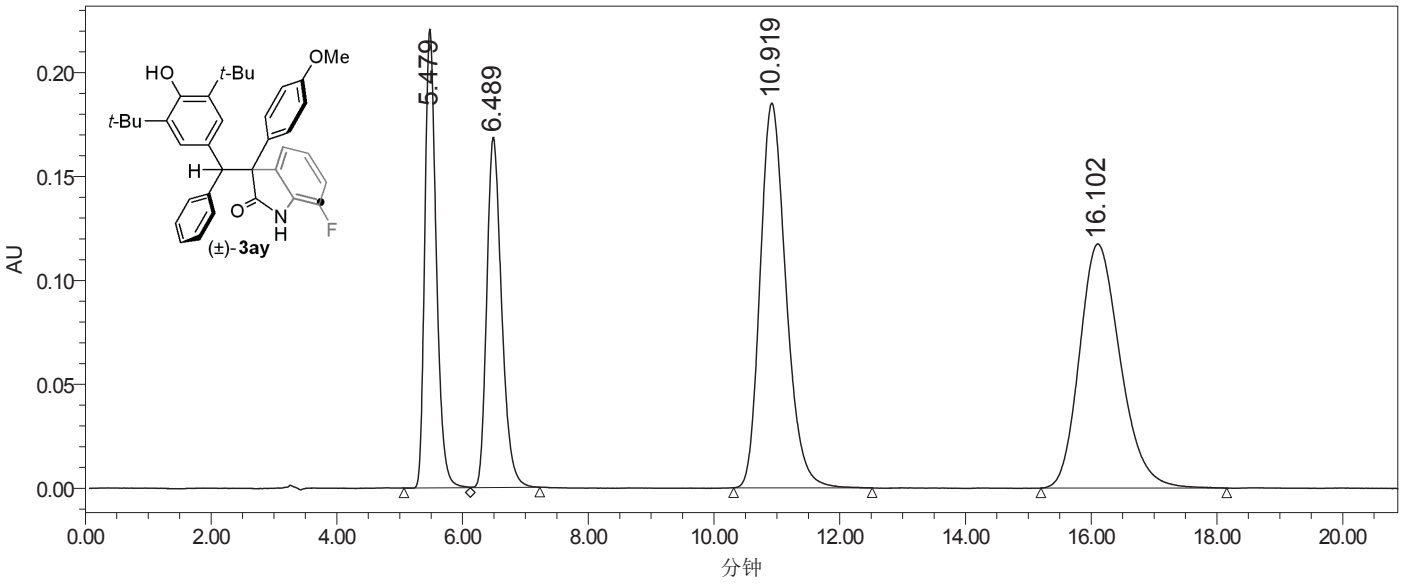



```
NAME      dengyh660 7-F-3-PMP -40 4
EXPNO                 25
PROCNO                 1
Date_           20150608
Time                15.47
INSTRUM             spect
PROBHD   5 mm PABBO BB/
PULPROG             zgpg30
TD                  65536
SOLVENT             CDCl3
NS                    293
DS                      2
SWH             24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                   2050
DW                 20.800 usec
DE                  6.50 usec
TE                 296.3 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 12.00 usec
SI                 32768
SF            100.6127817 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh660 7-F-3-PMP race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IC3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/29 17:15:54 CST		
处理时间:	2015/4/29 17:39:59 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

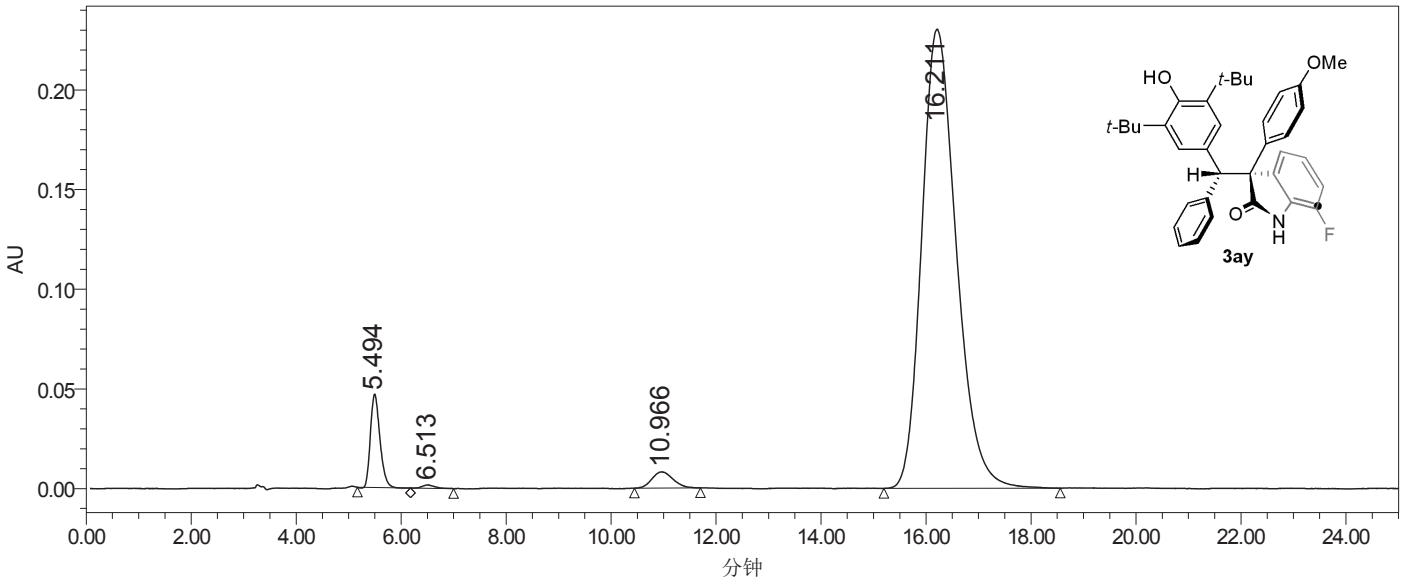
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.479	2787486	17.29	220654
2	2998 (190-400)纳米	6.489	2771473	17.19	168514
3	2998 (190-400)纳米	10.919	5286609	32.79	185086
4	2998 (190-400)纳米	16.102	5278390	32.74	117463

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

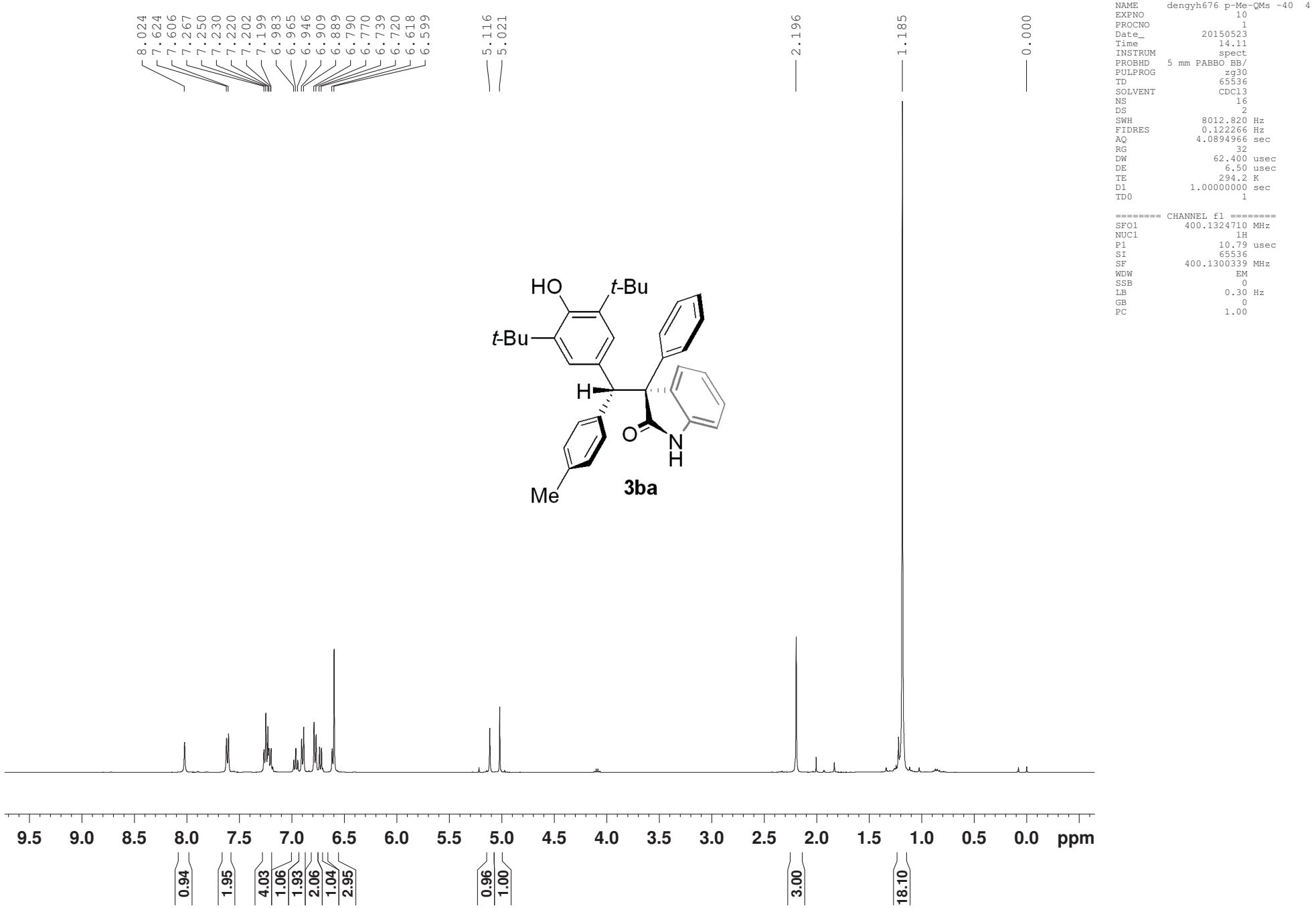
样品名称:	dengyh660a 7-F-3-PMP -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/4/29 16:50:31 CST		
处理时间:	2015/4/29 17:38:36 CST		

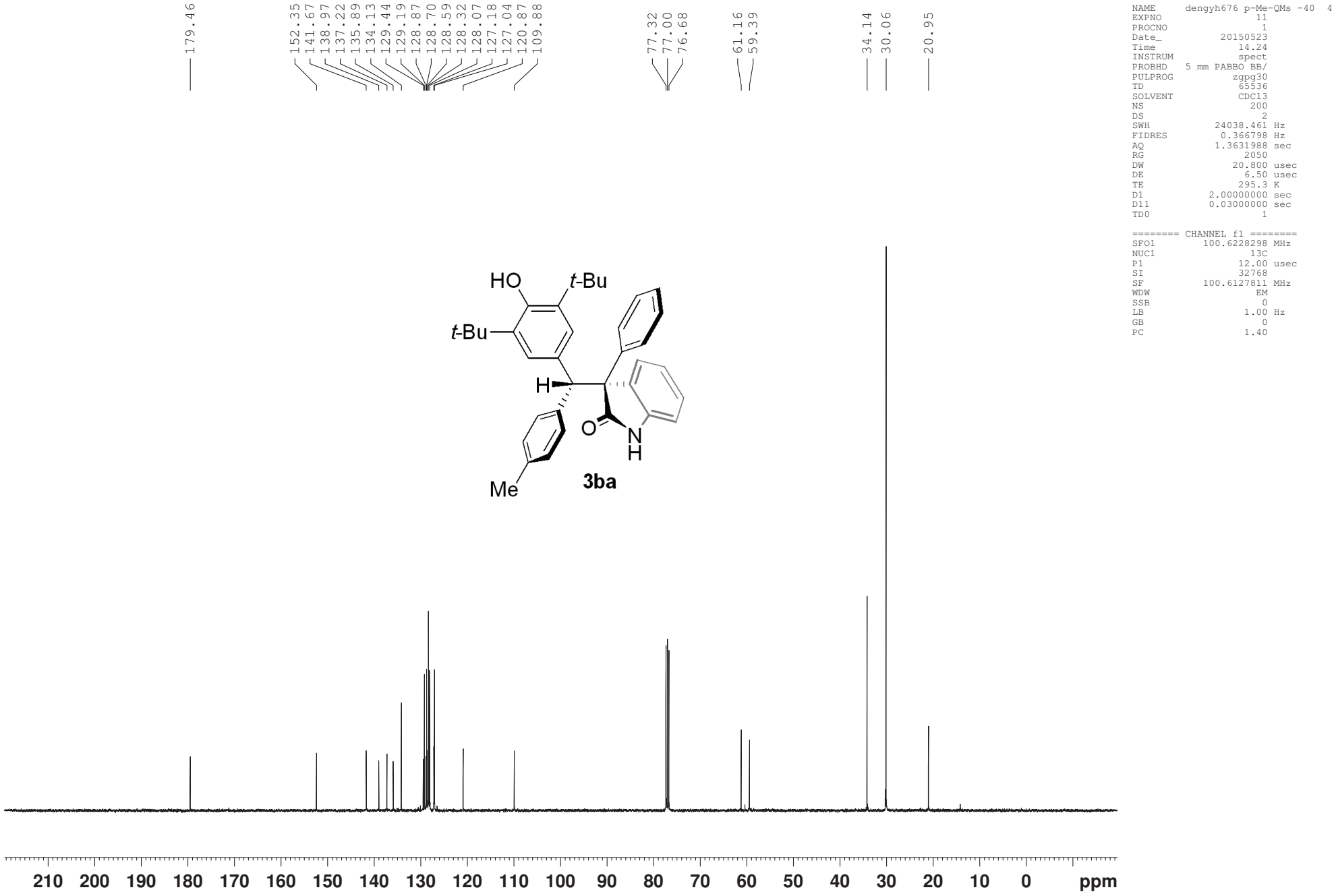


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.494	593700	5.21	46872
2	2998 (190-400)纳米	6.513	27033	0.24	1641
3	2998 (190-400)纳米	10.966	227538	2.00	8145
4	2998 (190-400)纳米	16.211	10541557	92.55	230320


8.024
7.624
7.606
7.267
7.250
7.230
7.220
7.202
7.199
6.983
6.965
6.946
6.909
6.889
6.790
6.770
6.739
6.720
6.618
6.599
5.116
5.021
2.196
1.185
0.000
HO
t-Bu
t-Bu
H
O
N
H
Me
3ba
NAME dengyh676 p-Me-QMs -40 4
EXPNO 10
PROCNO 1
Date_ 20150523
Time 14.11
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.2 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300339 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.94
1.95
4.03
1.06
1.93
2.06
1.04
2.95
0.96
1.00
3.00
18.10

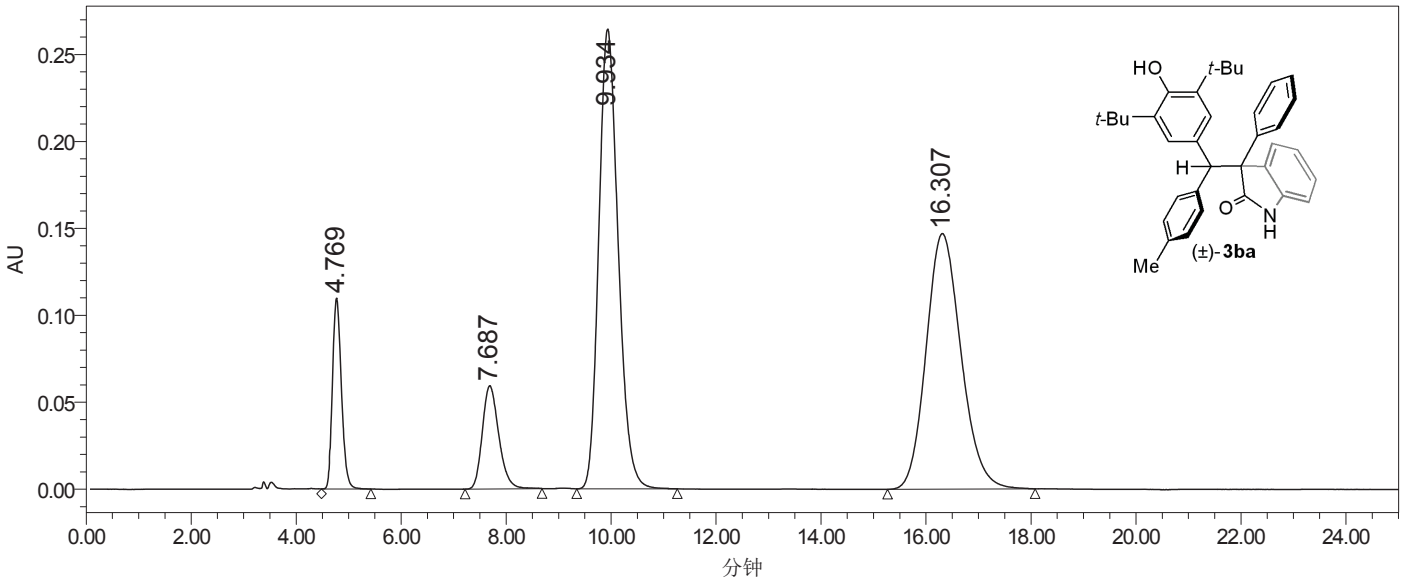



```
NAME      dengyh676 p-Me-QMs -40  4
EXPNO                 11
PROCNO                 1
Date_           20150523
Time                14.24
INSTRUM             spect
PROBHD    5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   200
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                  2050
DW                20.800 usec
DE                 6.50 usec
TE                295.3 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1                13C
P1                12.00 usec
SI                 32768
SF           100.6127811 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh676 p-Me race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,1	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/17 16:20:18 CST		
处理时间:	2015/5/17 21:21:13 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

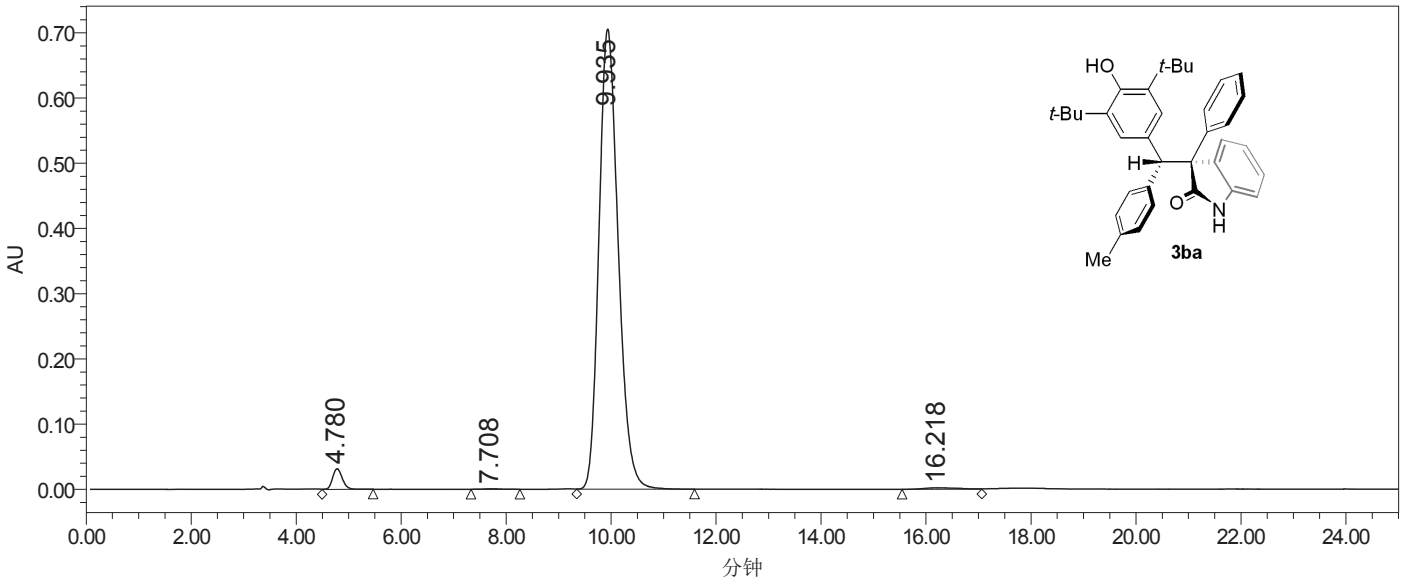
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.769	1309146	8.10	109768
2	2998 (190-400)纳米	7.687	1291537	7.99	59341
3	2998 (190-400)纳米	9.934	6784085	41.96	264276
4	2998 (190-400)纳米	16.307	6783027	41.95	146956

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

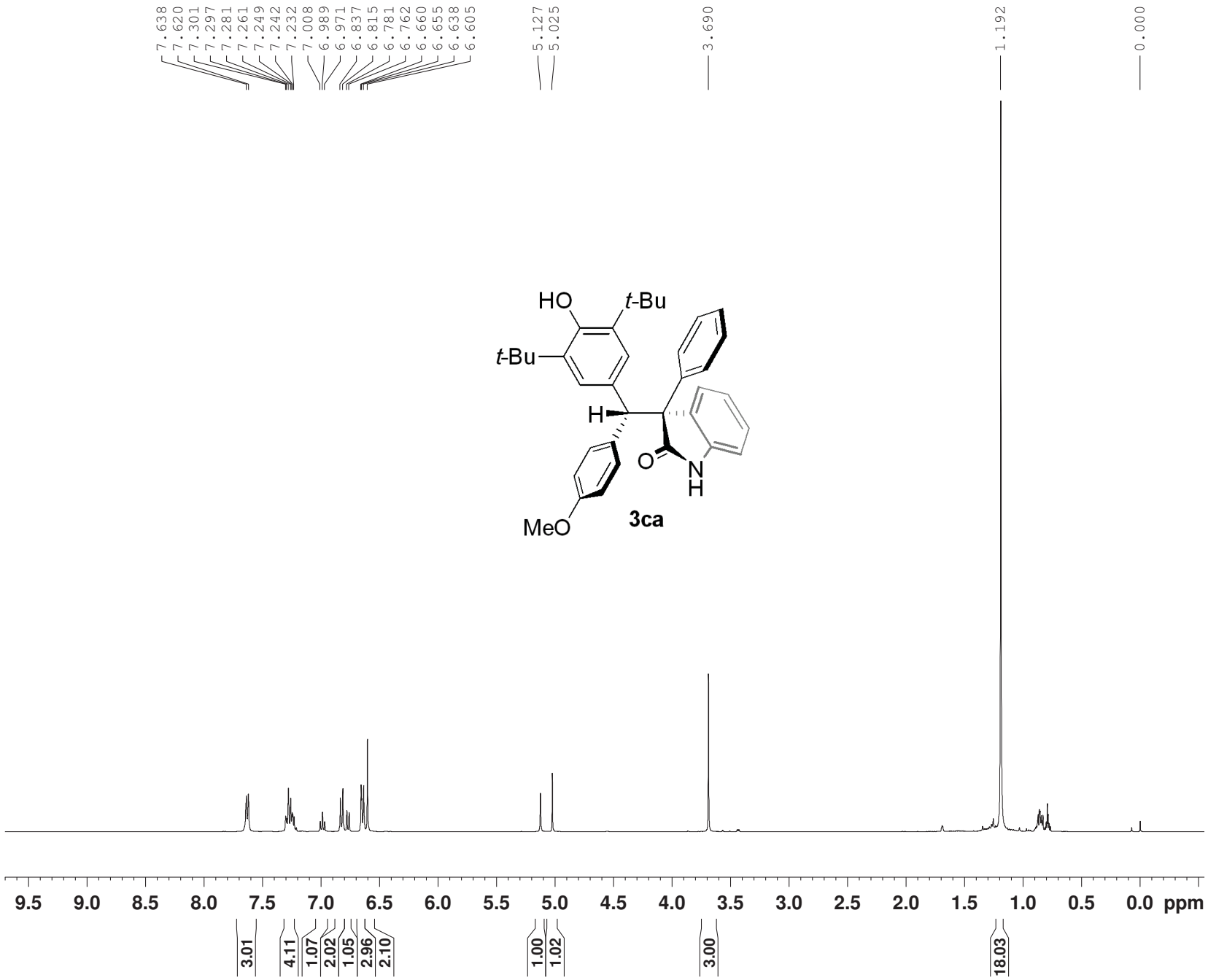
样品名称:	dengyh676b p-Me -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,2	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/17 15:54:57 CST		
处理时间:	2015/5/17 21:22:11 CST		



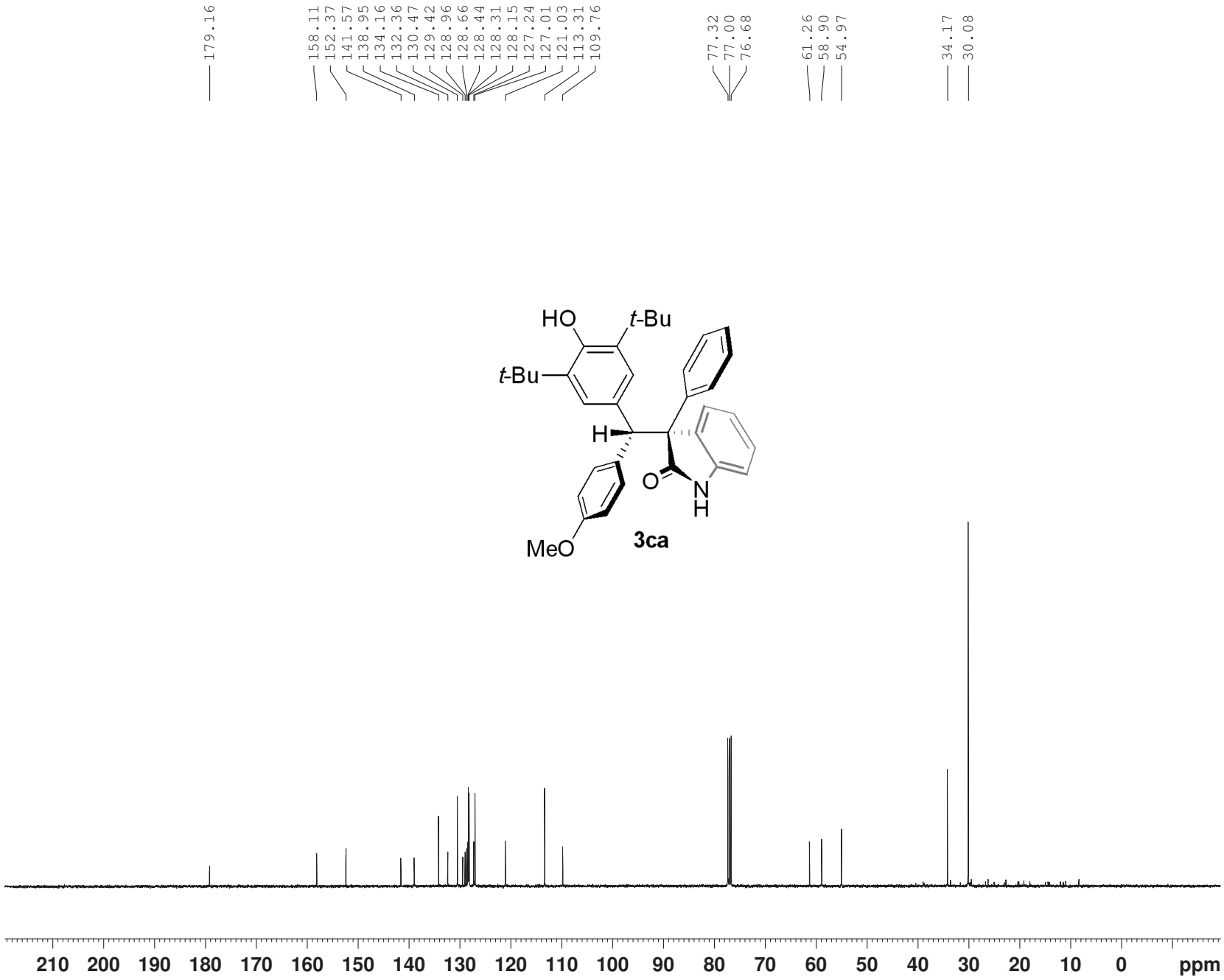
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.780	411609	2.22	31643
2	2998 (190-400)纳米	7.708	19238	0.10	848
3	2998 (190-400)纳米	9.935	17967787	97.07	705293
4	2998 (190-400)纳米	16.218	111386	0.60	2319




```
NAME      dengyh675 p-MeO -40
EXPNO                 12
PROCNO                 1
Date_           20150515
Time               10.02
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ            4.0894966 sec
RG                  80.6
DW                62.400 usec
DE                 6.50 usec
TE                292.7 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                 10.92 usec
SI                 65536
SF           400.1300168 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

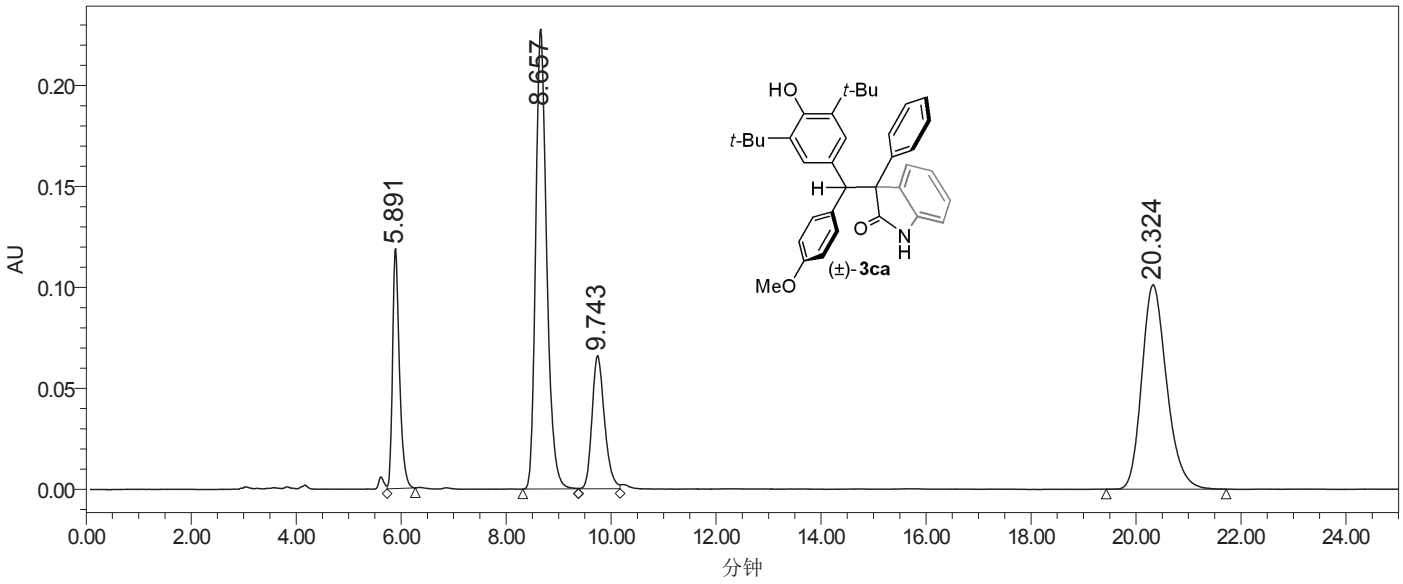



```
NAME      dengyh675 p-MeO -40
EXPNO                  13
PROCNO                  1
Date_            20150515
Time                10.26
INSTRUM             spect
PROBHD   5 mm PABBO BB/
PULPROG            zgpg30
TD                  65536
SOLVENT             CDCl3
NS                    400
DS                      2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   1030
DW                 20.800 usec
DE                  6.50 usec
TE                 294.1 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF           100.6127741 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh675 p-OMe race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,5	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米@1
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/8 21:05:26 CST		
处理时间:	2015/5/8 21:55:09 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

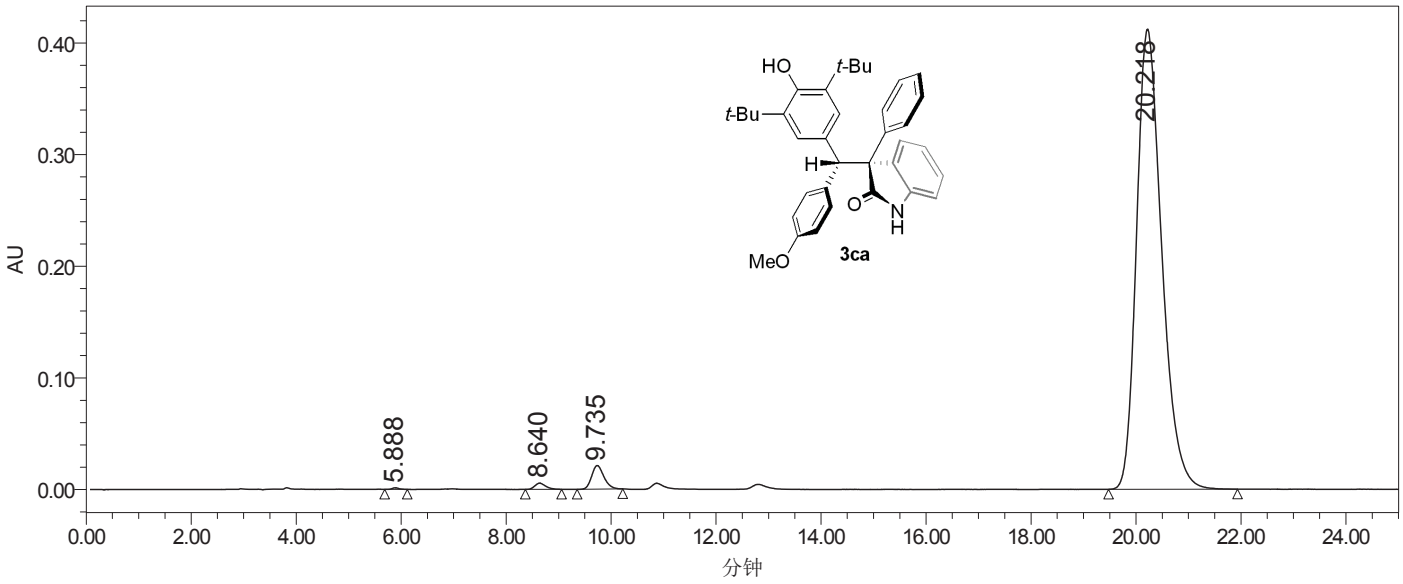
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.891	1086355	12.30	118668
2	2998 (190-400)纳米	8.657	3327058	37.68	227654
3	2998 (190-400)纳米	9.743	1087890	12.32	65795
4	2998 (190-400)纳米	20.324	3327445	37.69	101178

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

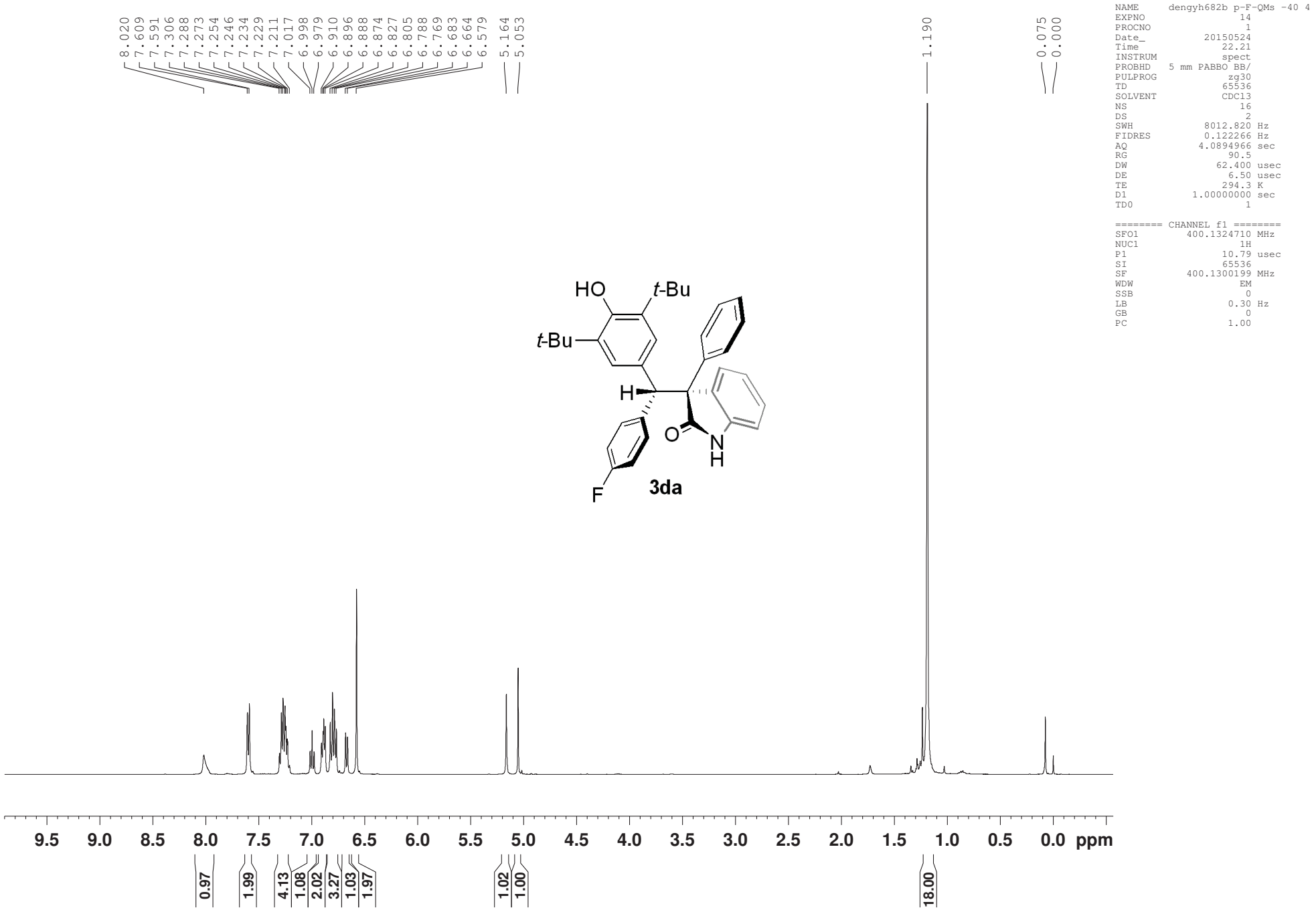
样品名称:	dengyh675a p-OMe -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,6	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@1
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/8 20:40:03 CST		
处理时间:	2015/5/8 21:54:18 CST		

