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# Amano-PS-IM–Catalyzed Mechanochemical Enzymatic Acylative Kinetic Resolution of Secondary Alcohols

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## 1. General and material

The starting materials were obtained from commercial suppliers and used as received. Solvents were purchased from commercial suppliers and further dried over molecular sieve (MS 4Å). All mechanochemical reactions were carried out using grinding vessels in a Retsch MM400 mill. Both jars (5 mL) and balls (10 mm) are made of stainless. The heat gun with temperature control function HG-1450B was used. NMR spectra were recorded on JEOL JNM-ECX400P and JNM-ECS400 spectrometers ($^1$H: 400 MHz, $^{13}$C: 100 MHz). $CDCl_3$ ($^1$H, $^{13}$C ) was employed as external standards, respectively. Multiplicity was recorded as follows: s = singlet, brs = broad singlet, d = doublet, t = triplet, q = quartet, quint = quintet, sept = septet, o = octet, m = multiplet. 1,1,2,2-Tetrachloroethane was used as an internal standard to determine NMR yields. The internal temperature of the jar after ball milling was confirmed by thermography and was recorded with an NEC Avio Thermo GEAR G120. HPLC analyses with chiral stationary phase were carried out at 40 °C under isocratic conditions using a Hitachi Chromaster HPLC system [Daicel CHIRALPAK® IA-3 (4.6 × 250 mm), Daicel CHIRALPAK® IB N-3 (4.6 × 250 mm), Daicel CHIRALPAK® IC-3 (4.6 × 250 mm), Daicel CHIRALPAK® ID-3 (4.6 × 250 mm), Daicel CHIRALPAK® IE-3 (4.6 × 250 mm), Daicel CHIRALPAK® IF-3 (4.6 × 250 mm)]. The pump pressure in the HPLC system was maintained at approximately 4 MPa to ensure a flow rate of 0.5 mL/min. Specific optical rotations were measured with HORIBA SEPA-300 and JASCO: P-2200. High-resolution mass spectra were recorded at the Global Facility Center, Hokkaido University.

The *s* value is calculated according to the following formula:

$$s = \frac{\ln[1-c(1+ee_{\text{acetate}})]}{\ln[1-c(1-ee_{\text{acetate}})]} \qquad c = \frac{ee_{\text{alcohol}}}{ee_{\text{acetate}}+ee_{\text{alcohol}}}$$

where $ee_{\text{alcohol}}$ is the enantiomeric excess of the starting materials, $ee_{\text{acetate}}$ is the enantiomeric excess of the products, and c is the conversion.



**Figure S1**. Retsch MM400 used in this study.

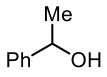


**Figure S2**. Stainless jar and ball used in this study.

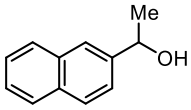


**Figure S3**. The temperature controllable heat-gun used in this study.

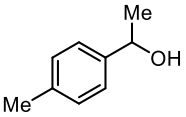
## 2. List of substrates



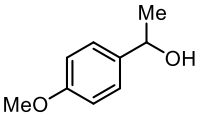

(*rac*)-**1a**



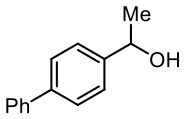

(*rac*)-**1b**



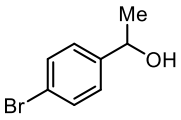

(*rac*)-**1c**



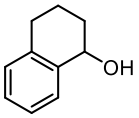

(*rac*)-**1d**



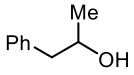

(*rac*)-**1e**



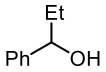

(*rac*)-**1f**



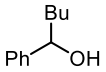

(*rac*)-**1g**



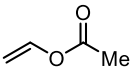

(*rac*)-**1h**



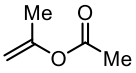

(*rac*)-**1i**




(*rac*)-**1j**



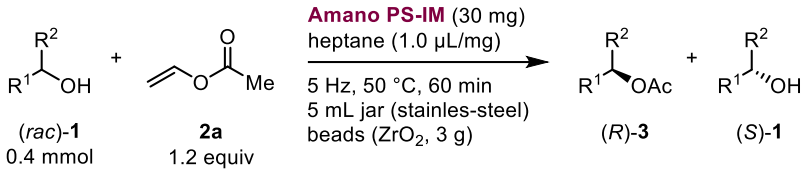

**2a**




**2b**

(*rac*)-**1a–1j** and **2a–2b** were obtained from suppliers and used as received.

## 3. General procedure for Amano PS-IM-catalyzed mechanochemical acylation




Alcohol (*rac*)-**1** (0.4 mmol), vinyl ester **2a** (0.48 mmol, 1.2 equiv), Amano PS-IM (30 mg), and heptane (1.0 μl) were placed in a ball milling vessel (stainless, 5 mL) loaded with grinding beads ($ZrO_2$: ca. 2 mm in diameter, ca. 20 mg per bead; 3 g total, ca. 150 beads). After the vessel was closed in air without purging with inert gas, it was placed in the ball mill (Retch MM400, 60 min at 5 Hz) and the heat gun (pre-set temperature at 70 °C). After grinding for 60 min, the jar was cooled rapidly with water and opened in air. The mixture was passed through a short silica gel column, eluting with EtOAc to remove lipase. The crude mixture was then purified by flash column chromatography ($SiO_2$, EtOAc/hexane, typically 2:98–20:80) to give the corresponding acetate product (*R*)-**3** and recovered alcohol (*S*)-**1**. It should be noted that the less toxic solvent heptane can be used in place of hexane for the purification step, as comparable results were obtained.

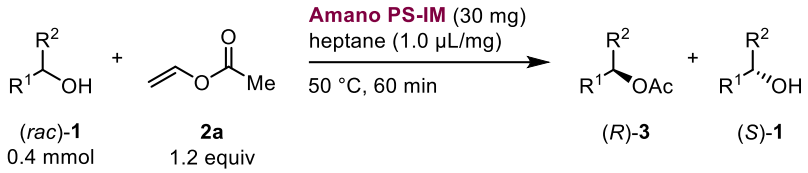
A heat gun was fixed with clamps and placed directly above the ball milling jar (distance between the heat gun tip and the ball milling jar: ca. 1 cm) (Figure S4). The temperature inside the milling jar was measured using thermography immediately after opening.



**Figure S4**. Ball milling while applying a heat gun.

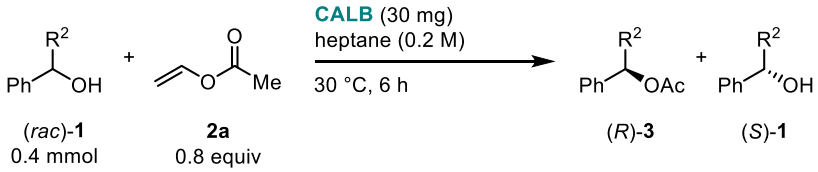
## 4. Experimental procedures with test tube

### 1) Test tube conditions




In a vacuum-dried test tube equipped with a magnetic stirring bar, alcohol (*rac*)-**1** (0.4 mmol), vinyl ester **2a** (0.48 mmol, 1.2 equiv), Amano PS-IM (30 mg), and heptane (1.0 μl) were placed. The mixture warmed to 50 °C and stirred for 60 min. After the reaction, the mixture was passed through a short silica gel column, eluting with EtOAc to remove lipase, and evaporated in vacuo. The crude mixture was then purified by flash column chromatography ($SiO_2$, EtOAc/hexane, typically 2:98–20:80) to give the corresponding acetate product (*R*)-**3** and recovered alcohol (*S*)-**1**.

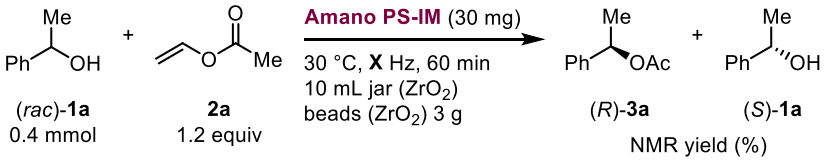
### 2) Heptane solvent conditions




In a vacuum-dried test tube equipped with a magnetic stirring bar, 2° alcohol (*rac*)-**1** (0.4 mmol), vinyl ester **2a** (0.32 mmol, 0.8 equiv), CALB (30 mg), and heptane (2 mL, 0.2 M) were placed. The mixture was warmed to 30 °C and stirred for 6 h. After the reaction, the mixture was passed through a short silica gel column, eluting with EtOAc to remove lipase, and evaporated in vacuo. The crude mixture was then purified by flash column chromatography ($SiO_2$, EtOAc/hexane, typically 2:98–20:80) to give the corresponding acetate product (*R*)-**3** and recovered alcohol (*S*)-**1**.

## 5. Additional experimental results

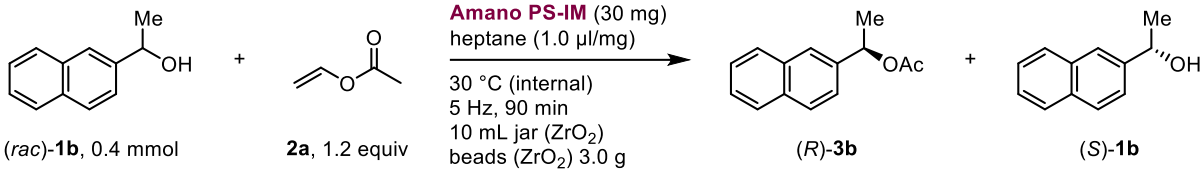
### • Effect of balls and beads




| entry | **X** Hz | NMR yield (%) |
|---|---|---|
| 1[a] | 25 | 30 |
| 2 | 25 | 33 |
| 3 | 15 | 39 |
| 4 | 5 | 43 |

[a]10 mm ball ($ZrO_2$)*1 instead of beads ($ZrO_2$).

### • Details of optimization study on acylation of solid alcohol

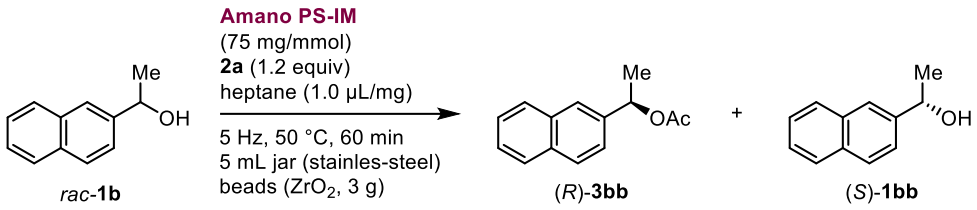



NMR yield (%)

| entry | conditions | NMR yield (%) | conv. (%) |
|---|---|---|---|
| 1 | - | 16 | 21 |
| 2 | 0.8 mmol scale | 18 | 15 |
| 3 | $SiO_2$ 40 mg | 7 | 5 |
| 4 | NaCl 40 mg | 27 | 26 |
| 5 | NaCl 1.0 equiv | 25 | 26 |
| 6 | KCl 1.0 equiv | 25 | 29 |
| 7 | 35 °C (internal) | 29 | 30 |
| 8 | 5 mL jar (stainless) | 35 | 33 |
| 9 | 35 °C (internal), 5 mL jar (stainless) | 34 | 35 |
| **10** | **50 °C (internal), 5 mL jar (stainless), 1 h** | **48 (99% ee)** | **48** |

*The reaction temperature was measured using thermography immediately after opening.

・**Preliminary investigation on catalyst recycling**

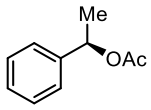



| entry | *rac*-**1b** (mmol) | amano PS (mg) | (*R*)-**3b** | (*S*)-**1b** |
|---|---|---|---|---|
| 1st run | 0.8 | 60.0 | 53%, 99% ee | 48%, 97% ee |
| 2nd run | 0.5 | 37.6 | 49%, 99% ee | 52%, 86% ee |

We have carried out a preliminary investigation on catalyst recycling. After the reaction, the mixture was subjected to filtration and washed with hexane. The obtained solid Amano PS-IM (63% recovery) was dried under reduced pressure. The recovered Amano PS-IM was then used in a second run, and the desired product (*R*)-**3b** was obtained in comparable yield and enantioselectivity (49%, 99% ee) to those of the first run. However, the recovered alcohol (*S*)-**1b** was obtained with lower enantioselectivity (86% ee). Although these results demonstrate the potential for catalyst reuse, the incomplete recovery of the catalyst and the decreased enantioselectivity of the alcohol suggest that further optimization of the recycling procedure is needed.

## 6. Characterization of obtained products

**(*R*)-1-Phenylethyl acetate [(*R*)-3a].**

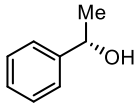



(*R*)-**3a**

The reaction was carried out with 48.6 mg (0.40 mmol) of (*rac*)-**1a**. The product (*R*)-**3a** was obtained as a colorless oil (28.7 mg, 0.175 mmol, 44% yield, 97% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (399 MHz, $CDCl_3$, δ): 1.54 (d, $J$ = 6.4 Hz, 3H), 2.08 (s, 3H), 5.88 (q, $J$ = 6.5 Hz, 1H), 7.27–7.32 (m, 1H), 7.33–7.37 (m, 4H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 21.5 ($CH_3$), 22.3 ($CH_3$), 72.4 (*C*H), 126.2 (*C*H), 128.0 (*C*H), 128.6 (*C*H), 141.8 (*C*), 170.5 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{10}H_{12}O_2Na$, 187.0730; found, 187.0729. $[\alpha]_D^{24}$ +111.5 (c 0.95, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 1/99, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 13.62 min., *S* isomer: $t_S$ = 16.29 min.

**(*S*)-1-Phenylethan-1-ol [(*S*)-1a].**

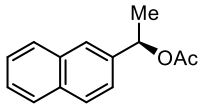



(*S*)-**1a**

The reaction was carried out with 48.6 mg (0.40 mmol) of (*rac*)-**1a**. The product (*S*)-**1a** was obtained as a colorless oil (21.3 mg, 0.174 mmol, 44% yield, 98% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (396 MHz, $CDCl_3$, δ): 1.51 (d, $J$ = 6.3 Hz, 3H), 1.79 (brd, $J$ = 3.2 Hz, 1H), 4.88–4.95 (m, 1H), 7.26–7.31 (m, 1H), 7.33–7.41 (m, 4H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 25.3 ($CH_3$), 70.6 (*C*H), 125.5 (*C*H), 127.6 (*C*H), 128.6 (*C*H), 145.9 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_8H_{10}O$, 122.0726; found, 122.0729. $[\alpha]_D^{23}$ –56.3 (c 0.63, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 3/97, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 18.55 min., *S* isomer: $t_S$ = 20.43 min.

**(*R*)-1-(Naphthalen-2-yl)ethyl acetate [(*R*)-3b].**

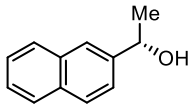



(*R*)-**3b**

The reaction was carried out with 68.7 mg (0.40 mmol) of (*rac*)-**1b**. The product (*R*)-**3b** was obtained as a colorless oil (40.5 mg, 0.189 mmol, 47% yield, 99% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.62 (d, $J$ = 6.4 Hz, 3H), 2.10 (s, 3H), 6.05 (q, $J$ = 6.5 Hz, 1H), 7.44–7.52 (m, 3H), 7.78–7.87 (m, 4H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 21.5 (*C*$H_3$), 22.3 (*C*$H_3$), 72.5 (*C*H), 124.2 (*C*H), 125.1 (*C*H), 126.2 (*C*H), 126.3 (*C*H), 127.8 (*C*H), 128.1 (*C*H), 128.5 (*C*H), 133.1 (*C*), 133.3 (*C*), 139.1 (*C*), 170.5 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{14}H_{14}O_2Na$, 237.0886; found, 237.0881. $[\alpha]_D^{24}$ +116.6 (c 0.98, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 1/99, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 20.11 min., *S* isomer: $t_S$ = 27.43 min.

**(*S*)-1-(Naphthalen-2-yl)ethan-1-ol [(*S*)-1b].**

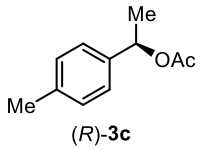



(*S*)-**1b**

The reaction was carried out with 68.7 mg (0.40 mmol) of (*rac*)-**1b**. The product (*S*)-**1b** was obtained as a colorless oil (35.9 mg, 0.208 mmol, 52% yield, 86% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.59 (d, $J$ = 6.4 Hz, 3H), 5.05–5.12 (m, 1H), 7.46–7.50 (m, 2H), 7.52 (dd, $J$ = 1.8, 8.6 Hz, 1H), 7.80–7.88 (m, 4H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 25.2 (*C*$H_3$), 70.6 (*C*H), 123.90 (*C*H), 123.93 (*C*H), 125.9 (*C*H), 126.3 (*C*H), 127.8 (*C*H), 128.0 (*C*H), 128.4 (*C*H), 133.0 (*C*), 133.4 (*C*), 143.3 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_{12}H_{12}O$, 172.0883; found, 172.0883. $[\alpha]_D^{24}$ –44.3 (c 0.89, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® ID, 2-PrOH/Hexane = 3/97, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 20.90 min., *S* isomer: $t_S$ = 21.86 min.

**(*R*)-1-(*p*-Tolyl)ethyl acetate [(*R*)-3c].**

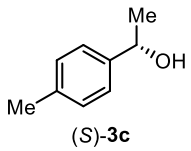


(*R*)-**3c**

The reaction was carried out with 54.5 mg (0.40 mmol) of (*rac*)-**1c**. The product (*R*)-**3c** was obtained as a colorless oil (36.5 mg, 0.205 mmol, 51% yield, 98% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.52 (d, $J$ = 6.4 Hz, 3H), 2.06 (s, 3H), 2.34 (s, 3H), 5.85 (q, $J$ = 6.5 Hz, 1H), 7.16 (d, $J$ = 8.4 Hz, 2H), 7.25 (d, $J$ = 7.2 Hz, 2H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 21.2 ($CH_3$), 21.5 ($CH_3$), 22.2 ($CH_3$), 72.3 (*C*H), 126.2 (*C*H), 129.3 (*C*H), 137.7 (*C*), 138.8 (*C*), 170.5 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{11}H_{14}O_2Na$, 201.0886; found, 201.0885. $[\alpha]_D^{24}$ +107.8 (c 0.93, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 1/99, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 14.37 min., *S* isomer: $t_S$ = 19.12 min.

**(*S*)-1-(*p*-Tolyl)ethan-1-ol [(*S*)-1c].**

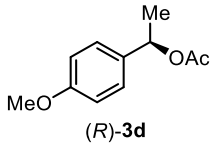


(*S*)-**3c**

The reaction was carried out with 54.5 mg (0.40 mmol) of (*rac*)-**1c**. The product (*S*)-**1c** was obtained as a colorless oil (26.4 mg, 0.194 mmol, 48% yield, 96% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.49 (d, $J$ = 6.4 Hz, 3H), 1.73 (brd, $J$ = 3.2 Hz, 1H), 2.35 (s, 3H), 4.84–4.92 (m, 1H), 7.17 (d, $J$ =7.6 Hz, 2H), 7.27 (d, $J$ =8.4 Hz, 2H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 21.2 ($CH_3$), 25.2 ($CH_3$), 70.3 (*C*H), 125.5 (*C*H), 129.3 (*C*H), 137.3 (*C*), 143.0 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_9H_{12}O$, 136.0883; found, 136.0884. $[\alpha]_D^{24}$ –52.6 (c 0.95, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IE, 2-PrOH/Hexane = 1.5/98.5, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 22.25 min., *S* isomer: $t_S$ = 23.35 min.

**(*R*)-1-(4-Methoxyphenyl)ethyl acetate [(*R*)-3d].**

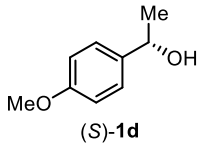


(*R*)-**3d**

The reaction was carried out with 61.2 mg (0.40 mmol) of (*rac*)-**1d**. The product (*R*)-**3d** was obtained as a colorless oil (36.8 mg, 0.189 mmol, 47% yield, 98% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.52 (d, $J$ = 6.4 Hz, 3H), 2.05 (s, 3H), 3.80 (s, 3H), 5.85 (q, $J$ = 6.5 Hz, 1H), 6.86–6.91 (m, 2H), 7.28–7.33 (m, 2H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 21.5 ($CH_3$), 22.1 ($CH_3$), 55.4 ($CH_3$), 72.1 (*C*H), 113.9 (*C*H), 127.7 (*C*H), 133.8 (*C*), 159.3 (*C*), 170.5 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{11}H_{14}O_3Na$, 217.0835; found, 217.0835. $[\alpha]_D^{24}$ +111.3 (c 0.95, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IA, 2-PrOH/Hexane = 1/99, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 12.65 min., *S* isomer: $t_S$ = 14.76 min.

**(*S*)-1-(4-Methoxyphenyl)ethan-1-ol [(*S*)-1d].**

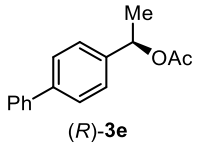


(*S*)-**1d**

The reaction was carried out with 61.2 mg (0.40 mmol) of (*rac*)-**1d**. The product (*S*)-**1d** was obtained as a colorless oil (28.3 mg, 0.186 mmol, 46% yield, 98% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.49 (d, $J$ = 6.4 Hz, 3H), 1.70–1.74 (m, 1H), 3.81 (s, 3H), 4.83–4.92 (m, 1H), 6.87–6.92 (m, 2H), 7.28–7.34 (m, 2H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 25.1 ($CH_3$), 55.4 ($CH_3$), 70.0 (*C*H), 113.9 (*C*H), 126.8 (*C*H), 138.1 (*C*), 159.0 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_9H_{12}O_2$, 152.0832; found, 152.0835. $[\alpha]_D^{24}$ –51.1 (c 0.94, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 3/97, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 26.23 min., *S* isomer: $t_S$ = 28.11 min.

**(*R*)-1-[(1,1'-Biphenyl)-4-yl]ethyl acetate [(*R*)-3b].**

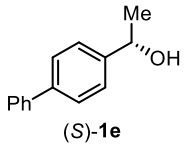


(*R*)-**3e**

The reaction was carried out with 79.6 mg (0.40 mmol) of (*rac*)-**1e**. The product (*R*)-**3e** was obtained as a colorless oil (48.0 mg, 0.200 mmol, 50% yield, 98% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[2]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.58 (d, $J$ = 6.4 Hz, 3H), 2.10 (s, 3H), 5.93 (q, $J$ = 6.5 Hz, 1H), 7.32–7.38 (m, 1H), 7.40–7.46 (m, 4H), 7.55–7.60 (m, 4H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 21.5 ($CH_3$), 22.3 ($CH_3$), 72.2 (*C*H), 126.7 (*C*H), 127.2 (*C*H), 127.4 (*C*H), 127.5 (*C*H), 128.9 (*C*H), 140.7 (*C*), 140.8 (*C*), 141.0 (*C*), 170.5 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{16}H_{16}O_2Na$, 263.1043; found, 263.1035. $[\alpha]_D^{24}$ +115.8 (c 0.98, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 1/99, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 21.75 min., *S* isomer: $t_S$ = 25.73 min.