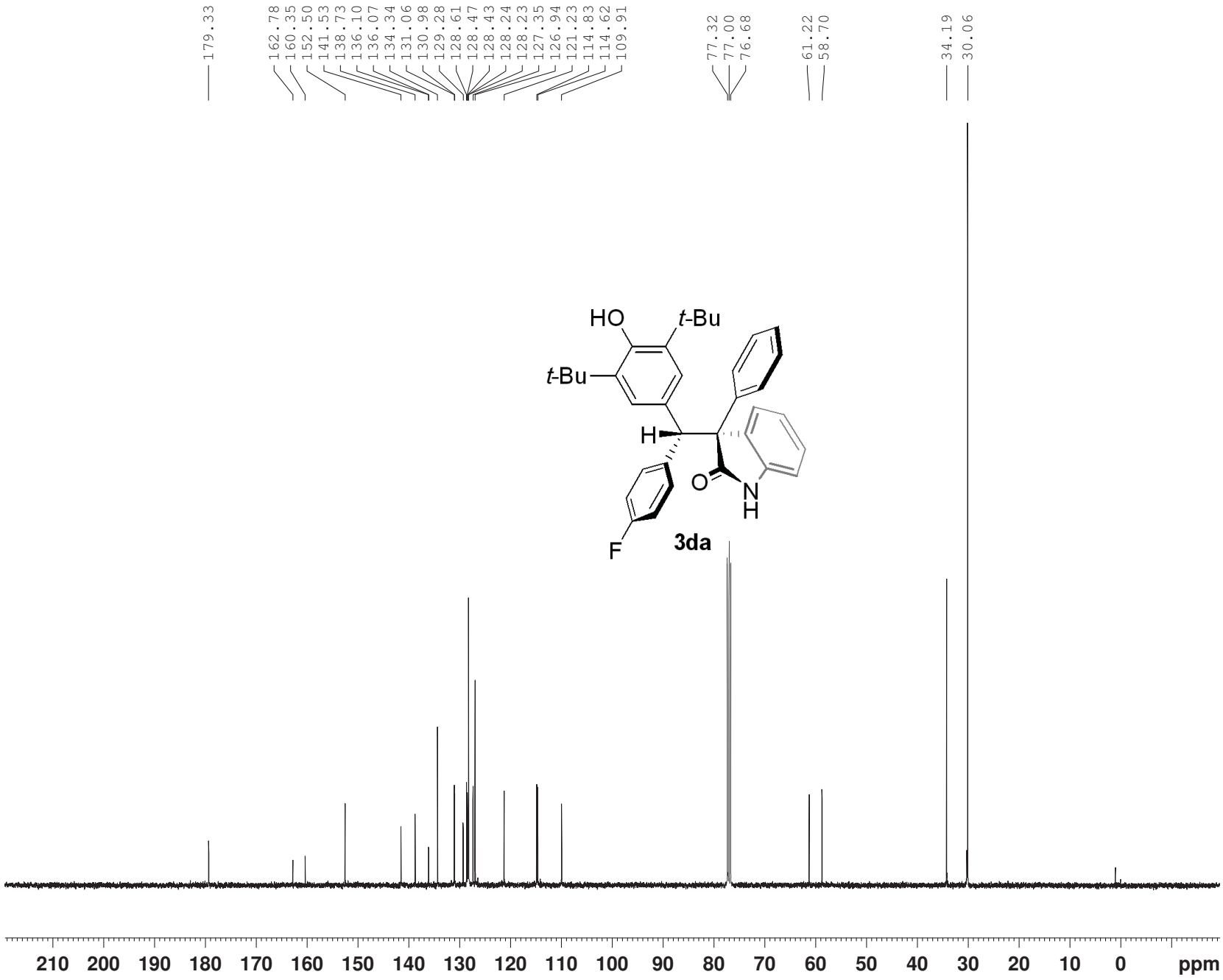


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.888	12653	0.09	1455
2	2998 (190-400)纳米	8.640	80157	0.57	5563
3	2998 (190-400)纳米	9.735	340785	2.41	21153
4	2998 (190-400)纳米	20.218	13718743	96.94	412007


8.020
7.609
7.591
7.306
7.288
7.273
7.254
7.246
7.234
7.229
7.211
7.017
6.998
6.979
6.910
6.896
6.888
6.874
6.827
6.805
6.788
6.769
6.683
6.664
6.579
5.164
5.053
1.190
0.075
0.000
NAME dengyh682b p-F-QMs -40 4
EXPNO 14
PROCNO 1
Date_ 20150524
Time 22.21
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 90.5
DW 62.400 usec
DE 6.50 usec
TE 294.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300199 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
O
N
H
F
3da
9.5 9.0 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 ppm
0.97
1.99
4.13
1.08
2.02
3.27
1.03
1.97
1.02
1.00
18.00

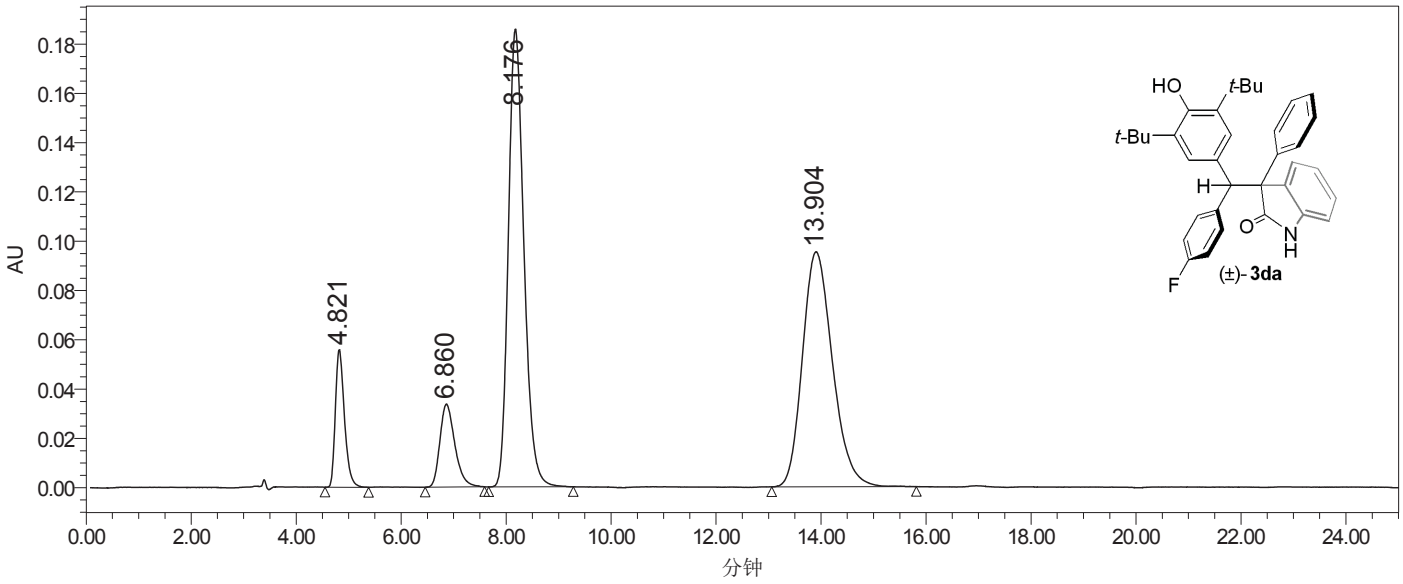



```
NAME      dengyh682b p-F-QMs -40 4
EXPNO                 15
PROCNO                 1
Date_           20150524
Time               22.45
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG            zgpg30
TD                 65536
SOLVENT            CDC13
NS                   400
DS                     2
SWH            24038.461 Hz
FIDRES             0.366798 Hz
AQ              1.3631988 sec
RG                  2050
DW                 20.800 usec
DE                  6.50 usec
TE                 295.4 K
D1              2.00000000 sec
D11             0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 12.00 usec
SI                 32768
SF            100.6127744 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh682 p-F race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/9 17:14:10 CST		
处理时间:	2015/5/9 20:40:52 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

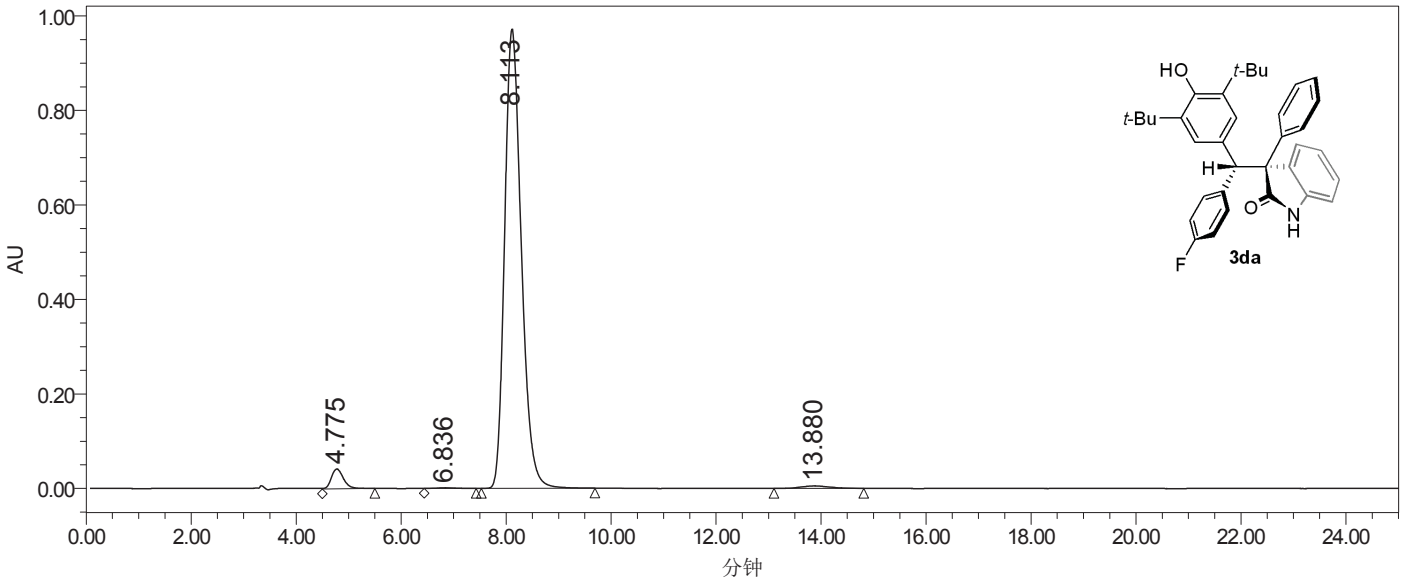
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.821	671445	7.51	55790
2	2998 (190-400)纳米	6.860	667491	7.47	33632
3	2998 (190-400)纳米	8.176	3814785	42.69	185691
4	2998 (190-400)纳米	13.904	3782570	42.33	95293

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

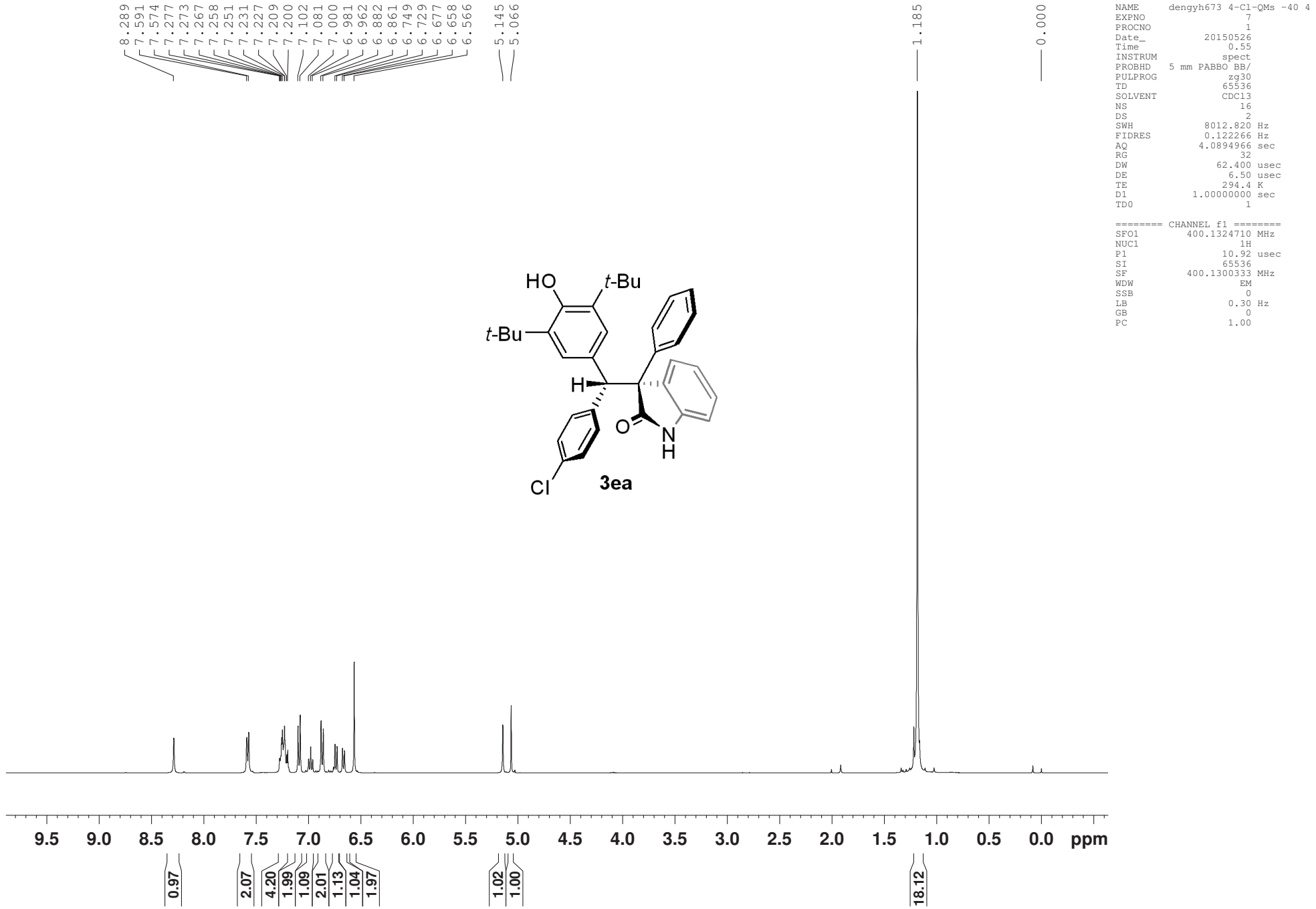
样品名称:	dengyh682a p-F -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	254.0 纳米
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/9 16:48:48 CST		
处理时间:	2015/5/9 20:41:44 CST		

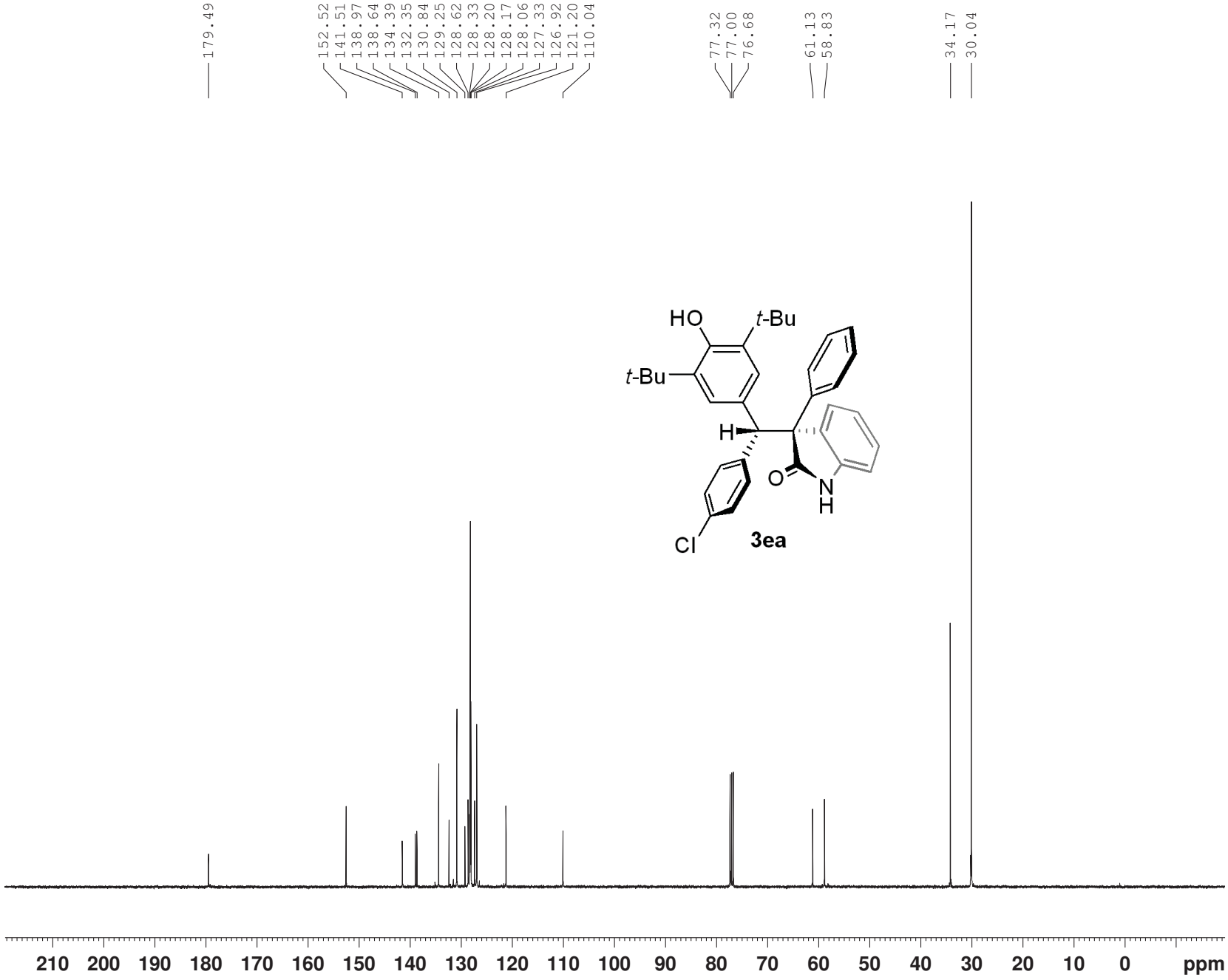


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.775	674973	3.02	41884
2	2998 (190-400)纳米	6.836	34740	0.16	1457
3	2998 (190-400)纳米	8.113	21408572	95.92	971591
4	2998 (190-400)纳米	13.880	201139	0.90	5172


8.289
7.591
7.574
7.277
7.273
7.267
7.258
7.251
7.231
7.227
7.209
7.200
7.102
7.081
7.000
6.981
6.962
6.882
6.861
6.749
6.729
6.677
6.658
6.566
5.145
5.066
1.185
0.000
HO
t-Bu
t-Bu
H
O
N
H
Cl
3ea
NAME dengyh673 4-Cl-QMs -40 4
EXPNO 7
PROCNO 1
Date_ 20150526
Time 0.55
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300333 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.97
2.07
4.20
1.99
1.09
2.01
1.13
1.04
1.97
1.02
1.00
18.12

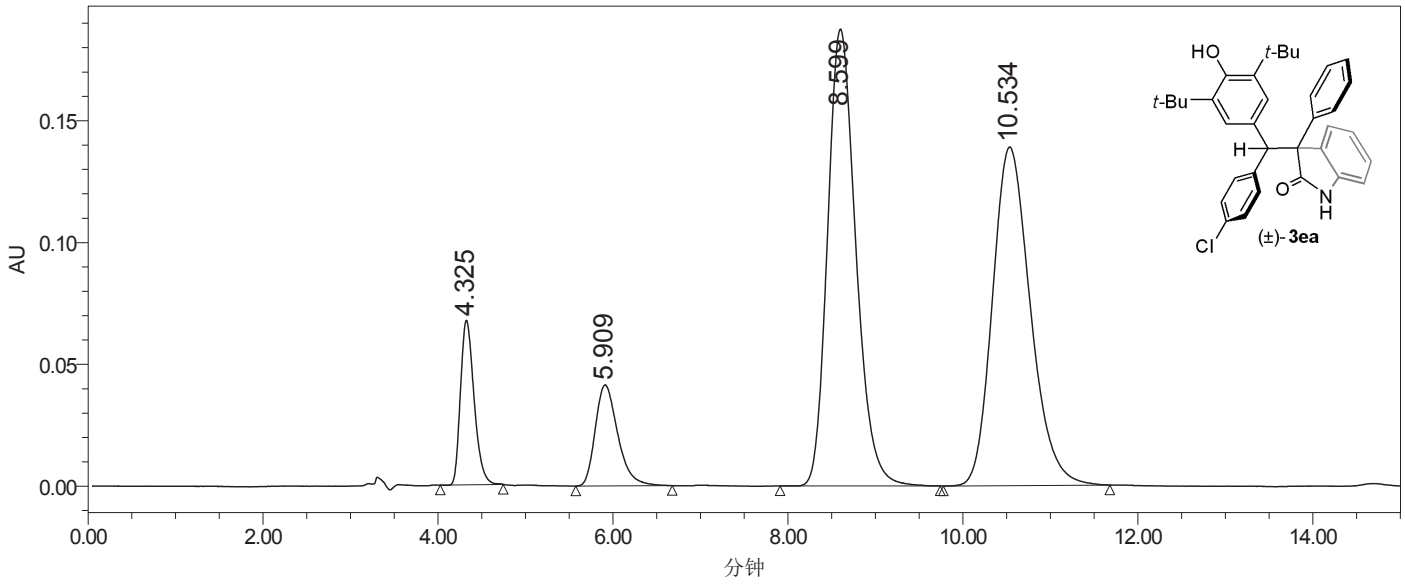



```
NAME      dengyh673 4-Cl-QMs -40 4
EXPNO                 16
PROCNO                 1
Date_           20150525
Time               17.59
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDC13
NS                   240
DS                     2
SWH            24038.461 Hz
FIDRES             0.366798 Hz
AQ              1.3631988 sec
RG                  1030
DW                 20.800 usec
DE                  6.50 usec
TE                297.0 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 14.70 usec
SI                 32768
SF            100.6127808 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh673 p-Cl race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,4	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@2
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/8 14:51:22 CST		
处理时间:	2015/5/8 15:28:55 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

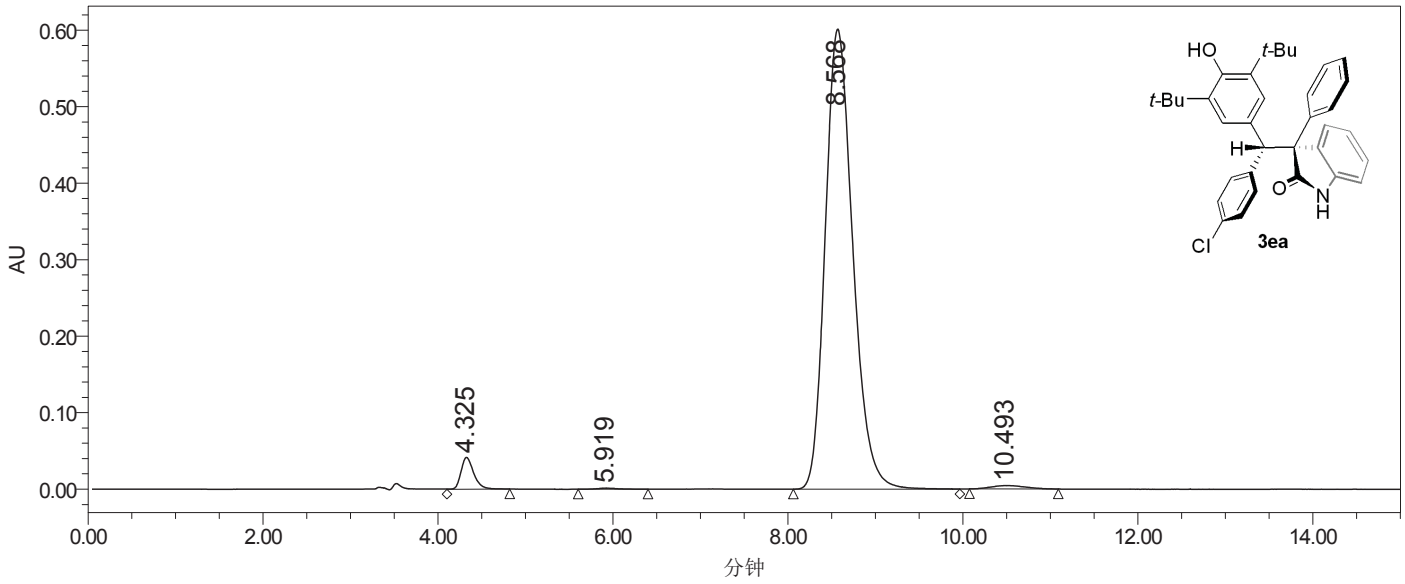
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.325	729338	7.41	67516
2	2998 (190-400)纳米	5.909	741629	7.53	41416
3	2998 (190-400)纳米	8.599	4199443	42.66	187382
4	2998 (190-400)纳米	10.534	4173629	42.40	138960

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

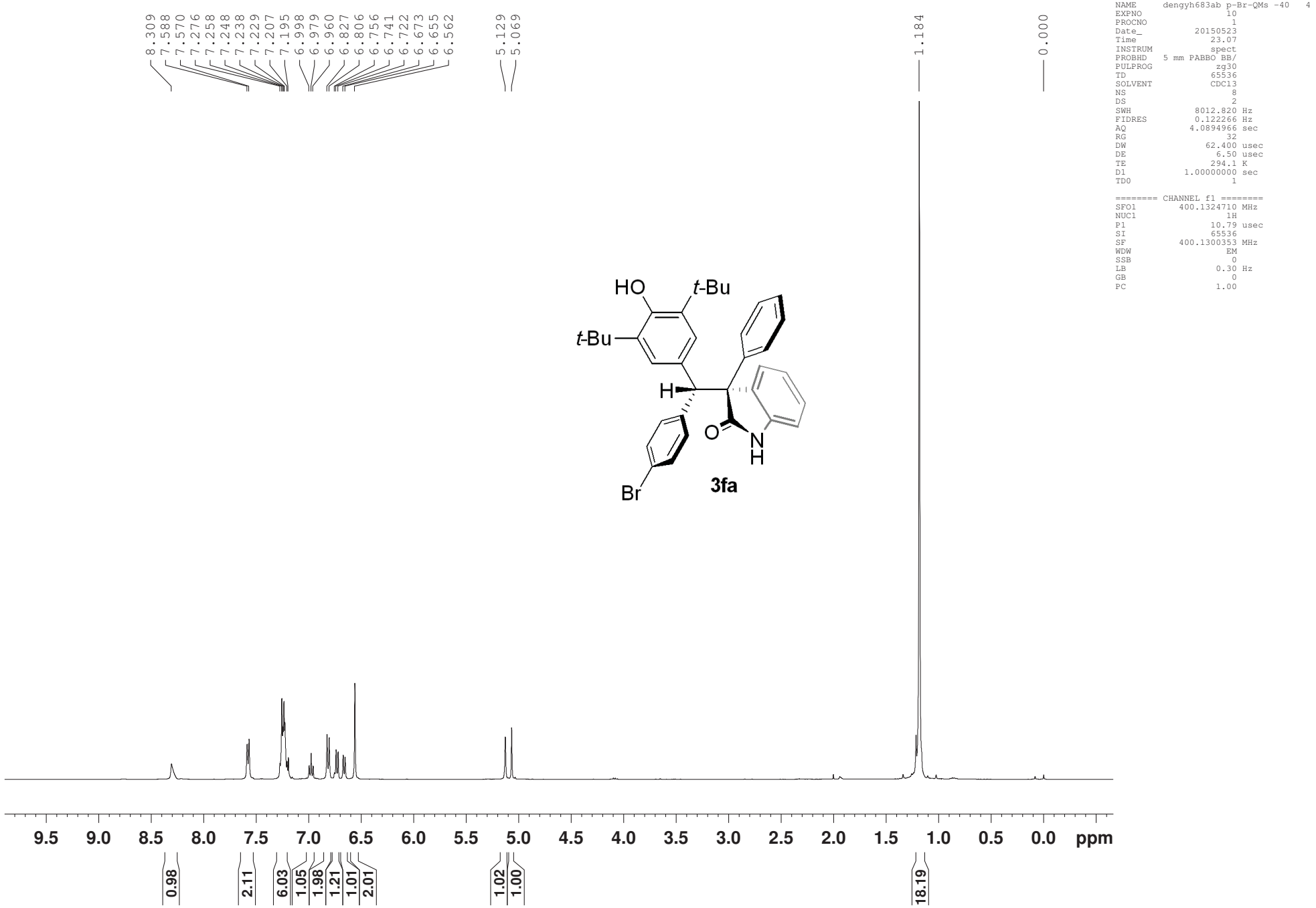
样品名称:	dengyh673a p-Cl -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@2
运行时间:	15.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/8 14:36:00 CST		
处理时间:	2015/5/8 15:30:15 CST		

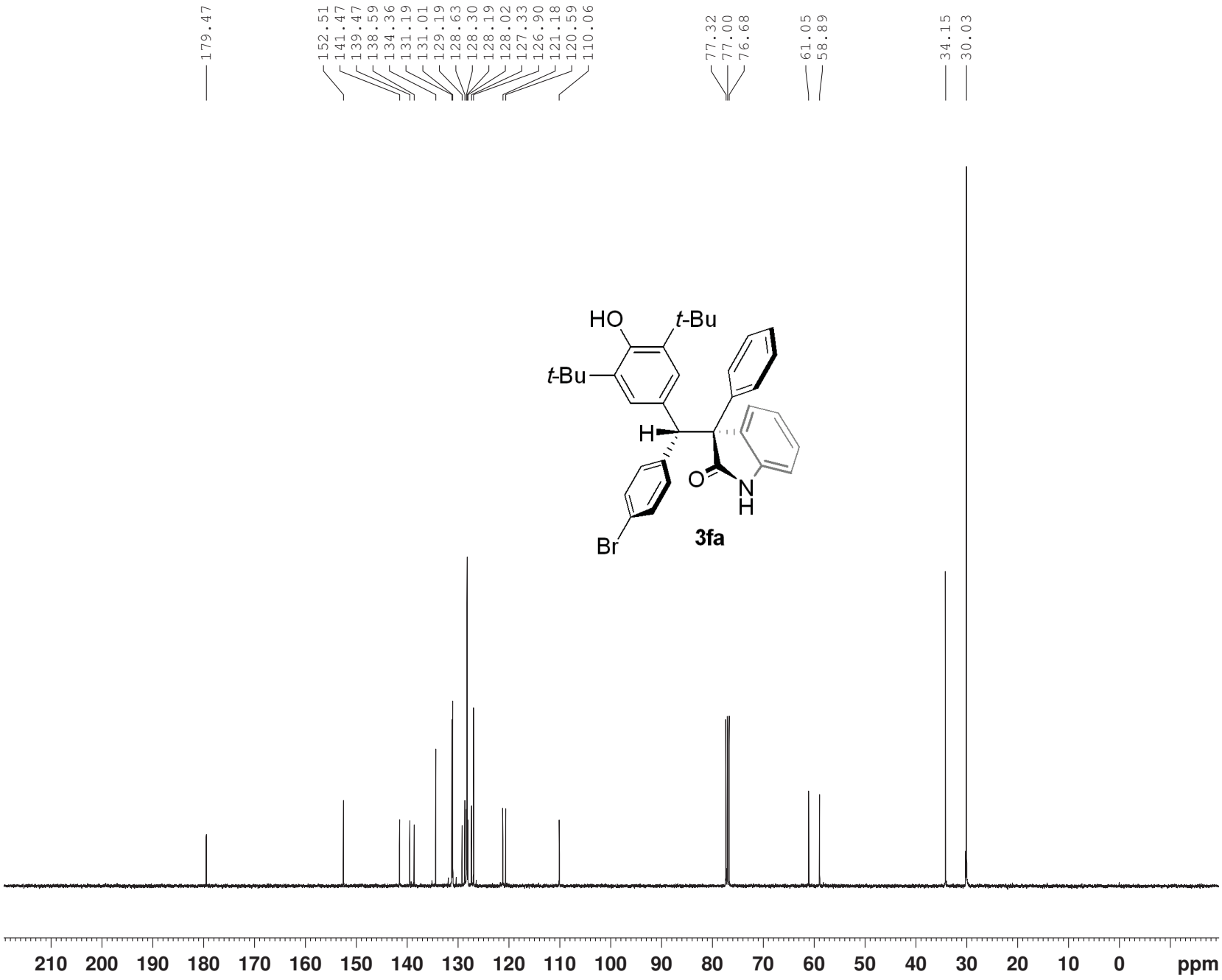


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.325	423053	3.08	41652
2	2998 (190-400)纳米	5.919	22672	0.17	1300
3	2998 (190-400)纳米	8.568	13167934	95.87	601290
4	2998 (190-400)纳米	10.493	121670	0.89	4477


8.309
7.588
7.570
7.276
7.258
7.248
7.238
7.229
7.207
7.195
6.998
6.979
6.960
6.827
6.806
6.756
6.741
6.722
6.673
6.655
6.562
5.129
5.069
1.184
0.000
NAME dengyh683ab p-Br-QMs -40 4
EXPNO 10
PROCNO 1
Date_ 20150523
Time 23.07
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.1 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300353 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
O
N
H
Br
3fa
9.5 9.0 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 ppm
0.98
2.11
6.03
1.05
1.98
1.21
1.01
2.01
1.02
1.00
18.19

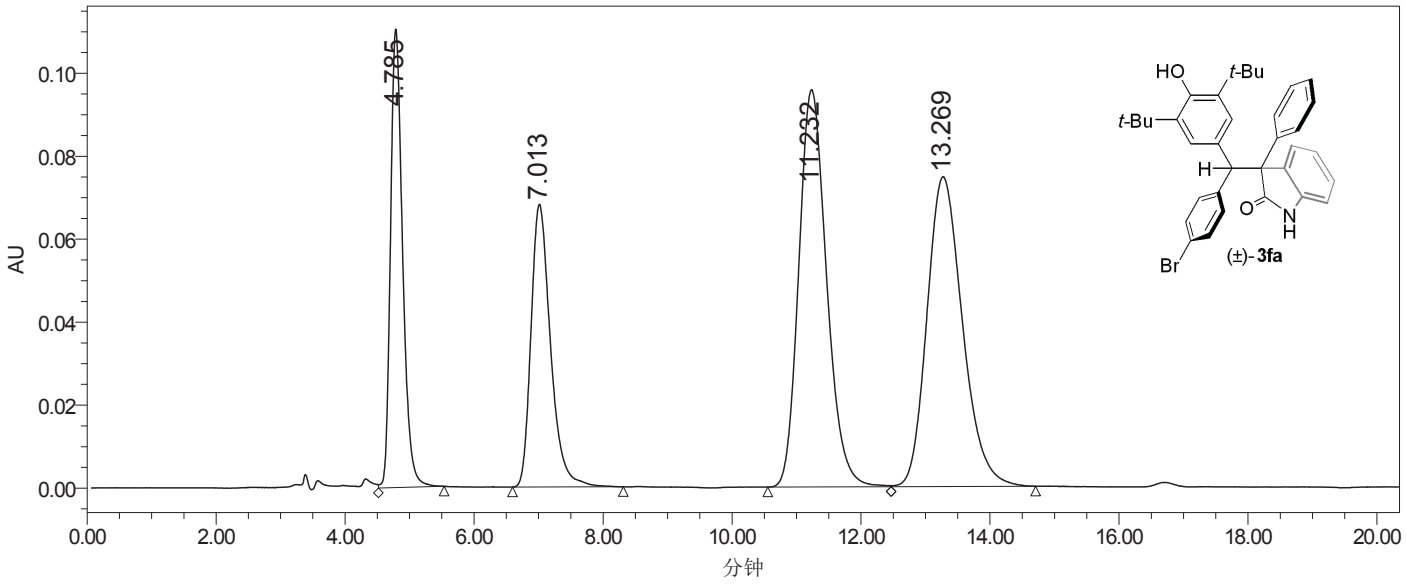



```
NAME      dengyh683ab p-Br-QMs -40   4
EXPNO                 11
PROCNO                 1
Date_           20150523
Time              23.22
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG           zgpg30
TD                65536
SOLVENT           CDCl3
NS                  240
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                 2050
DW                20.800 usec
DE                 6.50 usec
TE                295.2 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1               13C
P1                12.00 usec
SI                32768
SF          100.6127829 MHz
WDW                EM
SSB                 0
LB                1.00 Hz
GB                  0
PC                1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh683 p-Br-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	22.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/12 17:01:01 CST		
处理时间:	2015/5/13 9:55:56 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

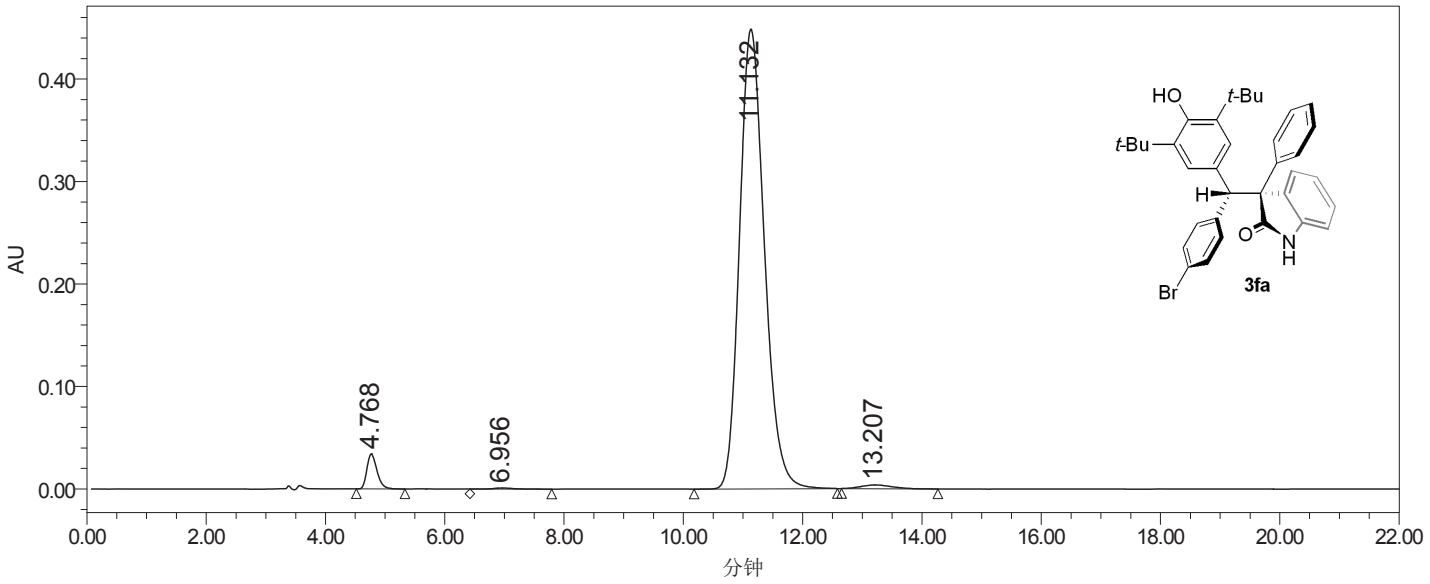
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.785	1440652	16.77	110489
2	2998 (190-400)纳米	7.013	1432415	16.67	68130
3	2998 (190-400)纳米	11.232	2867236	33.37	95727
4	2998 (190-400)纳米	13.269	2852481	33.20	74662

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

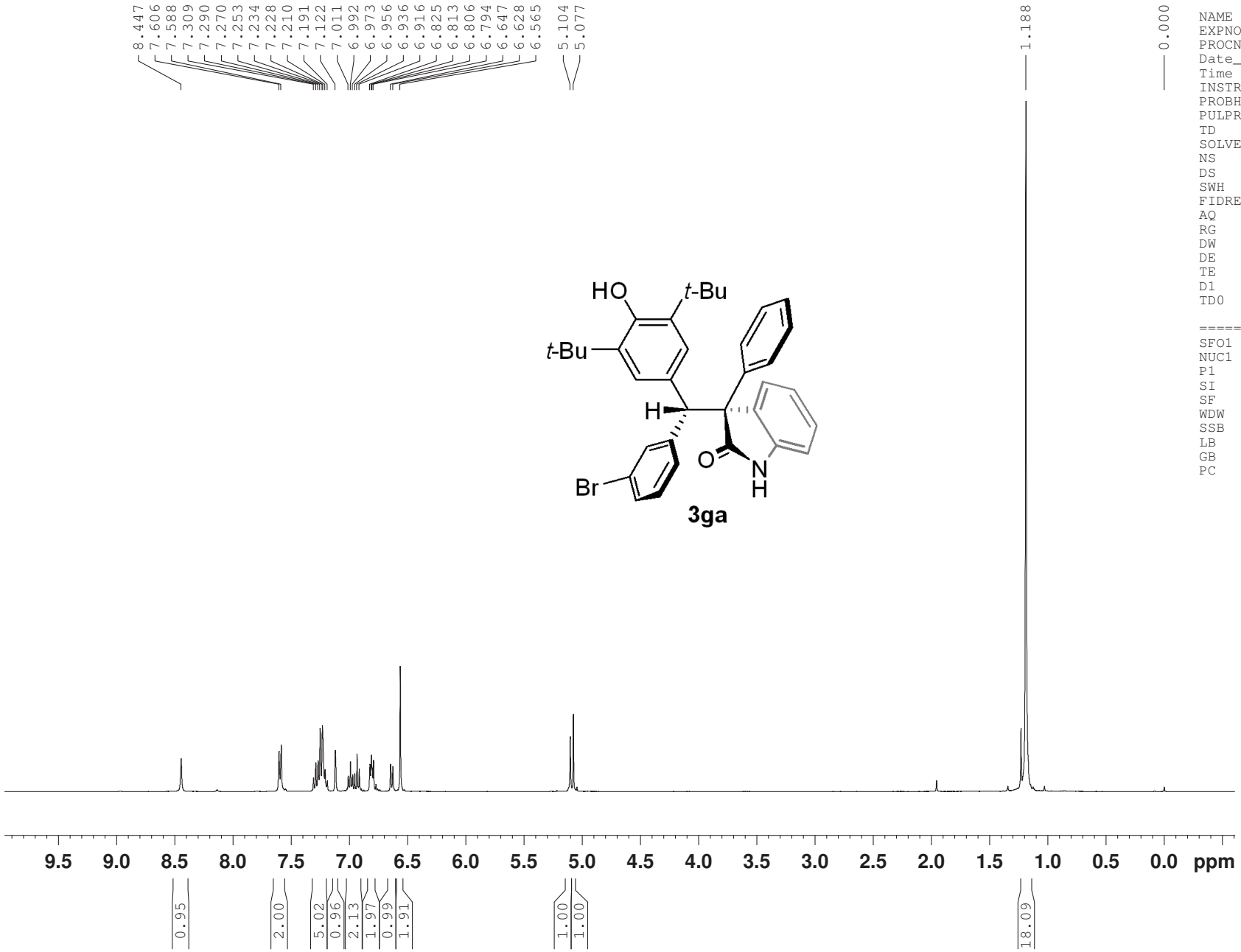
样品名称:	dengyh683a p-Br-QMs -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,5	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	22.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/12 16:33:19 CST		
处理时间:	2015/5/13 9:58:33 CST		



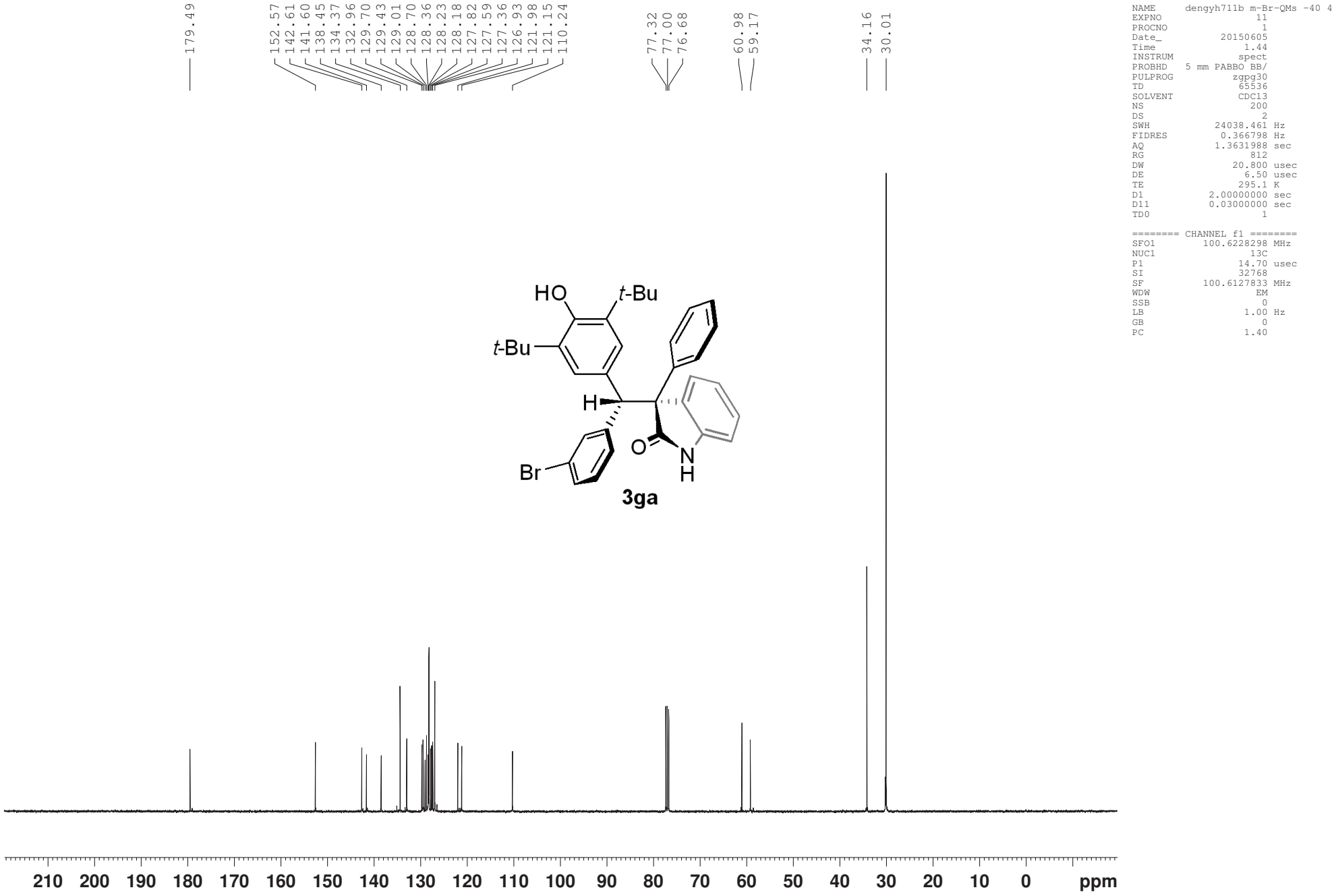
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.768	401601	2.97	34187
2	2998 (190-400)纳米	6.956	29010	0.21	1127
3	2998 (190-400)纳米	11.132	12965352	95.86	448482
4	2998 (190-400)纳米	13.207	129363	0.96	3590




```
NAME      dengyh711b m-Br-QMs -40 4
EXPNO                 10
PROCNO                 1
Date_           20150605
Time                1.32
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     2
DS                     2
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG                    32
DW                62.400 usec
DE                 6.50 usec
TE                294.4 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                 10.92 usec
SI                 65536
SF           400.1300373 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

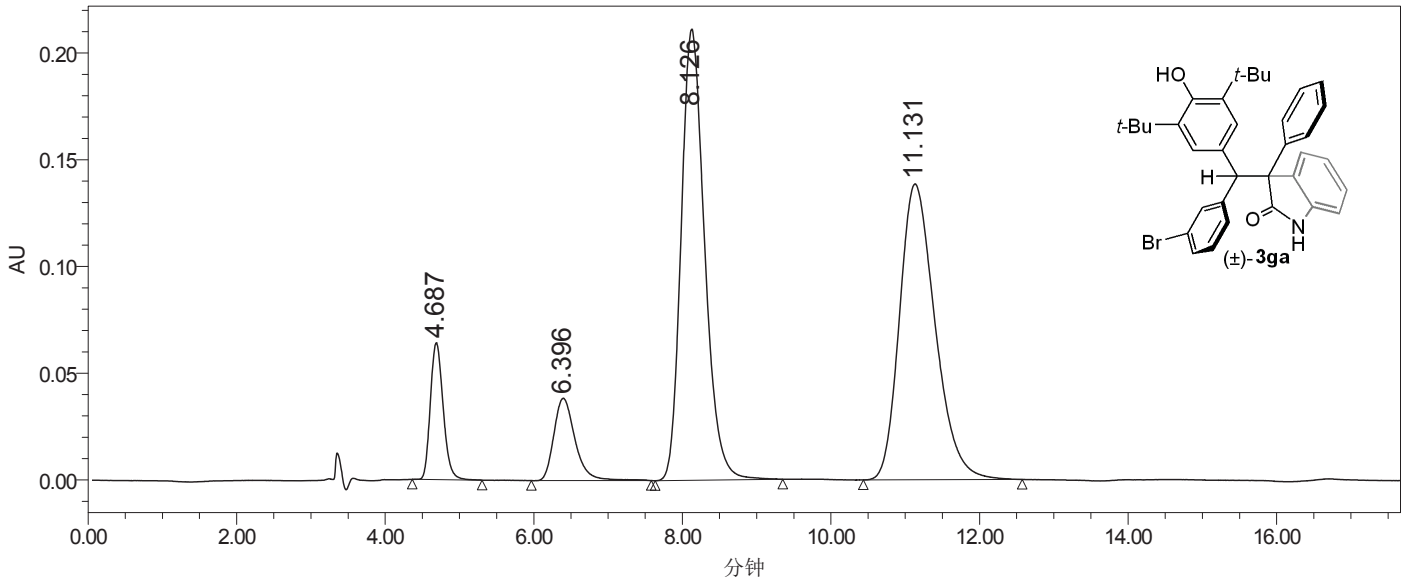



```
NAME      dengyh711b m-Br-QMs -40 4
EXPNO                 11
PROCNO                 1
Date_           20150605
Time                1.44
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  200
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ             1.3631988 sec
RG                  812
DW                20.800 usec
DE                 6.50 usec
TE                295.1 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF          100.6127833 MHz
WDW                 EM
SSB                  0
LB                1.00 Hz
GB                   0
PC                1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh711 m-Br-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,1	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	18.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/4 21:25:01 CST		
处理时间:	2015/6/4 21:43:38 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

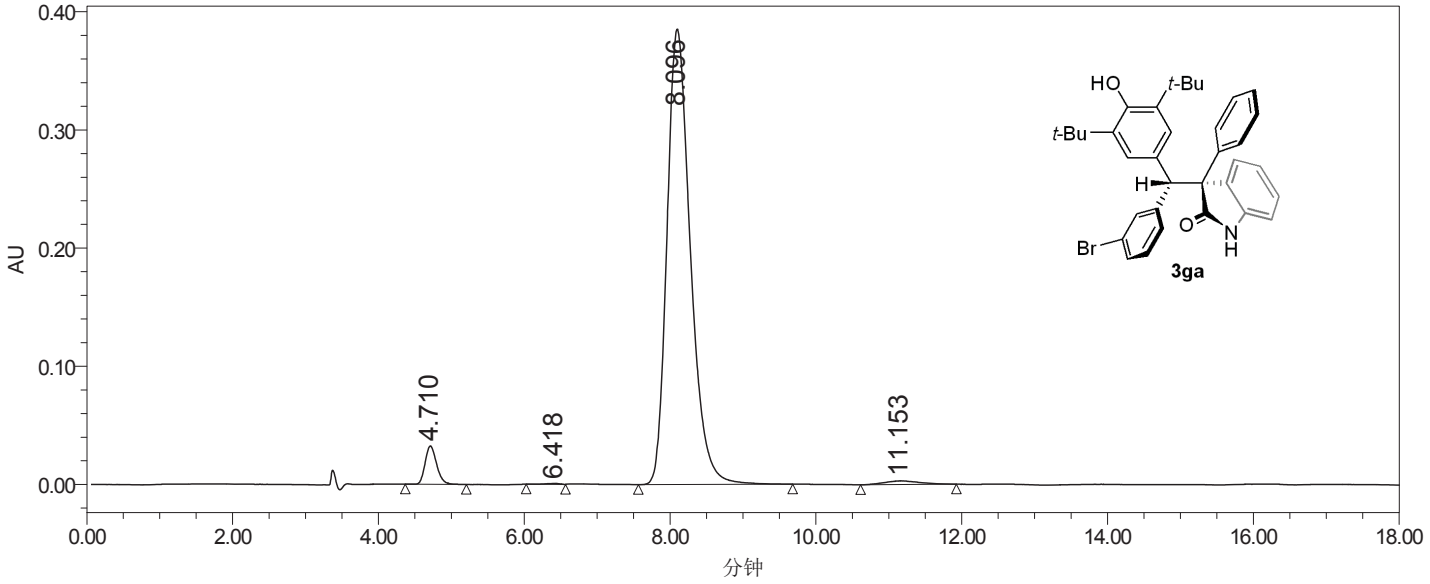
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.687	768997	7.13	64035
2	2998 (190-400)纳米	6.396	768145	7.12	38567
3	2998 (190-400)纳米	8.126	4636957	43.01	211263
4	2998 (190-400)纳米	11.131	4608255	42.74	138527

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

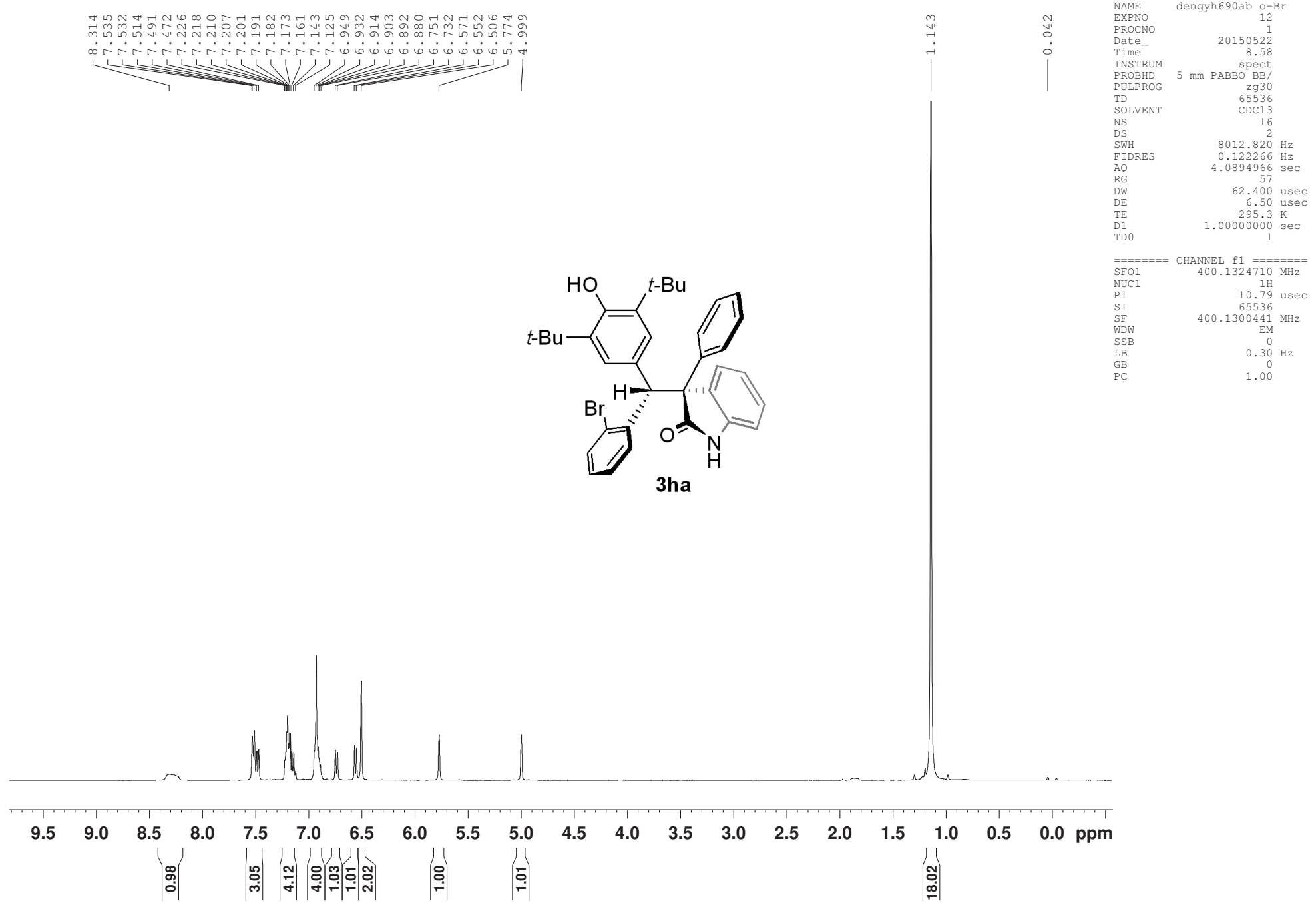
样品名称:	dengyh711b m-Br-QMs -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,3	采集方法组:	IC3 IPA vs Hex 4vs96 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	18.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/6/4 22:07:25 CST		
处理时间:	2015/6/4 23:07:26 CST		

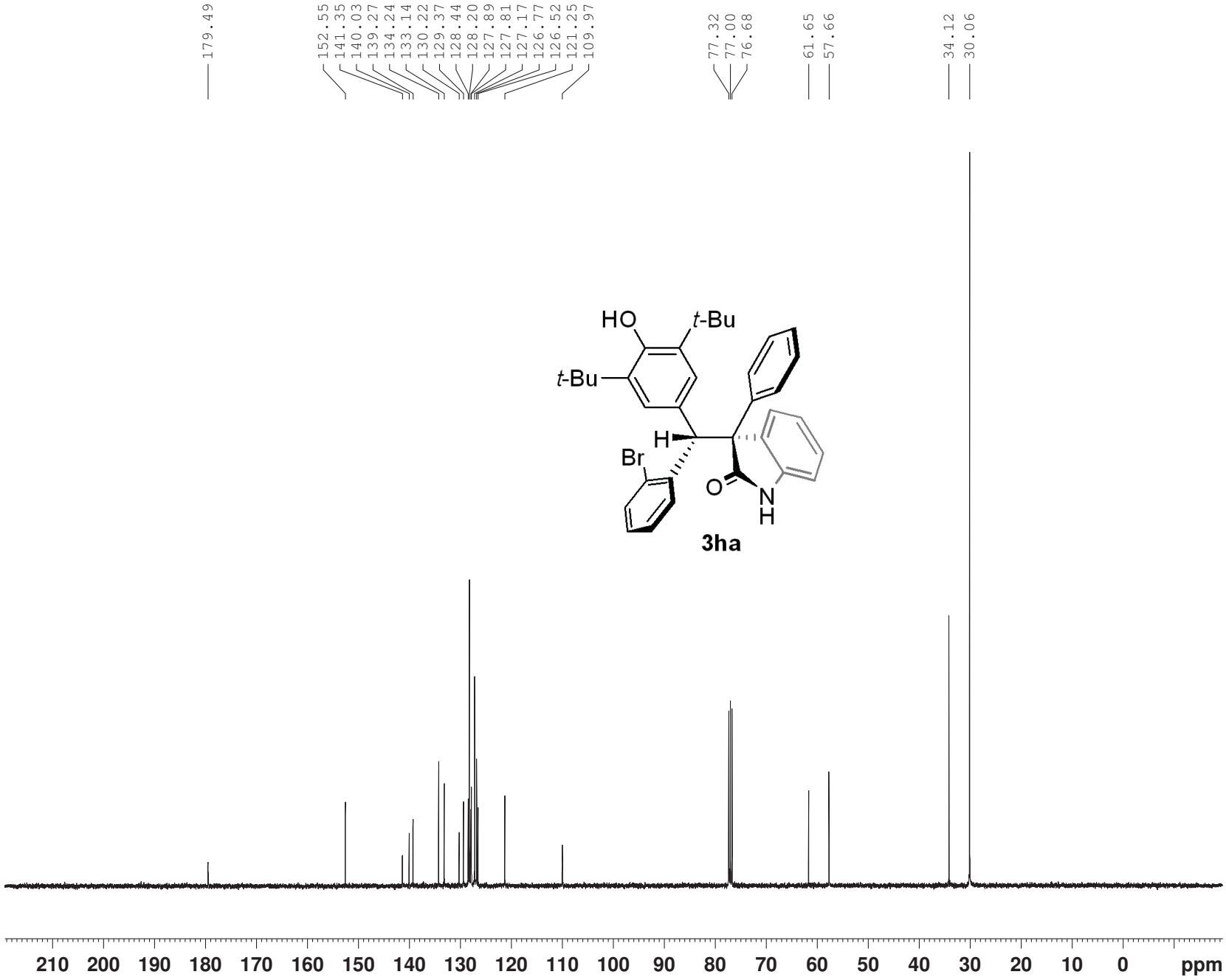


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.710	354279	3.92	32304
2	2998 (190-400)纳米	6.418	8969	0.10	748
3	2998 (190-400)纳米	8.096	8578821	94.82	385274
4	2998 (190-400)纳米	11.153	105355	1.16	3028


8.314
7.535
7.532
7.514
7.491
7.472
7.226
7.218
7.210
7.207
7.201
7.191
7.182
7.173
7.161
7.143
7.125
6.949
6.932
6.914
6.903
6.892
6.880
6.751
6.732
6.571
6.552
6.506
5.774
4.999
1.143
0.042
NAME dengyh690ab o-Br
EXPNO 12
PROCNO 1
Date_ 20150522
Time 8.58
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 57
DW 62.400 usec
DE 6.50 usec
TE 295.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300441 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
Br
O
N
H
3ha
9.5 9.0 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 ppm
0.98
3.05
4.12
4.00
1.03
1.01
2.02
1.00
1.01
18.02

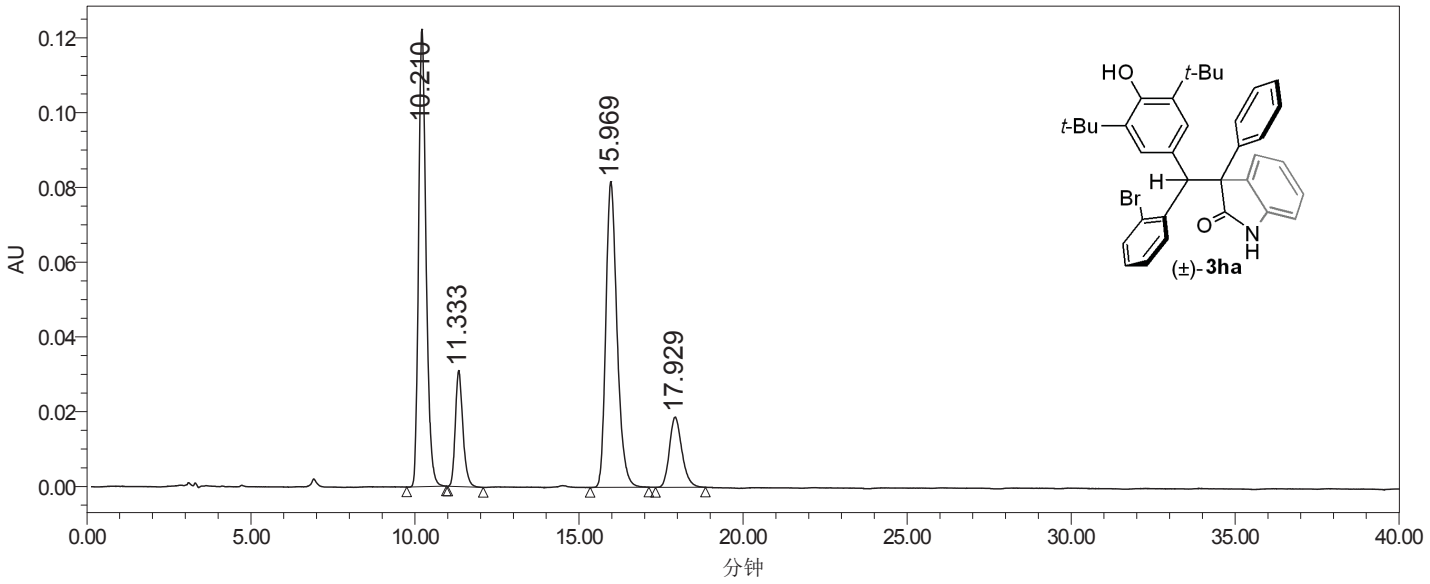



```
NAME      dengyh690ab o-Br
EXPNO                  13
PROCNO                  1
Date_            20150522
Time                 9.11
INSTRUM             spect
PROBHD   5 mm PABBO BB/
PULPROG            zgpg30
TD                  65536
SOLVENT             CDCl3
NS                    200
DS                      2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ             1.3631988 sec
RG                   2050
DW                 20.800 usec
DE                  6.50 usec
TE                 295.6 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1                13C
P1                12.00 usec
SI                32768
SF           100.6127795 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh690 o-Br-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米@4
运行时间:	40.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/12 10:53:38 CST		
处理时间:	2015/5/13 10:03:41 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

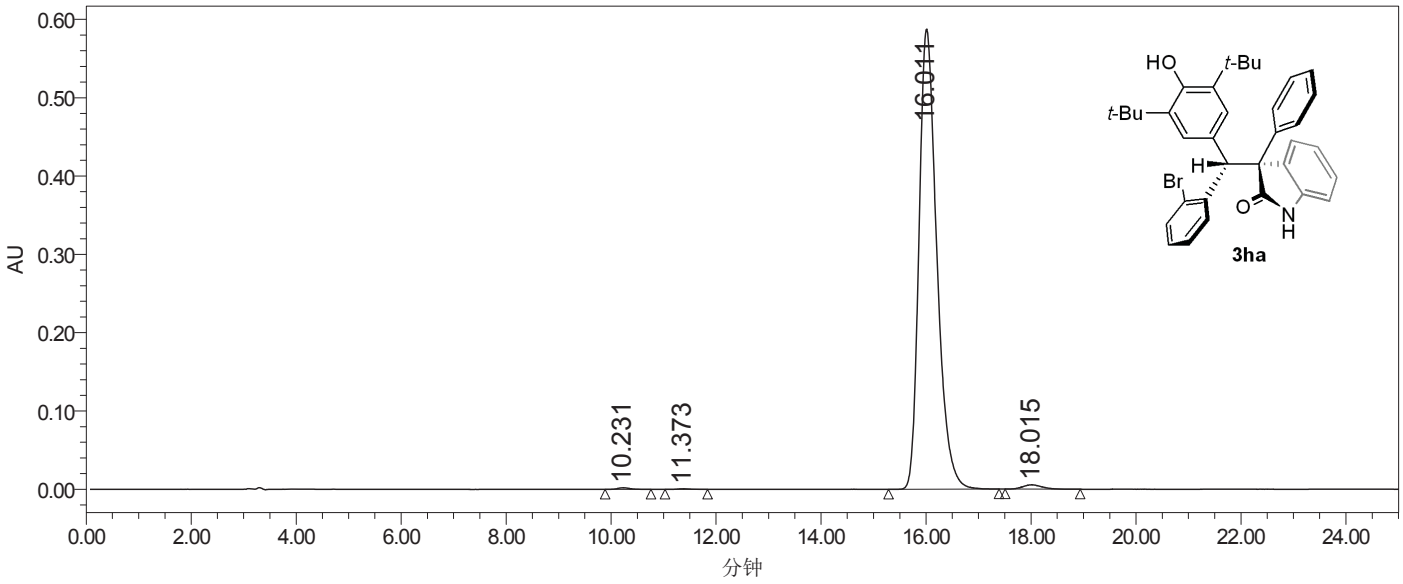
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	10.210	1929035	39.66	122387
2	2998 (190-400)纳米	11.333	497519	10.23	31022
3	2998 (190-400)纳米	15.969	1939271	39.87	81819
4	2998 (190-400)纳米	17.929	497909	10.24	18782

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

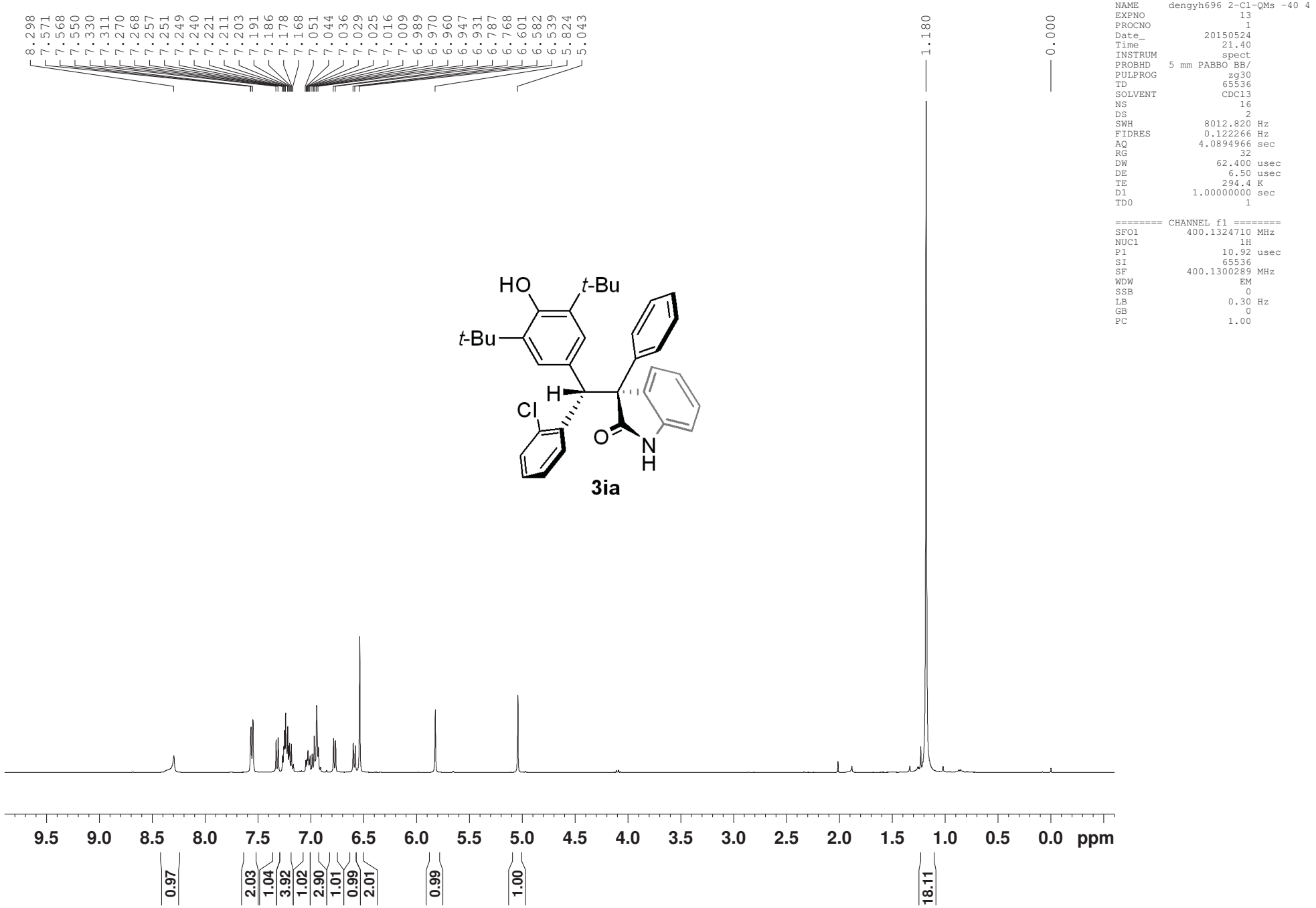
样品名称:	dengyh690a o-Br-QMs -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@4
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/12 11:41:23 CST		
处理时间:	2015/5/13 10:05:46 CST		