**(*S*)-1-[(1,1'-Biphenyl)-4-yl]ethan-1-ol [(*S*)-1e].**

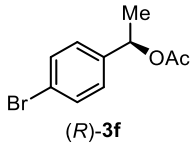


(*S*)-**1e**

The reaction was carried out with 79.6 mg (0.40 mmol) of (*rac*)-**1e**. The product (*S*)-**1e** was obtained as a colorless oil (38.6 mg, 0.195 mmol, 48% yield, 91% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[3]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.55 (d, $J$ = 6.4 Hz, 3H), 1.80 (d, $J$ = 3.6 Hz, 1H), 4.93–5.00 (m, 1H), 7.32–7.38 (m, 1H), 7.42–7.48 (m, 4H), 7.56–7.62 (m, 4H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 25.3 ($CH_3$), 70.2 (*C*H), 126.0 (*C*H), 127.2 (*C*H), 127.36 (*C*H), 127.38 (*C*H), 128.9 (*C*H), 140.5 (*C*), 140.9 (*C*), 144.9 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_{14}H_{14}O$, 198.1039; found, 198.1042. $[\alpha]_D^{24}$ –41.9 (c 0.90, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 3/97, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 36.38 min., *S* isomer: $t_S$ = 33.75 min.

**(*R*)-1-(4-Bromophenyl)ethyl acetate [(*R*)-3f].**

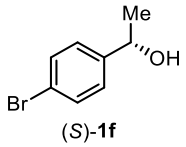


(*R*)-**3f**

The reaction was carried out with 80.4 mg (0.40 mmol) of (*rac*)-**1f**. The product (*R*)-**3f** was obtained as a colorless oil (47.7 mg, 0.196 mmol, 49% yield, 99% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.51 (d, $J$ = 6.4 Hz, 3H), 2.07 (s, 3H), 5.82 (q, $J$ = 6.5 Hz, 1H), 7.23 (dt, $J$ = 2.1, 8.7 Hz, 2H), 7.47 (dt, $J$ = 2.1, 8.8 Hz, 2H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 21.4 ($CH_3$), 22.2 ($CH_3$), 71.7 (*C*H), 121.8 (*C*), 128.0 (*C*H), 131.7 (*C*H), 140.8 (*C*), 170.3 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{10}H_{11}BrO_2Na$, 264.9835; found, 264.9830. $[\alpha]_D^{24}$ +87.2 (c 1.07, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IA, 2-PrOH/Hexane = 1/99, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 10.51 min., *S* isomer: $t_S$ = 11.73 min.

**(*S*)-1-(4-Bromophenyl)ethan-1-ol [(*S*)-1f].**

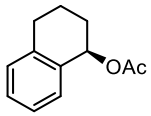


(*S*)-**1f**

The reaction was carried out with 80.4 mg (0.40 mmol) of (*rac*)-**1f**. The product (*S*)-**1f** was obtained as a colorless oil (38.5 mg, 0.191 mmol, 48% yield, 97% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (400 MHz, $CDCl_3$, δ): 1.48 (d, $J$ = 6.4 Hz, 3H), 1.80 (d, $J$ = 3.2 Hz, 1H), 4.84–4.92 (m, 1H), 7.24–7.28 (m, 2H), 7.47 (dt, $J$ = 2.2, 8.9 Hz, 2H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 25.4 ($CH_3$), 69.9 (*C*H), 121.2 (*C*), 127.3 (*C*H), 131.7 (*C*), 144.9 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_8H_9BrO$, 199.9831; found, 199.9834. $[\alpha]_D^{24}$ –39.0 (c 0.97, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 3/97, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 21.75 min., *S* isomer: $t_S$ = 20.36 min.

**(*R*)-1,2,3,4-Tetrahydronaphthalen-1-yl acetate [(*R*)-3g].**

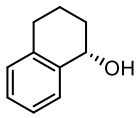



(*R*)-**3g**

The reaction was carried out with 59.2 mg (0.40 mmol) of (*rac*)-**1g**. The product (*R*)-**3g** was obtained as a colorless oil (40.6 mg, 0.213 mmol, 53% yield, 86% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (401 MHz, $CDCl_3$, δ): 1.78–1.89 (m, 1H), 1.90–2.03 (m, 3H), 2.09 (s, 3H), 2.68–2.82 (m, 1H), 2.82–2.94 (m, 1H), 6.00 (t, $J$ = 4.2 Hz, 1H), 7.10–7.30 (m, 4H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 18.9 (*C*$H_2$), 21.6 (*C*$H_3$), 29.1 (*C*$H_2$), 29.2 (*C*$H_2$), 70.1 (*C*H), 126.2 (*C*H), 128.2 (*C*H), 129.2 (*C*H), 129.6 (*C*H), 134.6 (*C*), 138.0 (*C*), 170.9 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{12}H_{14}O_2Na$, 213.0886; found, 213.0884. $[\alpha]_D^{24}$ +78.0 (c 1.04, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IA, Hexane, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 27.01 min., *S* isomer: $t_S$ = 33.43 min.

**(*S*)-1,2,3,4-Tetrahydronaphthalen-1-ol [(*S*)-1g].**

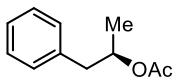



(*S*)-**1g**

The reaction was carried out with 59.2 mg (0.40 mmol) of (*rac*)-**1g**. The product (*S*)-**1g** was obtained as a colorless oil (27.4 mg, 0.185 mmol, 46% yield, 90% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 5:95–20:80). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (400 MHz, $CDCl_3$, δ): 1.62–1.70 (m, 1H), 1.73–1.85 (m, 1H), 1.86–2.03 (m, 3H), 2.68–2.90 (m, 2H), 4.80 (q, $J$ = 5.2 Hz, 1H), 7.08–7.14 (m, 1H), 7.18–7.24 (m, 2H), 7.42–7.46 (m, 1H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 18.9 (*C*$H_2$), 29.3 (*C*$H_2$), 32.3 (*C*$H_2$), 68.2 (*C*H), 126.3 (*C*H), 127.7 (*C*H), 128.9 (*C*H), 129.1 (*C*H), 137.2 (*C*), 138.9 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_{10}H_{12}O$, 148.0883; found, 148.0880. $[\alpha]_D^{24}$ +30.4 (c 0.92, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 0.8/99.2, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 41.32 min., *S* isomer: $t_S$ = 38.42 min.

**(*R*)-1-Phenylpropan-2-yl acetate [(*R*)-3h].**

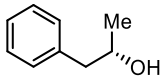



(*R*)-**3h**

The reaction was carried out with 54.3 mg (0.40 mmol) of (*rac*)-**1h**. The product (*R*)-**3h** was obtained as a colorless oil (30.3 mg, 0.170 mmol, 43% yield, >99% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[4]

$^1H$ NMR (399 MHz, $CDCl_3$, δ): 1.22 (d, $J$ = 6.4 Hz, 3H), 2.00 (s, 3H), 2.75 (dd, $J$ = 6.4, 13.6 Hz, 1H), 2.93 (dd, $J$ = 6.8, 13.6 Hz, 1H), 5.11 (sxt, $J$ = 6.4 Hz, 1H), 7.17–7.25 (m, 3H), 7.25–7.32 (m, 2H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 19.6 ($CH_3$), 21.5 ($CH_3$), 42.3 ($CH_2$), 71.6 (*C*H), 126.6 (*C*H), 128.5 (*C*H), 129.5 (*C*H), 137.7 (*C*), 170.7 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{11}H_{14}O_2Na$, 201.0886; found, 201.0885. $[\alpha]_D^{24}$ –8.5 (c 0.94, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 0.7/99.3, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 13.42 min., *S* isomer: $t_S$ = 14.03 min.

**(*S*)-1-Phenylpropan-2-ol [(*S*)-1h].**

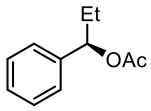



(*S*)-**1h**

The reaction was carried out with 54.3 mg (0.40 mmol) of (*rac*)-**1h**. The product (*S*)-**1h** was obtained as a colorless oil (25.0 mg, 0.184 mmol, 46% yield, 79% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[4]

$^1H$ NMR (399 MHz, $CDCl_3$, δ): 1.26 (d, $J$ = 6.0 Hz, 3H), 1.51 (d, $J$ = 2.4 Hz, 1H), 2.69 (dd, $J$ = 8.0, 13.6 Hz, 1H), 2.80 (dd, $J$ = 4.8, 13.6 Hz, 1H), 3.98–4.08 (m, 1H), 7.19–7.27 (m, 3H), 7.29–7.35 (m, 2H). $^{13}C$ NMR (100 MHz, $CDCl_3$, δ): 22.9 ($CH_3$), 45.9 ($CH_2$), 69.0 (*C*H), 126.6 (*C*H), 128.7 (*C*H), 129.5 (*C*), 138.6 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_9H_{12}O$, 136.0883; found, 136.0884. $[\alpha]_D^{24}$ +32.6 (c 0.92, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding ra00cemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 0.8/99.2, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 29.72 min., *S* isomer: $t_S$ = 27.23 min.

**(*R*)-1-Phenylpropyl acetate [(*R*)-3i].**

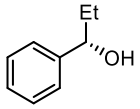



(*R*)-**3i**

The reaction was carried out with 54.5 mg (0.40 mmol) of (*rac*)-**1i**. The product (*R*)-**3i** was obtained as a colorless oil (29.7 mg, 0.167 mmol, 42% yield, 98% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (399 MHz, $CDCl_3$, δ): 0.88 (t, $J$ = 7.4 Hz, 3H), 1.74–1.87 (m, 1H), 1.88–1.99 (m, 1H), 2.08 (s, 3H), 5.66 (t, $J$ = 7.0 Hz, 1H), 7.25–7.37 (m, 5H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 10.0 (*C*$H_3$), 21.4 (*C*$H_3$), 29.4 (*C*$H_2$), 77.5 (*C*H), 126.7 (*C*H), 127.9 (*C*H), 128.5 (*C*H), 140.6 (*C*), 170.6 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{11}H_{14}O_2Na$, 201.0886; found, 201.0885. $[\alpha]_D^{24}$ +96.2 (c 0.98, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 0.7/99.3, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 13.60 min., *S* isomer: $t_S$ = 16.87 min.

**(*S*)-1-Phenylpropan-1-ol [(*S*)-1i].**

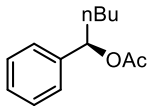



(*S*)-**1i**

The reaction was carried out with 54.5 mg (0.40 mmol) of (*rac*)-**1i**. The product (*S*)-**1i** was obtained as a colorless oil (24.7 mg, 0.181 mmol, 45% yield, 81% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[1]

$^1H$ NMR (399 MHz, $CDCl_3$, δ): 0.92 (t, $J$ = 7.6 Hz, 3H), 1.70–1.90 (m, 3H), 4.60 (td, $J$ = 3.1, 6.6 Hz, 1H), 7.25–7.31 (m, 1H), 7.32–7.38 (m, 4H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 10.3 (*C*$H_3$), 32.0 (*C*$H_2$), 76.1 (*C*H), 126.1 (*C*H), 127.6 (*C*H), 128.5 (*C*H), 144.7 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_9H_{12}O$, 136.0883; found, 136.0885. $[\alpha]_D^{24}$ –39.9 (c 0.67, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® IB, 2-PrOH/Hexane = 0.8/99.2, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 35.63 min., *S* isomer: $t_S$ = 37.48 min.

**(*R*)-1-Phenylpentyl acetate [(*R*)-3j].**

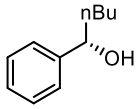



(*R*)-**3j**

The reaction was carried out with 66.0 mg (0.40 mmol) of (*rac*)-**1j**. The product (*R*)-**3j** was obtained as a colorless oil (14.6 mg, 0.071 mmol, 18% yield, 92% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[5]

$^1H$ NMR (399 MHz, $CDCl_3$, δ): 0.87 (t, $J$ = 7.2 Hz, 3H), 1.13–1.38 (m, 4H), 1.71–1.82 (m, 1H), 1.84–1.96 (m, 1H), 2.07 (s, 3H), 5.72 (dd, $J$ = 6.4, 7.6 Hz, 1H), 7.26–7.37 (m, 5H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 14.1 (*C*$H_3$), 21.5 (*C*$H_3$), 22.6 (*C*$H_2$), 27.8 (*C*$H_2$), 36.2 (*C*$H_2$), 76.3 (*C*H), 126.7 (*C*H), 127.9 (*C*H), 128.5 (*C*H), 141.0 (*C*), 170.6 (*C*). HRMS–ESI (m/z): $[M+Na]^+$ calcd for $C_{13}H_{18}O_2Na$, 229.1199; found, 229.1196. $[\alpha]_D^{24}$ +66.1 (c 0.31, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic ester product. Daicel CHIRALPAK® IC, 2-PrOH/Hexane = 0.7/99.3, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 11.92 min., *S* isomer: $t_S$ = 14.77 min.

**(*S*)-1-Phenylpentan-1-ol [(*S*)-1j].**



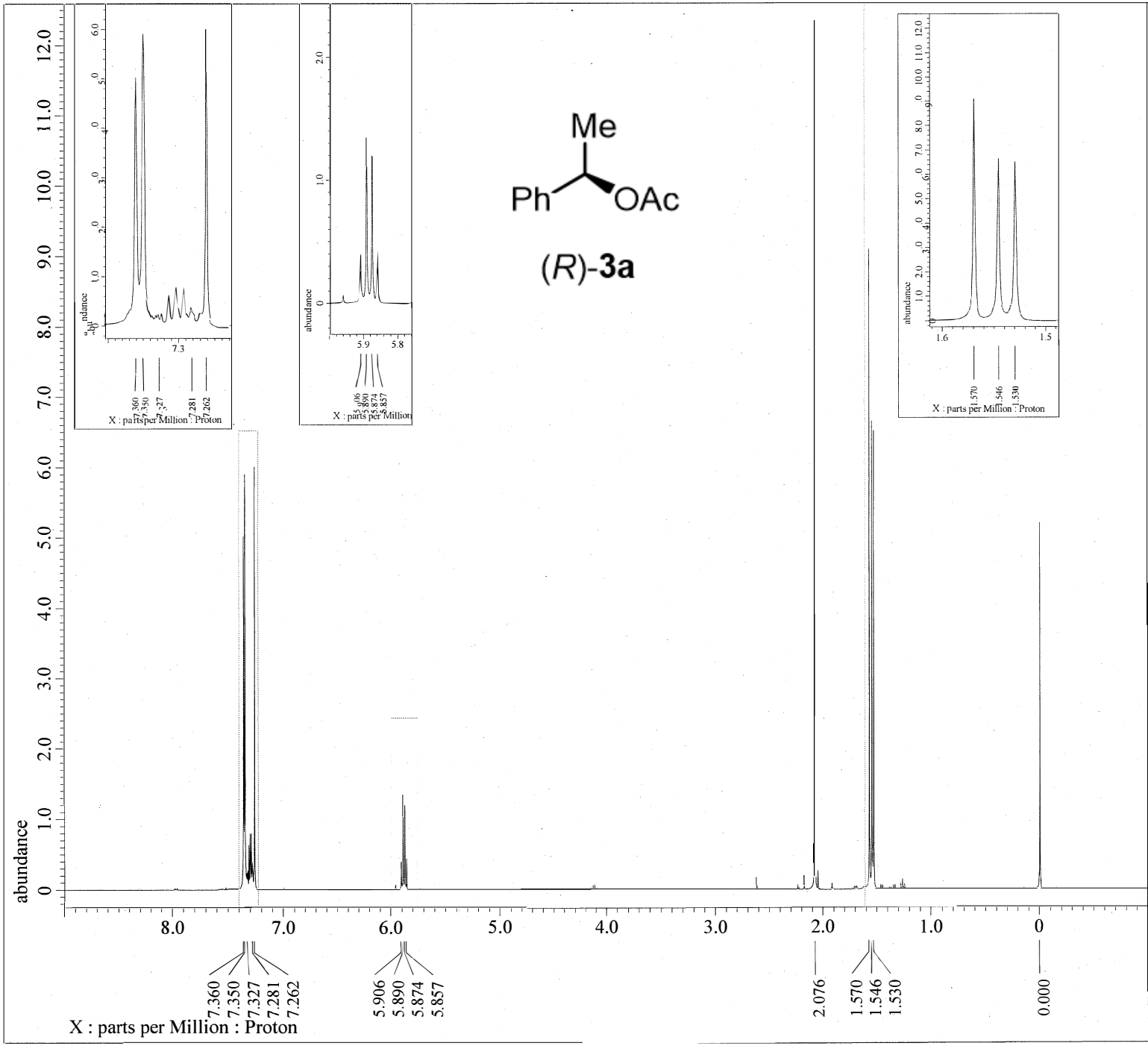

(*S*)-**1j**

The reaction was carried out with 66.0 mg (0.40 mmol) of (*rac*)-**1j**. The product (*S*)-**1j** was obtained as a colorless oil (53.8 mg, 0.328 mmol, 82% yield, 18% ee) after purification by silica-gel column chromatography ($SiO_2$, EtOAc/hexane, 2:98–10:90). $^1H$ and $^{13}C$ NMR spectra were consistent with the literature.[6]

$^1H$ NMR (400 MHz, $CDCl_3$, δ): 0.89 (t, $J$ = 7.0 Hz, 3H), 1.21–1.46 (m, 4H), 1.66–1.86 (m, 2H), 1.81 (d, $J$ = 3.2 Hz, 1H), 4.63–4.70 (m, 1H), 7.25–7.31 (m, 1H), 7.33–7.37 (m, 4H). $^{13}C$ NMR (101 MHz, $CDCl_3$, δ): 14.1 (*C*$H_3$), 22.7 (*C*$H_2$), 28.1 (*C*$H_2$), 38.9 (*C*$H_2$), 74.8 (*C*H), 126.0 (*C*H), 127.6 (*C*H), 128.5 (*C*H), 145.1 (*C*). HRMS–EI (m/z): $[M]^+$ calcd for $C_{11}H_{16}O$, 164.1196; found, 164.1200. $[\alpha]_D^{25}$ –8.3 (c 0.96, $CHCl_3$). The ee value was determined by HPLC analysis of the corresponding racemic alcohol starting material. Daicel CHIRALPAK® ID, 2-PrOH/Hexane = 0.8/99.2, 0.5 mL/min, 40 °C, *R* isomer: $t_R$ = 26.88 min., *S* isomer: $t_S$ = 24.94 min.

## 7. References.


1. Hernández, J. G.; Frings, M.; Bolm, C. *ChemCatChem* **2016**, *8*, 1769.
2. Martín-Matute, B.; Edin, M.; Bogár, K.; Kaynak, F. B.; Bäckvall, J.-E. *J. Am. Chem. Soc.* **2003**, *127*, 8817.
3. Süsse, L.; Hermeke, J.; Oestreich, M. *J. Am. Chem. Soc.* **2016**, *138*, 6940.
4. Kitamoto, Y.; Kuruma, Y.; Suzuki, K.; Hattori, T. *J. Org. Chem.* **2015**, *80*, 521.
5. Cen, Y.; Li, D.; Xu, J.; Wu, Q.; Wu, Q.; Lin, X. *Adv. Synth. Catal.* **2019**, *361*, 126.
6. Su, Y.; Ma, Z.; Wang, J.; Li, L.; Yan, X.; Ma, N.; Liu, Q.; Solan, G. A.; Wang, Z. *J. Org. Chem.* **2024**, *89*, 12318.




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sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
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fft( 1, TRUE, TRUE )
machinephase
ppm

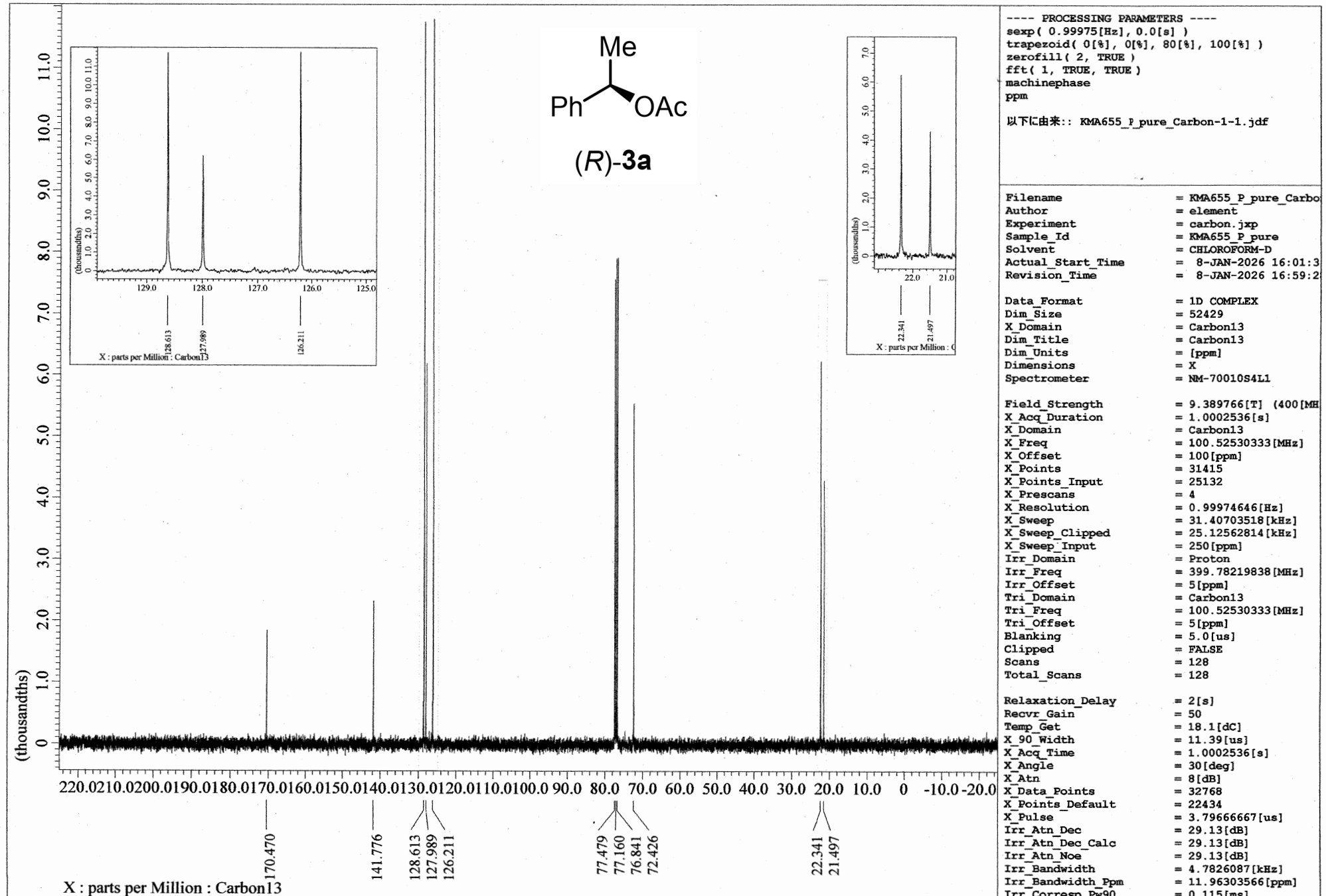
以下に由来:: KMA655_P_pure_1H_Proton-1-1.jdf
```

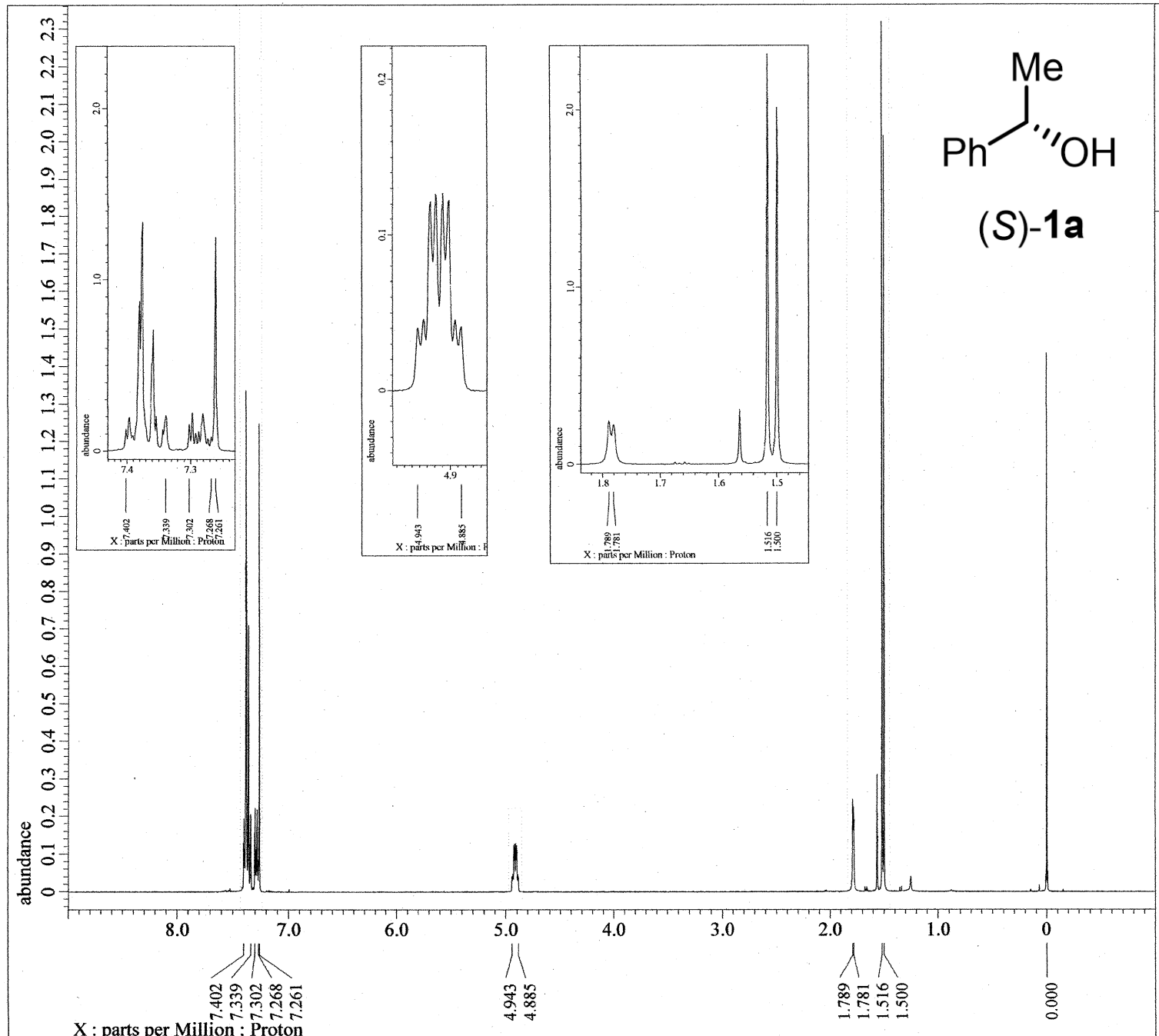
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Filename          = KMA655_P_pure_1H_Proton-1-
Author            = element
Experiment        = proton.jxp
Sample_Id         = KMA655_P_pure_1H
Solvent           = CHLOROFORM-D
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Revision_Time     = 23-DEC-2025 13:49:42

Comment           = single_pulse
Data_Format       = 1D COMPLEX
Dim_Size          = 13107
X_Domain          = Proton
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Dim_Units         = [ppm]
Dimensions        = X
Site              = JNM-ECS400
Spectrometer      = DELTA2_NMR

Field_Strength    = 9.37221[T] (400[MHz])
X_Acq_Duration    = 2.1889024[s]
X_Domain          = 1H
X_Freq            = 399.03472754[MHz]
X_Offset          = 5.0[ppm]
X_Points          = 16384
X_Prescans        = 1
X_Resolution      = 0.45684997[Hz]
X_Sweep           = 7.48502994[kHz]
X_Sweep_Clipped   = 5.98802395[kHz]
Irr_Domain        = Proton
Irr_Freq          = 399.03472754[MHz]
Irr_Offset        = 5.0[ppm]
Tri_Domain        = Proton
Tri_Freq          = 399.03472754[MHz]
Tri_Offset        = 5.0[ppm]
Clipped           = FALSE
Scans             = 8
Total_Scans       = 8

Relaxation_Delay  = 5[s]
Recvr_Gain        = 44
Temp_Get          = 19.4[dC]
X_90_Width        = 6.7[us]
X_Acq_Time        = 2.1889024[s]
X_Angle           = 45[deg]
X_Atn             = 1[dB]
X_Pulse           = 3.35[us]
Irr_Mode          = Off
Tri_Mode          = Off
Dante_Presat      = FALSE
Initial_Wait      = 1[s]
Repetition_Time   = 7.1889024[s]
```


Me
Ph
OAc
(R)-3a
X : parts per Million : Carbon13
170.470
141.776
128.613
127.989
126.211
77.479
77.160
76.841
72.426
22.341
21.497
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA655_P_pure_Carbon-1-1.jdf
Filename = KMA655_P_pure_Carbo
Author = element
Experiment = carbon.jxp
Sample_Id = KMA655_P_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 8-JAN-2026 16:01:3
Revision_Time = 8-JAN-2026 16:59:2
Data_Format = 1D COMPLEX
Dim_Size = 52429
X_Domain = Carbon13
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Spectrometer = NM-70010S4L1
Field_Strength = 9.389766[T] (400[MH
X_Acq_Duration = 1.0002536[s]
X_Domain = Carbon13
X_Freq = 100.52530333[MHz]
X_Offset = 100[ppm]
X_Points = 31415
X_Points_Input = 25132
X_Prescans = 4
X_Resolution = 0.99974646[Hz]
X_Sweep = 31.40703518[kHz]
X_Sweep_Clipped = 25.12562814[kHz]
X_Sweep_Input = 250[ppm]
Irr_Domain = Proton
Irr_Freq = 399.78219838[MHz]
Irr_Offset = 5[ppm]
Tri_Domain = Carbon13
Tri_Freq = 100.52530333[MHz]
Tri_Offset = 5[ppm]
Blanking = 5.0[us]
Clipped = FALSE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 18.1[dC]
X_90_Width = 11.39[us]
X_Acq_Time = 1.0002536[s]
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X_Atn = 8[dB]
X_Data_Points = 32768
X_Points_Default = 22434
X_Pulse = 3.79666667[us]
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Irr_Atn_Dec_Calc = 29.13[dB]
Irr_Atn_Noe = 29.13[dB]
Irr_Bandwidth = 4.7826087[kHz]
Irr_Bandwidth_Ppm = 11.96303566[ppm]
Irr_Corresp_Pw90 = 0.115[ms]





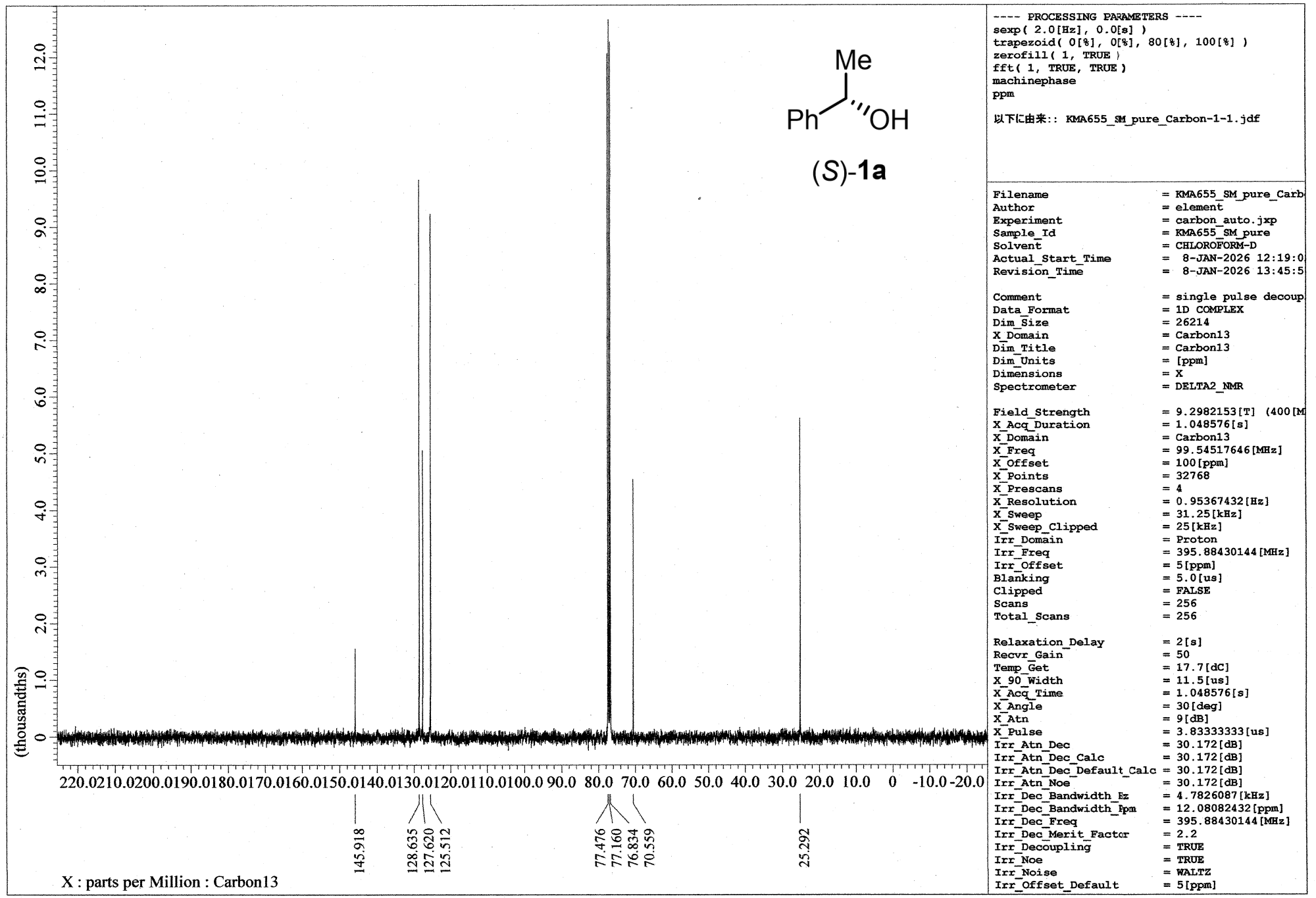


(*S*)-**1a**

```
---- PROCESSING PARAMETERS ----
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA655_SM_pure_1H_Proton-1-1.jdf
```

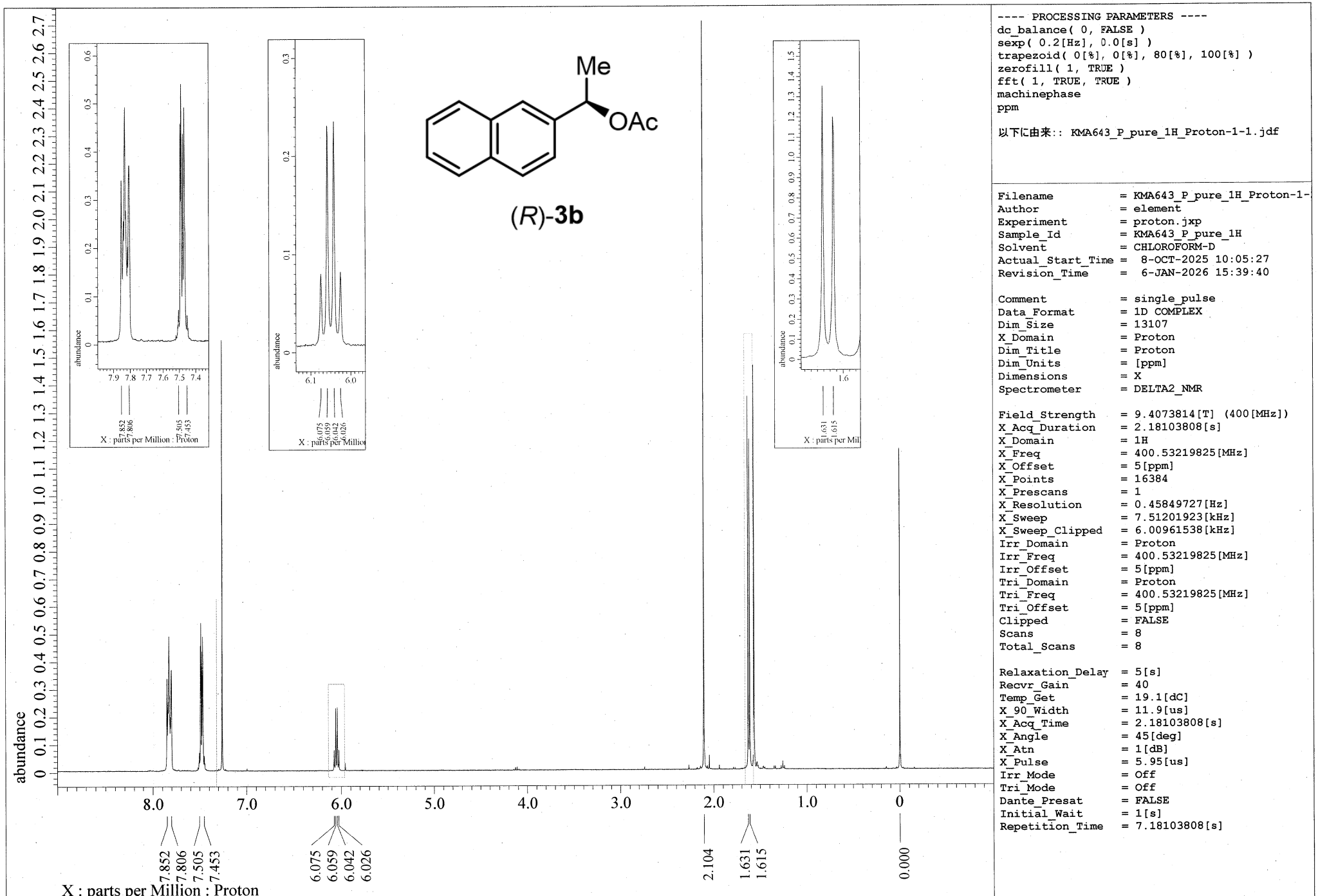
| | |
|---|---|
| Filename | = KMA655_SM_pure_1H_Prot |
| Author | = element |
| Experiment | = proton_auto.jxp |
| Sample_Id | = KMA655_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 8-JAN-2026 12:11:39 |
| Revision_Time | = 8-JAN-2026 13:33:18 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.2982153[T] (400[MHz] |
| X_Acq_Duration | = 2.20725248[s] |
| X_Domain | = Proton |
| X_Freq | = 395.88430144[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45305193[Hz] |
| X_Sweep | = 7.42280285[kHz] |
| X_Sweep_Clipped | = 5.93824228[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 395.88430144[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 395.88430144[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 2.0[us] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 56 |
| Temp_Get | = 17.7[dC] |
| X_90_Width | = 6.34[us] |
| X_Acq_Time | = 2.20725248[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 5[dB] |
| X_Pulse | = 3.17[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Loop | = 500 |
| Dante_Presat | = FALSE |
| Decimation_Rate | = 0 |
| Initial_Wait | = 1[s] |
| Phase | = {0, 90, 270, 180, 180, |
| Presat_Time | = 5[s] |
| Presat_Time_Flag | = FALSE |




```
---- PROCESSING PARAMETERS ----
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA655_SM_pure_Carbon-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA655_SM_pure_Carb |
| Author | = element |
| Experiment | = carbon_auto.jxp |
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| Actual_Start_Time | = 8-JAN-2026 12:19:0 |
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| Dim_Title | = Carbon13 |
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| X_Domain | = Carbon13 |
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| X_Offset | = 100[ppm] |
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| X_Prescans | = 4 |
| X_Resolution | = 0.95367432[Hz] |
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| X_Sweep_Clipped | = 25[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 395.88430144[MHz] |
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| Recvr_Gain | = 50 |
| Temp_Get | = 17.7[dC] |
| X_90_Width | = 11.5[us] |
| X_Acq_Time | = 1.048576[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 9[dB] |
| X_Pulse | = 3.83333333[us] |
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| Irr_Atn_Dec_Calc | = 30.172[dB] |
| Irr_Atn_Dec_Default_Calc | = 30.172[dB] |
| Irr_Atn_Noe | = 30.172[dB] |
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| Irr_Dec_Bandwidth_Ppm | = 12.08082432[ppm] |
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| Irr_Noe | = TRUE |
| Irr_Noise | = WALTZ |
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```
---- PROCESSING PARAMETERS ----
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sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
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fft( 1, TRUE, TRUE )
machinephase
ppm

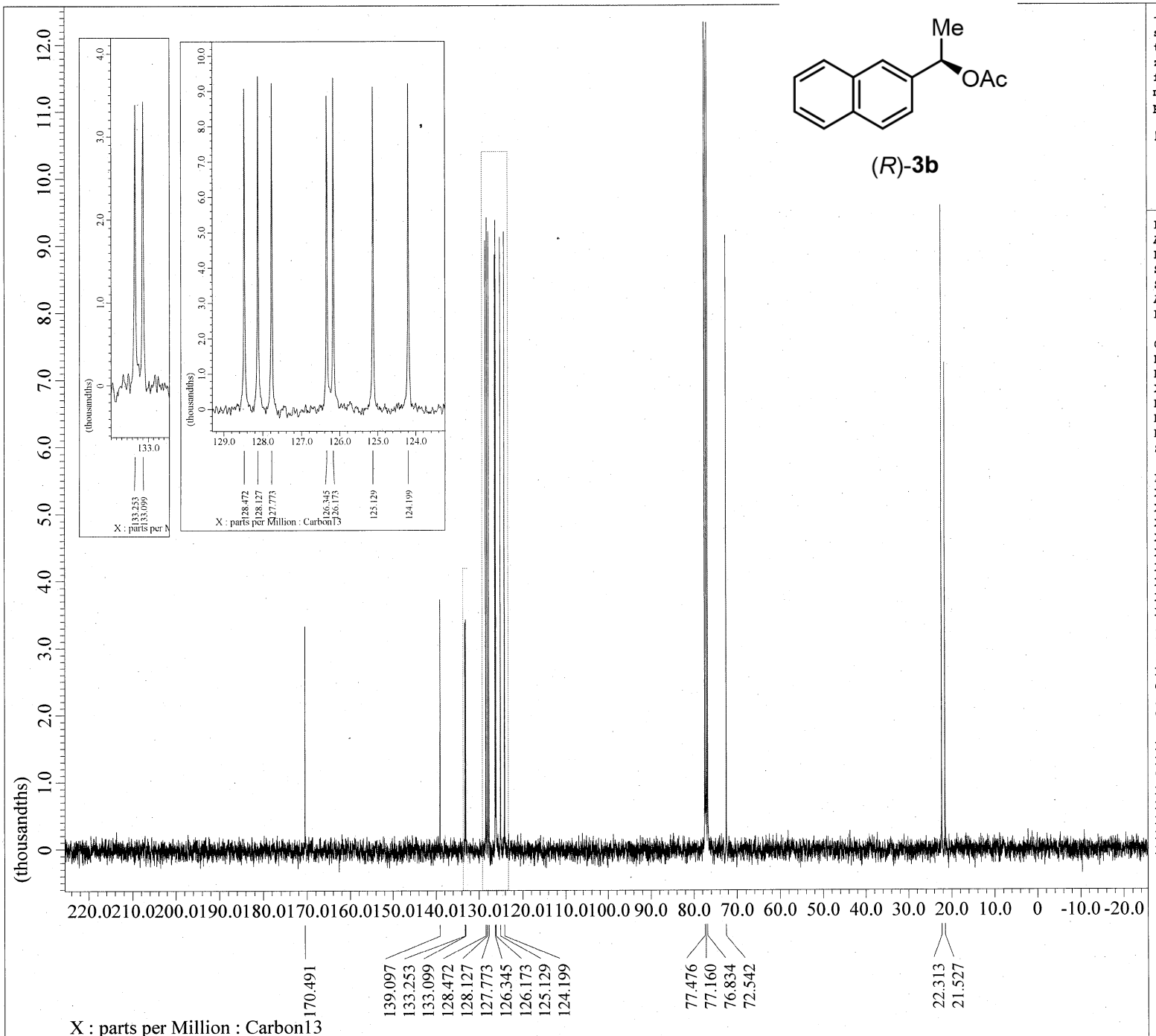
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X_Sweep           = 7.51201923[kHz]
X_Sweep_Clipped   = 6.00961538[kHz]
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Irr_Freq          = 400.53219825[MHz]
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Tri_Domain        = Proton
Tri_Freq          = 400.53219825[MHz]
Tri_Offset        = 5[ppm]
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Scans             = 8
Total_Scans       = 8

Relaxation_Delay  = 5[s]
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X_90_Width        = 11.9[us]
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X_Atn             = 1[dB]
X_Pulse           = 5.95[us]
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Tri_Mode          = Off
Dante_Presat      = FALSE
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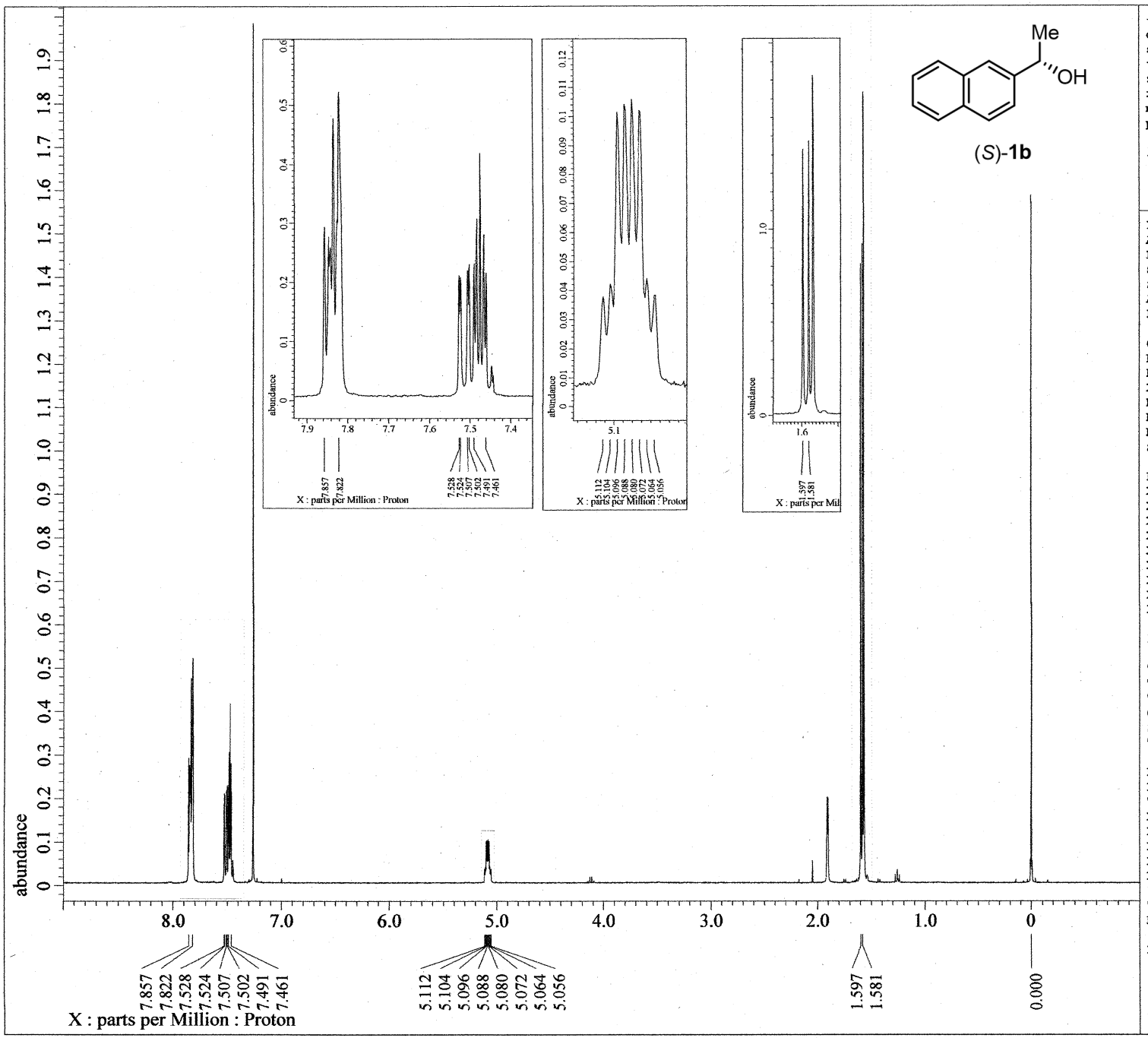


(*R*)-**3b**

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ppm

以下に由来:: KMA643_P_pure_Carbon-1-1.jdf
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| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 6-JAN-2026 14:08:5 |
| Revision_Time | = 6-JAN-2026 15:56:5 |
| Comment | = single pulse decoup |
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| Dim_Units | = [ppm] |
| Dimensions | = X |
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| Field_Strength | = 9.2982153[T] (400[M |
| X_Acq_Duration | = 1.048576[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 99.54517646[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 32768 |
| X_Prescans | = 4 |
| X_Resolution | = 0.95367432[Hz] |
| X_Sweep | = 31.25[kHz] |
| X_Sweep_Clipped | = 25[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 395.88430144[MHz] |
| Irr_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
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| Temp_Get | = 17.2[dC] |
| X_90_Width | = 11.5[us] |
| X_Acq_Time | = 1.048576[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 9[dB] |
| X_Pulse | = 3.83333333[us] |
| Irr_Atn_Dec | = 30.172[dB] |
| Irr_Atn_Dec_Calc | = 30.172[dB] |
| Irr_Atn_Dec_Default_Calc | = 30.172[dB] |
| Irr_Atn_Noe | = 30.172[dB] |
| Irr_Dec_Bandwidth_Hz | = 4.7826087[kHz] |
| Irr_Dec_Bandwidth_Ppm | = 12.08082432[ppm] |
| Irr_Dec_Freq | = 395.88430144[MHz] |
| Irr_Dec_Merit_Factor | = 2.2 |
| Irr_Decoupling | = TRUE |
| Irr_Noe | = TRUE |
| Irr_Noise | = WALTZ |
| Irr_Offset_Default | = 5[ppm] |







(*S*)-**1b**