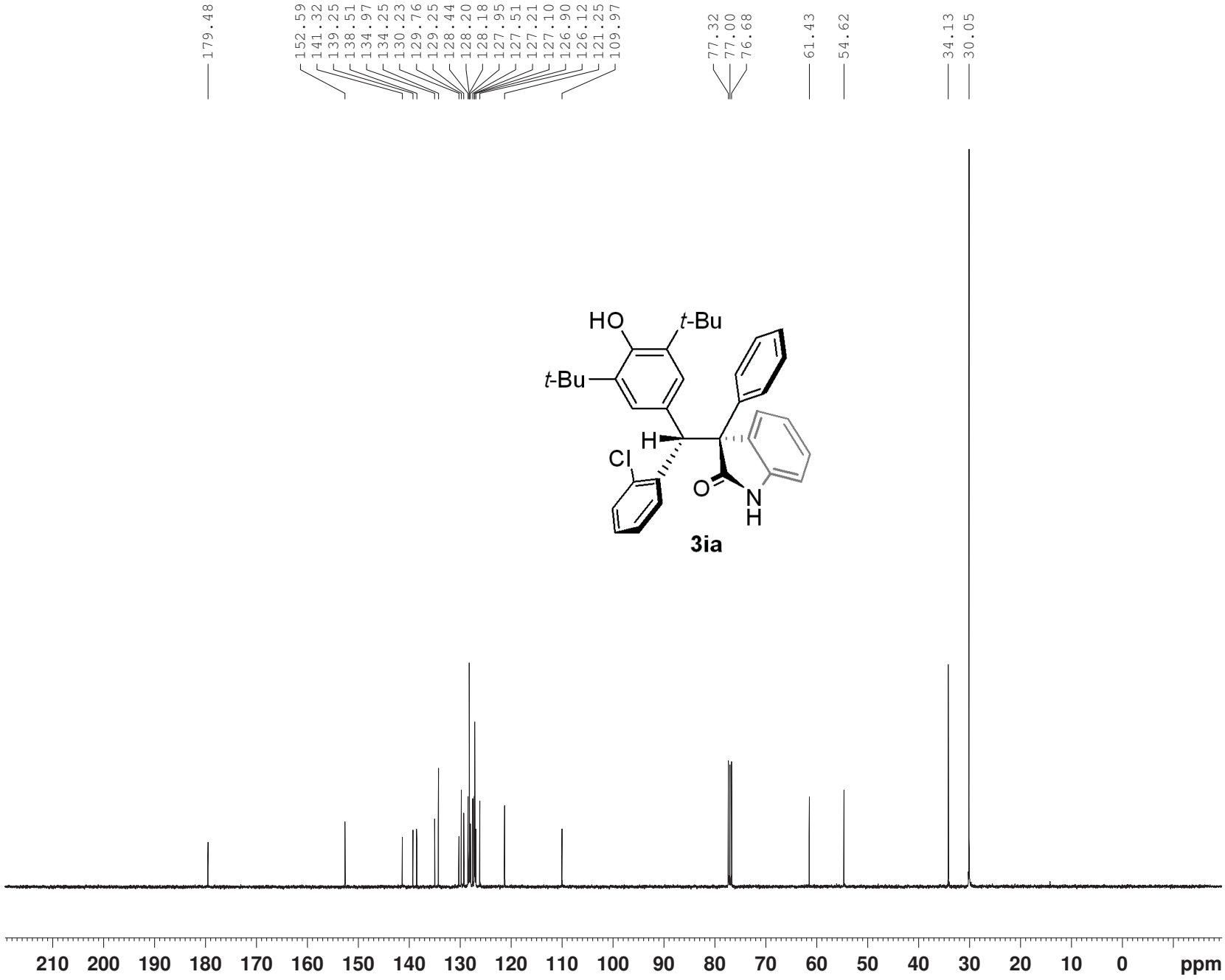


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	10.231	32604	0.23	2086
2	2998 (190-400)纳米	11.373	14483	0.10	872
3	2998 (190-400)纳米	16.011	13832294	98.67	587468
4	2998 (190-400)纳米	18.015	139842	1.00	5457


8.298
7.571
7.568
7.550
7.330
7.311
7.270
7.268
7.257
7.251
7.249
7.240
7.221
7.211
7.203
7.191
7.186
7.178
7.168
7.051
7.044
7.036
7.029
7.025
7.016
7.009
6.989
6.970
6.960
6.947
6.931
6.787
6.768
6.601
6.582
6.539
5.824
5.043
1.180
0.000
NAME dengyh696 2-Cl-QMs -40 4
EXPNO 13
PROCNO 1
Date_ 20150524
Time 21.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300289 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
Cl
O
N
H
3ia
9.5
9.0
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
ppm
0.97
2.03
1.04
3.92
1.02
2.90
1.01
0.99
2.01
0.99
1.00
18.11

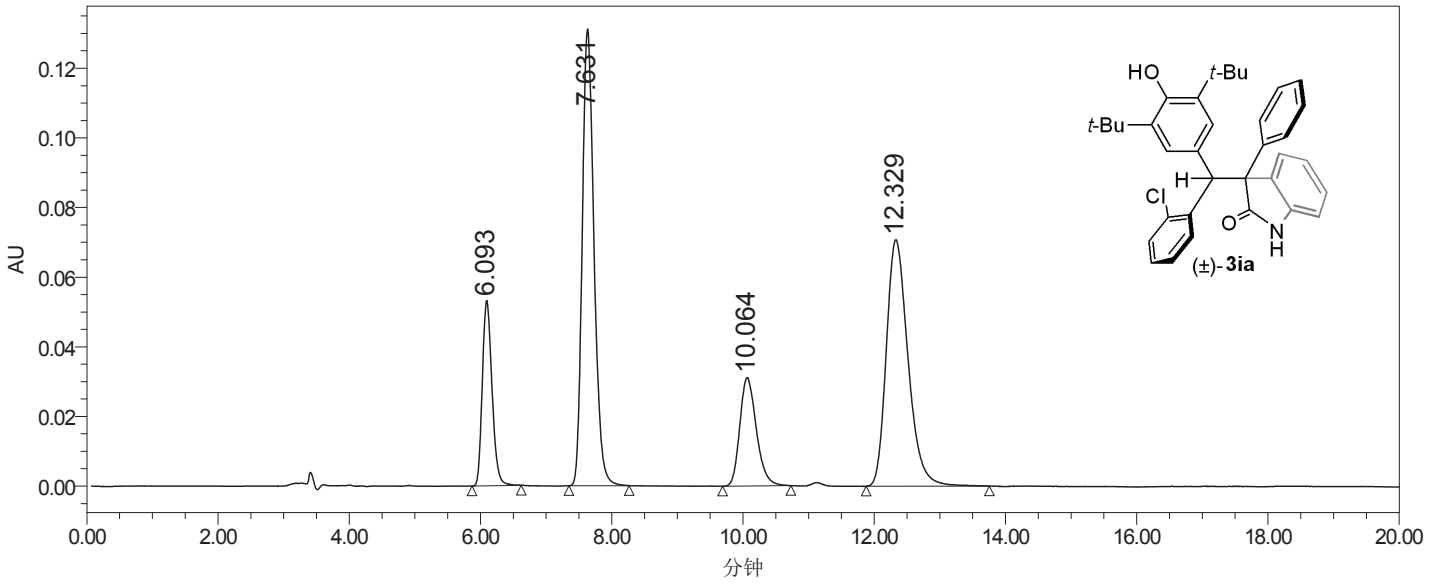


NAME	dengyh696 2-Cl-QMs -40 4
EXPNO	14
PROCNO	1
Date_	20150524
Time	21.52
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDC13
NS	200
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	912
DW	20.800 usec
DE	6.50 usec
TE	295.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	14.70 usec
SI	32768
SF	100.6127791 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengh696 2-Cl-QMs race IE3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,1	采集方法组:	IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/15 18:59:34 CST		
处理时间:	2015/5/15 19:36:33 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

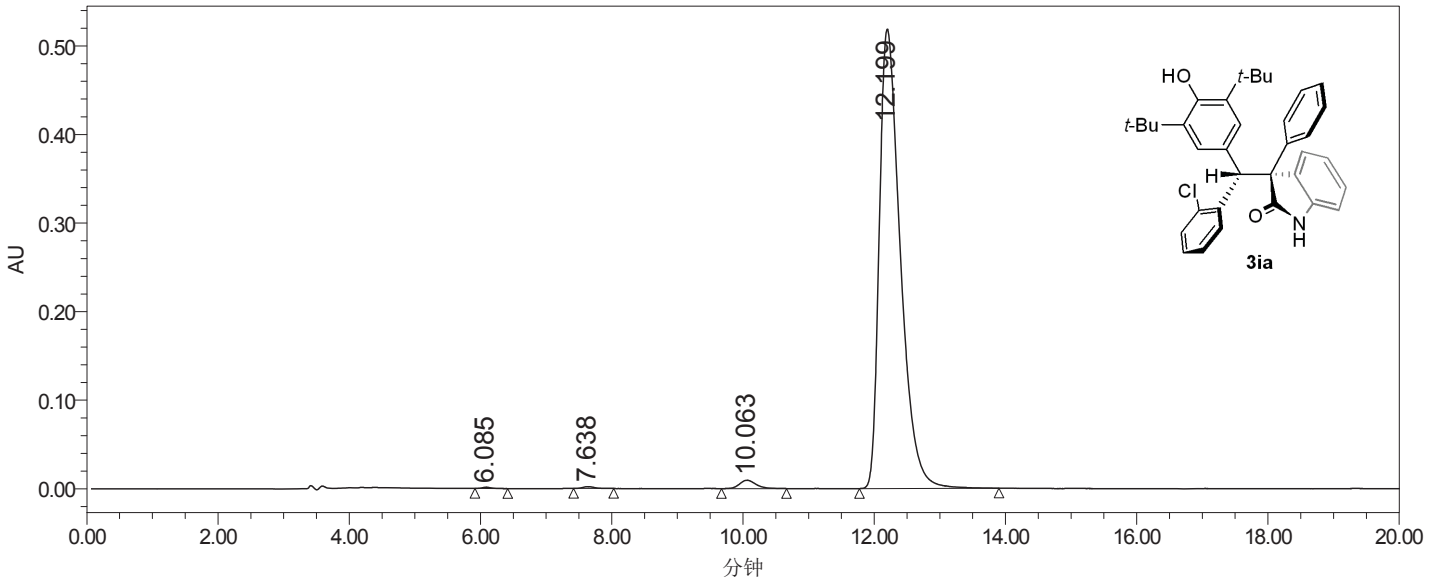
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.093	548113	12.59	53196
2	2998 (190-400)纳米	7.631	1632057	37.48	131070
3	2998 (190-400)纳米	10.064	545426	12.53	31118
4	2998 (190-400)纳米	12.329	1628334	37.40	70748

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

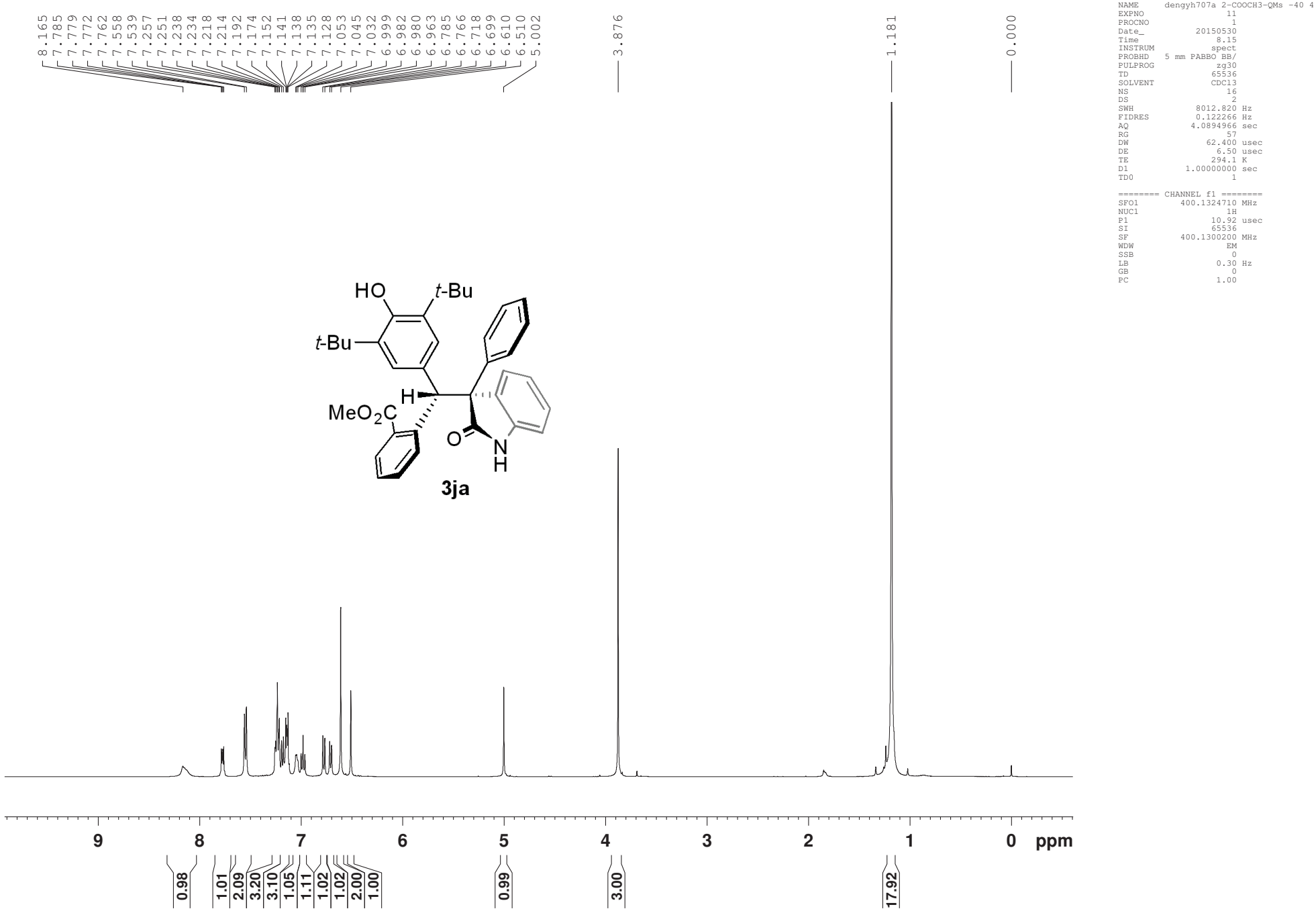
样品名称:	dengyh696a 2-Cl-QMs -40Du IE3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/15 18:39:12 CST		
处理时间:	2015/5/15 19:37:05 CST		



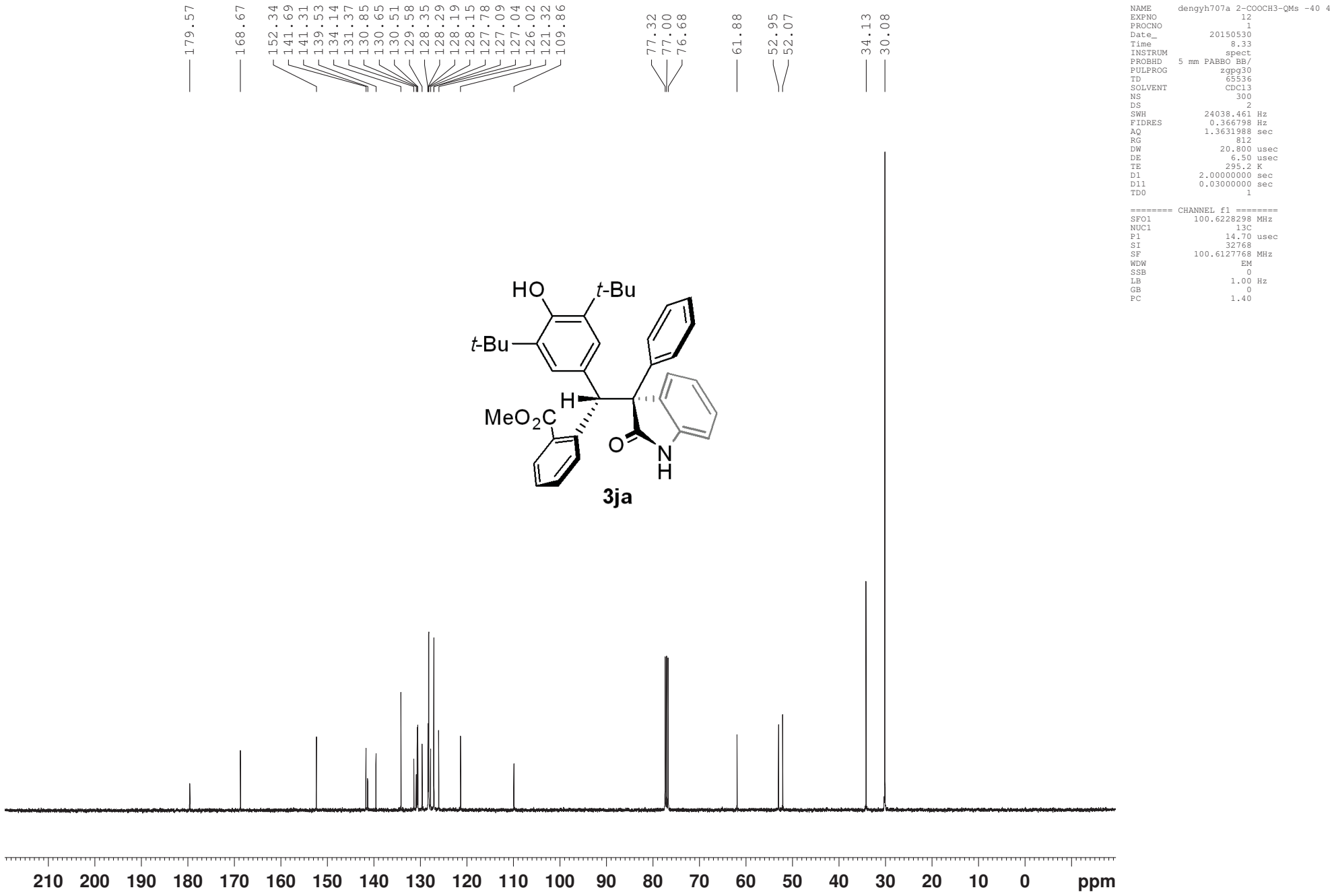
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.085	13336	0.11	1333
2	2998 (190-400)纳米	7.638	25531	0.22	2120
3	2998 (190-400)纳米	10.063	162193	1.38	9382
4	2998 (190-400)纳米	12.199	11521266	98.28	518464



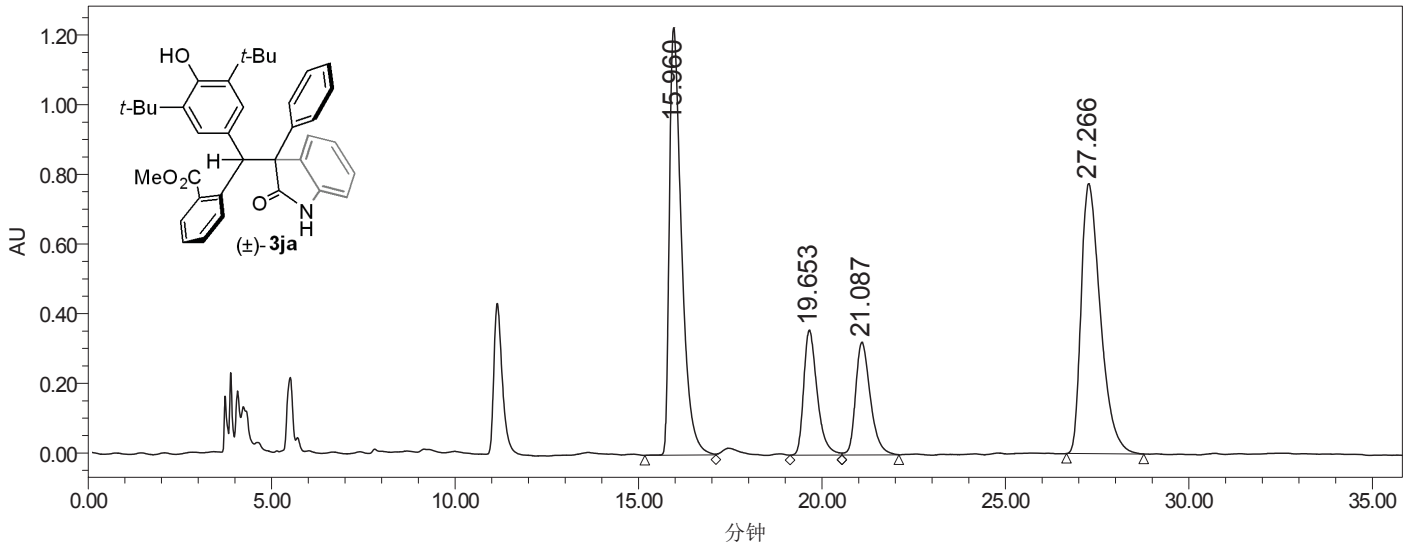

```
NAME      dengyh707a 2-COOCH3-QMs -40 4
EXPNO                 11
PROCNO                 1
Date_           20150530
Time                8.15
INSTRUM            spect
PROBHD     5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     2
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG                    57
DW                62.400 usec
DE                 6.50 usec
TE                294.1 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1          400.1324710 MHz
NUC1                  1H
P1                 10.92 usec
SI                 65536
SF            400.1300200 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```


179.57
168.67
152.34
141.69
141.31
139.53
134.14
131.37
130.85
130.65
130.51
129.58
128.35
128.29
128.19
128.15
127.78
127.09
127.04
126.02
121.32
109.86
77.32
77.00
76.68
61.88
52.95
52.07
34.13
30.08
NAME dengyh707a 2-COOCH3-QMs -40 4
EXPNO 12
PROCNO 1
Date_ 20150530
Time 8.33
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 300
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 812
DW 20.800 usec
DE 6.50 usec
TE 295.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127768 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
MeO2C
O
N
H
3ja
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: 2015
用户名称: Breeze 用户 (Breeze)

样品信息

样品名称:	dyh707 2-CO2Me IA3	采集者:	Breeze
样品类型:	未知	样品组名称:	
瓶号:	48	采集方法组:	dengyh
进样次数:	1	处理方法:	dengyh707 race IA3 DCM30
进样体积:	10.00 ul	通道名称:	226.1 纳米
运行时间:	60.0 Minutes	处理通道注释:	PDA 226.1 纳米
采集时间:	2015/5/30 11:29:07 CST		
处理时间:	2015/5/30 13:56:15 CST		



Channel: 2998; Channel Desc.: 2998 (210-400)纳米; Processing Method: dengyh707 race IA3 DCM30 Hex40

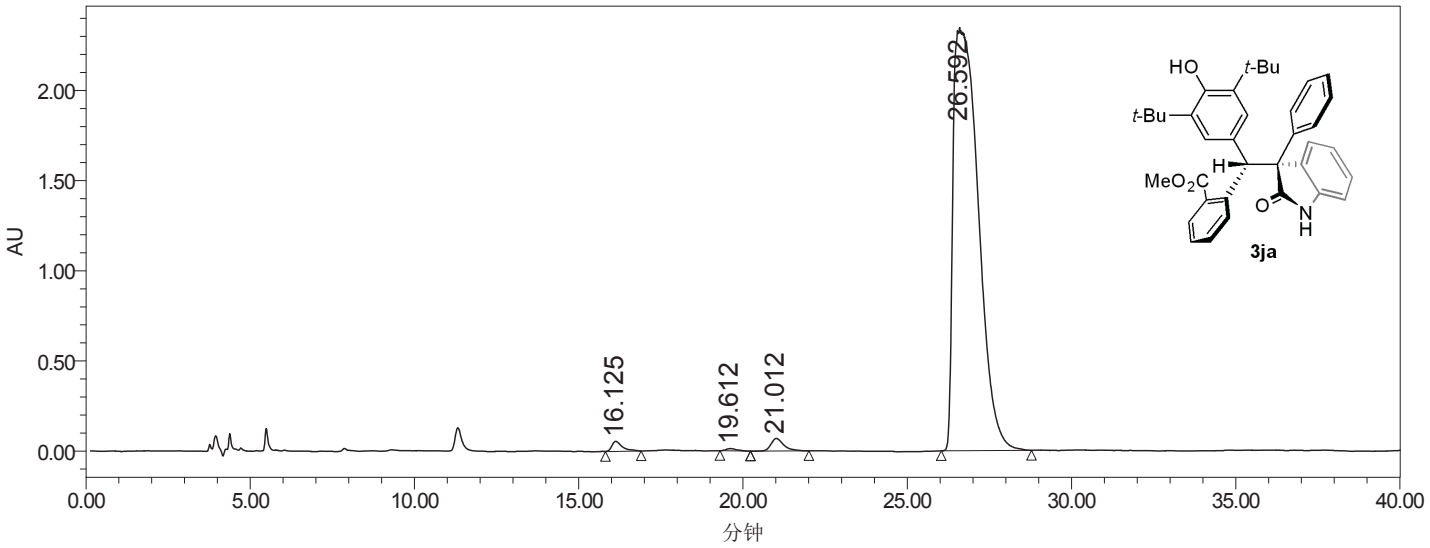
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (210-400)纳米	15.960	28327221	37.82	1227298
2	2998 (210-400)纳米	19.653	9173488	12.25	358961
3	2998 (210-400)纳米	21.087	9042648	12.07	323461
4	2998 (210-400)纳米	27.266	28352208	37.86	775368

项目名称: 2015
用户名称: Breeze 用户 (Breeze)

样品信息

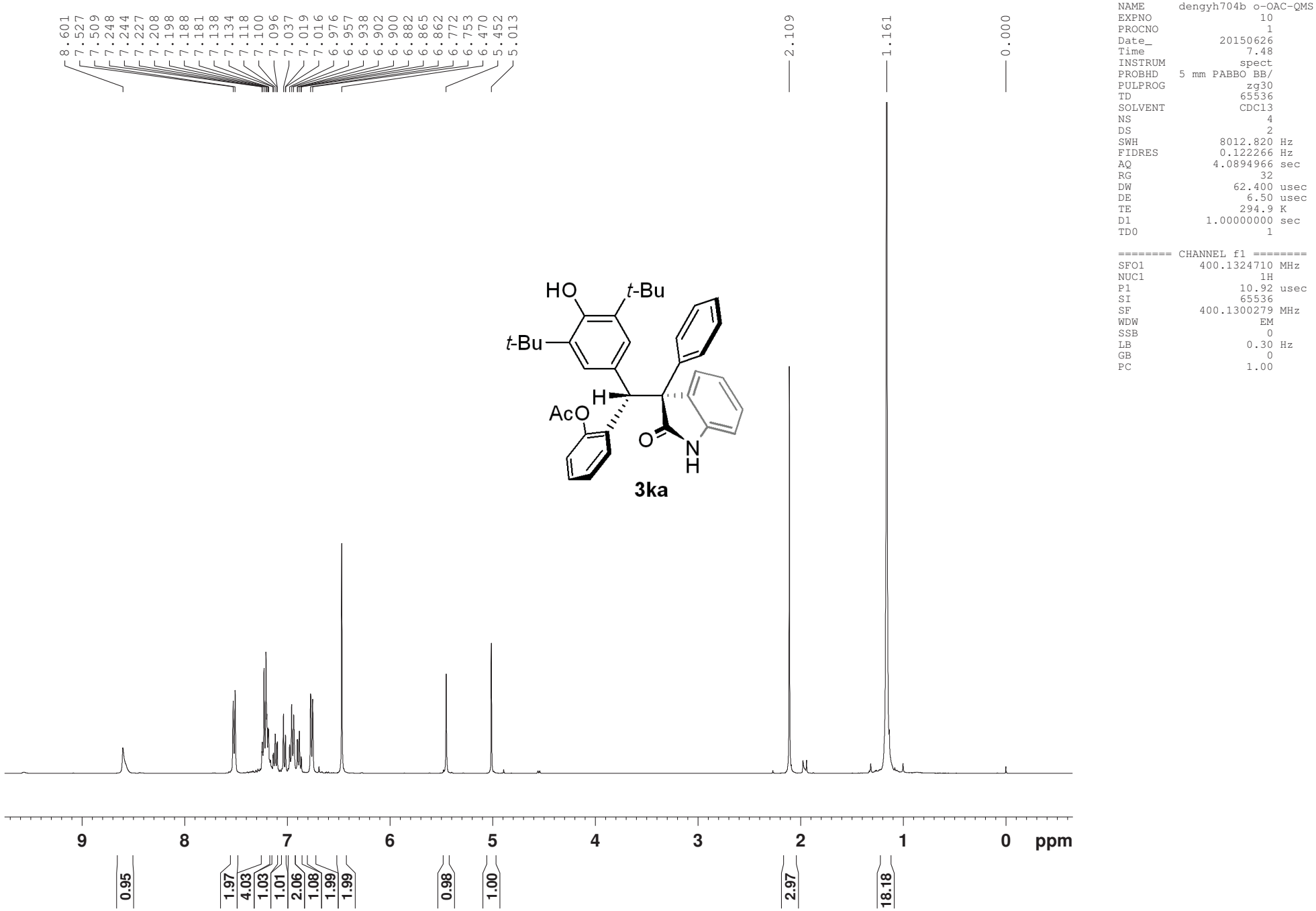
样品名称:	dyh707a 2-CO2Me IA3	采集者:	Breeze
样品类型:	未知	样品组名称:	
瓶号:	49	采集方法组:	dengyh
进样次数:	1	处理方法:	dengyh707a IA3 DCM30 Hex40
进样体积:	10.00 ul	通道名称:	226.1 纳米
运行时间:	40.0 Minutes	处理通道注释:	PDA 226.1 纳米
采集时间:	2015/5/30 12:06:55 CST		
处理时间:	2015/5/30 13:58:29 CST		



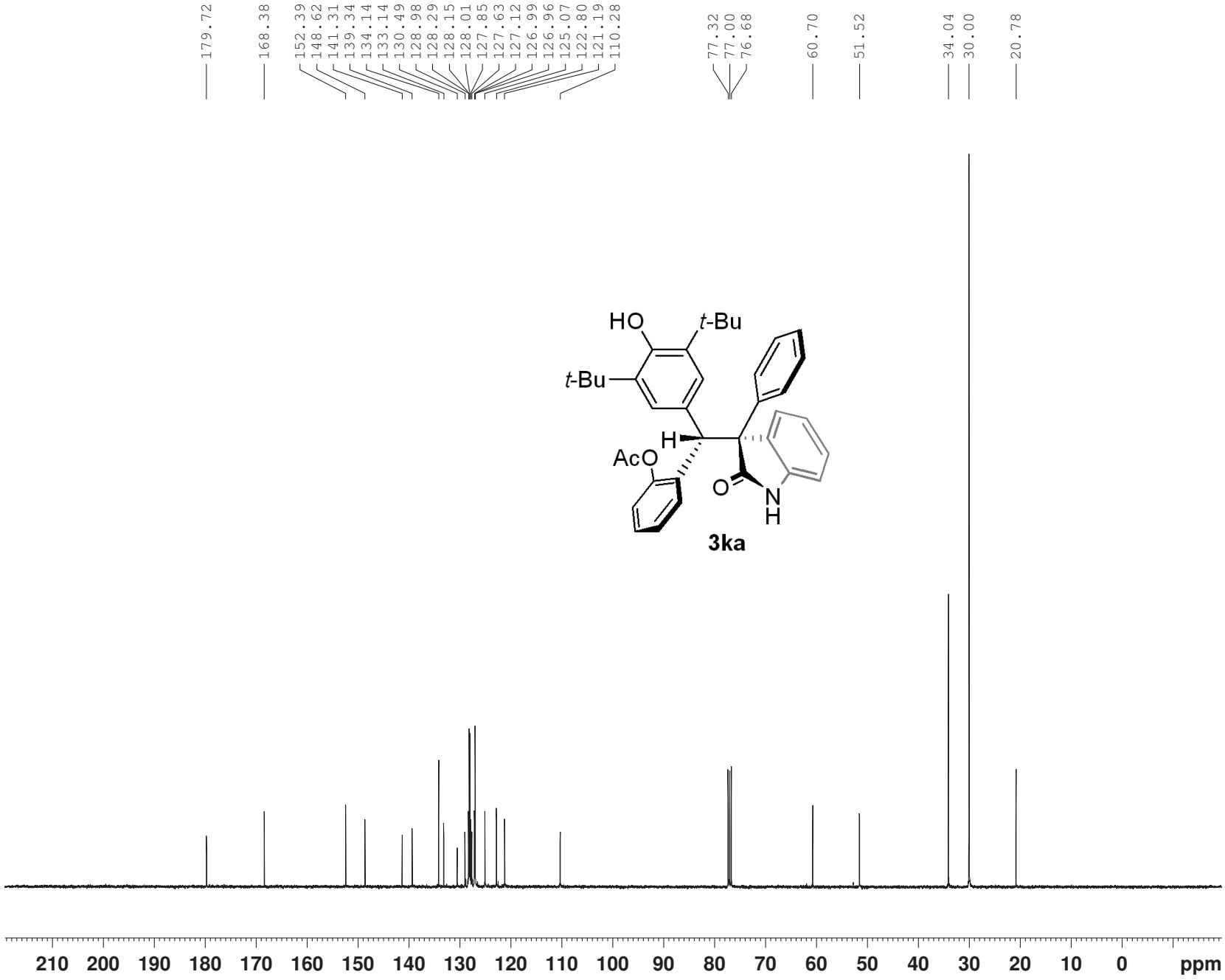
Channel: 2998; Channel Desc.: 2998 (210-400)纳米; Processing Method: dengyh707a IA3 DCM30 Hex40

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (210-400)纳米	16.125	1215134	0.95	55143
2	2998 (210-400)纳米	19.612	294885	0.23	12823
3	2998 (210-400)纳米	21.012	1872262	1.46	69445
4	2998 (210-400)纳米	26.592	125110403	97.37	2346730




```
NAME      dengyh704b o-OAC-QMS
EXPNO                  10
PROCNO                  1
Date_           20150626
Time                7.48
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     4
DS                     2
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG                    32
DW                62.400 usec
DE                 6.50 usec
TE                294.9 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                 10.92 usec
SI                 65536
SF           400.1300279 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

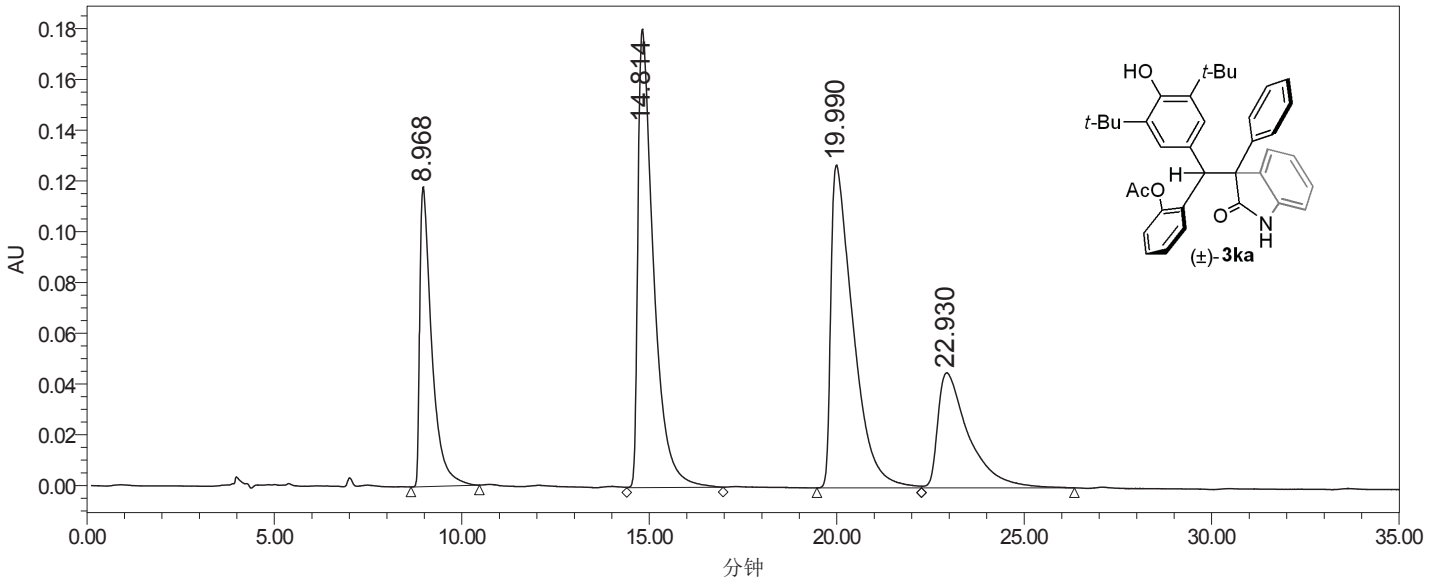


NAME	dengyh704b o-OAC-QMS
EXPNO	11
PROCNO	1
Date_	20150626
Time	8.00
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	200
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	1030
DW	20.800 usec
DE	6.50 usec
TE	295.8 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	14.70 usec
SI	32768
SF	100.6127821 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh704 2-OAc-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IB3 IPA vs Hex 3vs82 085ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@2
运行时间:	35.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/22 15:14:50 CST		
处理时间:	2015/5/22 16:13:31 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