```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

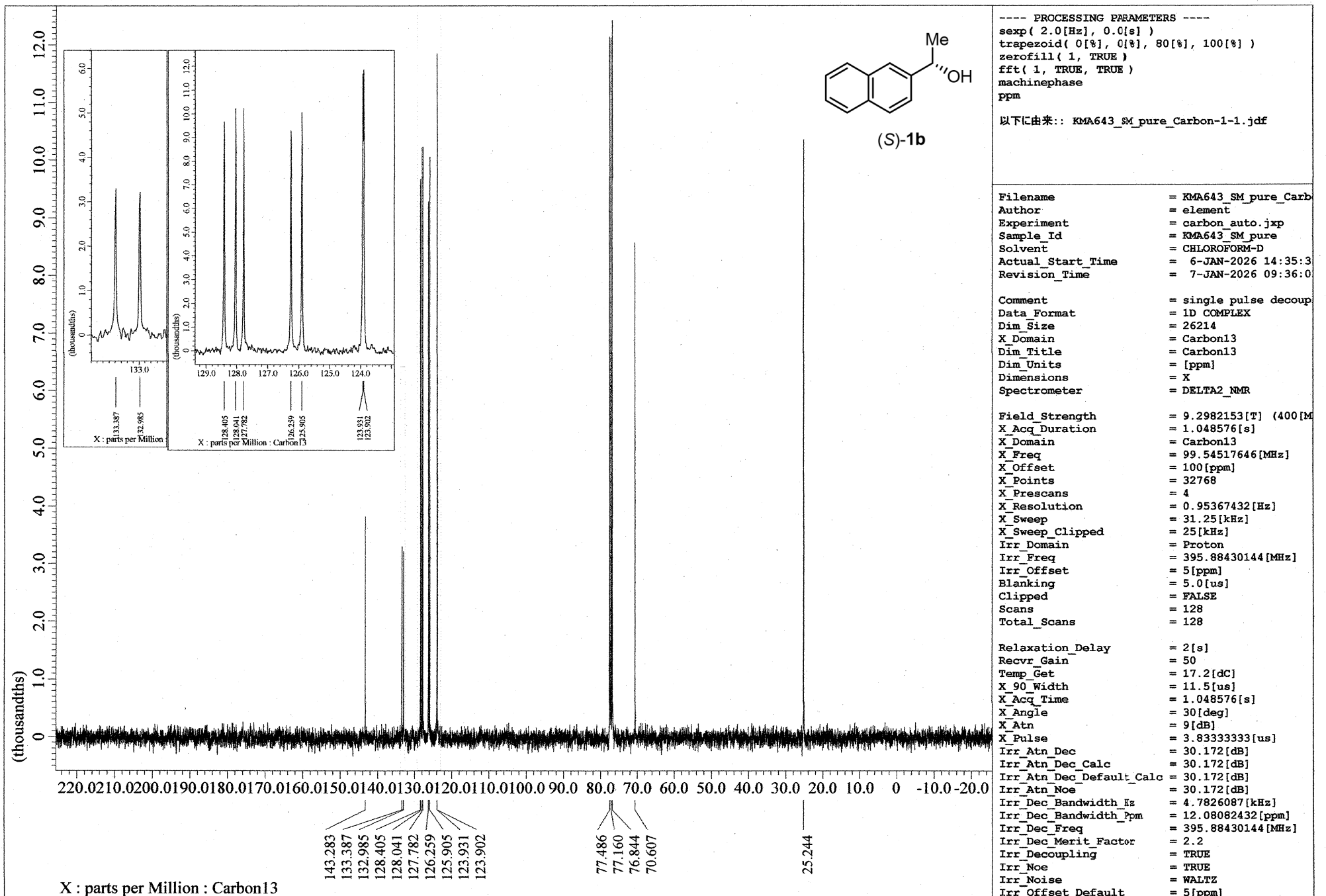
以下に由来:: KMA643_SM_pure_1H_Proton-1-1.jdf
```

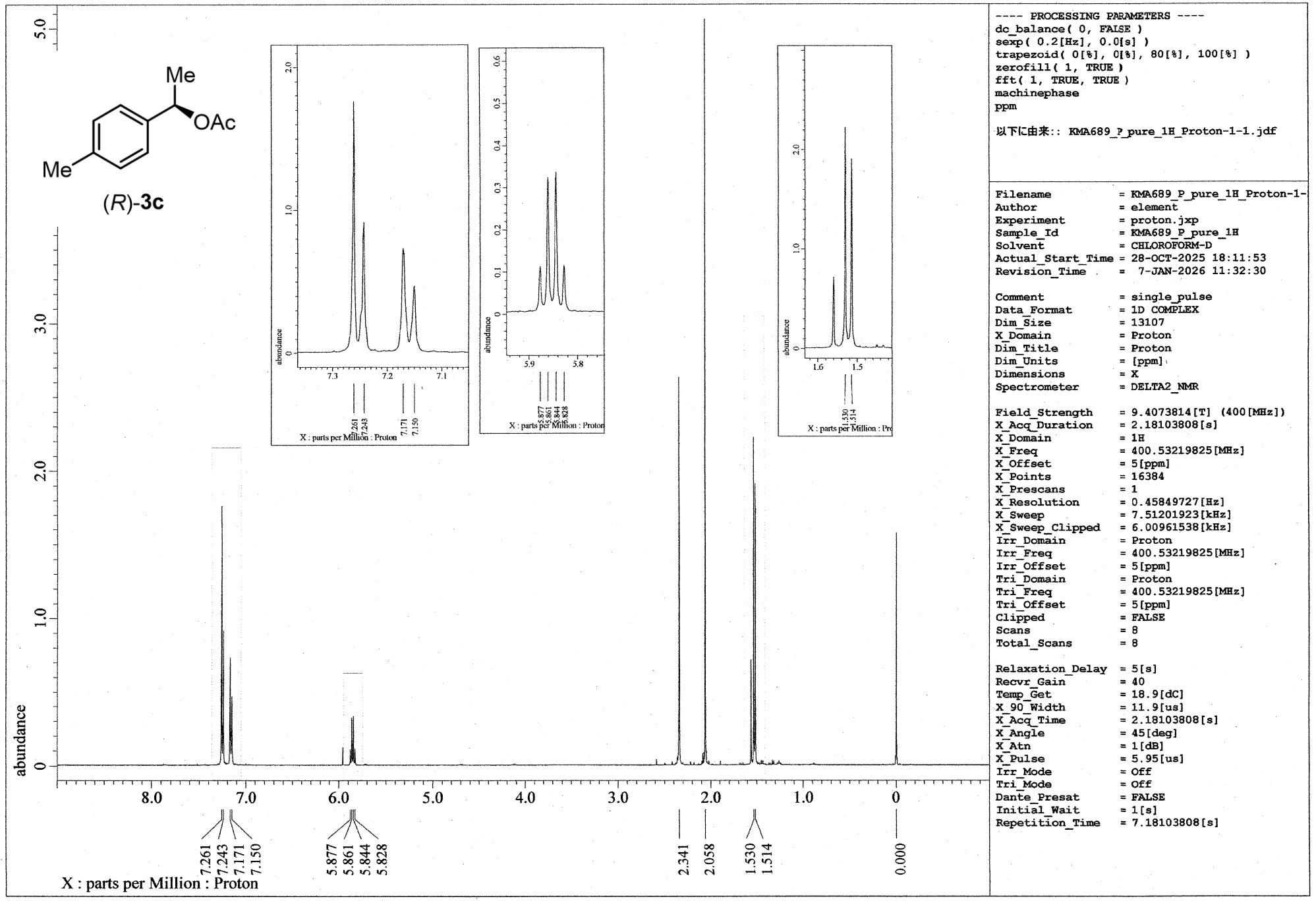
```
Filename            = KMA643_SM_pure_1H_Proton-1
Author              = element
Experiment          = proton.jxp
Sample_Id           = KMA643_SM_pure_1H
Solvent             = CHLOROFORM-D
Actual_Start_Time   =  8-OCT-2025 10:12:42
Revision_Time       =  6-JAN-2026 16:41:41

Comment             = single_pulse
Data_Format         = 1D COMPLEX
Dim_Size            = 13107
X_Domain            = Proton
Dim_Title           = Proton
Dim_Units           = [ppm]
Dimensions          = X
Spectrometer        = DELTA2_NMR

Field_Strength      = 9.4073814[T] (400[MHz])
X_Acq_Duration      = 2.18103808[s]
X_Domain            = 1H
X_Freq              = 400.53219825[MHz]
X_Offset            = 5[ppm]
X_Points            = 16384
X_Prescans          = 1
X_Resolution        = 0.45849727[Hz]
X_Sweep             = 7.51201923[kHz]
X_Sweep_Clipped     = 6.00961538[kHz]
Irr_Domain          = Proton
Irr_Freq            = 400.53219825[MHz]
Irr_Offset          = 5[ppm]
Tri_Domain          = Proton
Tri_Freq            = 400.53219825[MHz]
Tri_Offset          = 5[ppm]
Clipped             = FALSE
Scans               = 8
Total_Scans         = 8

Relaxation_Delay    = 5[s]
Recvr_Gain          = 40
Temp_Get            = 18.9[dC]
X_90_Width          = 11.9[us]
X_Acq_Time          = 2.18103808[s]
X_Angle             = 45[deg]
X_Atn               = 1[dB]
X_Pulse             = 5.95[us]
Irr_Mode            = Off
Tri_Mode            = Off
Dante_Presat        = FALSE
Initial_Wait        = 1[s]
Repetition_Time     = 7.18103808[s]
```

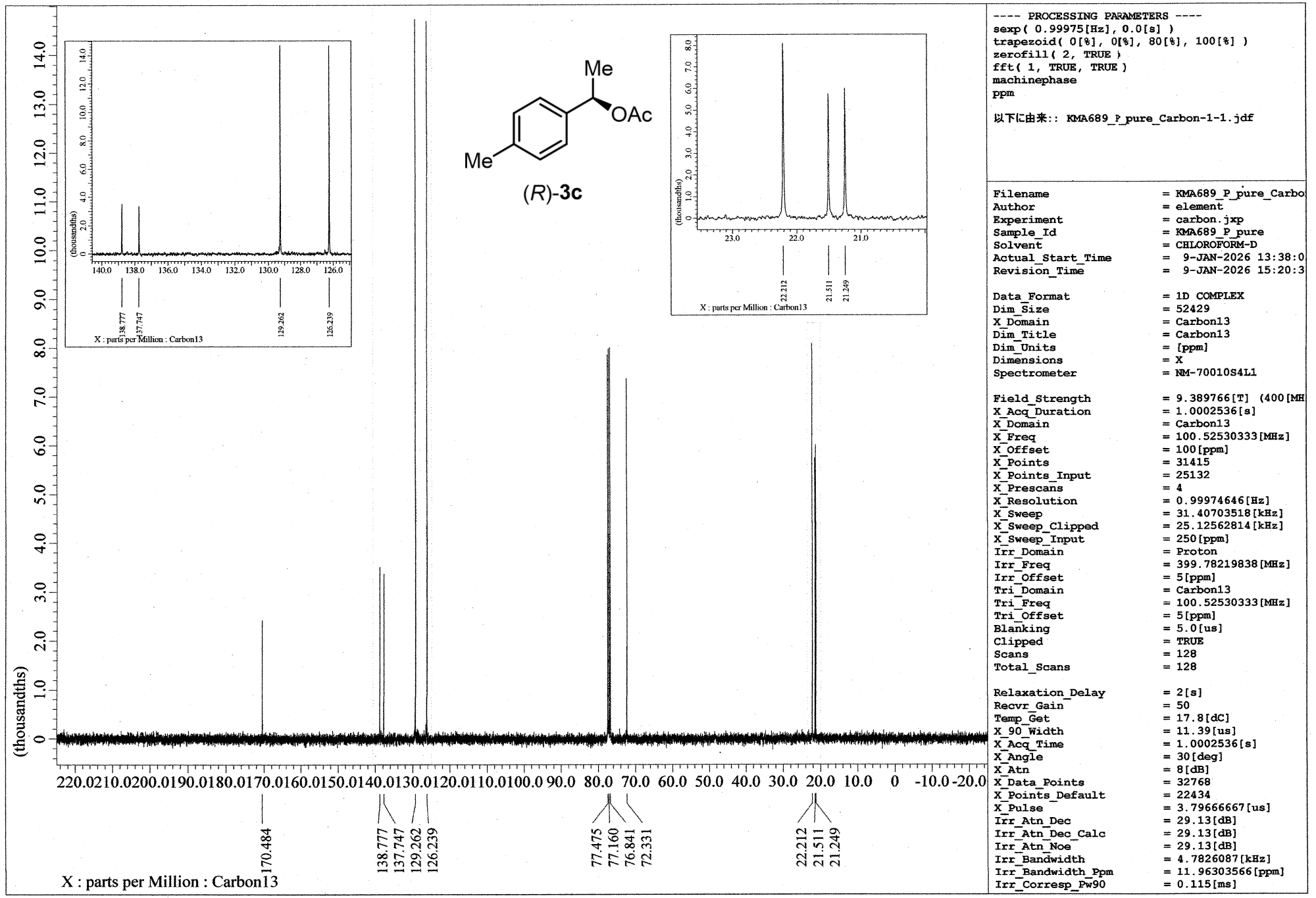

Me
OH
(S)-1b
---- PROCESSING PARAMETERS ----
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA643_SM_pure_Carbon-1-1.jdf
Filename = KMA643_SM_pure_Carb
Author = element
Experiment = carbon_auto.jxp
Sample_Id = KMA643_SM_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 6-JAN-2026 14:35:3
Revision_Time = 7-JAN-2026 09:36:0
Comment = single pulse decoup
Data_Format = 1D COMPLEX
Dim_Size = 26214
X_Domain = Carbon13
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Spectrometer = DELTA2_NMR
Field_Strength = 9.2982153[T] (400[M
X_Acq_Duration = 1.048576[s]
X_Domain = Carbon13
X_Freq = 99.54517646[MHz]
X_Offset = 100[ppm]
X_Points = 32768
X_Prescans = 4
X_Resolution = 0.95367432[Hz]
X_Sweep = 31.25[kHz]
X_Sweep_Clipped = 25[kHz]
Irr_Domain = Proton
Irr_Freq = 395.88430144[MHz]
Irr_Offset = 5[ppm]
Blanking = 5.0[us]
Clipped = FALSE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 17.2[dC]
X_90_Width = 11.5[us]
X_Acq_Time = 1.048576[s]
X_Angle = 30[deg]
X_Atn = 9[dB]
X_Pulse = 3.83333333[us]
Irr_Atn_Dec = 30.172[dB]
Irr_Atn_Dec_Calc = 30.172[dB]
Irr_Atn_Dec_Default_Calc = 30.172[dB]
Irr_Atn_Noe = 30.172[dB]
Irr_Dec_Bandwidth_Hz = 4.7826087[kHz]
Irr_Dec_Bandwidth_Ppm = 12.08082432[ppm]
Irr_Dec_Freq = 395.88430144[MHz]
Irr_Dec_Merit_Factor = 2.2
Irr_Decoupling = TRUE
Irr_Noe = TRUE
Irr_Noise = WALTZ
Irr_Offset_Default = 5[ppm]
(thousandths)
X : parts per Million : Carbon13
143.283
133.387
132.985
128.405
128.041
127.782
126.259
125.905
123.931
123.902
77.486
77.160
76.844
70.607
25.244




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA689_P_pure_1H_Proton-1-1.jdf
```

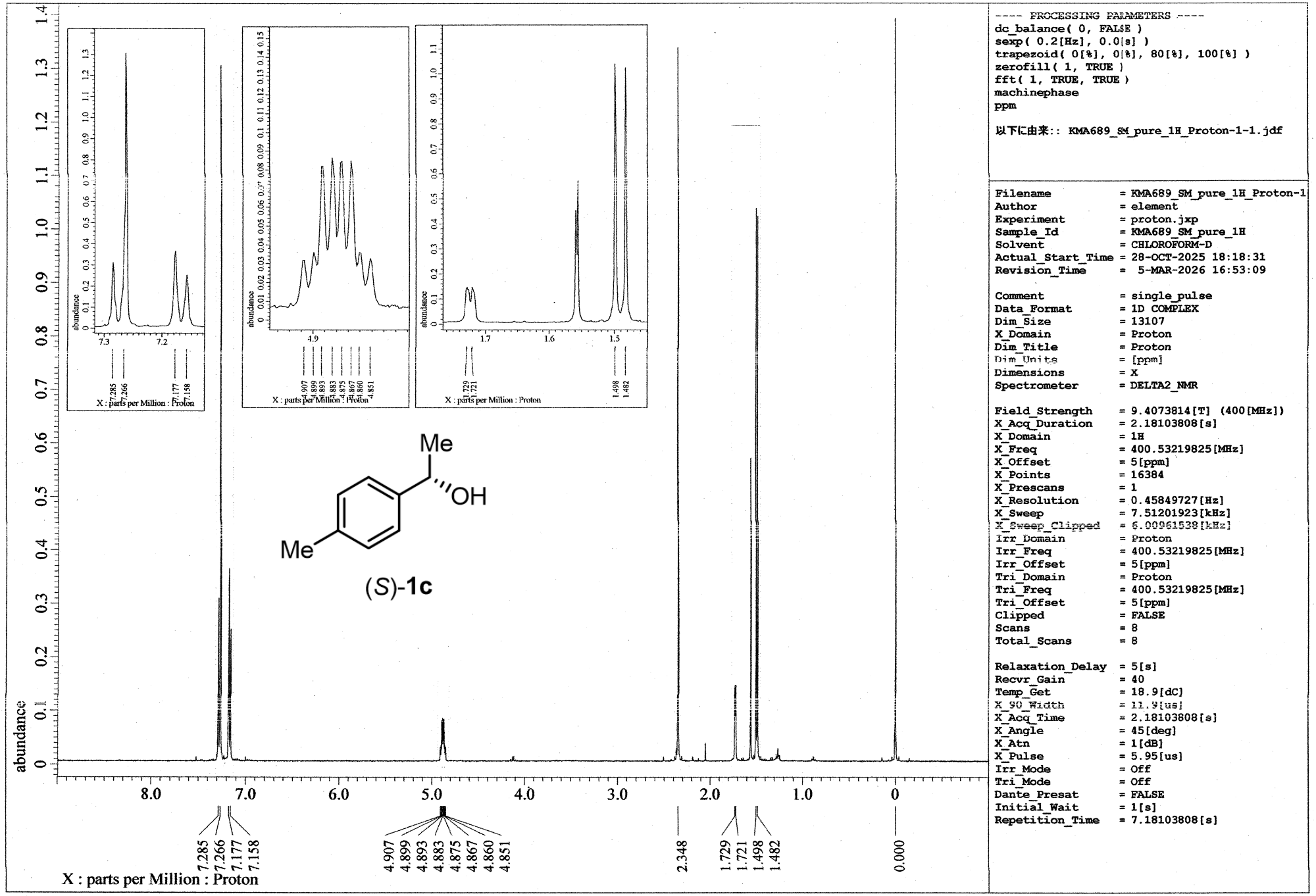
| | |
|---|---|
| Filename | = KMA689_P_pure_1H_Proton-1- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA689_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 28-OCT-2025 18:11:53 |
| Revision_Time | = 7-JAN-2026 11:32:30 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.4073814[T] (400[MHz]) |
| X_Acq_Duration | = 2.18103808[s] |
| X_Domain | = 1H |
| X_Freq | = 400.53219825[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45849727[Hz] |
| X_Sweep | = 7.51201923[kHz] |
| X_Sweep_Clipped | = 6.00961538[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 400.53219825[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 400.53219825[MHz] |
| Tri_Offset | = 5[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 40 |
| Temp_Get | = 18.9[dC] |
| X_90_Width | = 11.9[us] |
| X_Acq_Time | = 2.18103808[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 5.95[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.18103808[s] |




```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA689_P_pure_Carbon-1-1.jdf
```

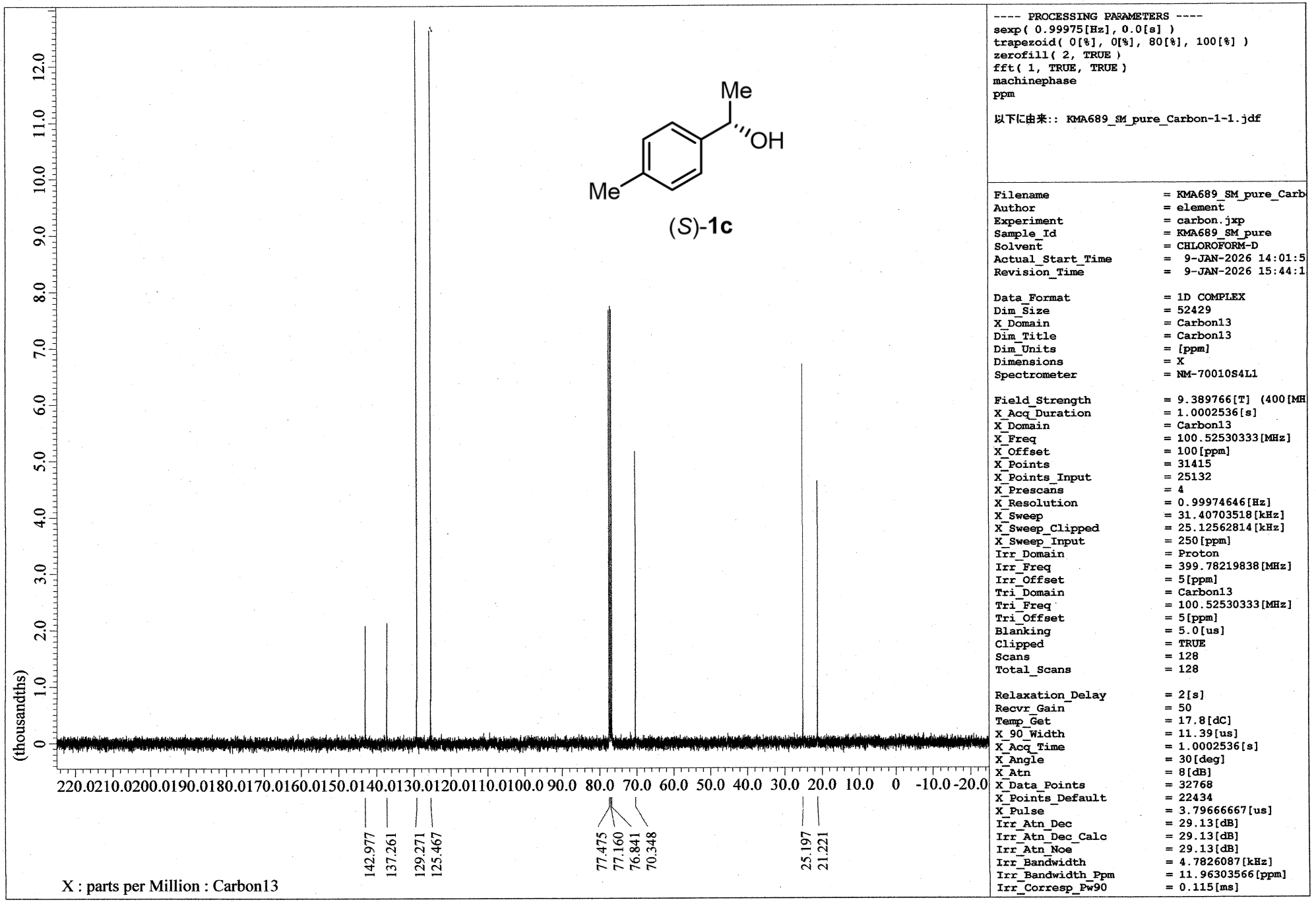
| | |
|---|---|
| Filename | = KMA689_P_pure_Carbo |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA689_P_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 9-JAN-2026 13:38:0 |
| Revision_Time | = 9-JAN-2026 15:20:3 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = TRUE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 17.8[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA689_SM_pure_1H_Proton-1-1.jdf
```

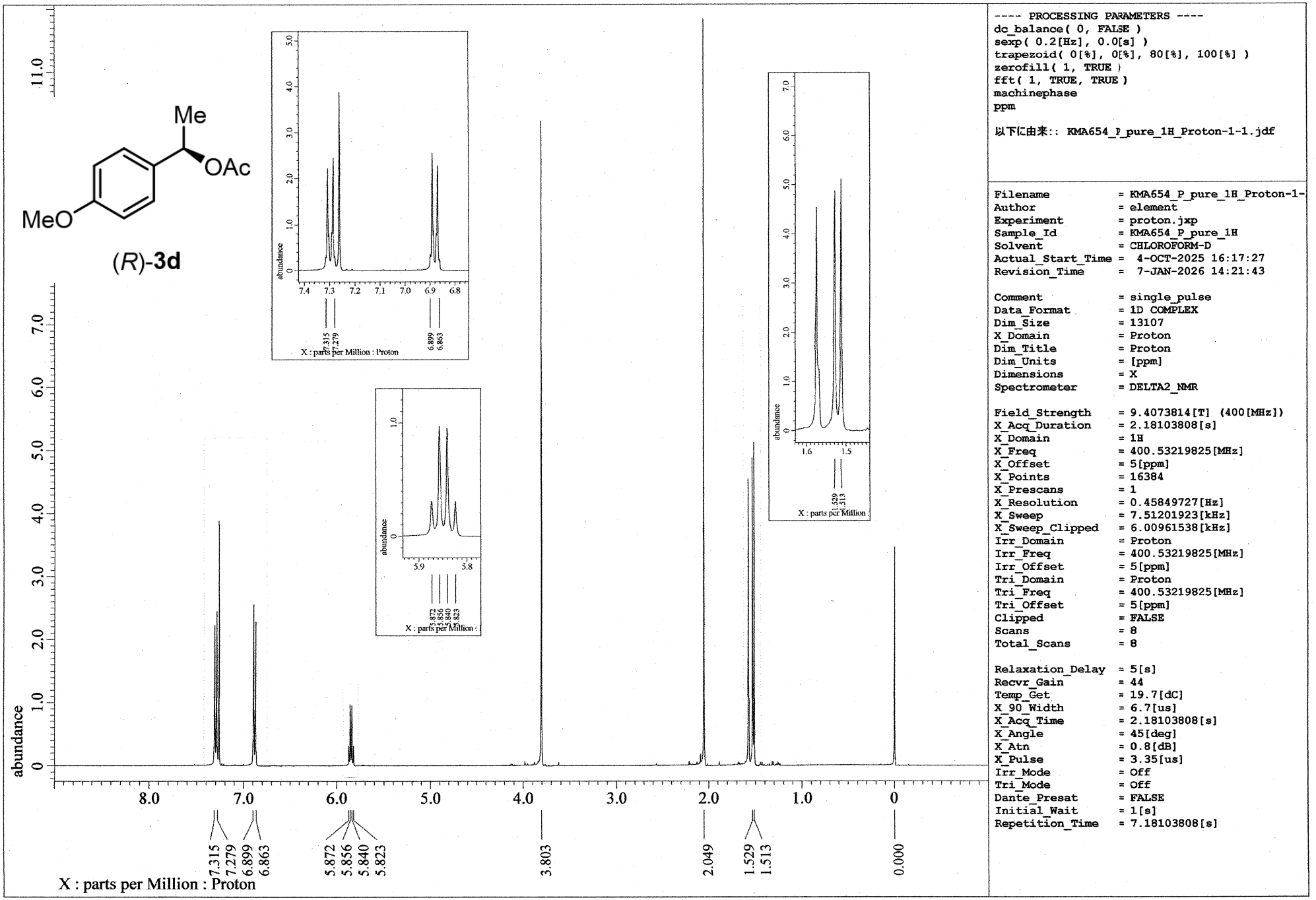
| | |
|---|---|
| Filename | = KMA689_SM_pure_1H_Proton-1 |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA689_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 28-OCT-2025 18:18:31 |
| Revision_Time | = 5-MAR-2026 16:53:09 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.4073814[T] (400[MHz]) |
| X_Acq_Duration | = 2.18103808[s] |
| X_Domain | = 1H |
| X_Freq | = 400.53219825[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45849727[Hz] |
| X_Sweep | = 7.51201923[kHz] |
| X_Sweep_Clipped | = 6.00961538[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 400.53219825[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 400.53219825[MHz] |
| Tri_Offset | = 5[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 40 |
| Temp_Get | = 18.9[dC] |
| X_90_Width | = 11.9[us] |
| X_Acq_Time | = 2.18103808[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 5.95[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.18103808[s] |




```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA689_SM_pure_Carbon-1-1.jdf
```

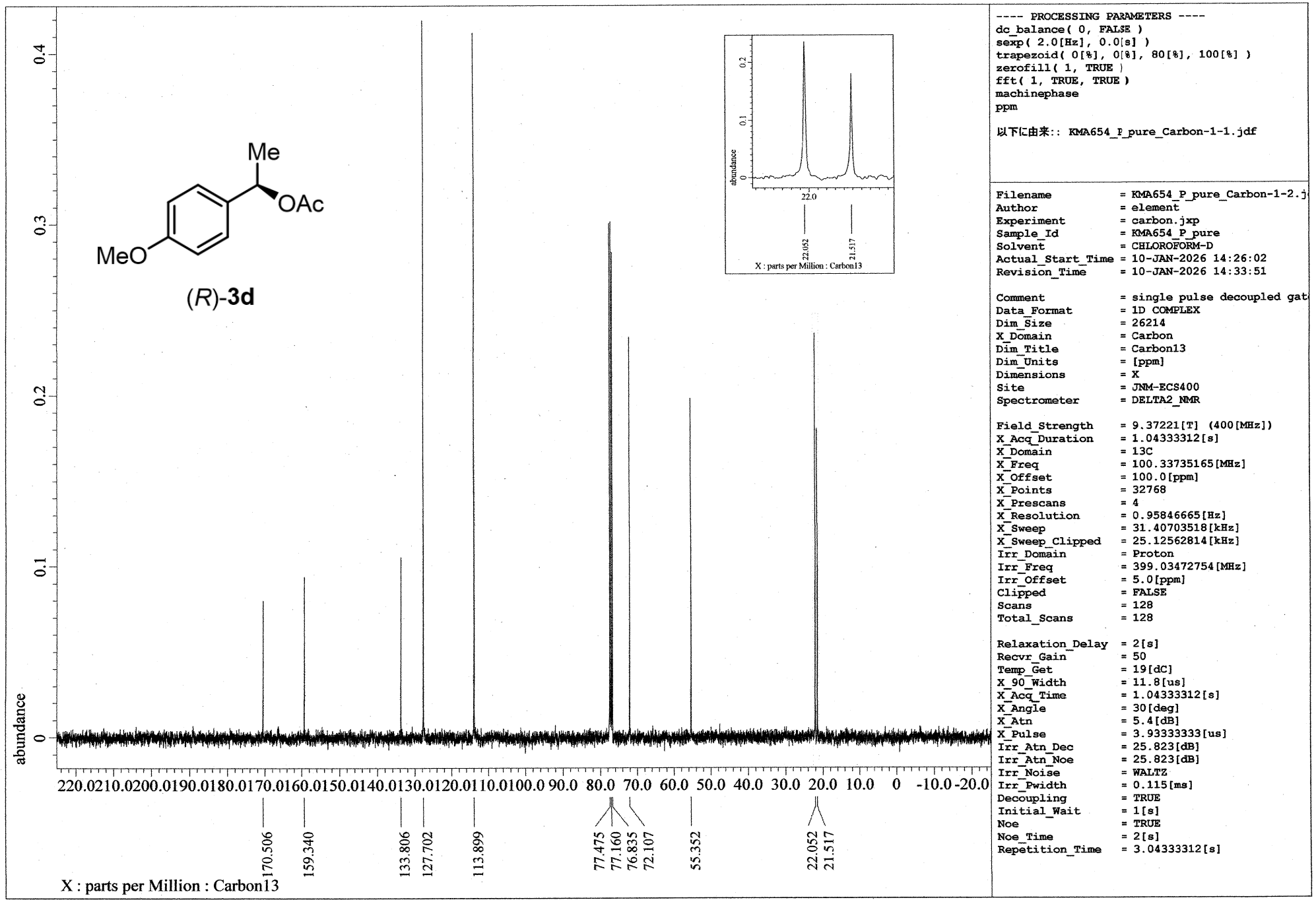
| | |
|---|---|
| Filename | = KMA689_SM_pure_Carb |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA689_SM_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 9-JAN-2026 14:01:5 |
| Revision_Time | = 9-JAN-2026 15:44:1 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = TRUE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 17.8[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |

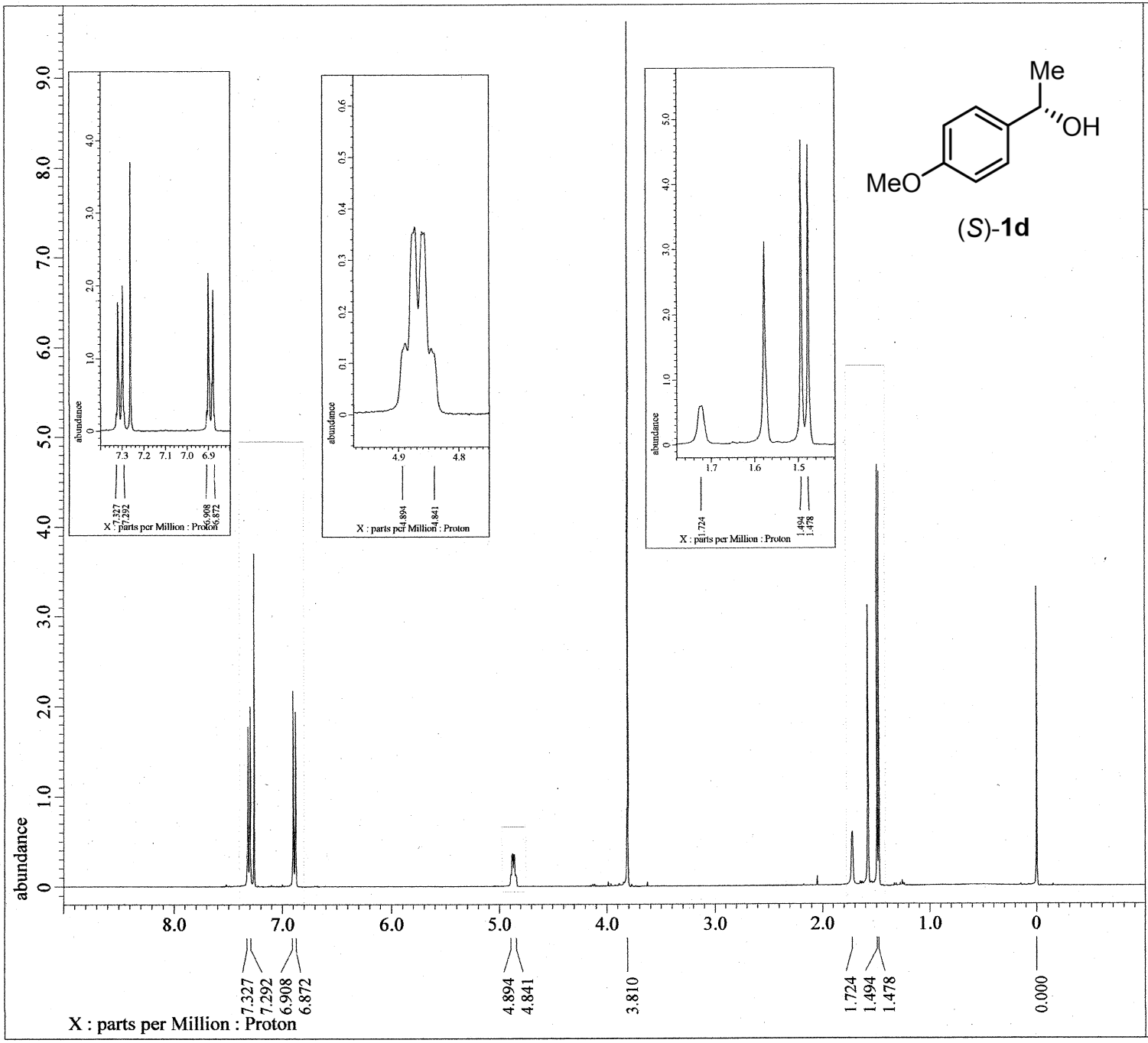



```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA654_P_pure_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA654_P_pure_1H_Proton-1- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA654_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 4-OCT-2025 16:17:27 |
| Revision_Time | = 7-JAN-2026 14:21:43 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.4073814[T] (400[MHz]) |
| X_Acq_Duration | = 2.18103808[s] |
| X_Domain | = 1H |
| X_Freq | = 400.53219825[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45849727[Hz] |
| X_Sweep | = 7.51201923[kHz] |
| X_Sweep_Clipped | = 6.00961538[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 400.53219825[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 400.53219825[MHz] |
| Tri_Offset | = 5[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 44 |
| Temp_Get | = 19.7[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.18103808[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 0.8[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.18103808[s] |


Me
OAc
MeO
(R)-3d
abundance
0
0.1
0.2
0.3
0.4
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
170.506
159.340
133.806
127.702
113.899
77.475
77.160
76.835
72.107
55.352
22.052
21.517
X : parts per Million : Carbon13
abundance
0
0.1
0.2
22.0
22.052
21.517
X : parts per Million : Carbon13
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA654_P_pure_Carbon-1-1.jdf
Filename = KMA654_P_pure_Carbon-1-2.j
Author = element
Experiment = carbon.jxp
Sample_Id = KMA654_P_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 10-JAN-2026 14:26:02
Revision_Time = 10-JAN-2026 14:33:51
Comment = single pulse decoupled gat
Data_Format = 1D COMPLEX
Dim_Size = 26214
X_Domain = Carbon
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Site = JNM-ECS400
Spectrometer = DELTA2_NMR
Field_Strength = 9.37221[T] (400[MHz])
X_Acq_Duration = 1.04333312[s]
X_Domain = 13C
X_Freq = 100.33735165[MHz]
X_Offset = 100.0[ppm]
X_Points = 32768
X_Prescans = 4
X_Resolution = 0.95846665[Hz]
X_Sweep = 31.40703518[kHz]
X_Sweep_Clipped = 25.12562814[kHz]
Irr_Domain = Proton
Irr_Freq = 399.03472754[MHz]
Irr_Offset = 5.0[ppm]
Clipped = FALSE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 19[dC]
X_90_Width = 11.8[us]
X_Acq_Time = 1.04333312[s]
X_Angle = 30[deg]
X_Atn = 5.4[dB]
X_Pulse = 3.93333333[us]
Irr_Atn_Dec = 25.823[dB]
Irr_Atn_Noe = 25.823[dB]
Irr_Noise = WALTZ
Irr_Pwidth = 0.115[ms]
Decoupling = TRUE
Initial_Wait = 1[s]
Noe = TRUE
Noe_Time = 2[s]
Repetition_Time = 3.04333312[s]