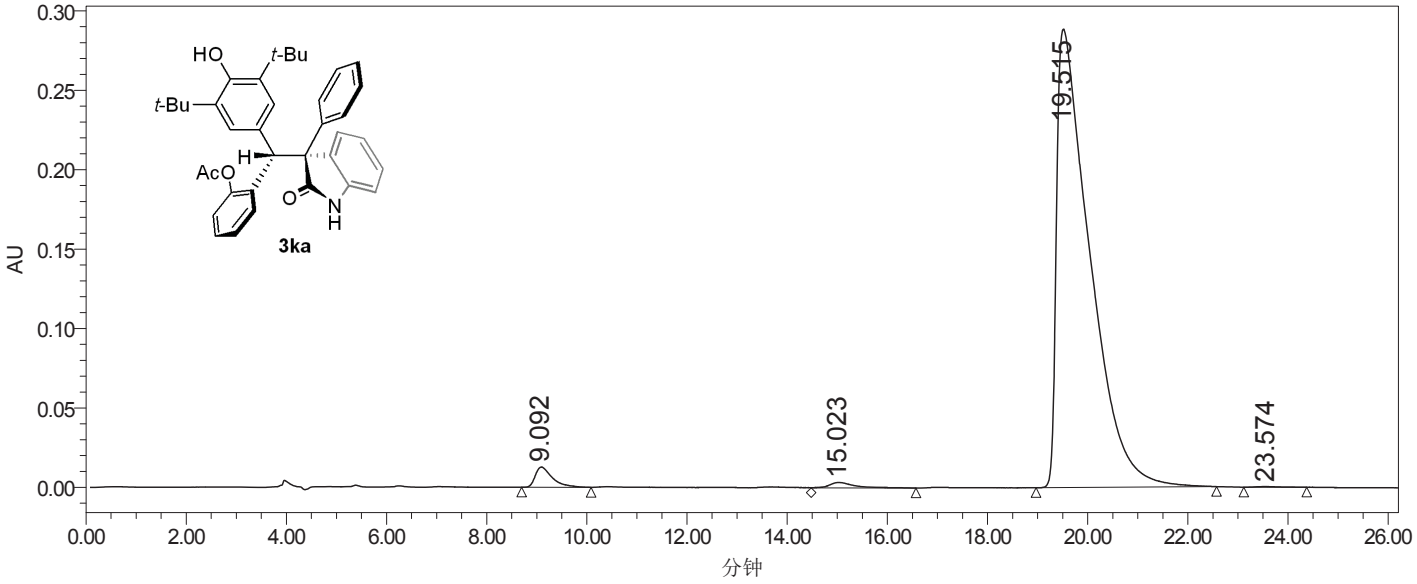
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.968	2618628	16.70	118087
2	2998 (190-400)纳米	14.814	5234577	33.39	180553
3	2998 (190-400)纳米	19.990	5237583	33.41	127114
4	2998 (190-400)纳米	22.930	2585134	16.49	45316

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

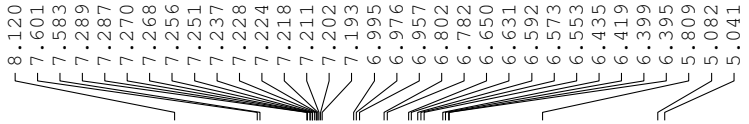
样品名称:	dengyh704a 2-OAc-QMs -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IB3 IPA vs Hex 3vs82 085ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	26.2 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/22 16:33:44 CST		
处理时间:	2015/5/22 17:33:19 CST		

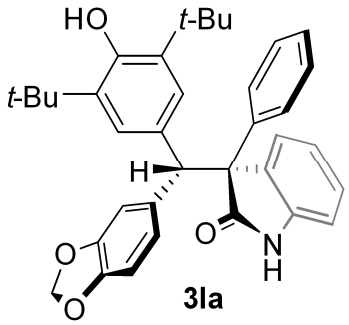


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

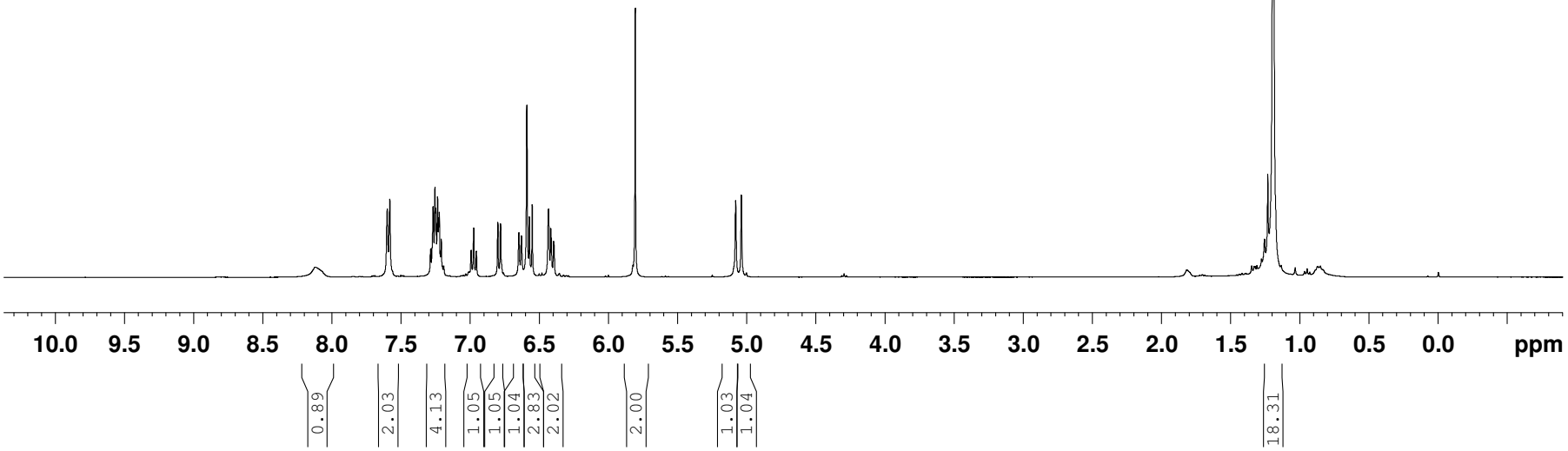
	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.092	302765	2.21	12729
2	2998 (190-400)纳米	15.023	123306	0.90	3471
3	2998 (190-400)纳米	19.515	13241893	96.78	288534
4	2998 (190-400)纳米	23.574	14528	0.11	466

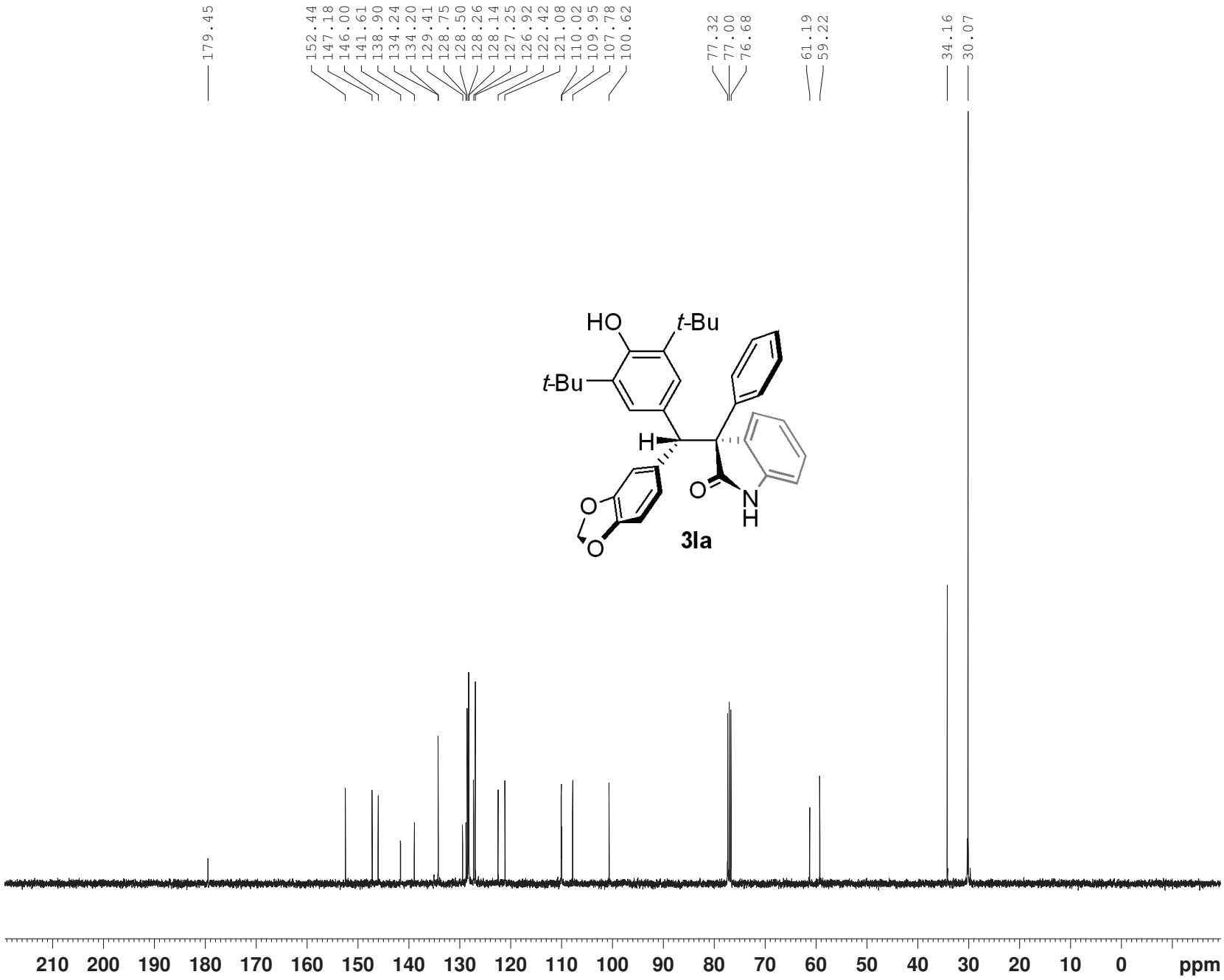




3la


```
NAME      dengyh697b fujiaoji
EXPNO                  10
PROCNO                  1
Date_           20150630
Time                 8.54
INSTRUM              spect
PROBHD   5 mm PABBO BB/
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       2
SWH               8012.820 Hz
FIDRES               0.122266 Hz
AQ                4.0894966 sec
RG                     50.8
DW                   62.400 usec
DE                    6.50 usec
TE                   295.5 K
D1             1.00000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                   1H
P1                  10.92 usec
SI                  65536
SF             400.1300241 MHz
WDW                    EM
SSB                     0
LB                   0.30 Hz
GB                      0
PC                   1.00
```



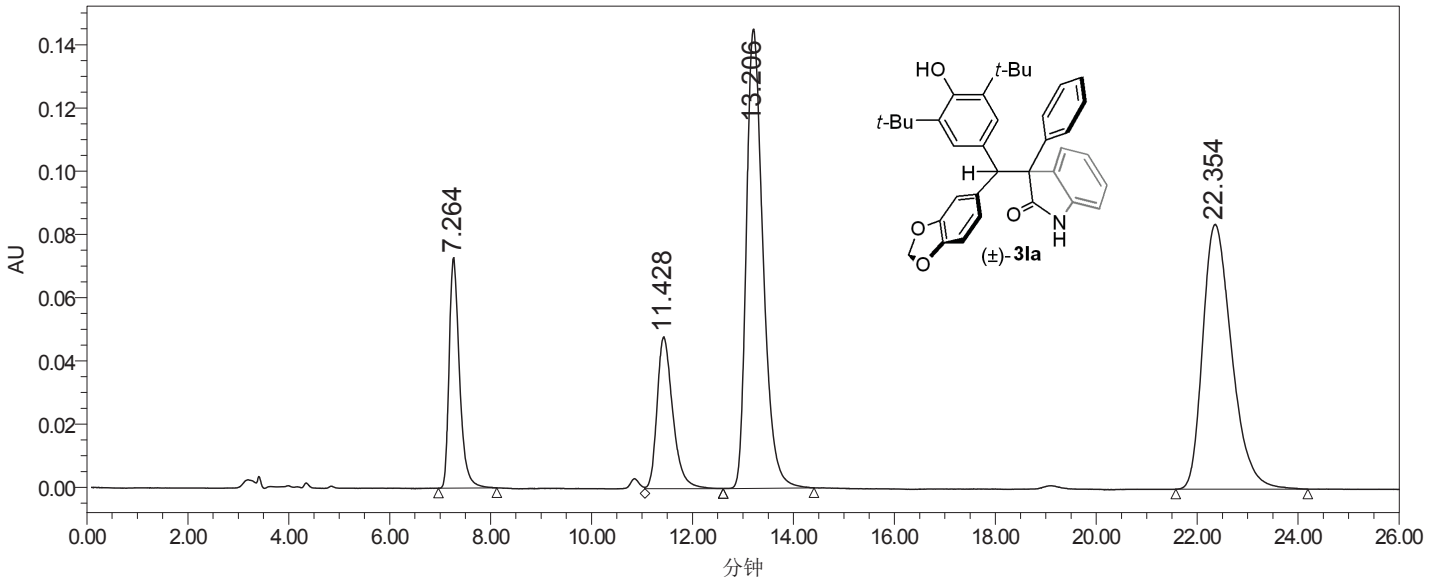


NAME	dengyh697b fujiaoji
EXPNO	11
PROCNO	1
Date_	20150630
Time	8.56
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	110
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.50 usec
TE	296.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	14.70 usec
SI	32768
SF	100.6127773 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh697 fujiaoji race IE3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:E,1	采集方法组:	IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米
运行时间:	26.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/17 14:23:40 CST		
处理时间:	2015/5/17 21:09:53 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

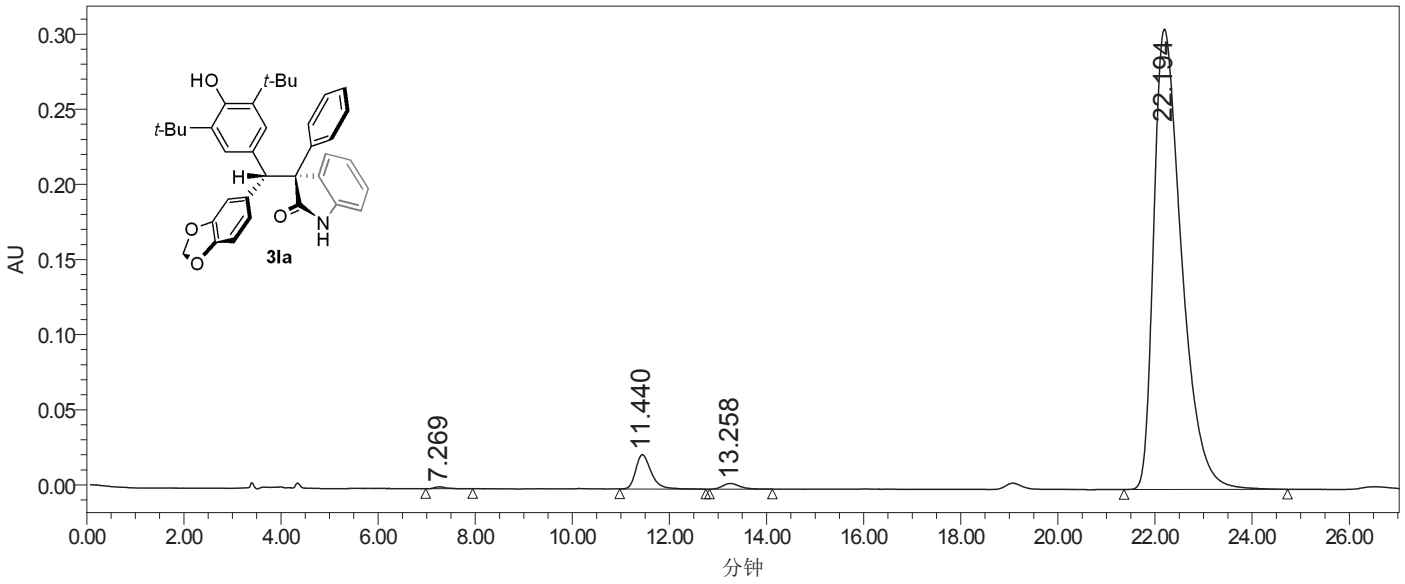
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	7.264	1036513	11.86	72859
2	2998 (190-400)纳米	11.428	1036100	11.85	47891
3	2998 (190-400)纳米	13.206	3334181	38.14	145177
4	2998 (190-400)纳米	22.354	3334367	38.15	83754

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

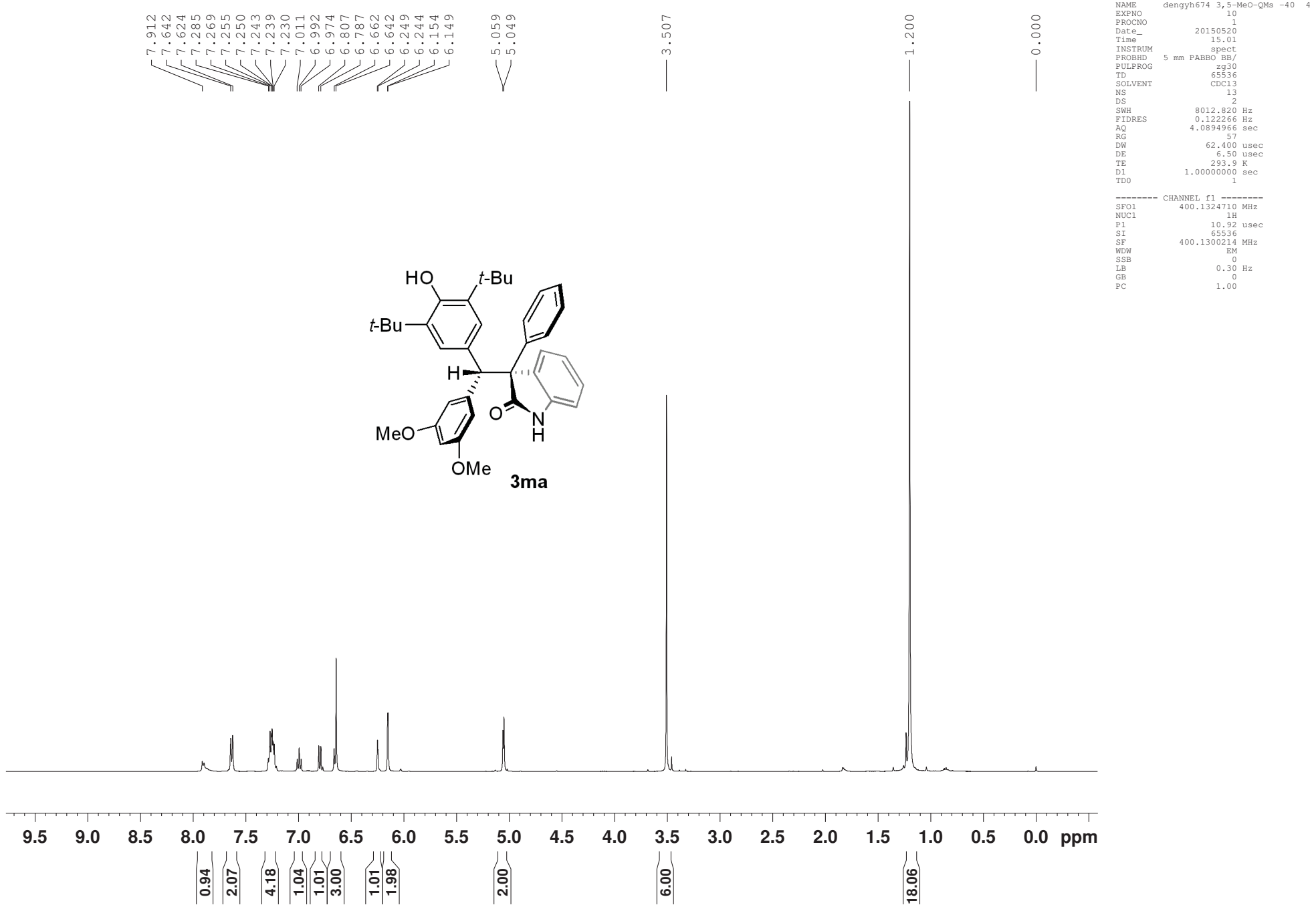
样品名称:	dengyh697a fujiaoji -40Du IE3	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:E,2	采集方法组:	IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/17 13:55:50 CST		
处理时间:	2015/5/17 21:11:10 CST		

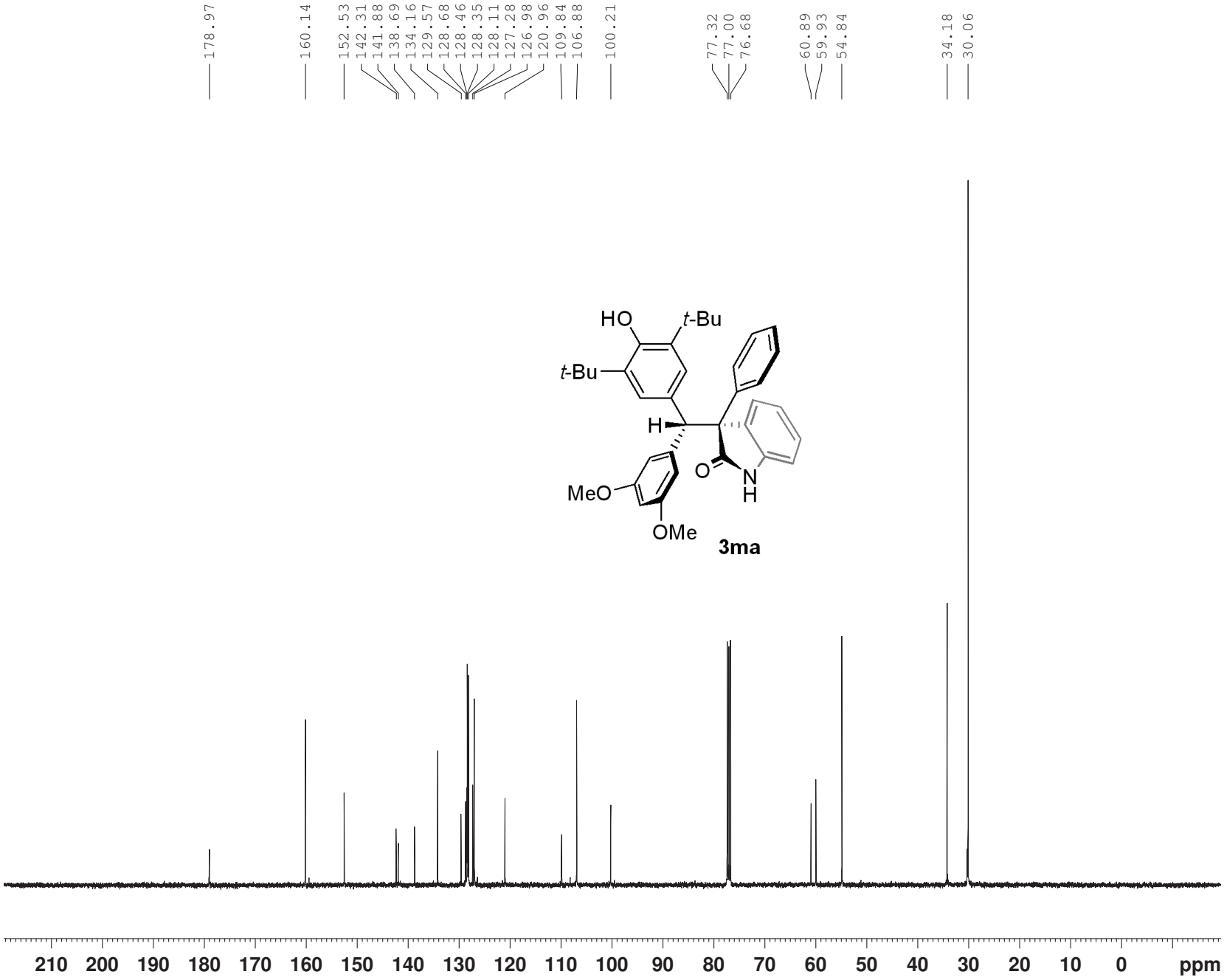


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	7.269	20775	0.16	1261
2	2998 (190-400)纳米	11.440	504833	3.95	22827
3	2998 (190-400)纳米	13.258	92197	0.72	3775
4	2998 (190-400)纳米	22.194	12174976	95.17	306339


7.912
7.642
7.624
7.285
7.269
7.255
7.250
7.243
7.239
7.230
7.011
6.992
6.974
6.807
6.787
6.662
6.642
6.249
6.244
6.154
6.149
5.059
5.049
3.507
1.200
0.000
HO
t-Bu
t-Bu
H
O
N
H
MeO
OMe
3ma
NAME dengyh674 3,5-MeO-QMs -40 4
EXPNO 10
PROCNO 1
Date_ 20150520
Time 15.01
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 13
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 57
DW 62.400 usec
DE 6.50 usec
TE 293.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300214 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.94
2.07
4.18
1.04
1.01
3.00
1.01
1.98
2.00
6.00
18.06