(*S*)-**1d**

```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

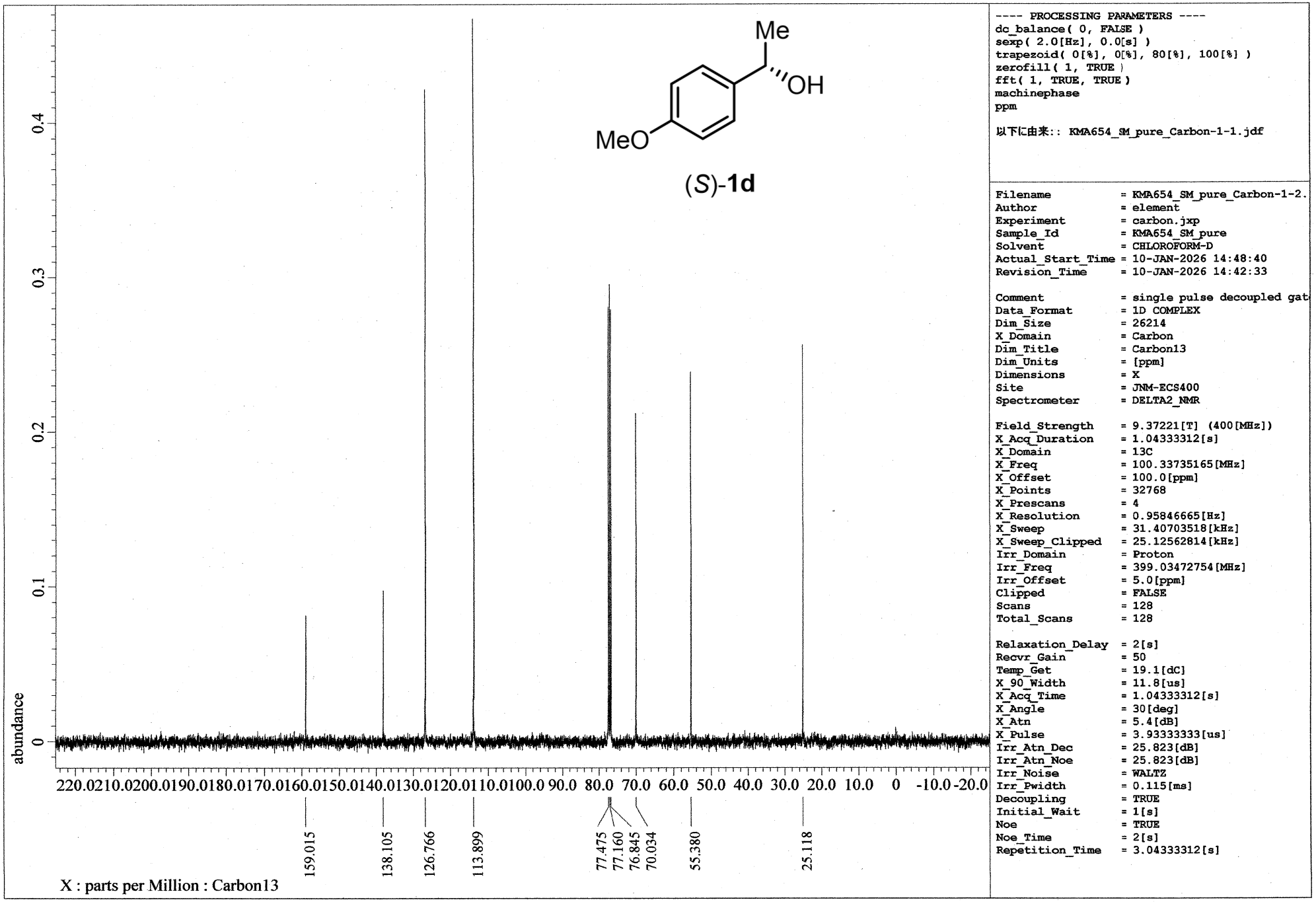
以下に由来:: KMA654_SM_pure_1H_Proton-1-1.jdf
```

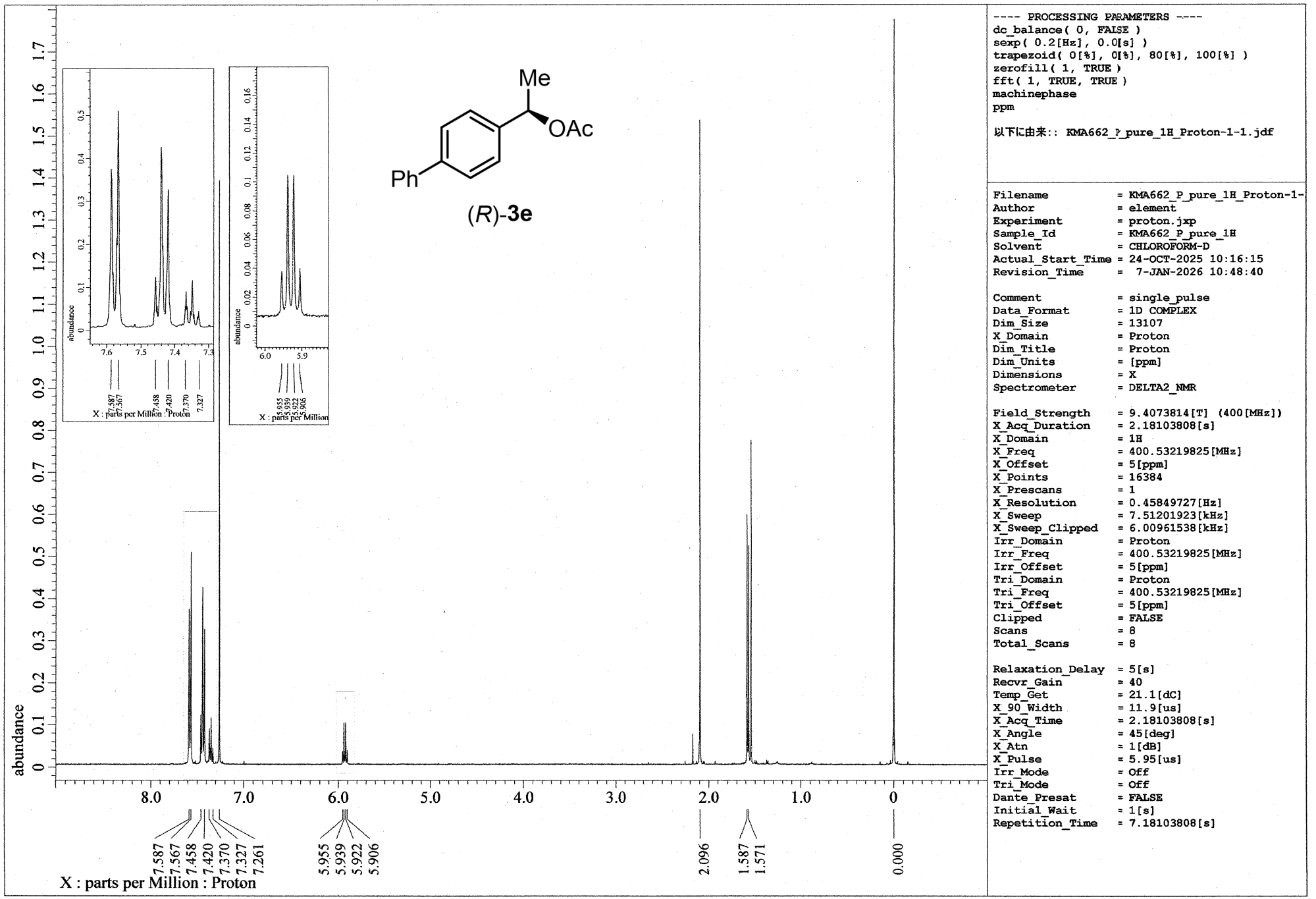
```
Filename            = KMA654_SM_pure_1H_Proton-1
Author              = element
Experiment          = proton.jxp
Sample_Id           = KMA654_SM_pure_1H
Solvent             = CHLOROFORM-D
Actual_Start_Time   =  4-OCT-2025 16:24:42
Revision_Time       =  7-JAN-2026 14:57:37

Comment             = single_pulse
Data_Format         = 1D COMPLEX
Dim_Size            = 13107
X_Domain            = Proton
Dim_Title           = Proton
Dim_Units           = [ppm]
Dimensions          = X
Spectrometer        = DELTA2_NMR

Field_Strength      = 9.4073814[T] (400[MHz])
X_Acq_Duration      = 2.18103808[s]
X_Domain            = 1H
X_Freq              = 400.53219825[MHz]
X_Offset            = 5[ppm]
X_Points            = 16384
X_Prescans          = 1
X_Resolution        = 0.45849727[Hz]
X_Sweep             = 7.51201923[kHz]
X_Sweep_Clipped     = 6.00961538[kHz]
Irr_Domain          = Proton
Irr_Freq            = 400.53219825[MHz]
Irr_Offset          = 5[ppm]
Tri_Domain          = Proton
Tri_Freq            = 400.53219825[MHz]
Tri_Offset          = 5[ppm]
Clipped             = FALSE
Scans               = 8
Total_Scans         = 8

Relaxation_Delay    = 5[s]
Recvr_Gain          = 44
Temp_Get            = 19.4[dC]
X_90_Width          = 6.7[us]
X_Acq_Time          = 2.18103808[s]
X_Angle             = 45[deg]
X_Atn               = 0.8[dB]
X_Pulse             = 3.35[us]
Irr_Mode            = Off
Tri_Mode            = Off
Dante_Presat        = FALSE
Initial_Wait        = 1[s]
Repetition_Time     = 7.18103808[s]
```

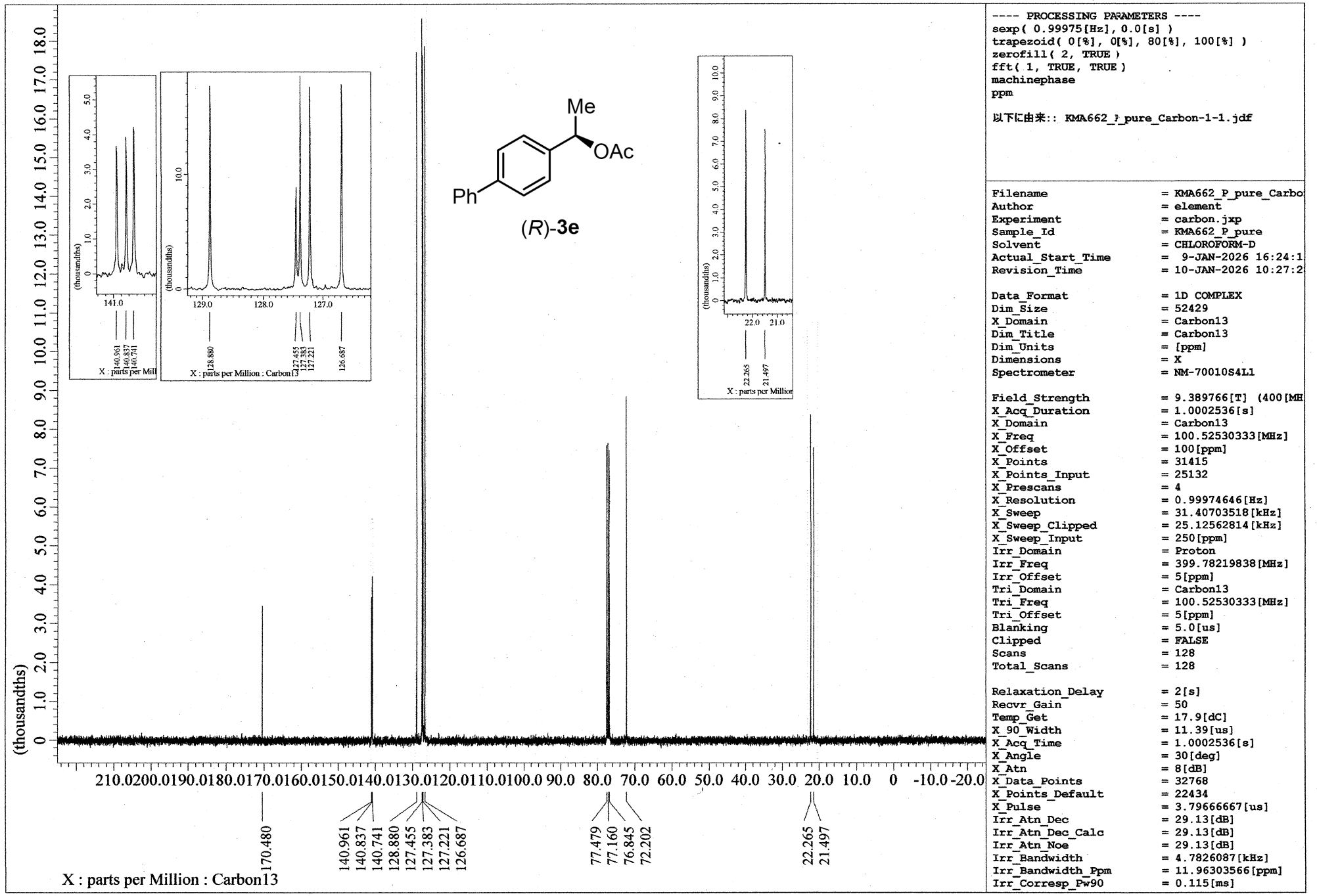

Me
OH
MeO
(S)-1d
abundance
0
0.1
0.2
0.3
0.4
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
159.015
138.105
126.766
113.899
77.475
77.160
76.845
70.034
55.380
25.118
X : parts per Million : Carbon13
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA654_SM_pure_Carbon-1-1.jdf
Filename = KMA654_SM_pure_Carbon-1-2.
Author = element
Experiment = carbon.jxp
Sample_Id = KMA654_SM_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 10-JAN-2026 14:48:40
Revision_Time = 10-JAN-2026 14:42:33
Comment = single pulse decoupled gat
Data_Format = 1D COMPLEX
Dim_Size = 26214
X_Domain = Carbon
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Site = JNM-ECS400
Spectrometer = DELTA2_NMR
Field_Strength = 9.37221[T] (400[MHz])
X_Acq_Duration = 1.04333312[s]
X_Domain = 13C
X_Freq = 100.33735165[MHz]
X_Offset = 100.0[ppm]
X_Points = 32768
X_Prescans = 4
X_Resolution = 0.95846665[Hz]
X_Sweep = 31.40703518[kHz]
X_Sweep_Clipped = 25.12562814[kHz]
Irr_Domain = Proton
Irr_Freq = 399.03472754[MHz]
Irr_Offset = 5.0[ppm]
Clipped = FALSE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 19.1[dC]
X_90_Width = 11.8[us]
X_Acq_Time = 1.04333312[s]
X_Angle = 30[deg]
X_Atn = 5.4[dB]
X_Pulse = 3.93333333[us]
Irr_Atn_Dec = 25.823[dB]
Irr_Atn_Noe = 25.823[dB]
Irr_Noise = WALTZ
Irr_Pwidth = 0.115[ms]
Decoupling = TRUE
Initial_Wait = 1[s]
Noe = TRUE
Noe_Time = 2[s]
Repetition_Time = 3.04333312[s]

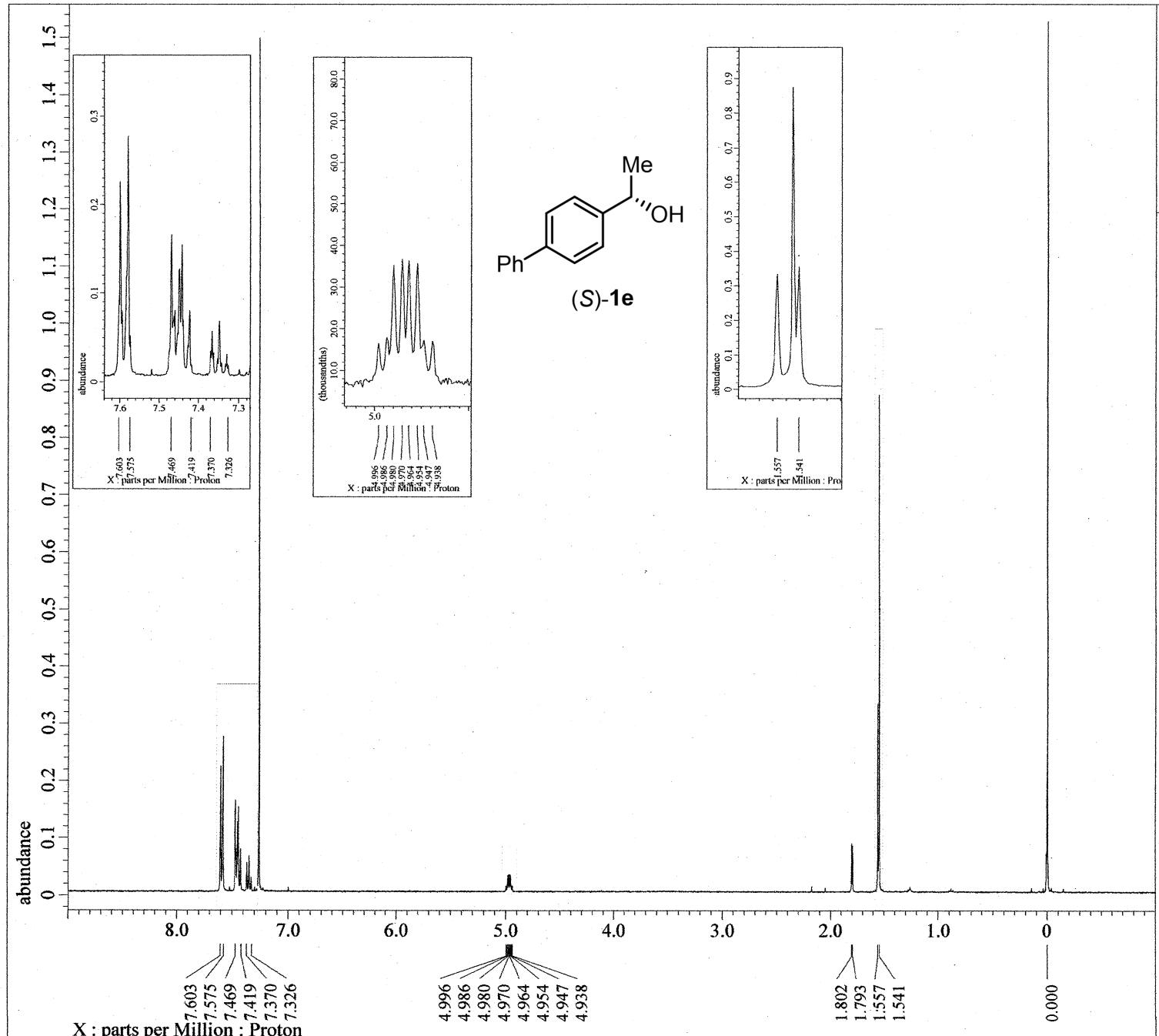



```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA662_P_pure_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA662_P_pure_1H_Proton-1- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA662_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 24-OCT-2025 10:16:15 |
| Revision_Time | = 7-JAN-2026 10:48:40 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.4073814[T] (400[MHz]) |
| X_Acq_Duration | = 2.18103808[s] |
| X_Domain | = 1H |
| X_Freq | = 400.53219825[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45849727[Hz] |
| X_Sweep | = 7.51201923[kHz] |
| X_Sweep_Clipped | = 6.00961538[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 400.53219825[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 400.53219825[MHz] |
| Tri_Offset | = 5[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 40 |
| Temp_Get | = 21.1[dC] |
| X_90_Width | = 11.9[us] |
| X_Acq_Time | = 2.18103808[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 5.95[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.18103808[s] |

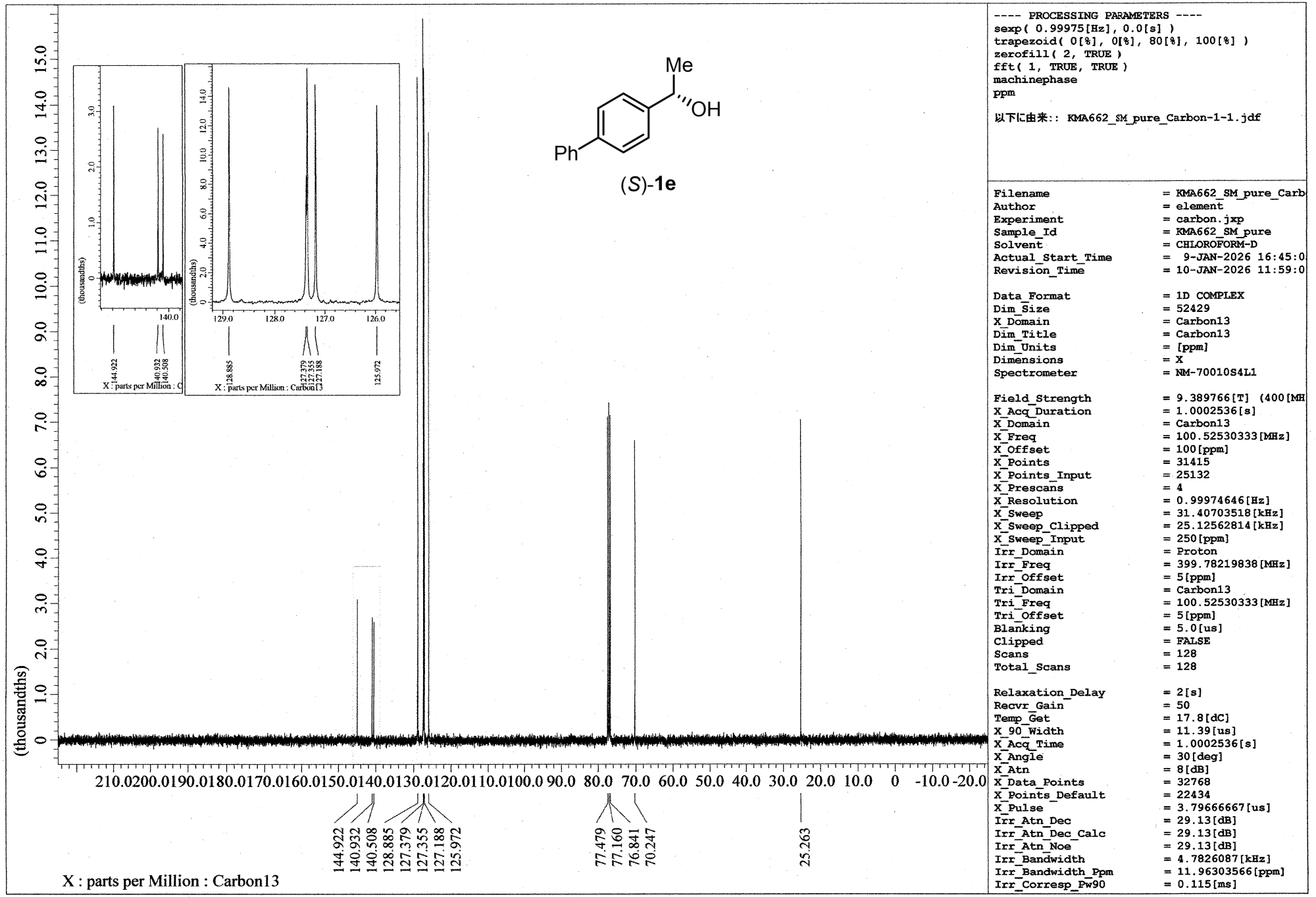

Me
OAc
Ph
(R)-3e
X : parts per Million : Carbon13
170.480
140.961
140.837
140.741
128.880
127.455
127.383
127.221
126.687
77.479
77.160
76.845
72.202
22.265
21.497
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA662_P_pure_Carbon-1-1.jdf
Filename = KMA662_P_pure_Carbo
Author = element
Experiment = carbon.jxp
Sample_Id = KMA662_P_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 9-JAN-2026 16:24:1
Revision_Time = 10-JAN-2026 10:27:2
Data_Format = 1D COMPLEX
Dim_Size = 52429
X_Domain = Carbon13
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Spectrometer = NM-70010S4L1
Field_Strength = 9.389766[T] (400[MH
X_Acq_Duration = 1.0002536[s]
X_Domain = Carbon13
X_Freq = 100.52530333[MHz]
X_Offset = 100[ppm]
X_Points = 31415
X_Points_Input = 25132
X_Prescans = 4
X_Resolution = 0.99974646[Hz]
X_Sweep = 31.40703518[kHz]
X_Sweep_Clipped = 25.12562814[kHz]
X_Sweep_Input = 250[ppm]
Irr_Domain = Proton
Irr_Freq = 399.78219838[MHz]
Irr_Offset = 5[ppm]
Tri_Domain = Carbon13
Tri_Freq = 100.52530333[MHz]
Tri_Offset = 5[ppm]
Blanking = 5.0[us]
Clipped = FALSE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 17.9[dC]
X_90_Width = 11.39[us]
X_Acq_Time = 1.0002536[s]
X_Angle = 30[deg]
X_Atn = 8[dB]
X_Data_Points = 32768
X_Points_Default = 22434
X_Pulse = 3.79666667[us]
Irr_Atn_Dec = 29.13[dB]
Irr_Atn_Dec_Calc = 29.13[dB]
Irr_Atn_Noe = 29.13[dB]
Irr_Bandwidth = 4.7826087[kHz]
Irr_Bandwidth_Ppm = 11.96303566[ppm]
Irr_Corresp_Pw90 = 0.115[ms]

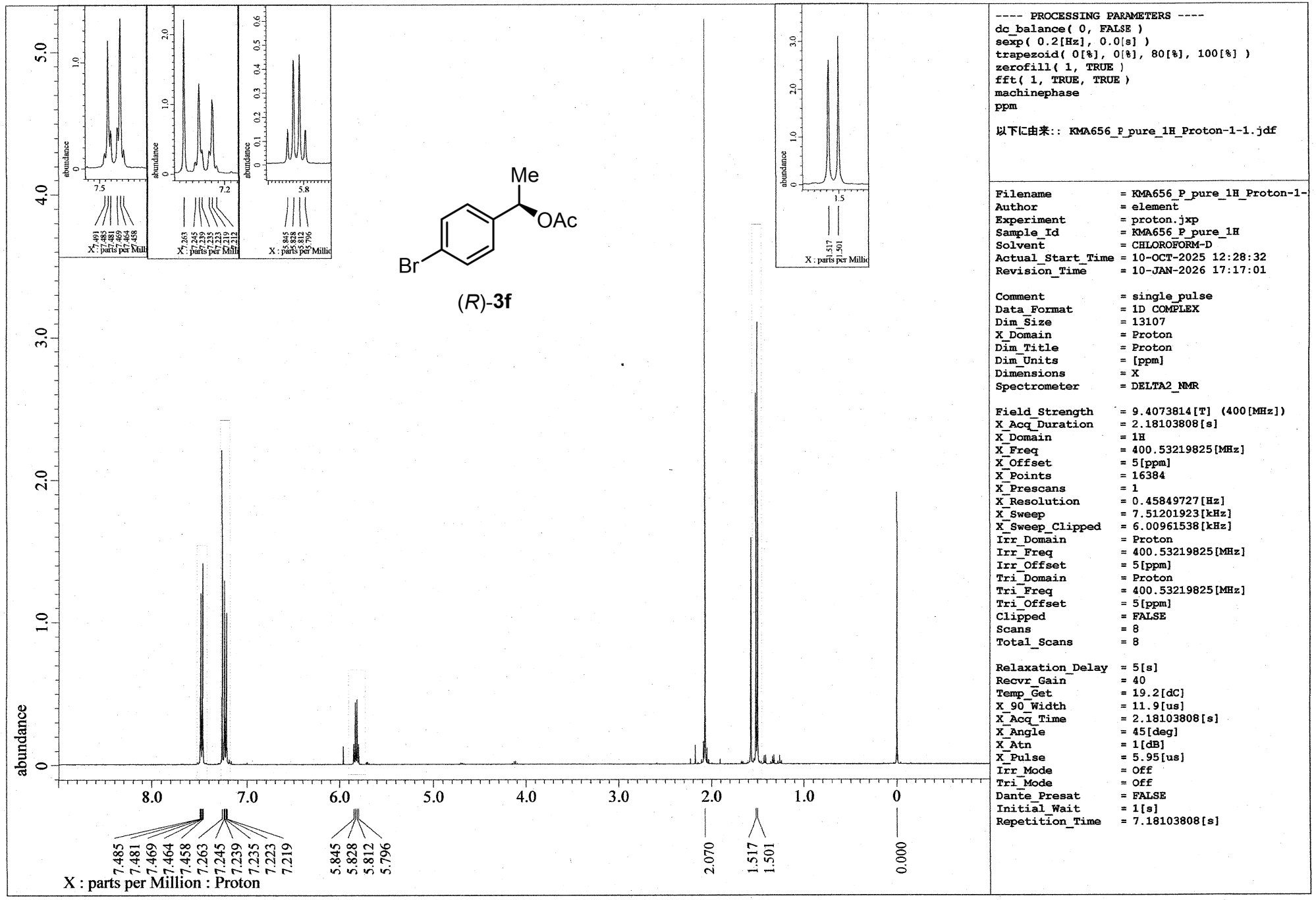