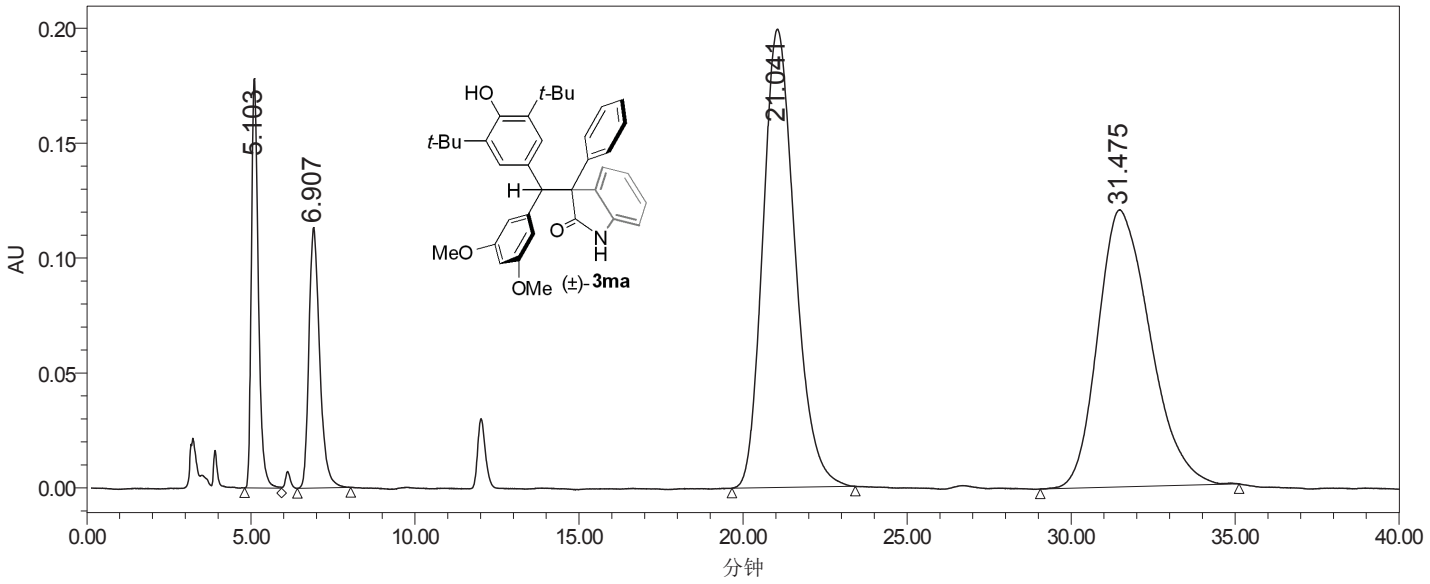



```
NAME      dengyh674 3,5-MeO-QMs -40  4
EXPNO                 12
PROCNO                 1
Date_           20150523
Time               14.53
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   280
DS                     2
SWH            24038.461 Hz
FIDRES          0.366798 Hz
AQ              1.3631988 sec
RG                  2050
DW                 20.800 usec
DE                  6.50 usec
TE                295.5 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         100.6228298 MHz
NUC1               13C
P1                12.00 usec
SI                32768
SF           100.6127770 MHz
WDW                EM
SSB                 0
LB                1.00 Hz
GB                  0
PC                1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh674 3,5-OMe race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,4	采集方法组:	IC3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	8.00 ul	通道名称:	226.3 纳米
运行时间:	40.0 Minutes	处理通道注释:	PDA 226.3 纳米
采集时间:	2015/5/9 19:54:39 CST		
处理时间:	2015/5/20 20:25:15 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

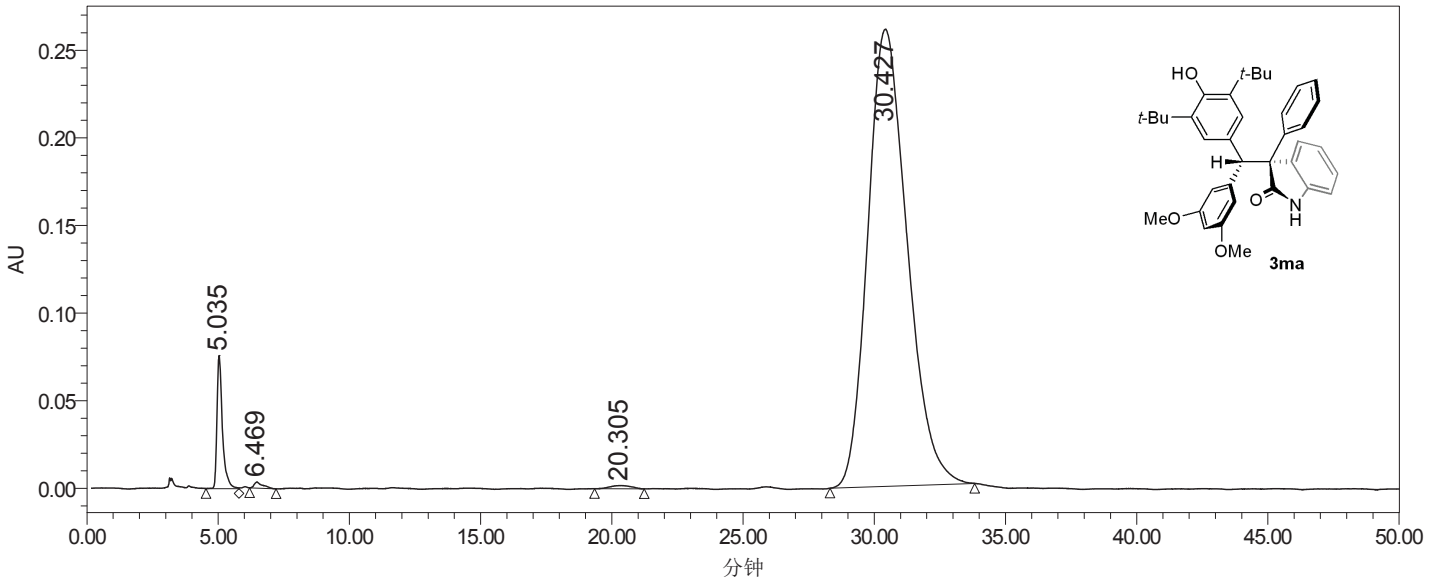
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.103	2622302	8.18	178122
2	2998 (190-400)纳米	6.907	2588255	8.07	113308
3	2998 (190-400)纳米	21.041	13522856	42.16	199403
4	2998 (190-400)纳米	31.475	13342078	41.60	120569

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

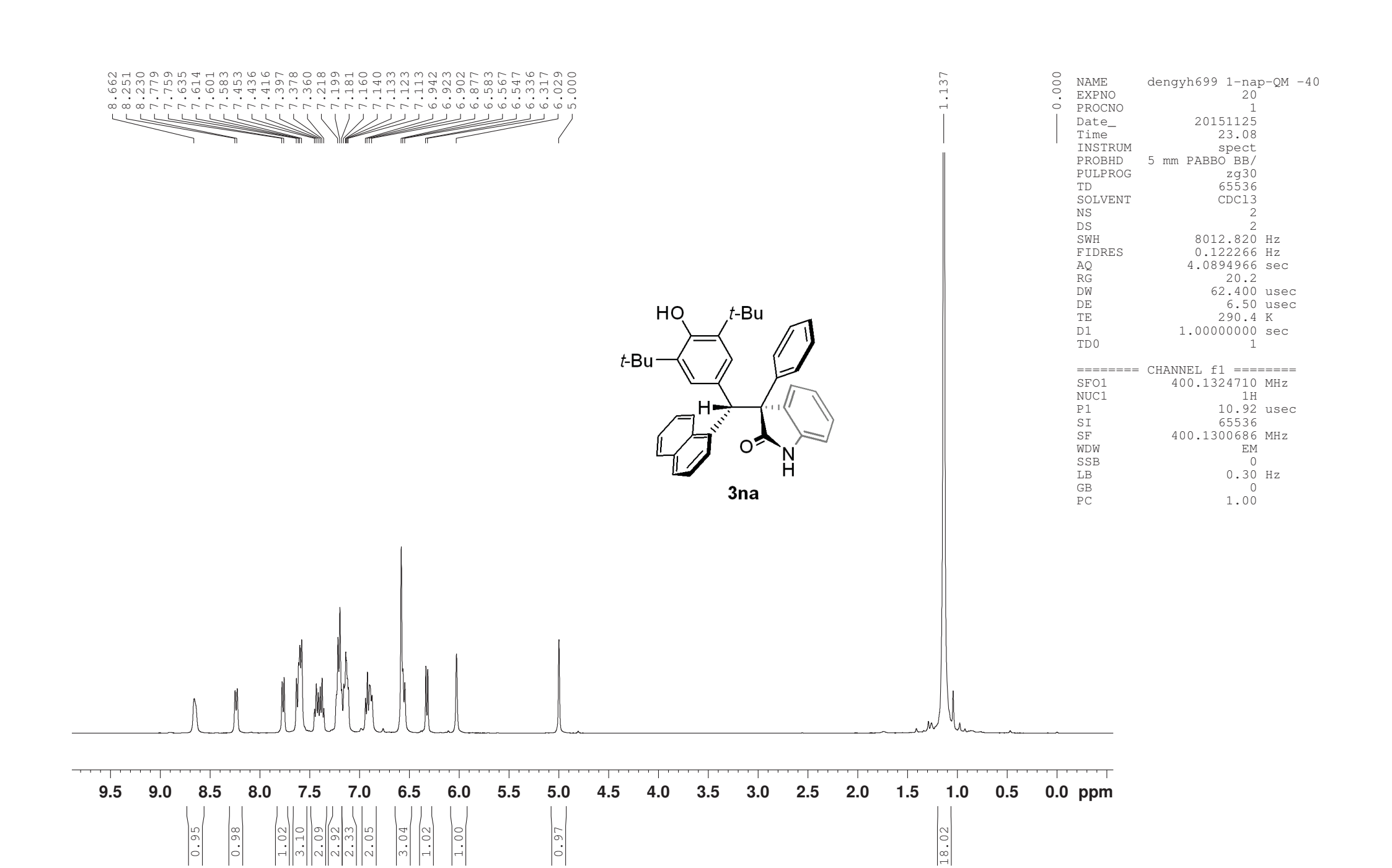
样品名称:	dengyh674b 3,5-MeO -40	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,2	采集方法组:	IC3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	226.1 纳米
运行时间:	50.0 Minutes	处理通道注释:	PDA 226.1 纳米
采集时间:	2015/5/20 10:21:17 CST		
处理时间:	2015/5/20 11:22:40 CST		

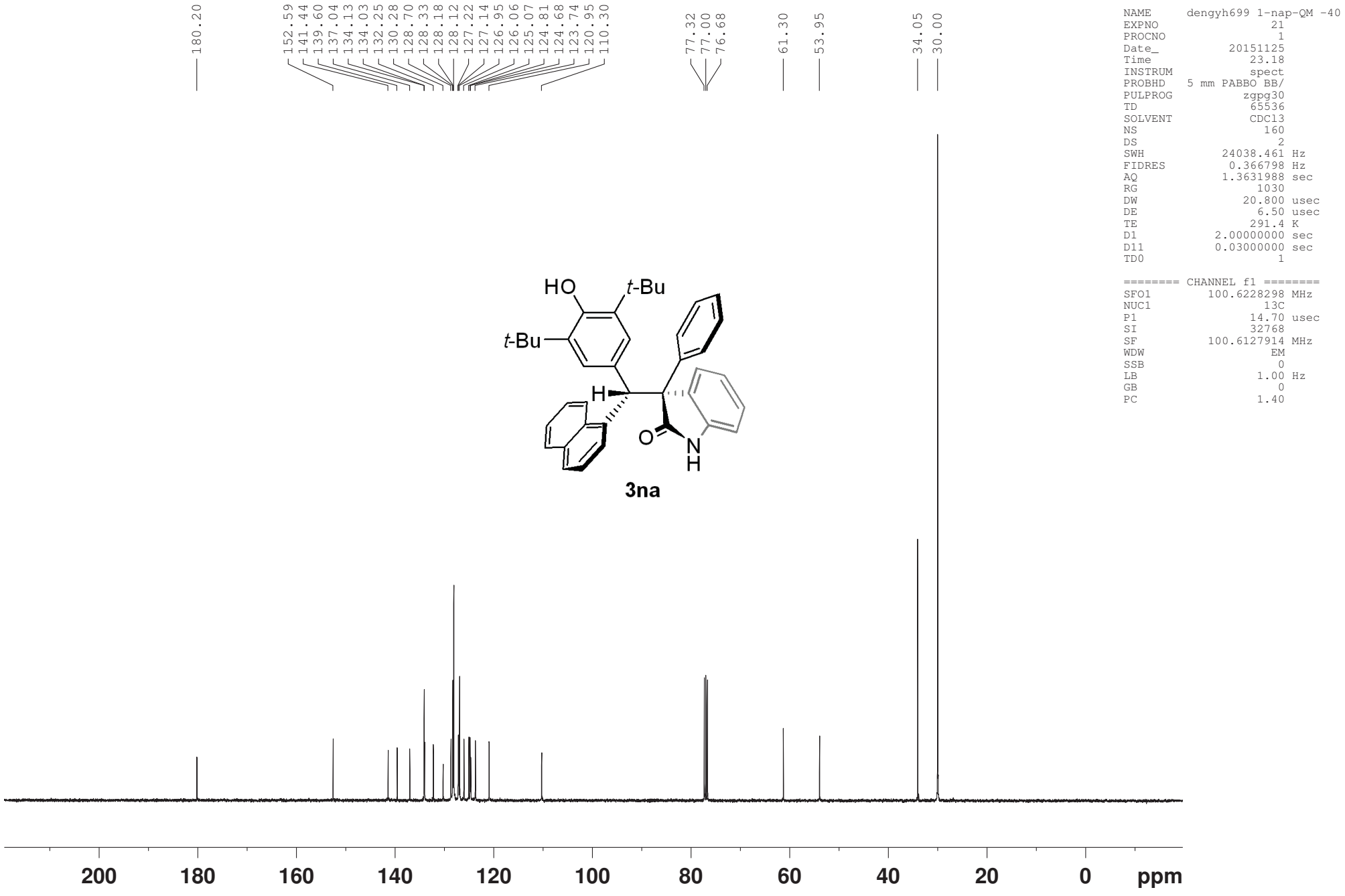


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.035	1099121	3.86	75966
2	2998 (190-400)纳米	6.469	77647	0.27	3378
3	2998 (190-400)纳米	20.305	102961	0.36	1871
4	2998 (190-400)纳米	30.427	27210243	95.51	260915

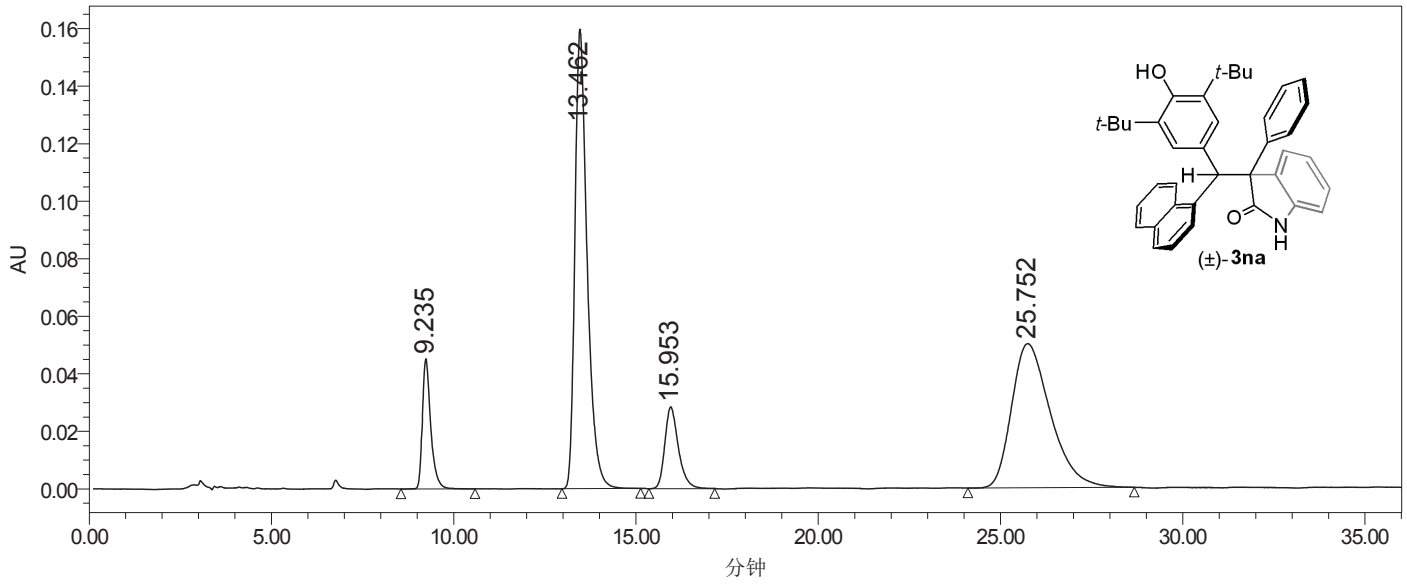

8.662
8.251
8.230
7.779
7.759
7.635
7.614
7.601
7.583
7.453
7.436
7.416
7.397
7.378
7.360
7.218
7.199
7.181
7.160
7.140
7.133
7.123
7.113
6.942
6.923
6.902
6.877
6.583
6.567
6.547
6.336
6.317
6.029
5.000
1.137
0.000
HO
t-Bu
t-Bu
H
O
N
H
3na
NAME dengyh699 1-nap-QM -40
EXPNO 20
PROCNO 1
Date_ 20151125
Time 23.08
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 2
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 20.2
DW 62.400 usec
DE 6.50 usec
TE 290.4 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300686 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
9.5 9.0 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 ppm
0.95
0.98
1.02
3.10
2.09
2.92
2.33
2.05
3.04
1.02
1.00
0.97
18.02


180.20
152.59
141.44
139.60
137.04
134.13
134.03
132.25
130.28
128.70
128.33
128.18
128.12
127.22
127.14
126.95
126.06
125.07
124.81
124.68
123.74
120.95
110.30
77.32
77.00
76.68
61.30
53.95
34.05
30.00
NAME dengyh699 1-nap-QM -40
EXPNO 21
PROCNO 1
Date_ 20151125
Time 23.18
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 160
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 1030
DW 20.800 usec
DE 6.50 usec
TE 291.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 14.70 usec
SI 32768
SF 100.6127914 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
t-Bu
H
O
N
H
3na
200
180
160
140
120
100
80
60
40
20
0
ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh699 1-naphthyl-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,1	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@4
运行时间:	36.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/20 14:53:39 CST		
处理时间:	2015/5/20 17:23:16 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

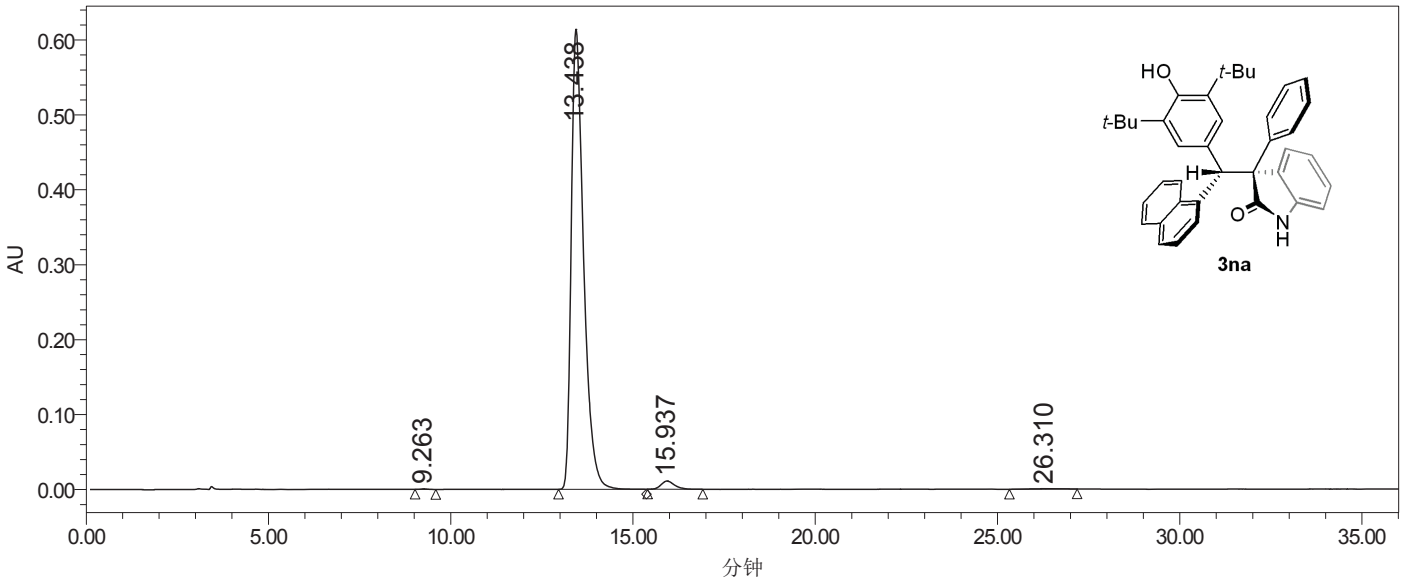
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.235	720990	8.12	45171
2	2998 (190-400)纳米	13.462	3722202	41.93	159698
3	2998 (190-400)纳米	15.953	734242	8.27	28347
4	2998 (190-400)纳米	25.752	3700137	41.68	50087

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

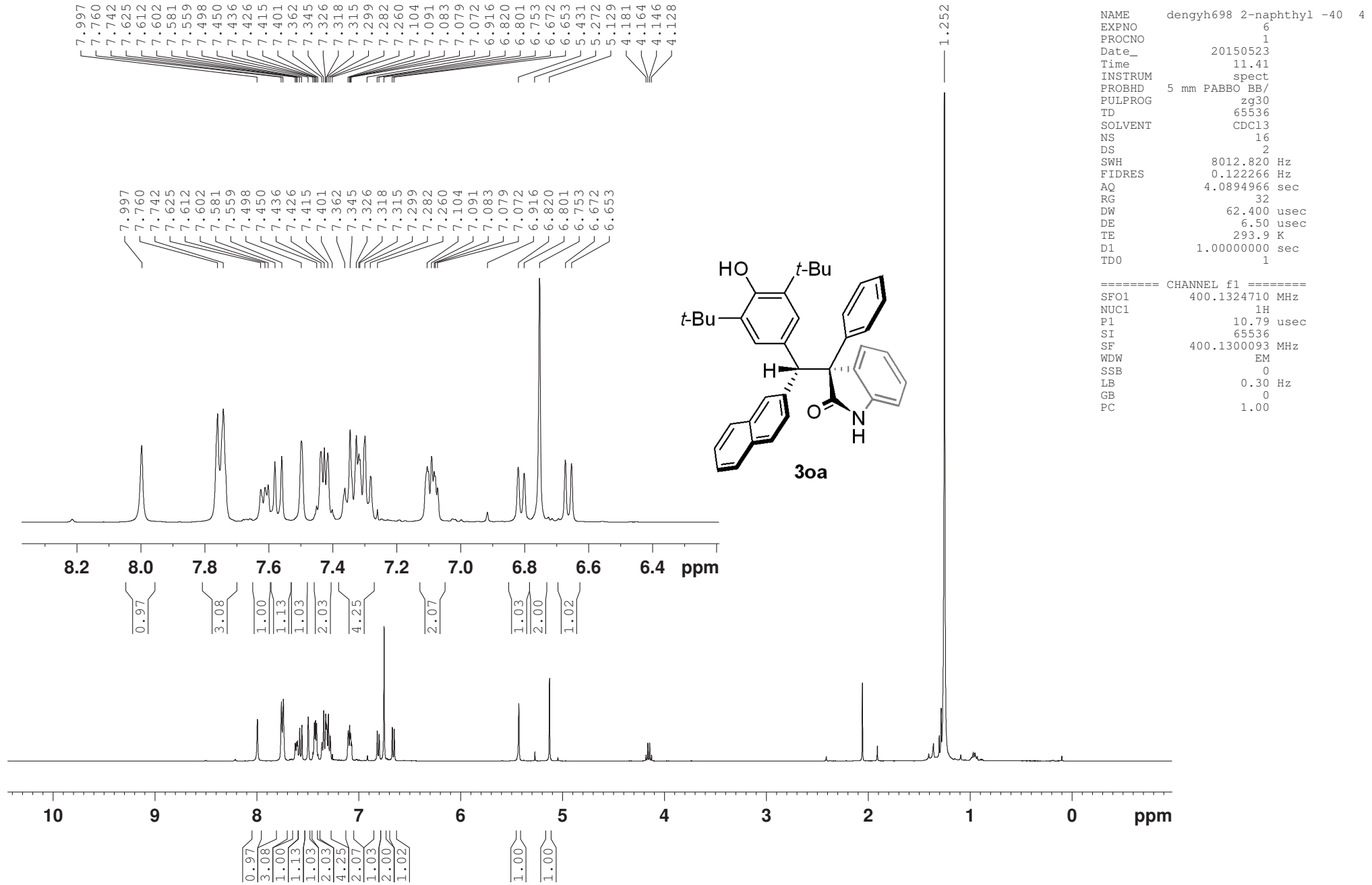
样品名称:	dengyh699a 1-naphthyl-QMs	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,2	采集方法组:	IA3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@4
运行时间:	36.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/20 15:44:37 CST		
处理时间:	2015/5/20 17:21:48 CST		

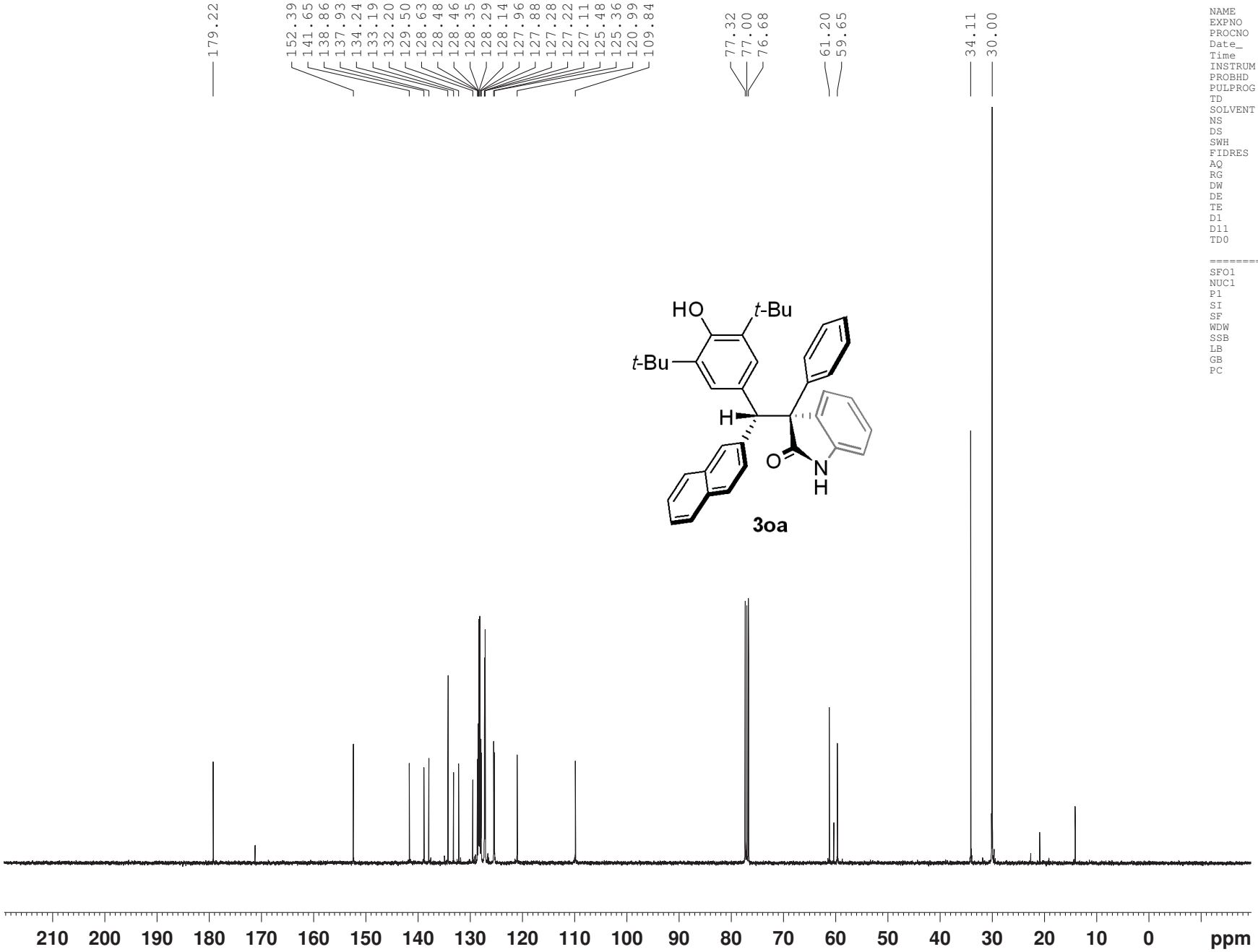


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	9.263	11544	0.08	825
2	2998 (190-400)纳米	13.438	14491947	97.70	614054
3	2998 (190-400)纳米	15.937	286923	1.93	11013
4	2998 (190-400)纳米	26.310	42863	0.29	653


7.997
7.760
7.742
7.625
7.612
7.602
7.581
7.559
7.498
7.450
7.436
7.426
7.415
7.401
7.362
7.345
7.326
7.318
7.315
7.299
7.282
7.260
7.104
7.091
7.083
7.079
7.072
6.916
6.820
6.801
6.753
6.672
6.653
5.431
5.272
5.129
4.181
4.164
4.146
4.128
1.252
NAME dengyh698 2-naphthyl -40 4
EXPNO 6
PROCNO 1
Date_ 20150523
Time 11.41
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 293.9 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300093 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
t-Bu
H
O
N
H
3oa
8.2
8.0
7.8
7.6
7.4
7.2
7.0
6.8
6.6
6.4
ppm
0.97
3.08
1.00
1.13
1.03
2.03
4.25
2.07
1.03
2.00
1.02
10
9
8
7
6
5
4
3
2
1
0
ppm
0.97
3.08
1.00
1.13
1.03
2.03
4.25
2.07
1.03
2.00
1.02
1.00
1.00

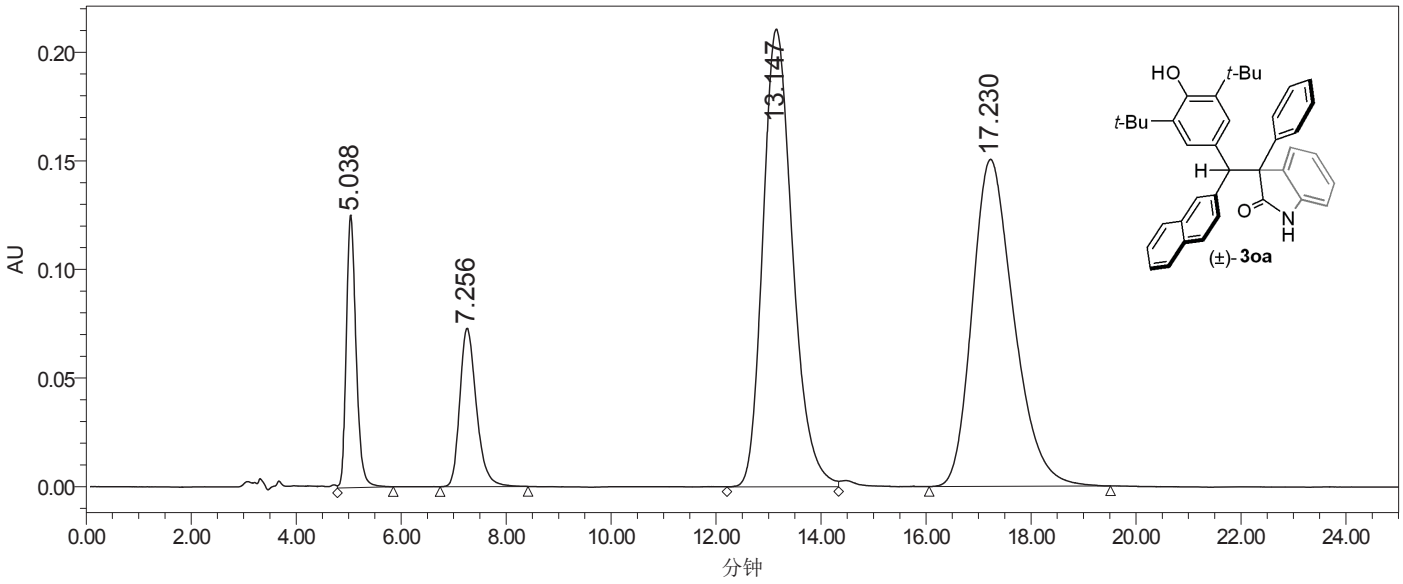



```
NAME      dengyh698 2-naphthyl -40  4
EXPNO                7
PROCNO               1
Date_         20150523
Time             12.00
INSTRUM          spect
PROBHD   5 mm PABBO BB/
PULPROG         zgpg30
TD               65536
SOLVENT          CDC13
NS                 300
DS                   2
SWH          24038.461 Hz
FIDRES        0.366798 Hz
AQ           1.3631988 sec
RG                2050
DW              20.800 usec
DE               6.50 usec
TE              295.1 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1               13C
P1               12.00 usec
SI               32768
SF          100.6127865 MHz
WDW                EM
SSB                 0
LB               1.00 Hz
GB                  0
PC               1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengh698 2-naphthyl-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,1	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@2
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/15 20:33:15 CST		
处理时间:	2015/5/17 21:15:17 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

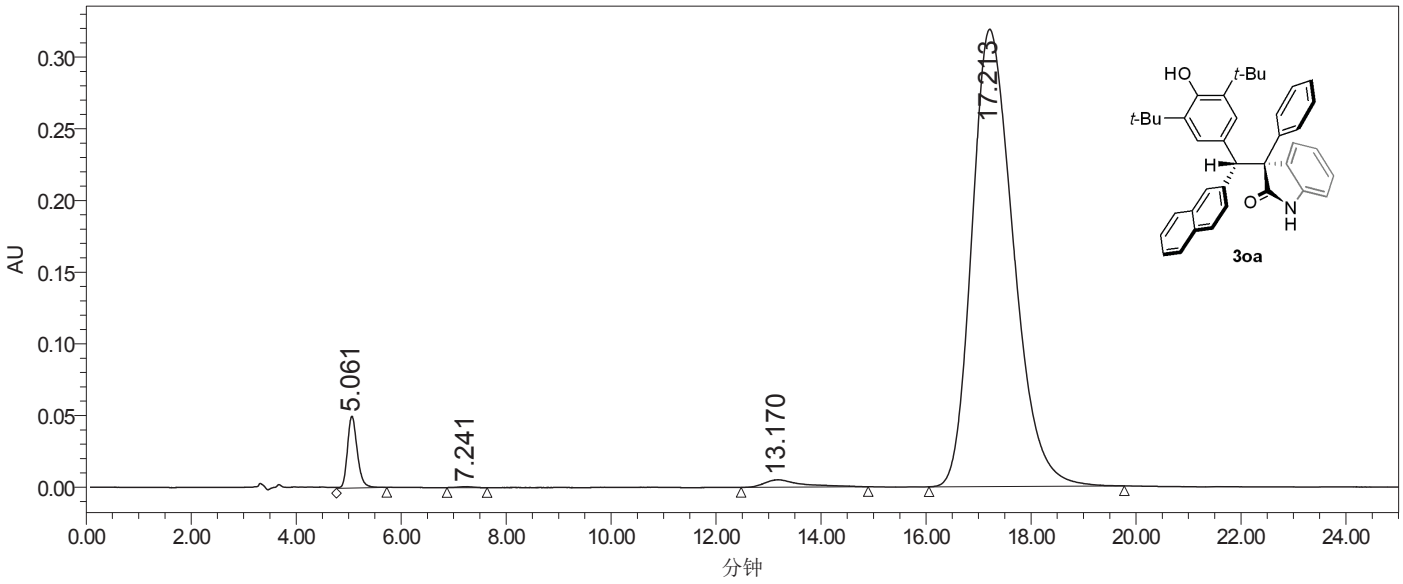
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.038	1624498	8.23	125510
2	2998 (190-400)纳米	7.256	1596864	8.09	72847
3	2998 (190-400)纳米	13.147	8257698	41.83	210695
4	2998 (190-400)纳米	17.230	8260816	41.85	150586

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

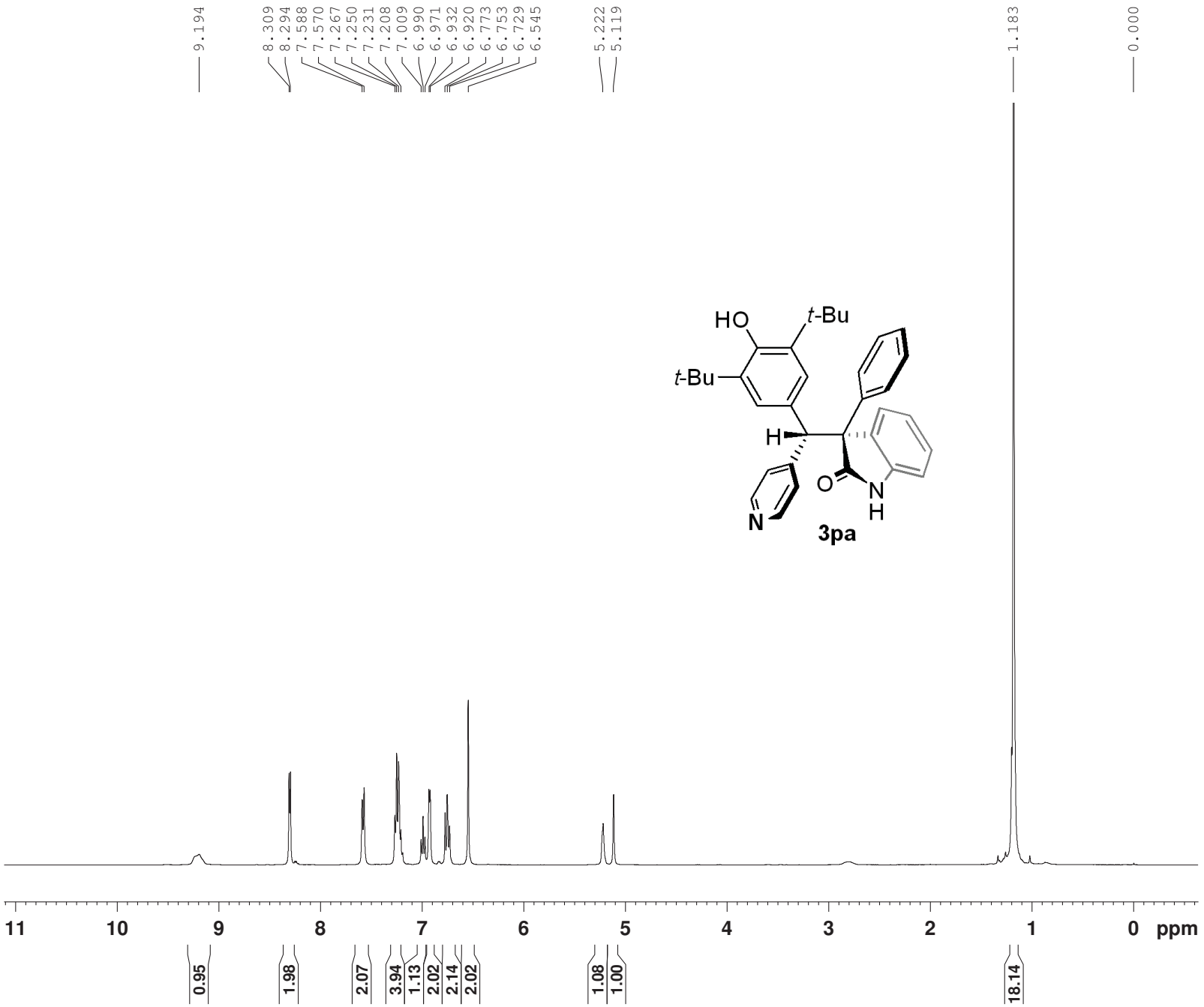
样品名称:	dengyh698a 2-na-QMs -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,2	采集方法组:	IC3 IPA vs Hex 5vs95 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米@2
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/5/15 20:07:53 CST		
处理时间:	2015/5/17 21:14:29 CST		



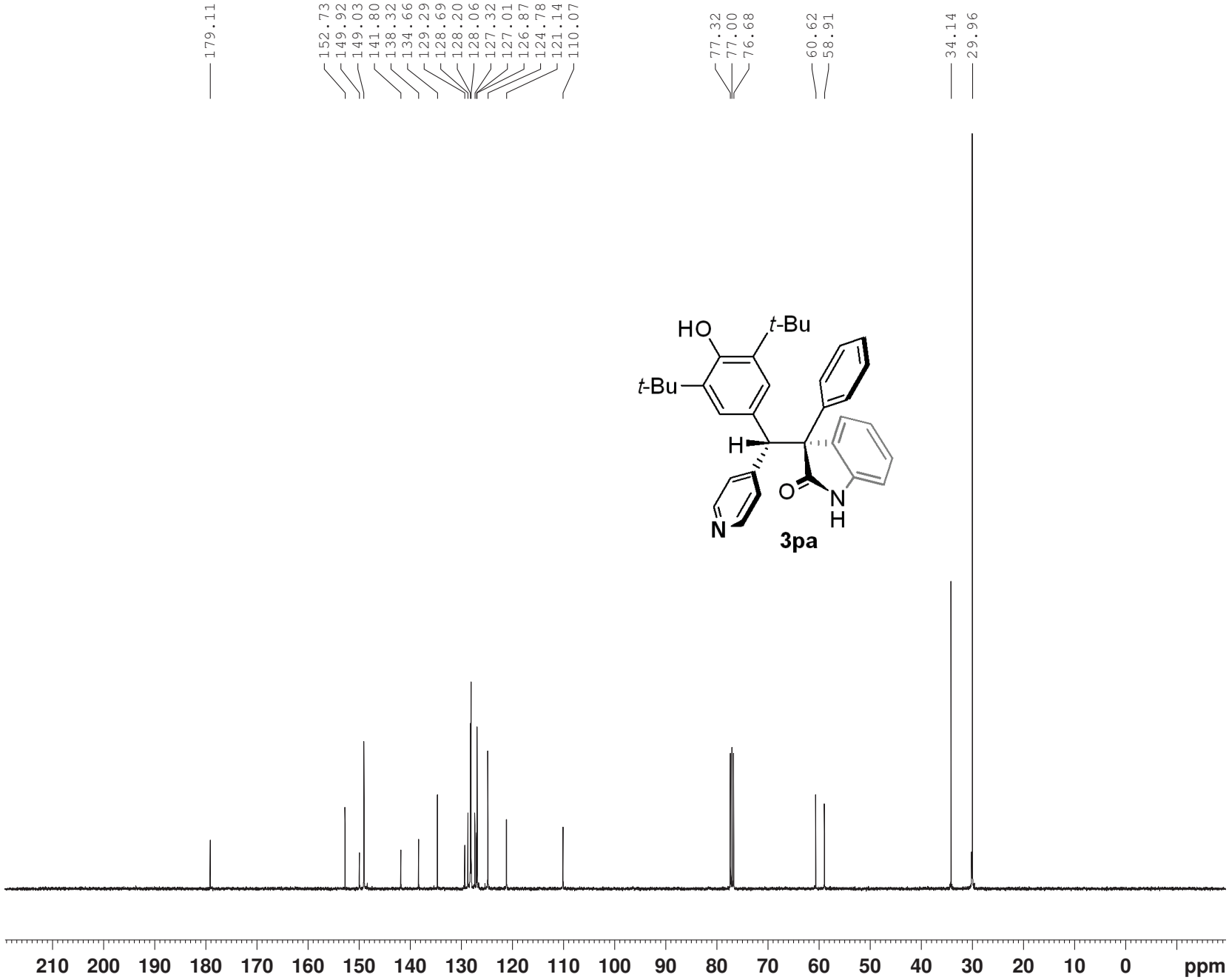
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.061	652836	3.55	50109
2	2998 (190-400)纳米	7.241	14035	0.08	712
3	2998 (190-400)纳米	13.170	258187	1.40	5188
4	2998 (190-400)纳米	17.213	17458604	94.97	318970




```
NAME      dengyhy779 4-Py-QMs -40
EXPNO                 10
PROCNO                 1
Date_           20150801
Time                9.10
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                     8
DS                     2
SWH             8012.820 Hz
FIDRES          0.122266 Hz
AQ              4.0894966 sec
RG                    32
DW                62.400 usec
DE                 6.50 usec
TE                296.9 K
D1             1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                10.79 usec
SI                 65536
SF           400.1300242 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```



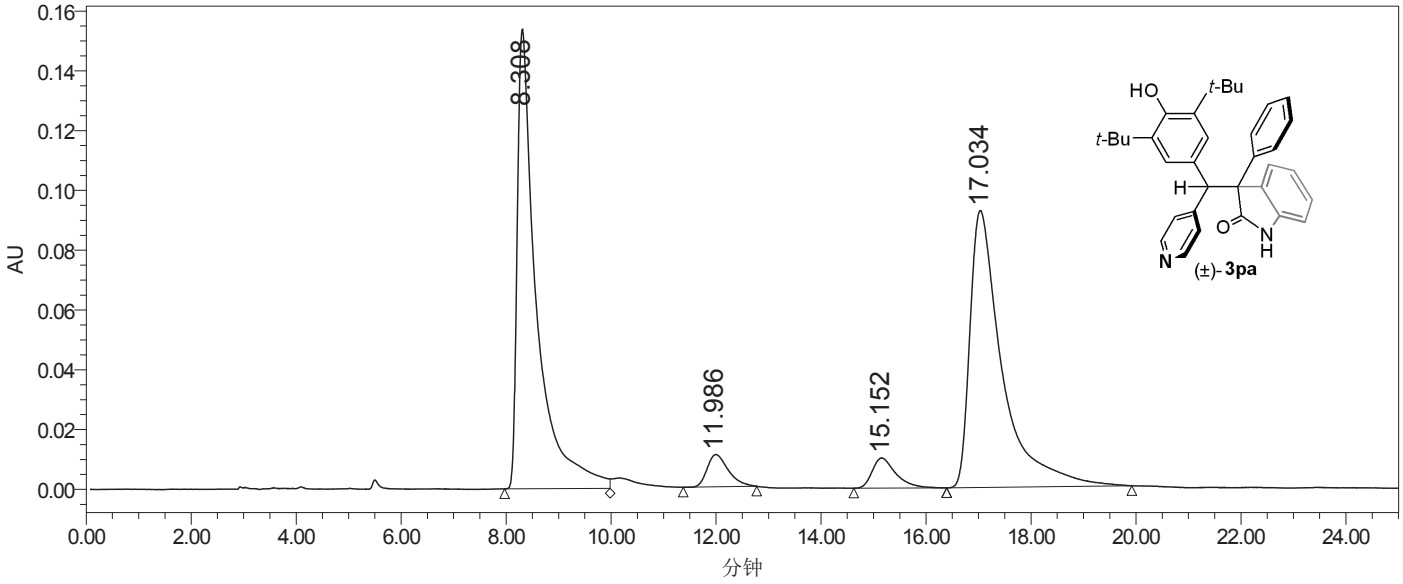
NAME dengyhy779 4-Py-QMs -40
EXPNO 11
PROCNO 1
Date_ 20150801
Time 9.29
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 400
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 2050
DW 20.800 usec
DE 6.50 usec
TE 298.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 12.00 usec
SI 32768
SF 100.6127854 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh779 4-Py-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,4	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	4.00 ul	通道名称:	254.0 纳米@1
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/31 20:14:26 CST		
处理时间:	2015/8/5 17:45:51 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

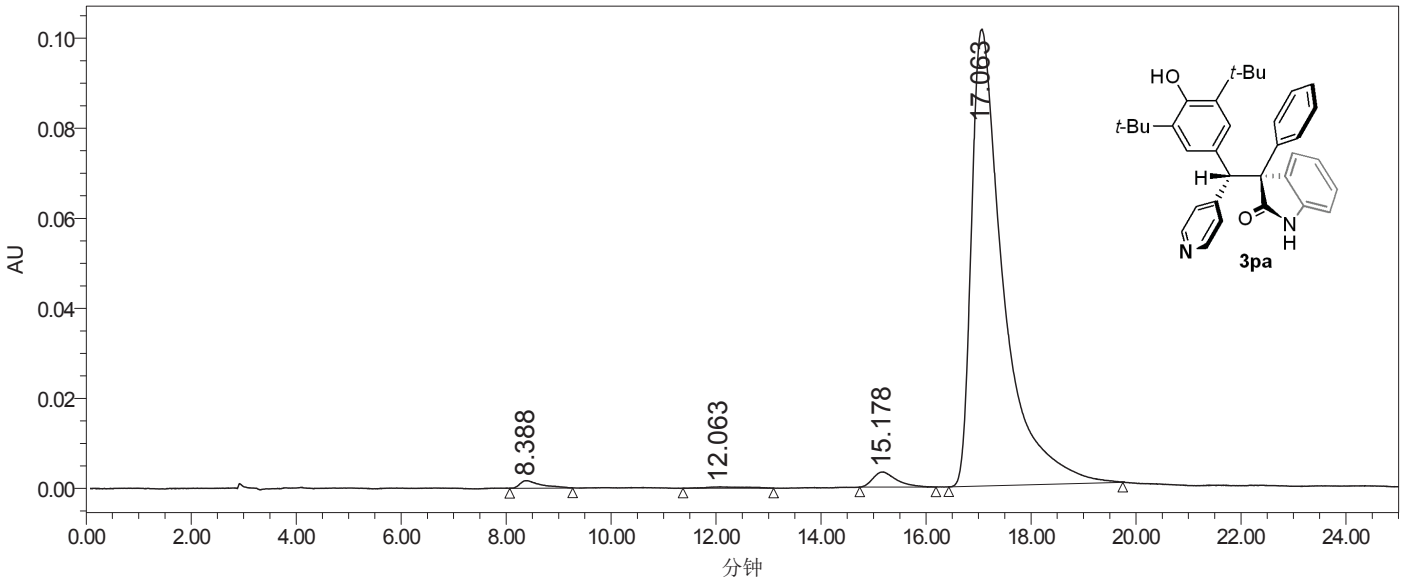
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.308	3915797	46.14	153704
2	2998 (190-400)纳米	11.986	302337	3.56	10781
3	2998 (190-400)纳米	15.152	314543	3.71	10081
4	2998 (190-400)纳米	17.034	3953221	46.59	92654

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

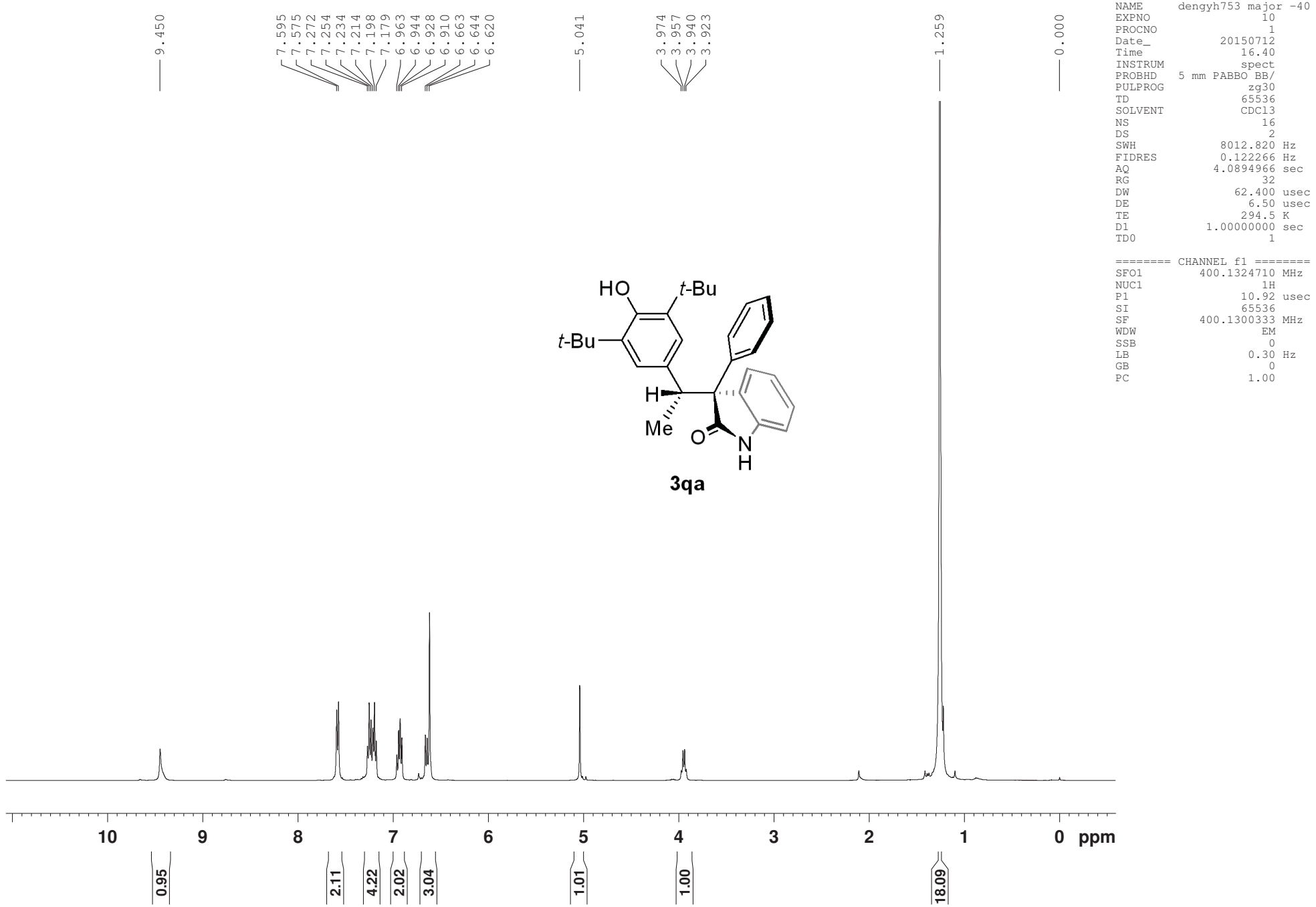
样品名称:	dengyh779a 4-Py-QMs -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:C,1	采集方法组:	IA3 IPA vs Hex 10vs90 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米@1
运行时间:	25.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/31 20:41:45 CST		
处理时间:	2015/8/5 17:48:24 CST		

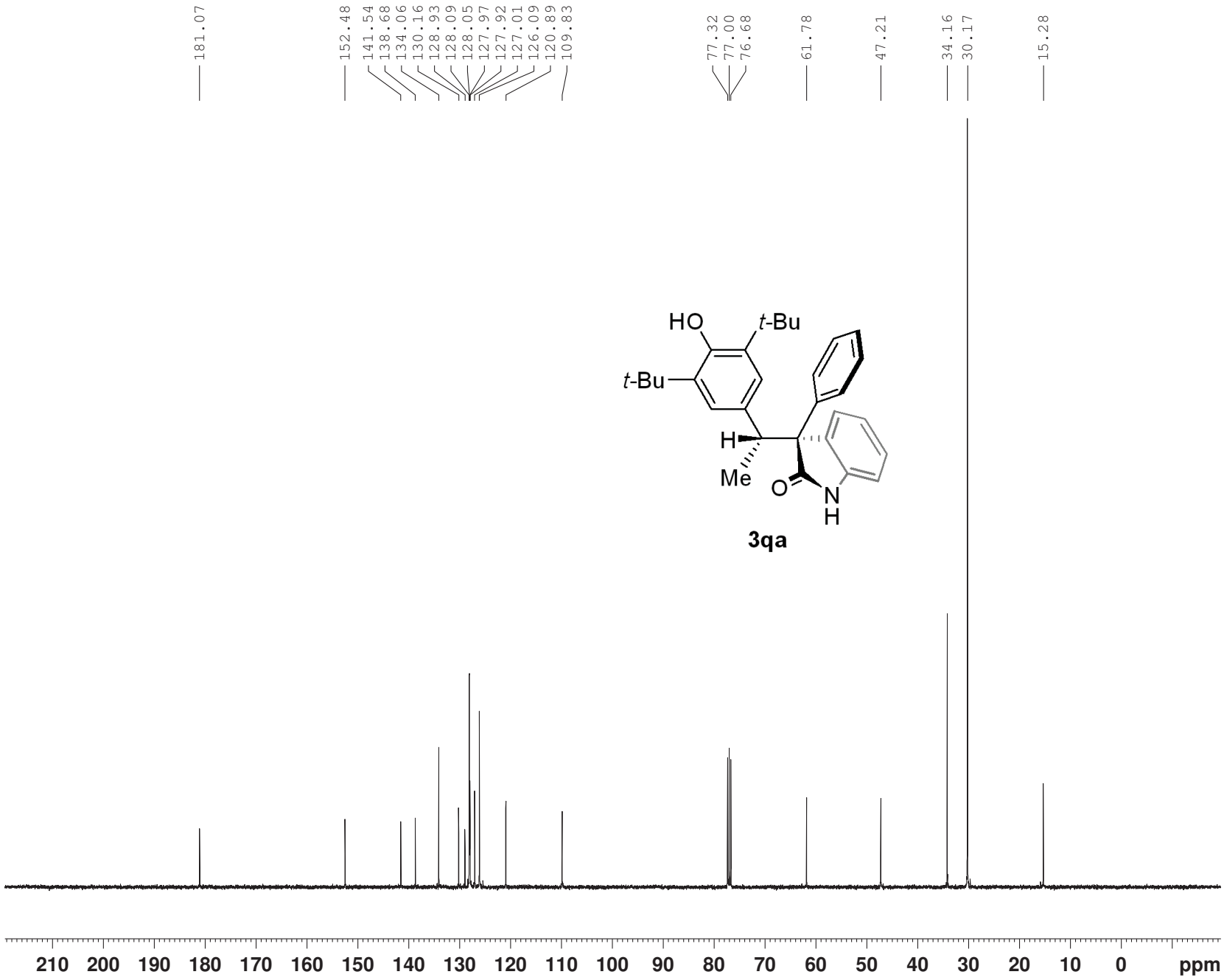


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	8.388	46684	1.05	1686
2	2998 (190-400)纳米	12.063	15390	0.35	297
3	2998 (190-400)纳米	15.178	104786	2.35	3350
4	2998 (190-400)纳米	17.063	4283322	96.25	101460


9.450
7.595
7.575
7.272
7.254
7.234
7.214
7.198
7.179
6.963
6.944
6.928
6.910
6.663
6.644
6.620
5.041
3.974
3.957
3.940
3.923
1.259
0.000
HO
t-Bu
t-Bu
H
Me
O
N
H
3qa
NAME dengyh753 major -40
EXPNO 10
PROCNO 1
Date_ 20150712
Time 16.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32
DW 62.400 usec
DE 6.50 usec
TE 294.5 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.92 usec
SI 65536
SF 400.1300333 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
10
9
8
7
6
5
4
3
2
1
0
ppm
0.95
2.11
4.22
2.02
3.04
1.01
1.00
18.09

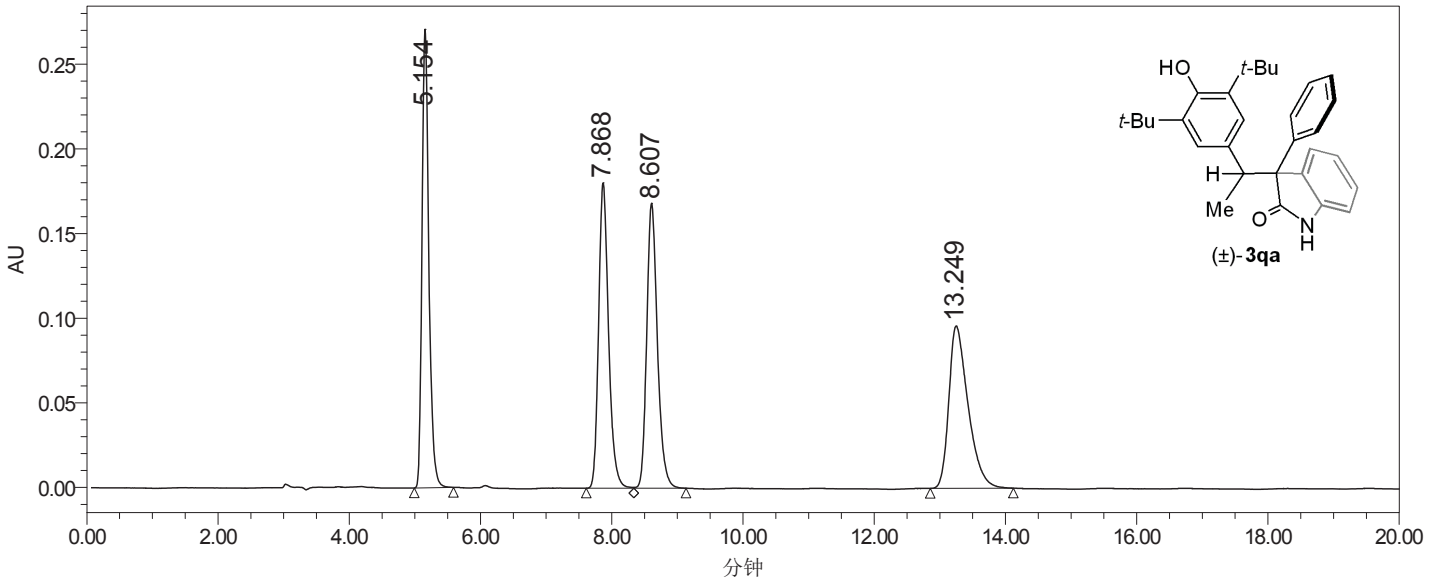


NAME	dengyh753 major -40
EXPNO	11
PROCNO	1
Date_	20150712
Time	16.50
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	400
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	1030
DW	20.800 usec
DE	6.50 usec
TE	295.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	14.70 usec
SI	32768
SF	100.6127795 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh753 race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,2	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/14 10:31:15 CST		
处理时间:	2015/11/22 14:32:15 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

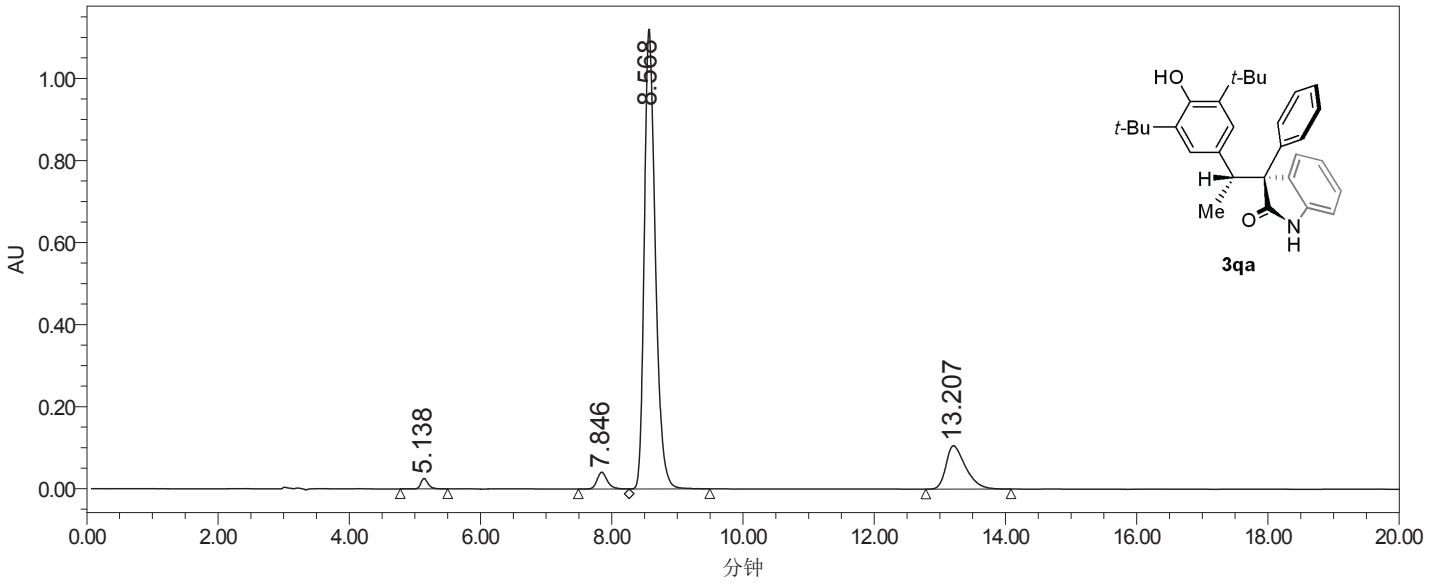
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.154	1953791	25.32	270900
2	2998 (190-400)纳米	7.868	1904489	24.68	180446
3	2998 (190-400)纳米	8.607	1906694	24.71	168300
4	2998 (190-400)纳米	13.249	1950922	25.28	95881

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

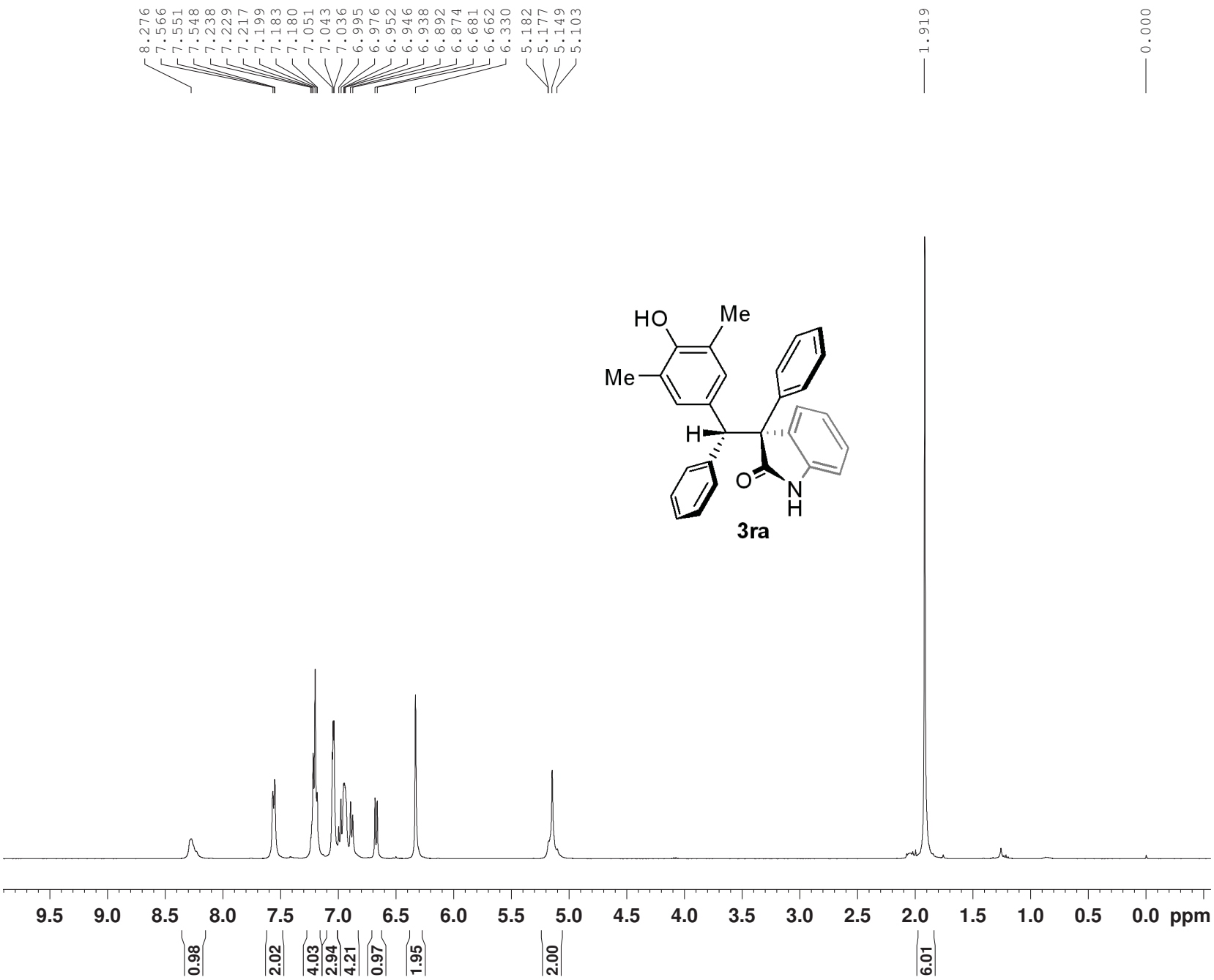
样品名称:	dengyh753c -60Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,1	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/14 10:10:52 CST		
处理时间:	2015/11/22 14:33:24 CST		



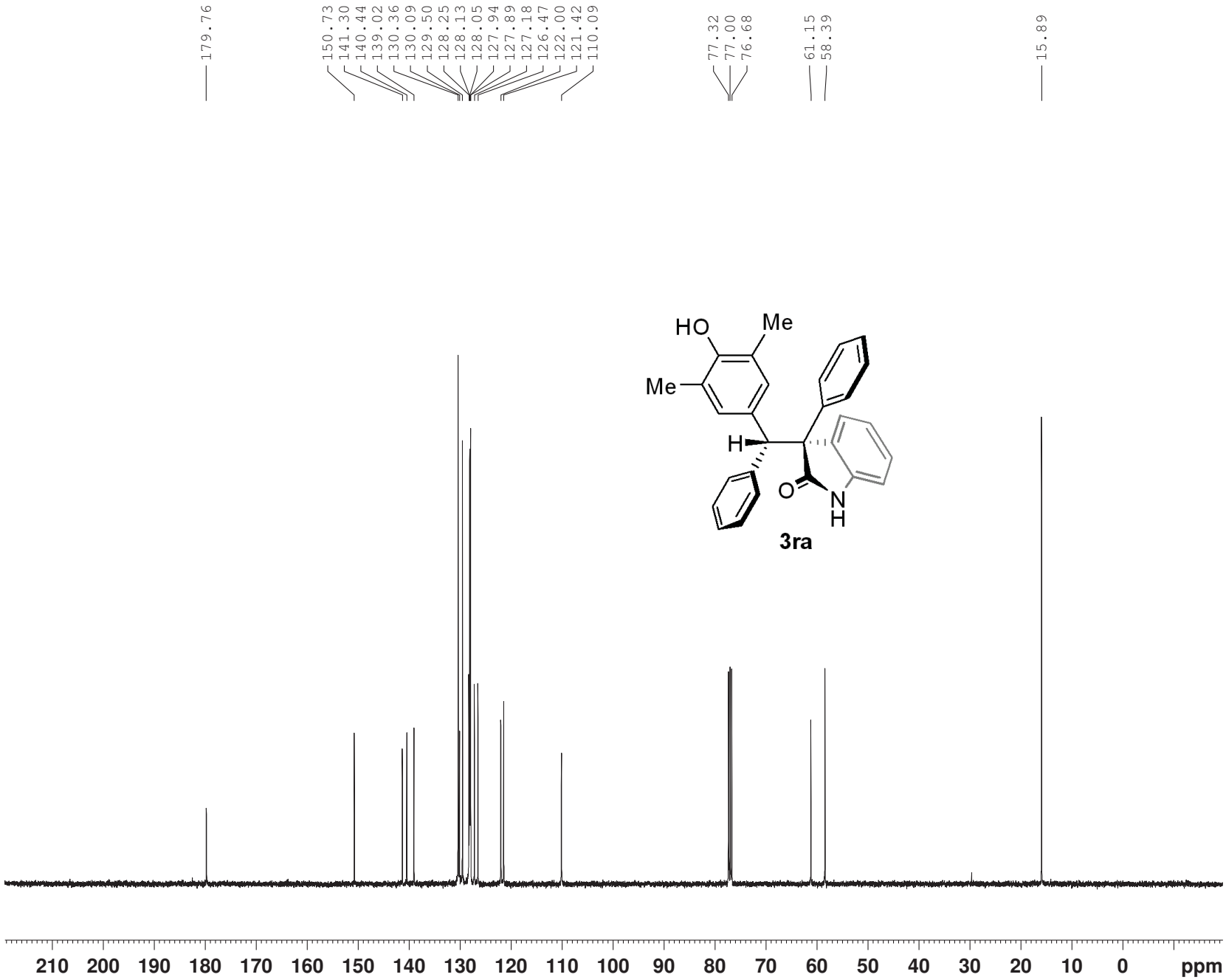
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.138	195734	1.23	25490
2	2998 (190-400)纳米	7.846	438791	2.76	40611
3	2998 (190-400)纳米	8.568	13087456	82.27	1120544
4	2998 (190-400)纳米	13.207	2186618	13.74	105683




```
NAME      dengyh763a 2,6-Me-QM
EXPNO                   14
PROCNO                   1
Date_              20150719
Time                 13.13
INSTRUM              spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8012.820 Hz
FIDRES            0.122266 Hz
AQ                4.0894966 sec
RG                       32
DW                   62.400 usec
DE                    6.50 usec
TE                   294.5 K
D1                1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                     1H
P1                   10.92 usec
SI                    65536
SF             400.1300413 MHz
WDW                     EM
SSB                      0
LB                    0.30 Hz
GB                       0
PC                    1.00
```

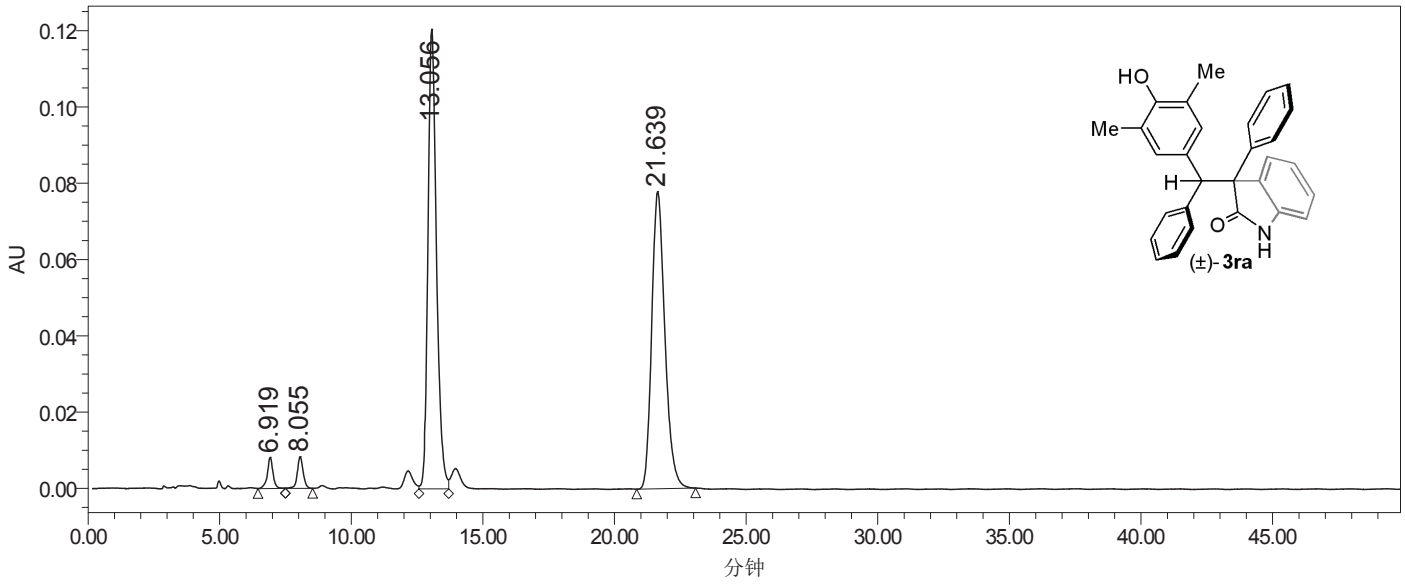



```
NAME      dengyh763a 2,6-Me-QM
EXPNO                  15
PROCNO                  1
Date_            20150719
Time                13.16
INSTRUM             spect
PROBHD   5 mm PABBO BB/
PULPROG             zgpg30
TD                   65536
SOLVENT              CDCl3
NS                     344
DS                       2
SWH             24038.461 Hz
FIDRES           0.366798 Hz
AQ               1.3631988 sec
RG                     812
DW                20.800 usec
DE                 6.50 usec
TE                 295.1 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                      1

======== CHANNEL f1 ========
SFO1          100.6228298 MHz
NUC1                  13C
P1                 14.70 usec
SI                    32768
SF            100.6127851 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh763 2,6-Me race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:A,3	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	100.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/19 15:50:44 CST		
处理时间:	2015/7/19 17:43:58 CST		



Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

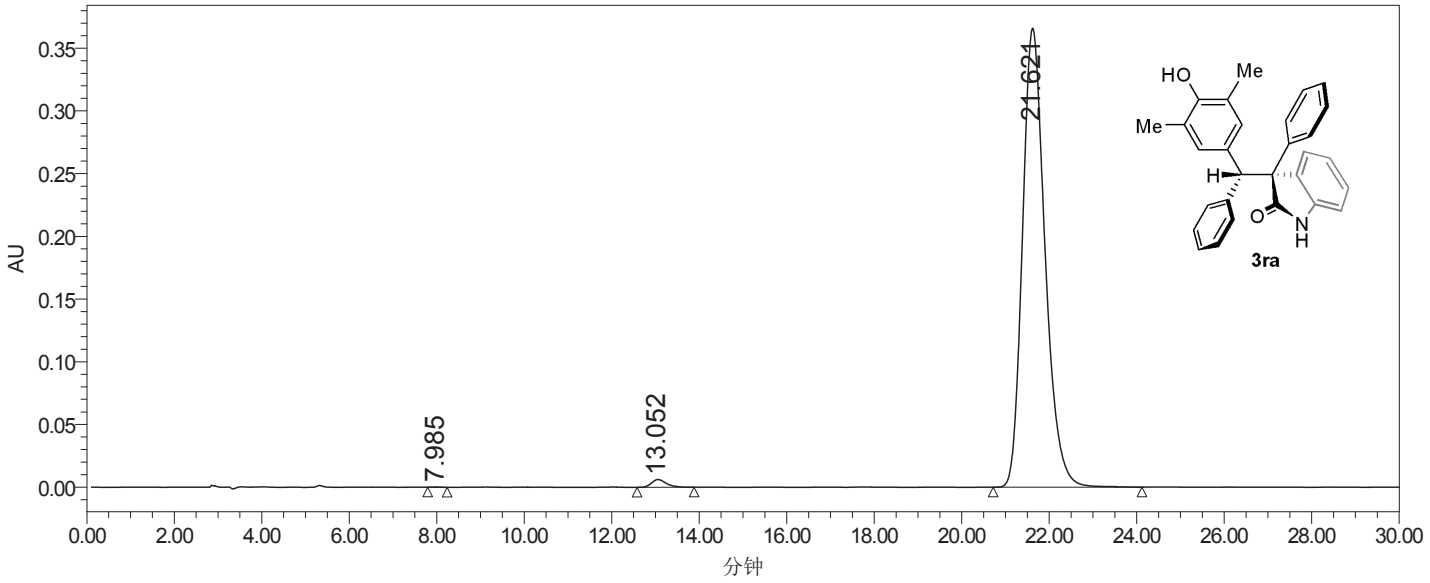
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	6.919	123313	2.17	8207
2	2998 (190-400)纳米	8.055	128841	2.27	8318
3	2998 (190-400)纳米	13.056	2710402	47.80	120474
4	2998 (190-400)纳米	21.639	2707816	47.75	77946

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

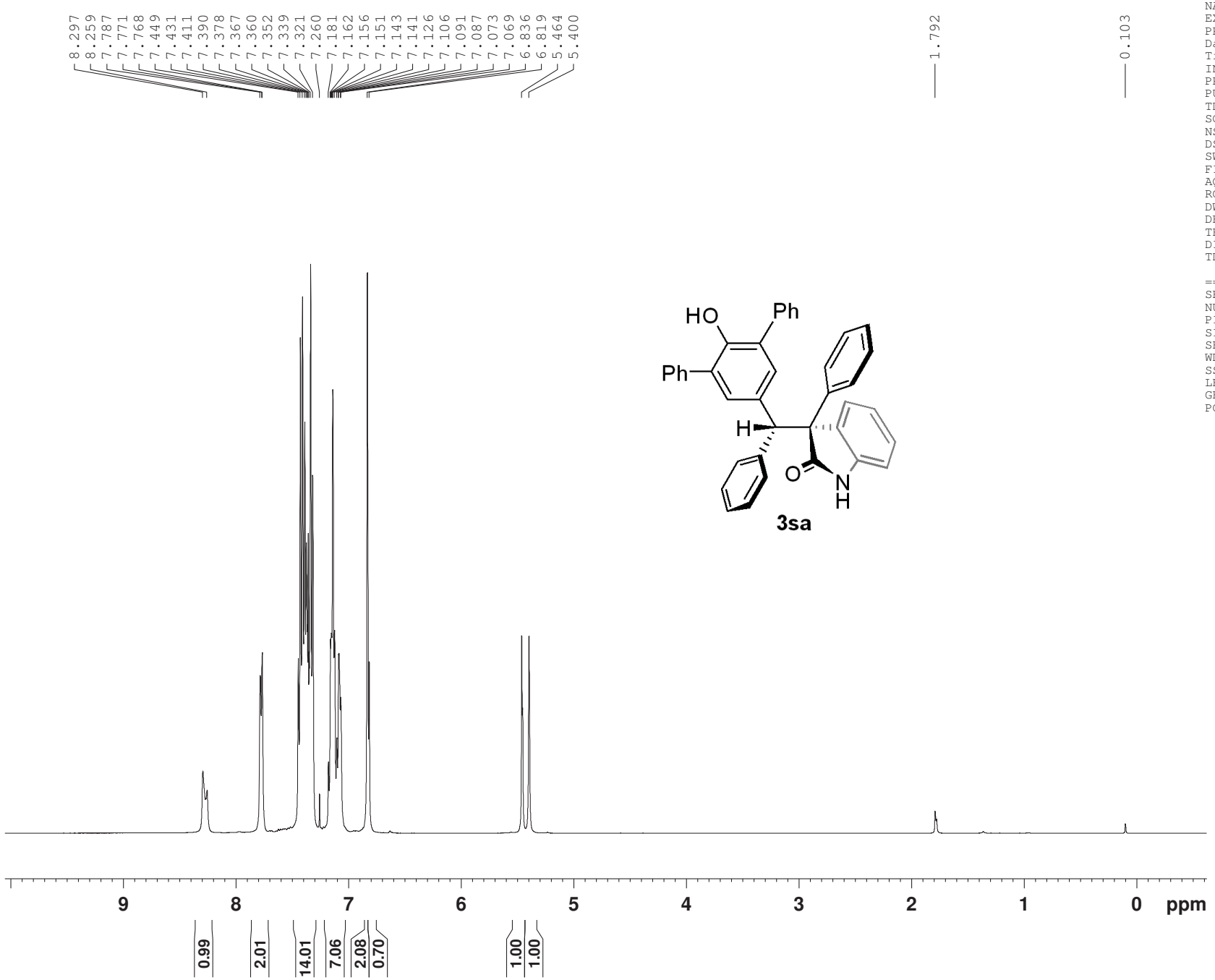
样品名称:	dengyh763b 2,6-Me -40Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:B,1	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	10.00 ul	通道名称:	254.0 纳米
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/19 16:42:39 CST		
处理时间:	2015/7/19 17:44:40 CST		



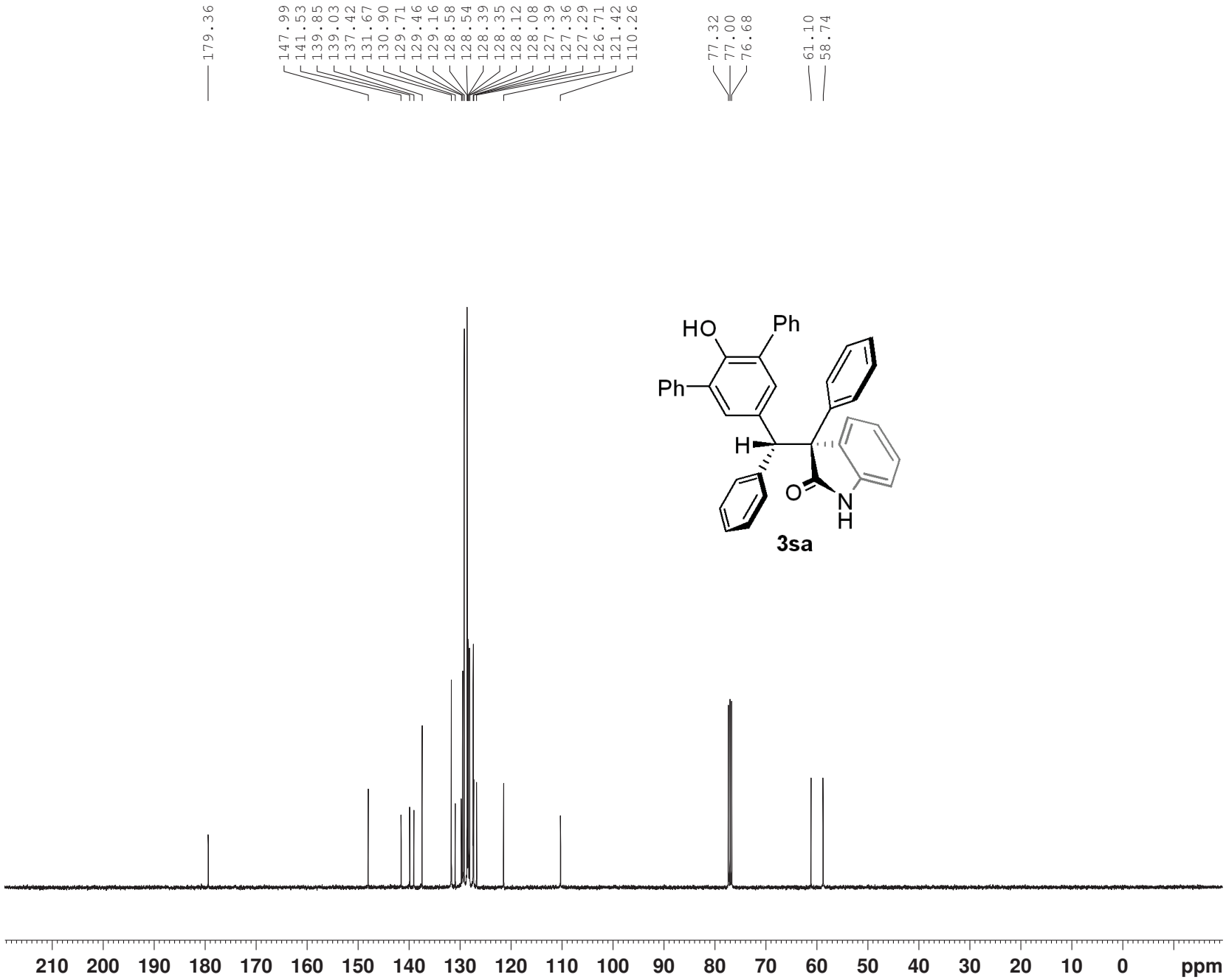
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	7.985	2284	0.02	177
2	2998 (190-400)纳米	13.052	146560	1.11	6233
3	2998 (190-400)纳米	21.621	13078287	98.87	365778