```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA662_SM_pure_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA662_SM_pure_1H_Proton-1 |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA662_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 24-OCT-2025 10:23:12 |
| Revision_Time | = 7-JAN-2026 11:06:53 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.4073814[T] (400[MHz]) |
| X_Acq_Duration | = 2.18103808[s] |
| X_Domain | = 1H |
| X_Freq | = 400.53219825[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45849727[Hz] |
| X_Sweep | = 7.51201923[kHz] |
| X_Sweep_Clipped | = 6.00961538[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 400.53219825[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 400.53219825[MHz] |
| Tri_Offset | = 5[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 40 |
| Temp_Get | = 20.4[dC] |
| X_90_Width | = 11.9[us] |
| X_Acq_Time | = 2.18103808[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 5.95[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.18103808[s] |

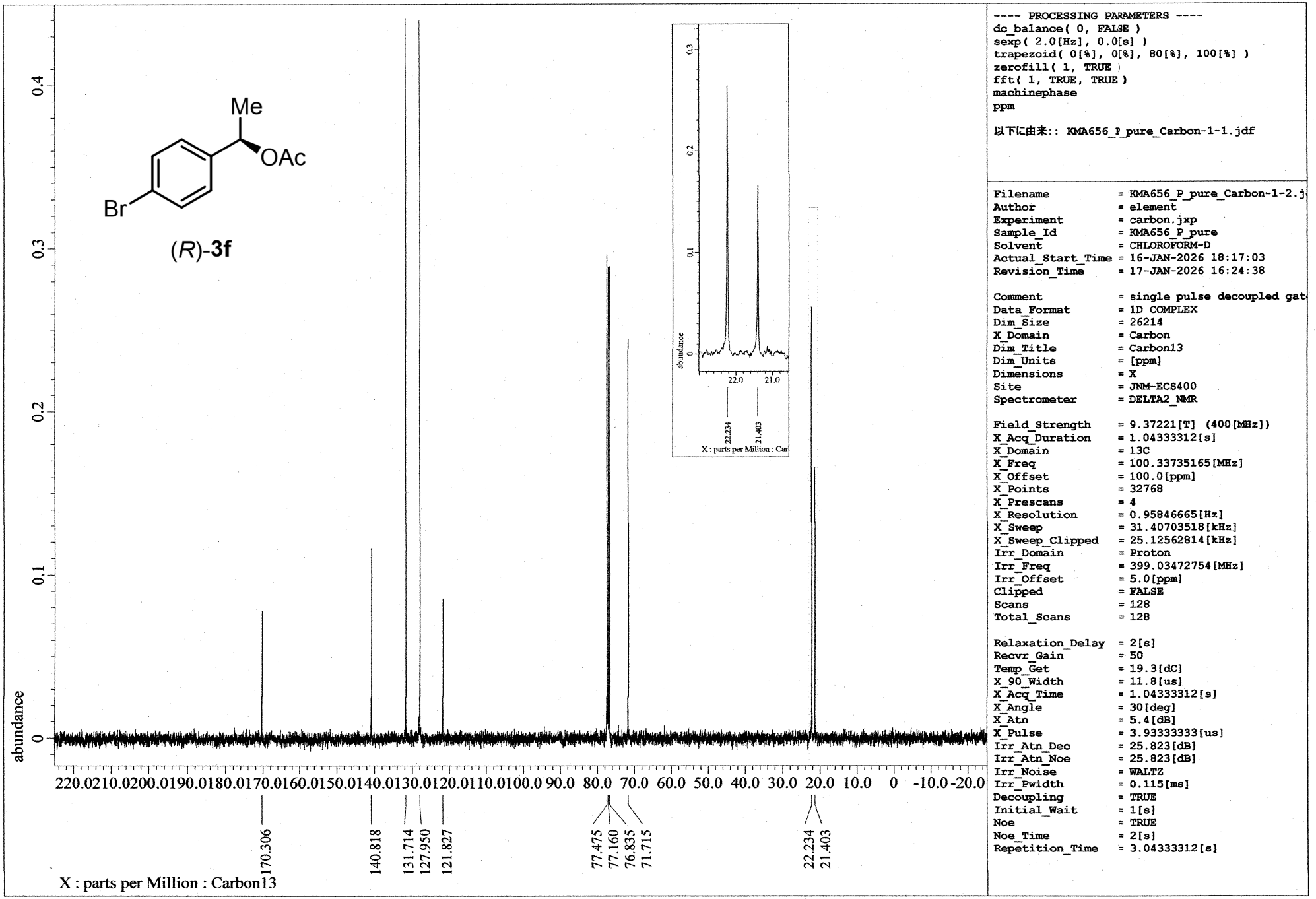

Me
OH
Ph
(S)-1e
(thousandths)
X : parts per Million : Carbon13
144.922
140.932
140.508
128.885
127.379
127.355
127.188
125.972
77.479
77.160
76.841
70.247
25.263
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA662_SM_pure_Carbon-1-1.jdf
Filename = KMA662_SM_pure_Carb
Author = element
Experiment = carbon.jxp
Sample_Id = KMA662_SM_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 9-JAN-2026 16:45:0
Revision_Time = 10-JAN-2026 11:59:0
Data_Format = 1D COMPLEX
Dim_Size = 52429
X_Domain = Carbon13
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Spectrometer = NM-70010S4L1
Field_Strength = 9.389766[T] (400[MH
X_Acq_Duration = 1.0002536[s]
X_Domain = Carbon13
X_Freq = 100.52530333[MHz]
X_Offset = 100[ppm]
X_Points = 31415
X_Points_Input = 25132
X_Prescans = 4
X_Resolution = 0.99974646[Hz]
X_Sweep = 31.40703518[kHz]
X_Sweep_Clipped = 25.12562814[kHz]
X_Sweep_Input = 250[ppm]
Irr_Domain = Proton
Irr_Freq = 399.78219838[MHz]
Irr_Offset = 5[ppm]
Tri_Domain = Carbon13
Tri_Freq = 100.52530333[MHz]
Tri_Offset = 5[ppm]
Blanking = 5.0[us]
Clipped = FALSE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 17.8[dC]
X_90_Width = 11.39[us]
X_Acq_Time = 1.0002536[s]
X_Angle = 30[deg]
X_Atn = 8[dB]
X_Data_Points = 32768
X_Points_Default = 22434
X_Pulse = 3.79666667[us]
Irr_Atn_Dec = 29.13[dB]
Irr_Atn_Dec_Calc = 29.13[dB]
Irr_Atn_Noe = 29.13[dB]
Irr_Bandwidth = 4.7826087[kHz]
Irr_Bandwidth_Ppm = 11.96303566[ppm]
Irr_Corresp_Pw90 = 0.115[ms]




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA656_P_pure_1H_Proton-1-1.jdf
```

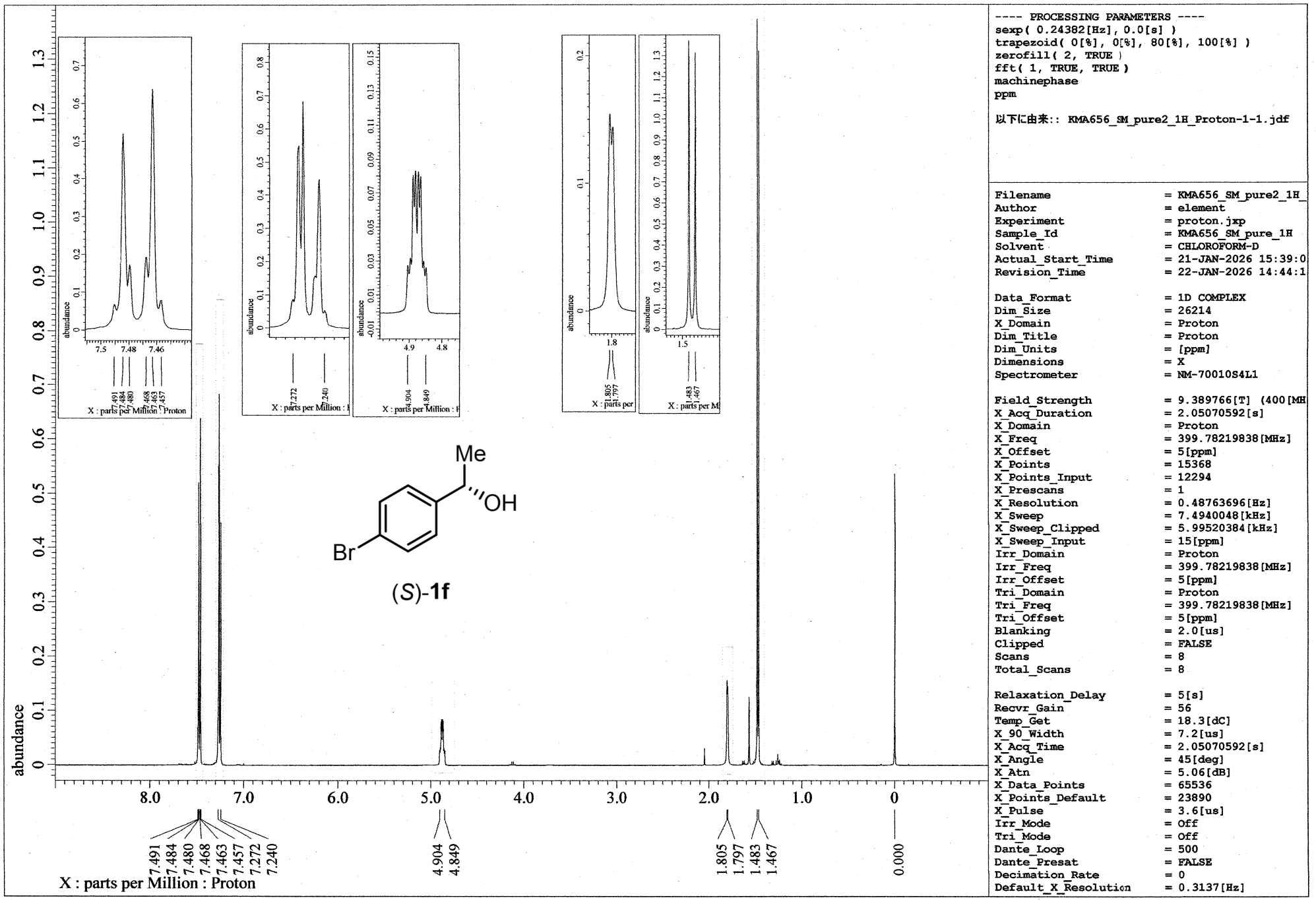
| | |
|---|---|
| Filename | = KMA656_P_pure_1H_Proton-1- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA656_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 10-OCT-2025 12:28:32 |
| Revision_Time | = 10-JAN-2026 17:17:01 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.4073814[T] (400[MHz]) |
| X_Acq_Duration | = 2.18103808[s] |
| X_Domain | = 1H |
| X_Freq | = 400.53219825[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45849727[Hz] |
| X_Sweep | = 7.51201923[kHz] |
| X_Sweep_Clipped | = 6.00961538[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 400.53219825[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 400.53219825[MHz] |
| Tri_Offset | = 5[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 40 |
| Temp_Get | = 19.2[dC] |
| X_90_Width | = 11.9[us] |
| X_Acq_Time | = 2.18103808[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 5.95[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.18103808[s] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA656_P_pure_Carbon-1-1.jdf
```

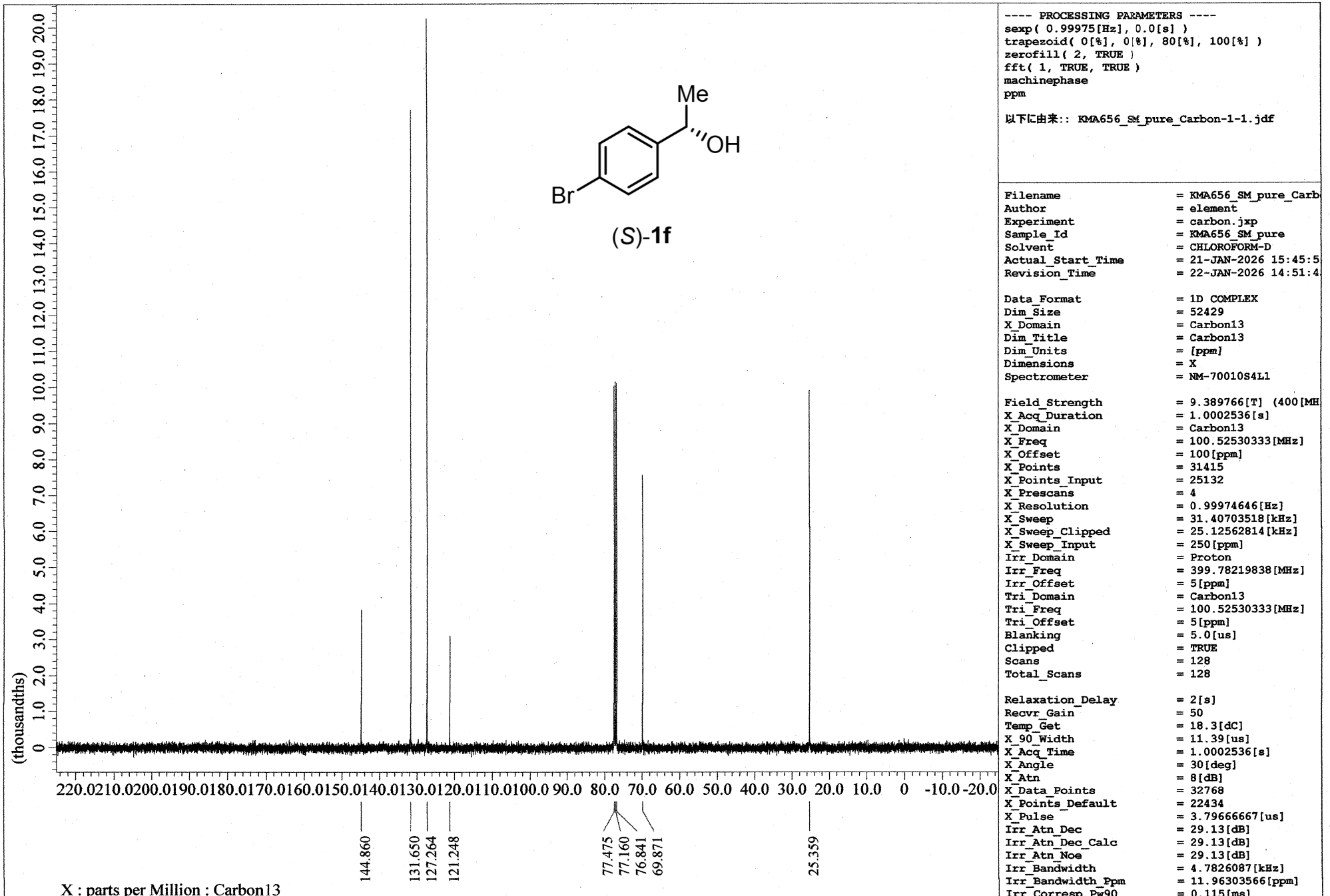
| | |
|---|---|
| Filename | = KMA656_P_pure_Carbon-1-2.j |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA656_P_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 16-JAN-2026 18:17:03 |
| Revision_Time | = 17-JAN-2026 16:24:38 |
| Comment | = single pulse decoupled gat |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 26214 |
| X_Domain | = Carbon |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 1.04333312[s] |
| X_Domain | = 13C |
| X_Freq | = 100.33735165[MHz] |
| X_Offset | = 100.0[ppm] |
| X_Points | = 32768 |
| X_Prescans | = 4 |
| X_Resolution | = 0.95846665[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 19.3[dC] |
| X_90_Width | = 11.8[us] |
| X_Acq_Time | = 1.04333312[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 5.4[dB] |
| X_Pulse | = 3.93333333[us] |
| Irr_Atn_Dec | = 25.823[dB] |
| Irr_Atn_Noe | = 25.823[dB] |
| Irr_Noise | = WALTZ |
| Irr_Pwidth | = 0.115[ms] |
| Decoupling | = TRUE |
| Initial_Wait | = 1[s] |
| Noe | = TRUE |
| Noe_Time | = 2[s] |
| Repetition_Time | = 3.04333312[s] |




```
---- PROCESSING PARAMETERS ----
sexp( 0.24382[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA656_SM_pure2_1H_Proton-1-1.jdf
```