NAME	dengyh740ab re
EXPNO	20
PROCNO	1
Date_	20150708
Time	13.40
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	8012.820 Hz
FIDRES	0.122266 Hz
AQ	4.0894966 sec
RG	57
DW	62.400 usec
DE	6.50 usec
TE	296.5 K
D1	1.00000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	400.1324710 MHz
NUC1	1H
P1	10.92 usec
SI	65536
SF	400.1300094 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

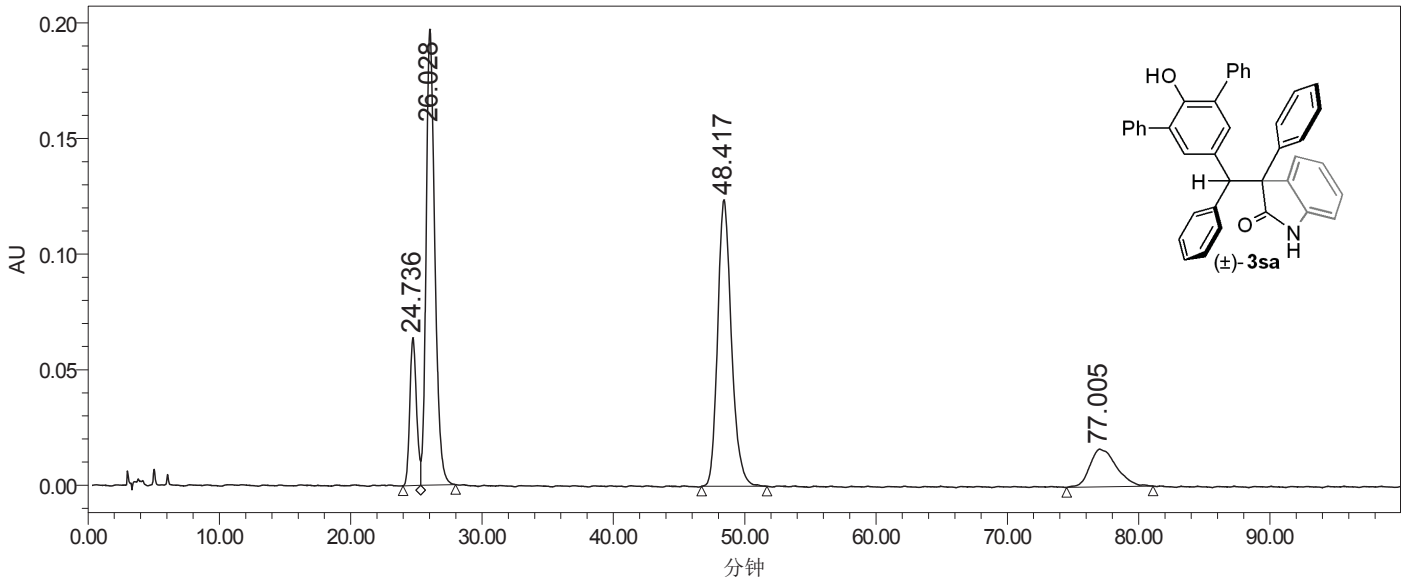



```
NAME      dengyh740ab re
EXPNO                10
PROCNO                1
Date_          20150708
Time              13.58
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG         zgpg30
TD                65536
SOLVENT           CDCl3
NS                  300
DS                    2
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ            1.3631988 sec
RG                 1030
DW               20.800 usec
DE                6.50 usec
TE               297.5 K
D1          2.00000000 sec
D11         0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        100.6228298 MHz
NUC1                13C
P1                14.70 usec
SI                32768
SF          100.6127866 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh740 race 2,6-Ph	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,6	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	5.00 ul	通道名称:	254.0 纳米
运行时间:	100.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/14 13:12:44 CST		
处理时间:	2015/7/15 17:22:47 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

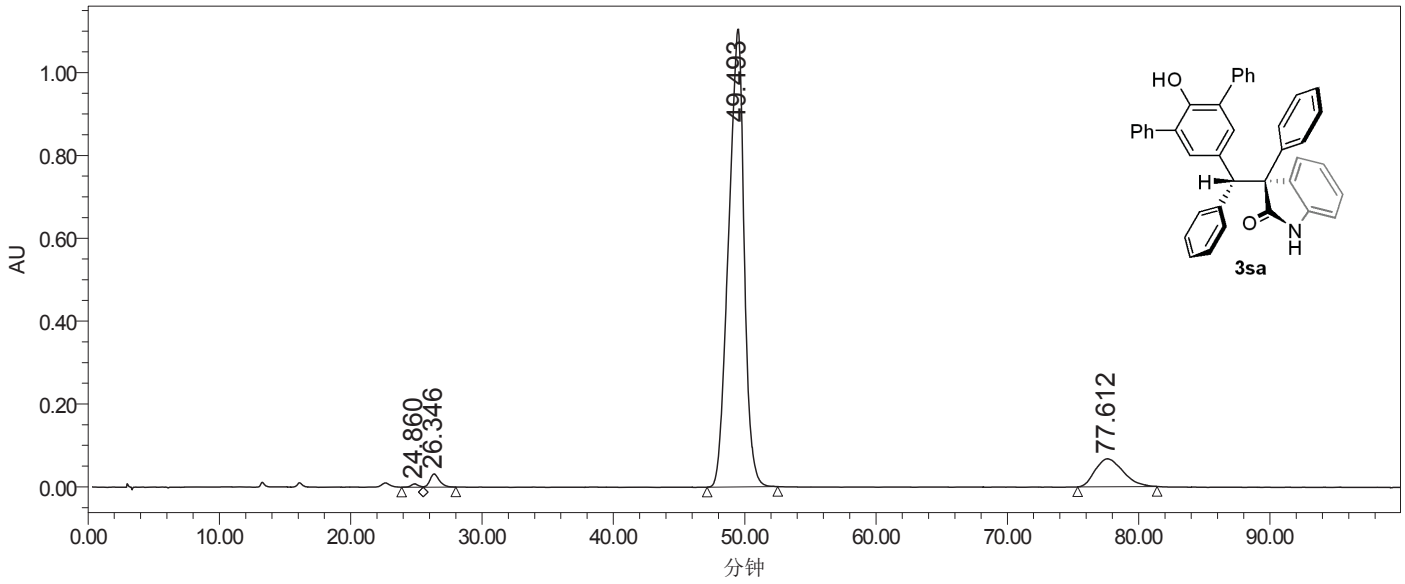
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	24.736	2269811	10.00	63915
2	2998 (190-400)纳米	26.028	9090339	40.03	197220
3	2998 (190-400)纳米	48.417	9056547	39.88	123843
4	2998 (190-400)纳米	77.005	2291549	10.09	16277

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

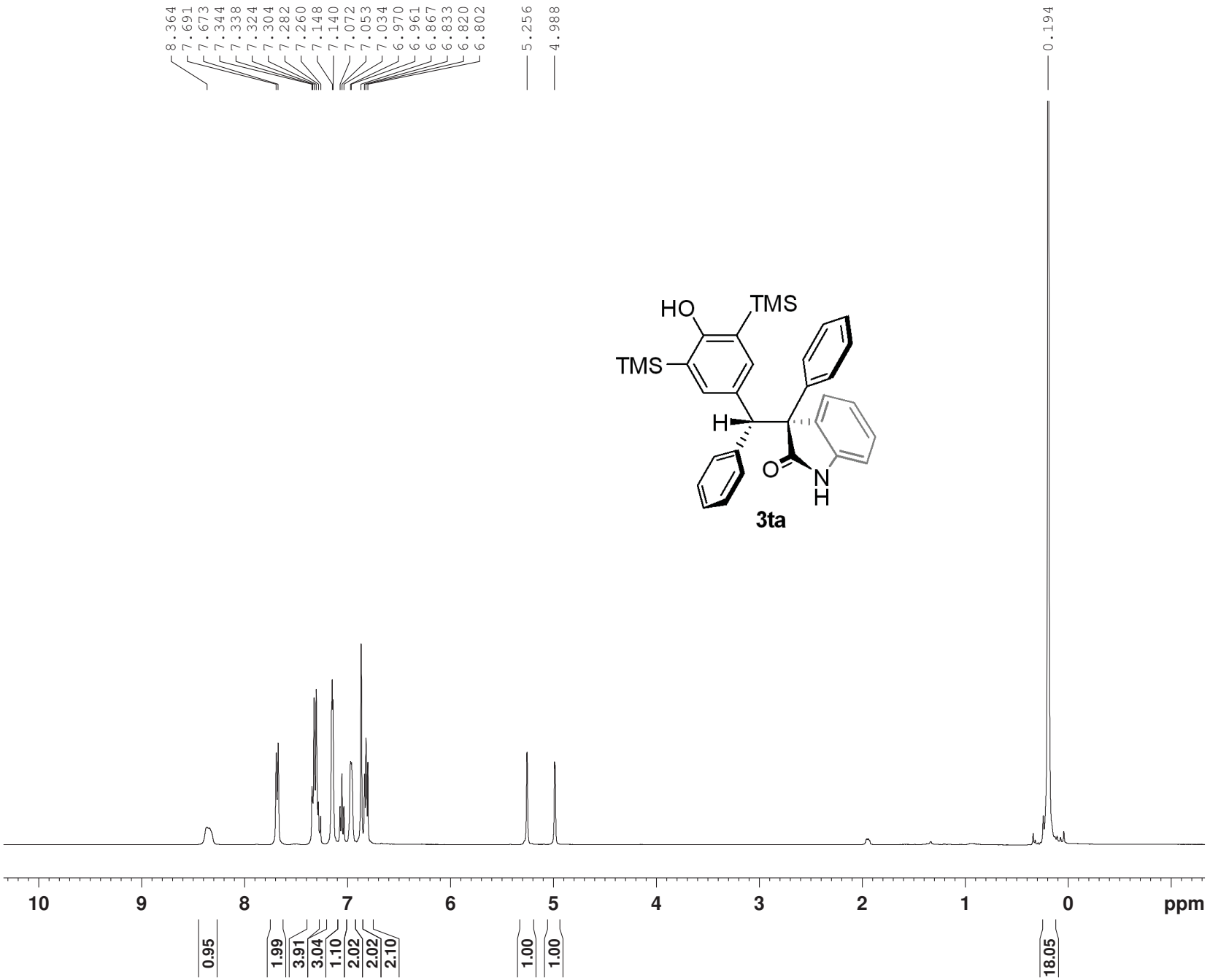
样品名称:	dengyh740c 2,6-Ph -60Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,5	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	12.00 ul	通道名称:	254.0 纳米
运行时间:	100.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/14 11:32:22 CST		
处理时间:	2015/7/15 17:19:58 CST		



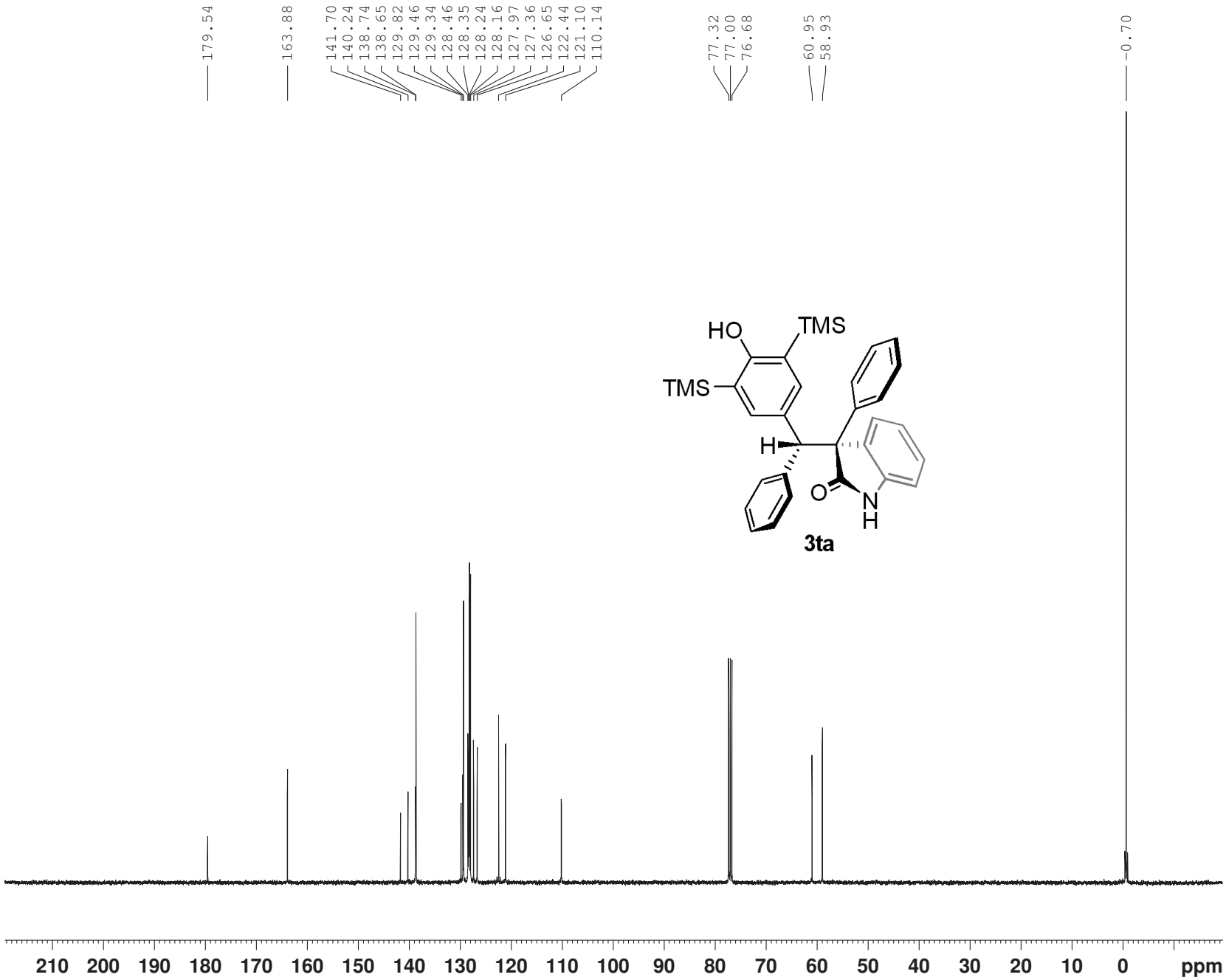
——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	24.860	306452	0.30	7946
2	2998 (190-400)纳米	26.346	1583907	1.54	31862
3	2998 (190-400)纳米	49.493	90912443	88.50	1104809
4	2998 (190-400)纳米	77.612	9922810	9.66	67249




```
NAME      dengyh743 major
EXPNO                12
PROCNO                1
Date_          20150705
Time               6.14
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    2
SWH            8012.820 Hz
FIDRES        0.122266 Hz
AQ           4.0894966 sec
RG                   32
DW              62.400 usec
DE               6.50 usec
TE              293.7 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        400.1324710 MHz
NUC1                1H
P1                10.79 usec
SI                65536
SF          400.1300094 MHz
WDW                 EM
SSB                  0
LB                0.30 Hz
GB                   0
PC                1.00
```

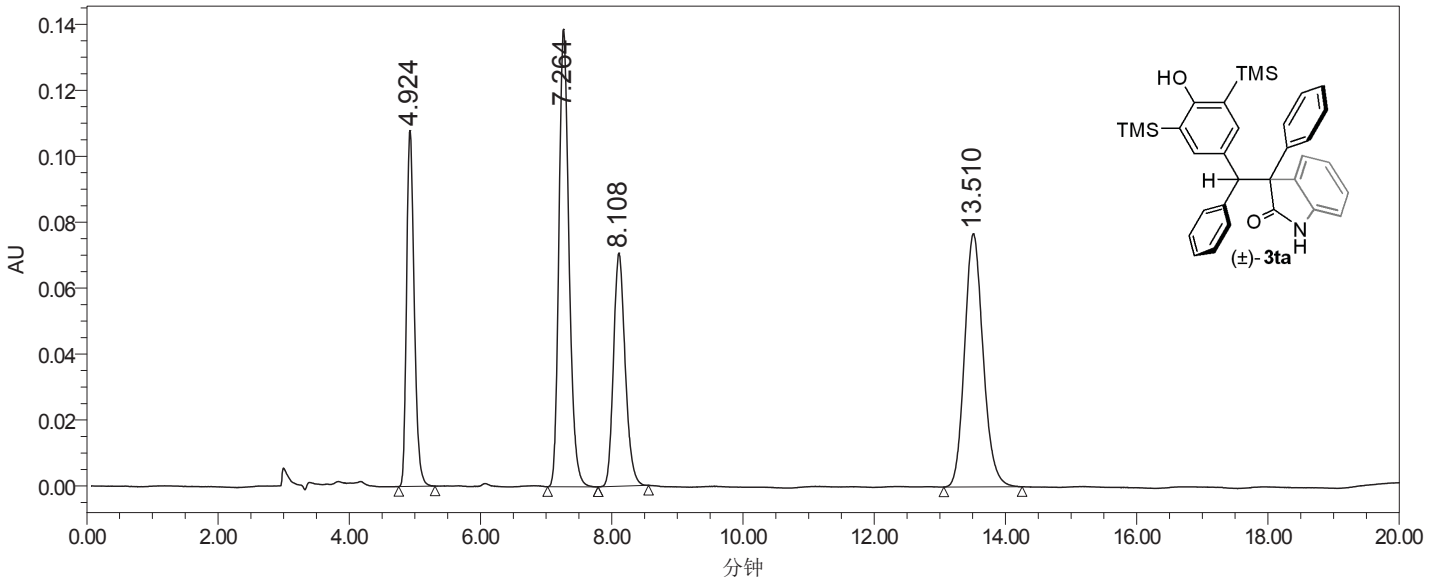


NAME	dengyh743 major
EXPNO	13
PROCNO	1
Date_	20150705
Time	6.38
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	400
DS	2
SWH	24038.461 Hz
FIDRES	0.366798 Hz
AQ	1.3631988 sec
RG	2050
DW	20.800 usec
DE	6.50 usec
TE	295.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
SFO1	100.6228298 MHz
NUC1	13C
P1	12.00 usec
SI	32768
SF	100.6127820 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh743 RACE 2,6-TMS	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,4	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/14 11:11:58 CST		
处理时间:	2015/7/15 17:27:57 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

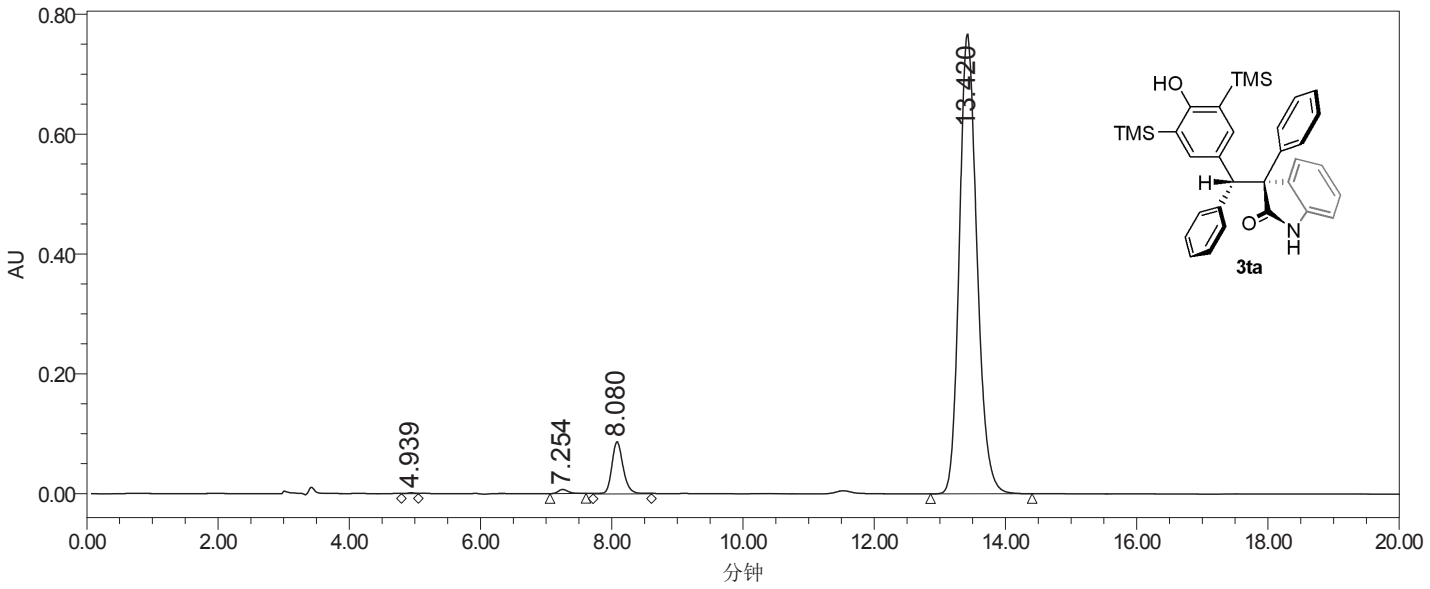
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.924	876217	18.48	107921
2	2998 (190-400)纳米	7.264	1486301	31.34	138757
3	2998 (190-400)纳米	8.108	876504	18.48	70720
4	2998 (190-400)纳米	13.510	1503208	31.70	76783

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

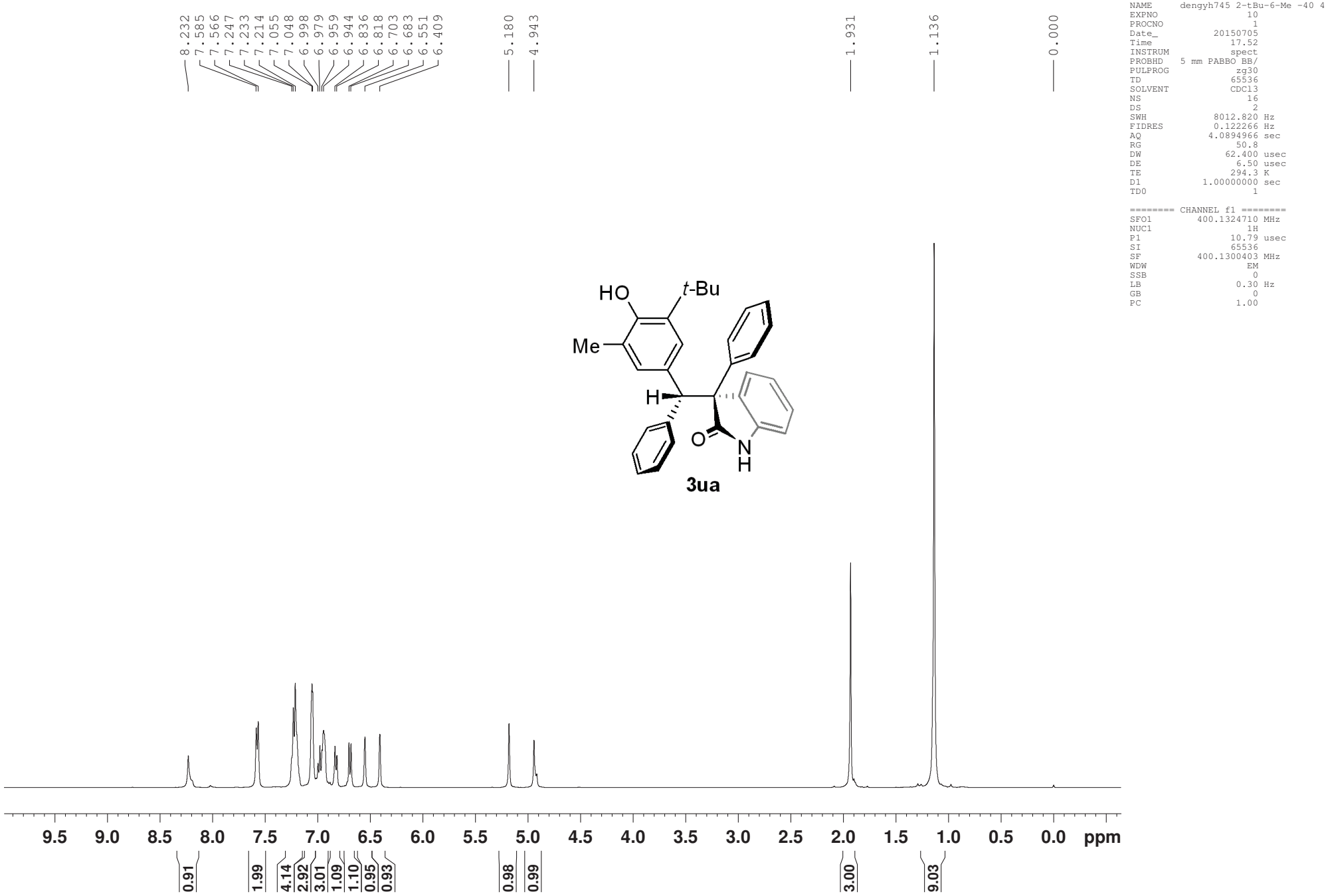
样品名称:	dengyh743c 2,6-TMS -60Du	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,3	采集方法组:	IA3 IPA vs Hex 7vs93 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	6.00 ul	通道名称:	254.0 纳米
运行时间:	20.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/14 10:51:36 CST		
处理时间:	2015/7/15 17:28:39 CST		

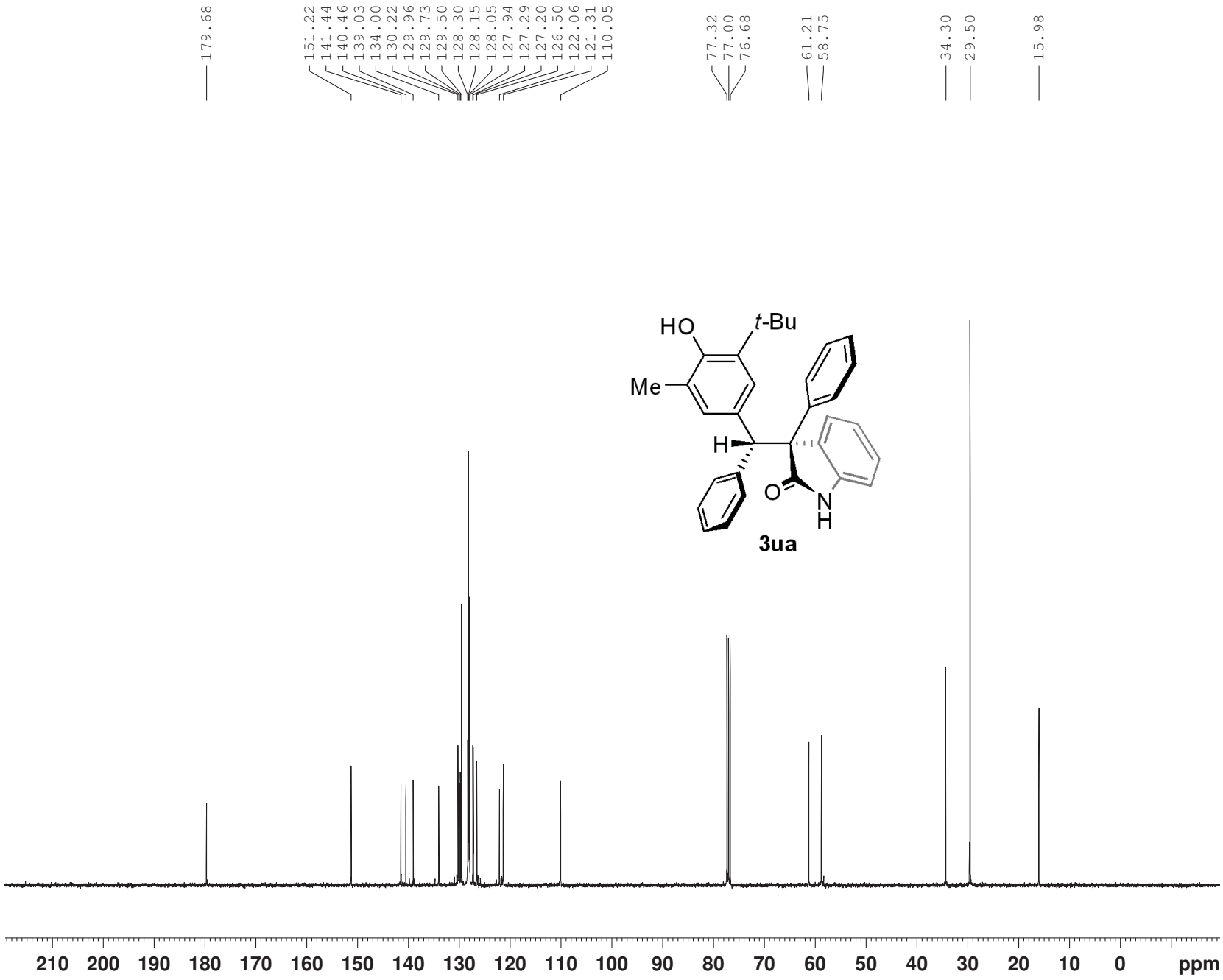


——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	4.939	13692	0.09	1626
2	2998 (190-400)纳米	7.254	72432	0.47	6954
3	2998 (190-400)纳米	8.080	1044503	6.77	86637
4	2998 (190-400)纳米	13.420	14303413	92.67	766875

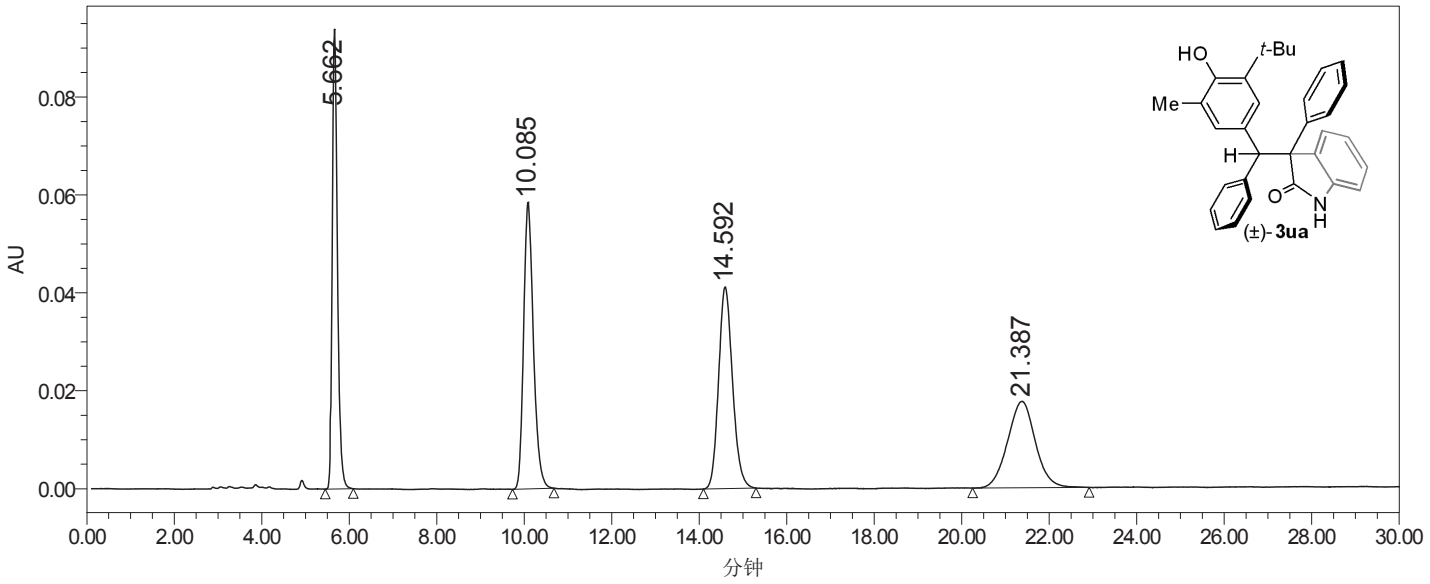

8.232
7.585
7.566
7.247
7.233
7.214
7.055
7.048
6.998
6.979
6.959
6.944
6.836
6.818
6.703
6.683
6.551
6.409
5.180
4.943
1.931
1.136
0.000
NAME dengyh745 2-tBu-6-Me -40 4
EXPNO 10
PROCNO 1
Date_ 20150705
Time 17.52
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 50.8
DW 62.400 usec
DE 6.50 usec
TE 294.3 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 400.1324710 MHz
NUC1 1H
P1 10.79 usec
SI 65536
SF 400.1300403 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
HO
t-Bu
Me
H
O
N
H
3ua
9.5 9.0 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 ppm
0.91
1.99
4.14
2.92
3.01
1.09
1.10
0.95
0.93
0.98
0.99
3.00
9.03


179.68
151.22
141.44
140.46
139.03
134.00
130.22
129.96
129.73
129.50
128.30
128.15
128.05
127.94
127.29
127.20
126.50
122.06
121.31
110.05
77.32
77.00
76.68
61.21
58.75
34.30
29.50
15.98
NAME dengyh745 2-tBu-6-Me -40 4
EXPNO 11
PROCNO 1
Date_ 20150705
Time 18.21
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 480
DS 2
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 2050
DW 20.800 usec
DE 6.50 usec
TE 295.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
======== CHANNEL f1 ========
SFO1 100.6228298 MHz
NUC1 13C
P1 12.00 usec
SI 32768
SF 100.6127836 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40
HO
t-Bu
Me
H
O
N
H
3ua
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh745 2-tBu-6-Me-QMs race	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,1	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	3.00 ul	通道名称:	254.0 纳米
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/5 17:36:31 CST		
处理时间:	2015/11/22 14:28:20 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

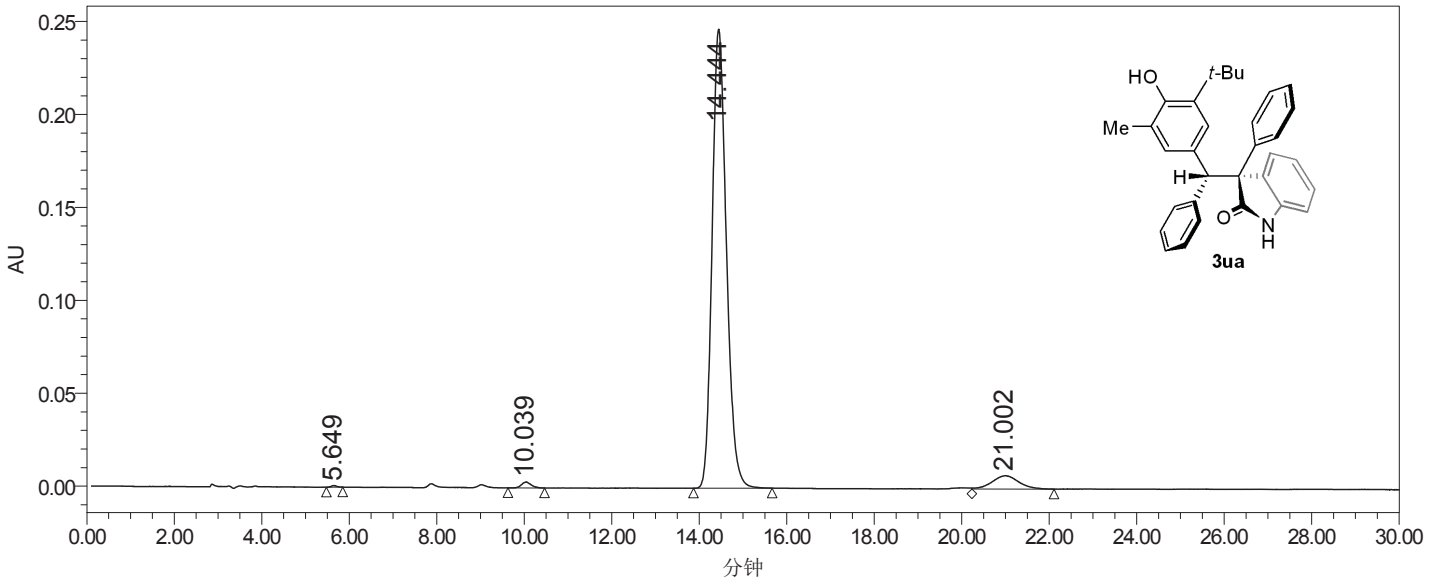
名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.662	772671	22.91	93884
2	2998 (190-400)纳米	10.085	910329	26.99	58545
3	2998 (190-400)纳米	14.592	910989	27.01	41168
4	2998 (190-400)纳米	21.387	778407	23.08	17660

项目名称: Deng Yu-hua
用户名称: FanChunAn

样品信息

样品名称:	dengyh745a 2-tBu-6-Me-QMs	采集者:	FanChunAn
样品类型:	标准样	样品组名称:	dengyh
瓶号:	1:D,2	采集方法组:	IA3 IPA vs Hex 15vs85 1ml 190
进样次数:	1	处理方法:	dengyh
进样体积:	10.00 ul	通道名称:	254.0 纳米
运行时间:	30.0 Minutes	处理通道注释:	PDA 254.0 纳米
采集时间:	2015/7/5 17:06:08 CST		
处理时间:	2015/11/22 14:27:31 CST		



——— Channel: 2998; Channel Desc.: 2998 (190-400)纳米; Processing Method: dengyh

名称:

	通道说明	保留时间 (分钟)	面积 (微伏*秒)	% 面积	高度 (微伏)
1	2998 (190-400)纳米	5.649	7541	0.13	899
2	2998 (190-400)纳米	10.039	49116	0.82	3123
3	2998 (190-400)纳米	14.444	5597020	93.98	246969
4	2998 (190-400)纳米	21.002	301692	5.07	7107