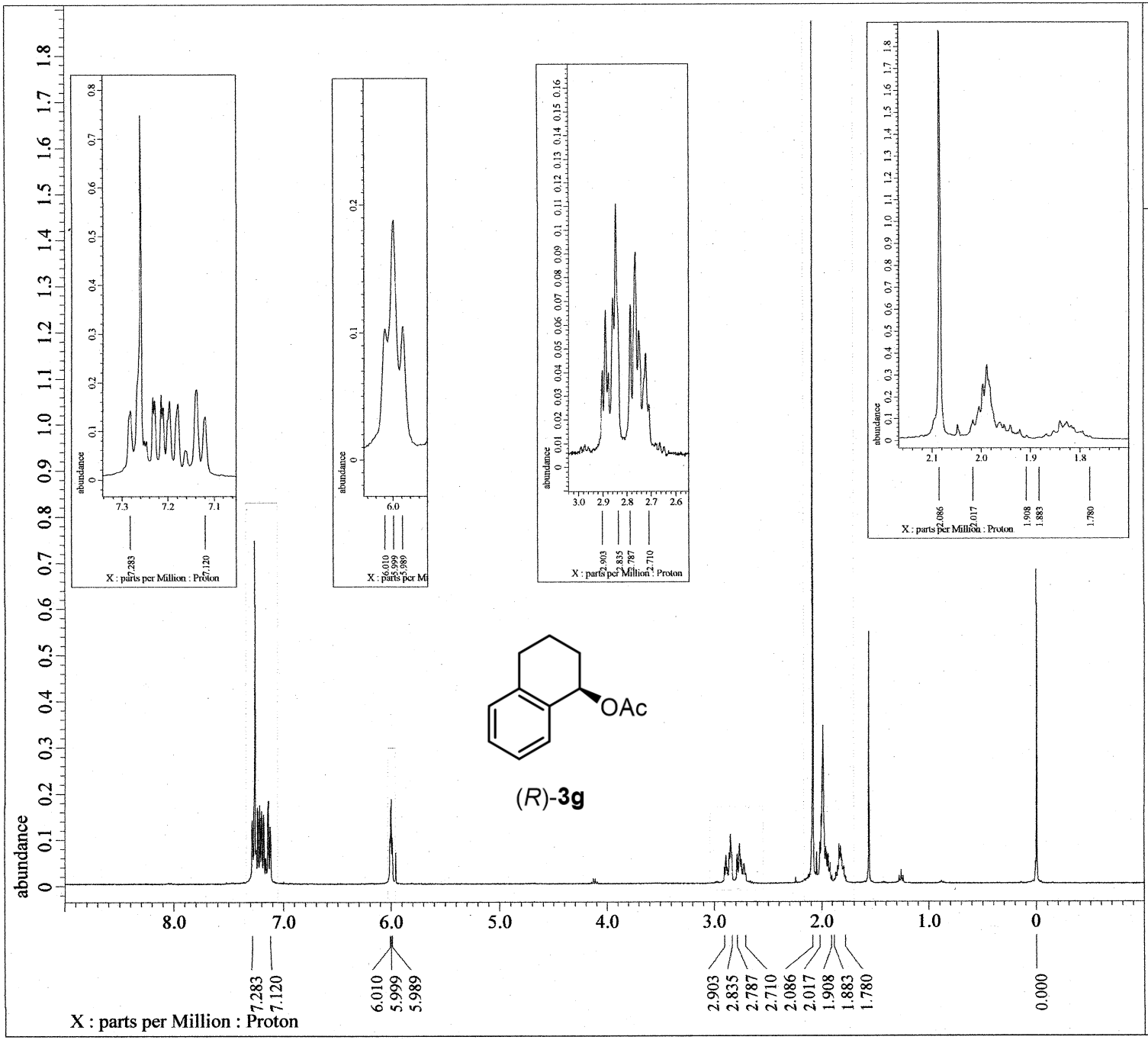
| | |
|---|---|
| Filename | = KMA656_SM_pure2_1H_ |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA656_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 21-JAN-2026 15:39:0 |
| Revision_Time | = 22-JAN-2026 14:44:1 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 26214 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 2.05070592[s] |
| X_Domain | = Proton |
| X_Freq | = 399.78219838[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 15368 |
| X_Points_Input | = 12294 |
| X_Prescans | = 1 |
| X_Resolution | = 0.48763696[Hz] |
| X_Sweep | = 7.4940048[kHz] |
| X_Sweep_Clipped | = 5.99520384[kHz] |
| X_Sweep_Input | = 15[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.78219838[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 2.0[us] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 56 |
| Temp_Get | = 18.3[dC] |
| X_90_Width | = 7.2[us] |
| X_Acq_Time | = 2.05070592[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 5.06[dB] |
| X_Data_Points | = 65536 |
| X_Points_Default | = 23890 |
| X_Pulse | = 3.6[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Loop | = 500 |
| Dante_Presat | = FALSE |
| Decimation_Rate | = 0 |
| Default_X_Resolution | = 0.3137[Hz] |




```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA656_SM_pure_Carbon-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA656_SM_pure_Carb |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA656_SM_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 21-JAN-2026 15:45:5 |
| Revision_Time | = 22-JAN-2026 14:51:4 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = TRUE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 18.3[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

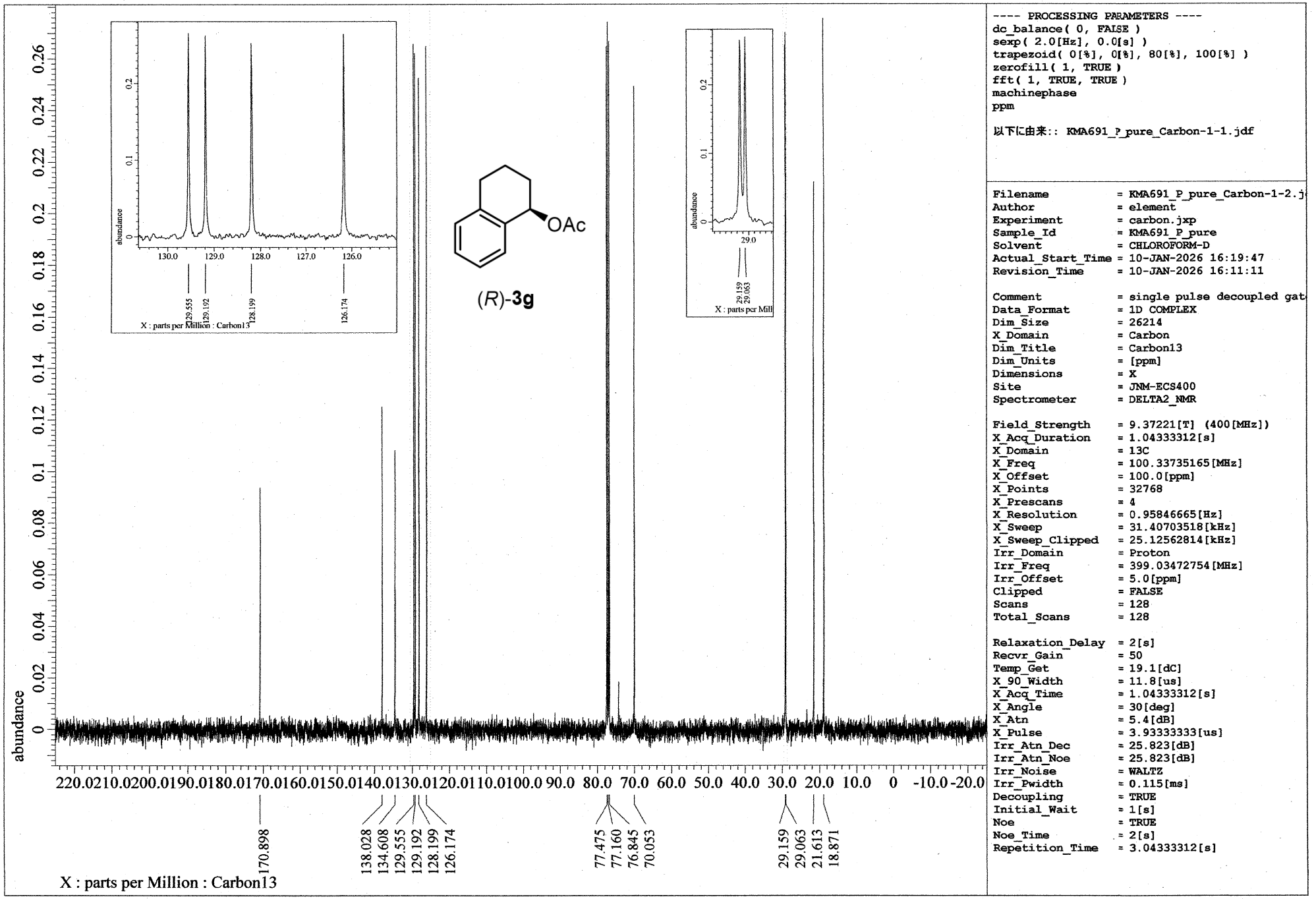
以下に由来:: KMA691_P_pure_1H_Proton-1-1.jdf
```

```
Filename            = KMA691_P_pure_1H_Proton-1-
Author              = element
Experiment          = proton.jxp
Sample_Id           = KMA691_P_pure_1H
Solvent             = CHLOROFORM-D
Actual_Start_Time   =  8-NOV-2025 15:36:55
Revision_Time       =  7-JAN-2026 18:17:05

Comment             = single_pulse
Data_Format         = 1D COMPLEX
Dim_Size            = 13107
X_Domain            = Proton
Dim_Title           = Proton
Dim_Units           = [ppm]
Dimensions          = X
Spectrometer        = DELTA2_NMR

Field_Strength      = 9.4073814[T] (400[MHz])
X_Acq_Duration      = 2.18103808[s]
X_Domain            = 1H
X_Freq              = 400.53219825[MHz]
X_Offset            = 5[ppm]
X_Points            = 16384
X_Prescans          = 1
X_Resolution        = 0.45849727[Hz]
X_Sweep             = 7.51201923[kHz]
X_Sweep_Clipped     = 6.00961538[kHz]
Irr_Domain          = Proton
Irr_Freq            = 400.53219825[MHz]
Irr_Offset          = 5[ppm]
Tri_Domain          = Proton
Tri_Freq            = 400.53219825[MHz]
Tri_Offset          = 5[ppm]
Clipped             = FALSE
Scans               = 8
Total_Scans         = 8

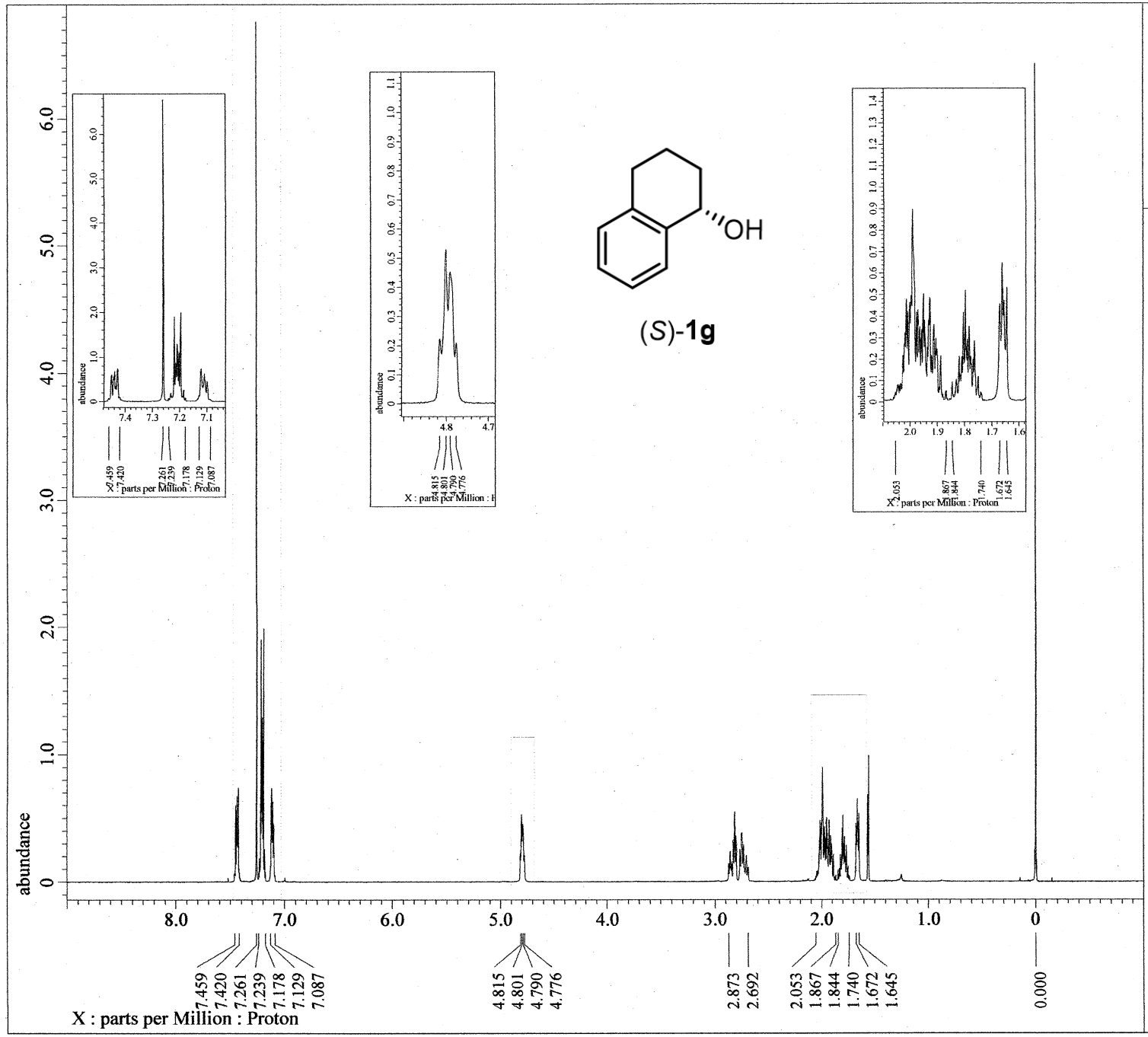
Relaxation_Delay    = 5[s]
Recvr_Gain          = 38
Temp_Get            = 19.1[dC]
X_90_Width          = 11.9[us]
X_Acq_Time          = 2.18103808[s]
X_Angle             = 45[deg]
X_Atn               = 1[dB]
X_Pulse             = 5.95[us]
Irr_Mode            = Off
Tri_Mode            = Off
Dante_Presat        = FALSE
Initial_Wait        = 1[s]
Repetition_Time     = 7.18103808[s]
```




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA691_P_pure_Carbon-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA691_P_pure_Carbon-1-2.j |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA691_P_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 10-JAN-2026 16:19:47 |
| Revision_Time | = 10-JAN-2026 16:11:11 |
| Comment | = single pulse decoupled gat |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 26214 |
| X_Domain | = Carbon |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 1.04333312[s] |
| X_Domain | = 13C |
| X_Freq | = 100.33735165[MHz] |
| X_Offset | = 100.0[ppm] |
| X_Points | = 32768 |
| X_Prescans | = 4 |
| X_Resolution | = 0.95846665[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 19.1[dC] |
| X_90_Width | = 11.8[us] |
| X_Acq_Time | = 1.04333312[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 5.4[dB] |
| X_Pulse | = 3.93333333[us] |
| Irr_Atn_Dec | = 25.823[dB] |
| Irr_Atn_Noe | = 25.823[dB] |
| Irr_Noise | = WALTZ |
| Irr_Pwidth | = 0.115[ms] |
| Decoupling | = TRUE |
| Initial_Wait | = 1[s] |
| Noe | = TRUE |
| Noe_Time | = 2[s] |
| Repetition_Time | = 3.04333312[s] |





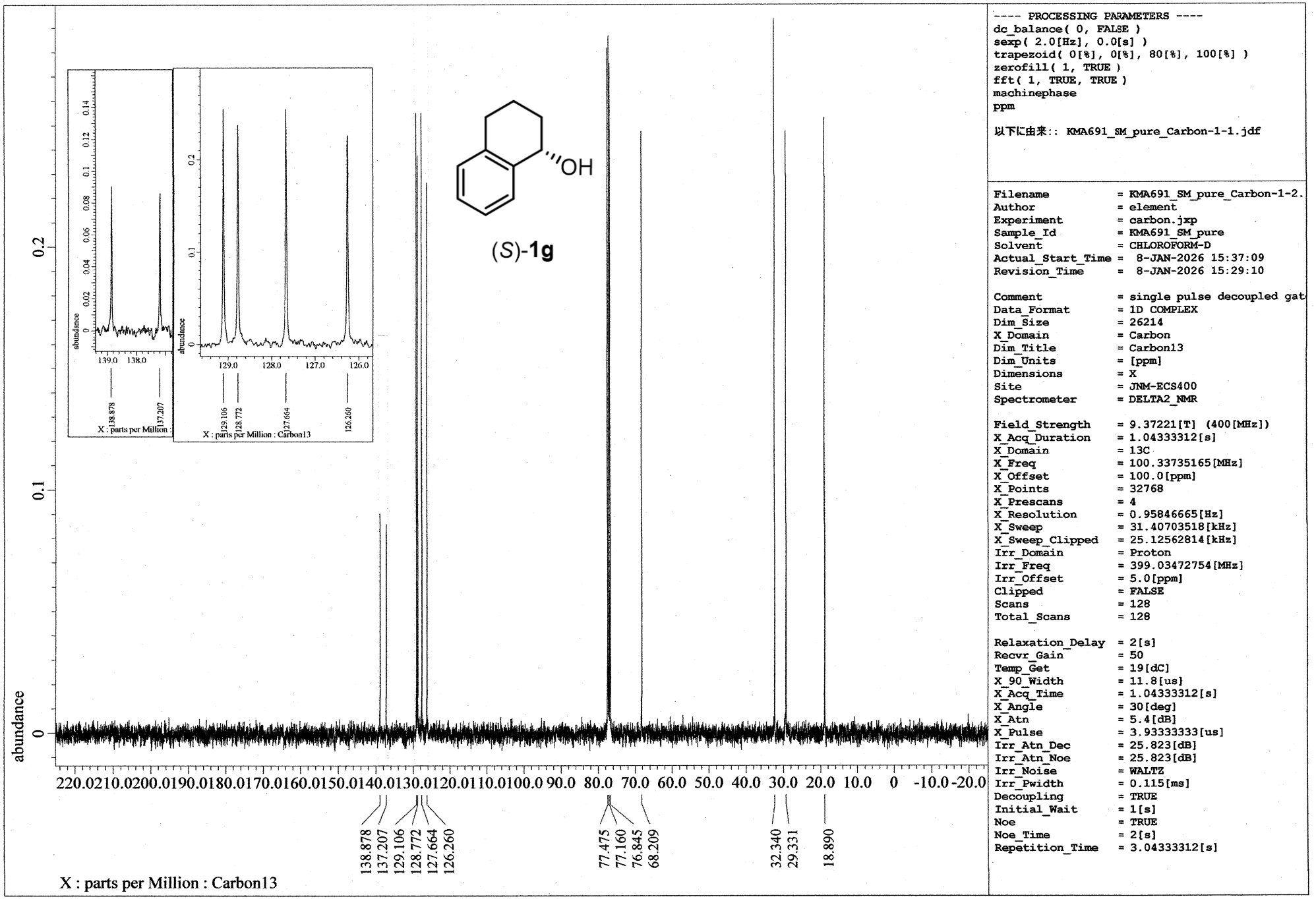


(*S*)-**1g**

```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA691_SM_pure2_1H_Proton-1-1.jdf
```

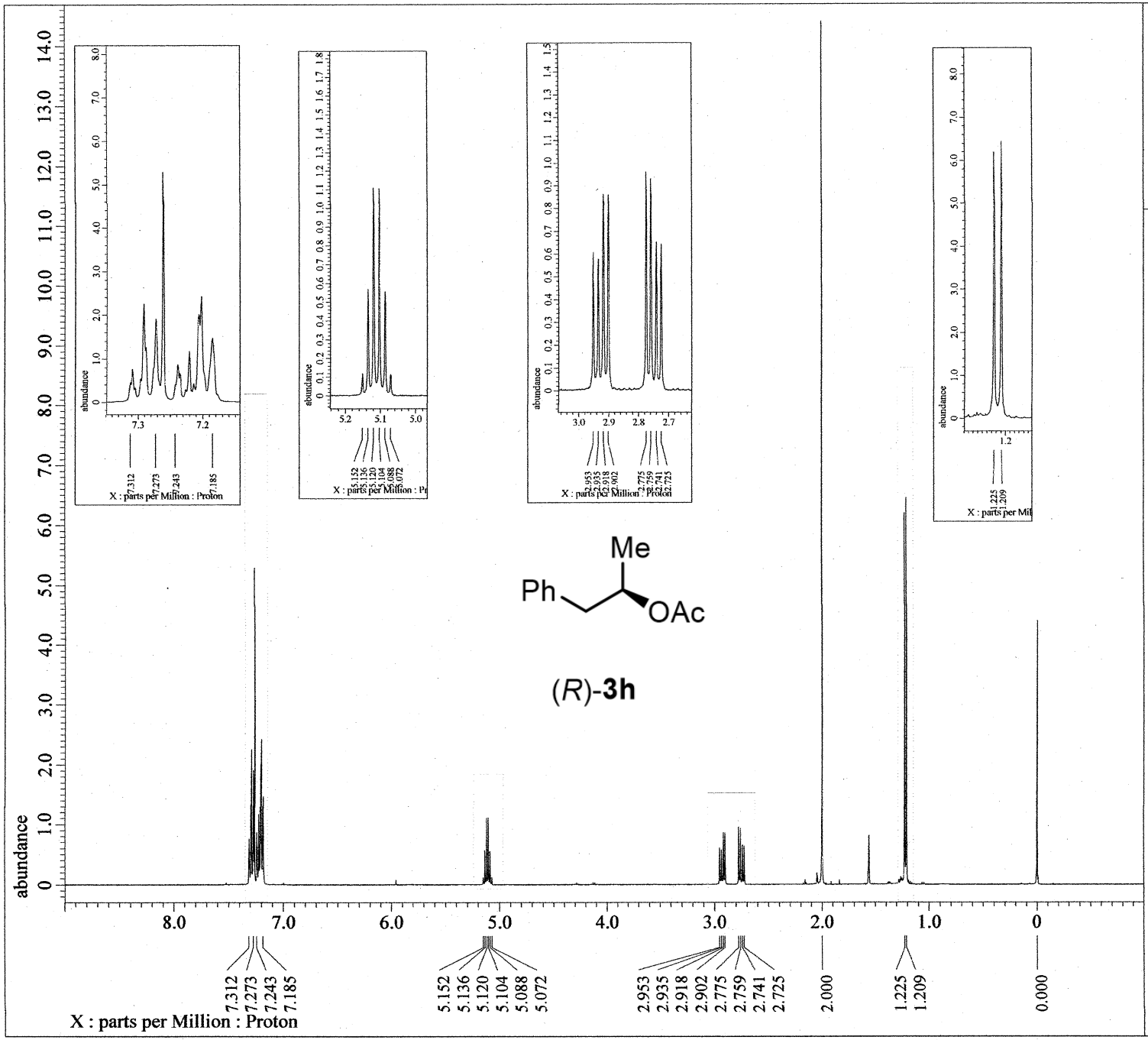
| | |
|---|---|
| Filename | = KMA691_SM_pure2_1H_Proton- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA691_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 8-JAN-2026 15:31:43 |
| Revision_Time | = 8-JAN-2026 15:13:22 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 2.1889024[s] |
| X_Domain | = 1H |
| X_Freq | = 399.03472754[MHz] |
| X_Offset | = 5.0[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45684997[Hz] |
| X_Sweep | = 7.48502994[kHz] |
| X_Sweep_Clipped | = 5.98802395[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.03472754[MHz] |
| Tri_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 44 |
| Temp_Get | = 18.9[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.1889024[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.1889024[s] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA691_SM_pure_Carbon-1-1.jdf
```

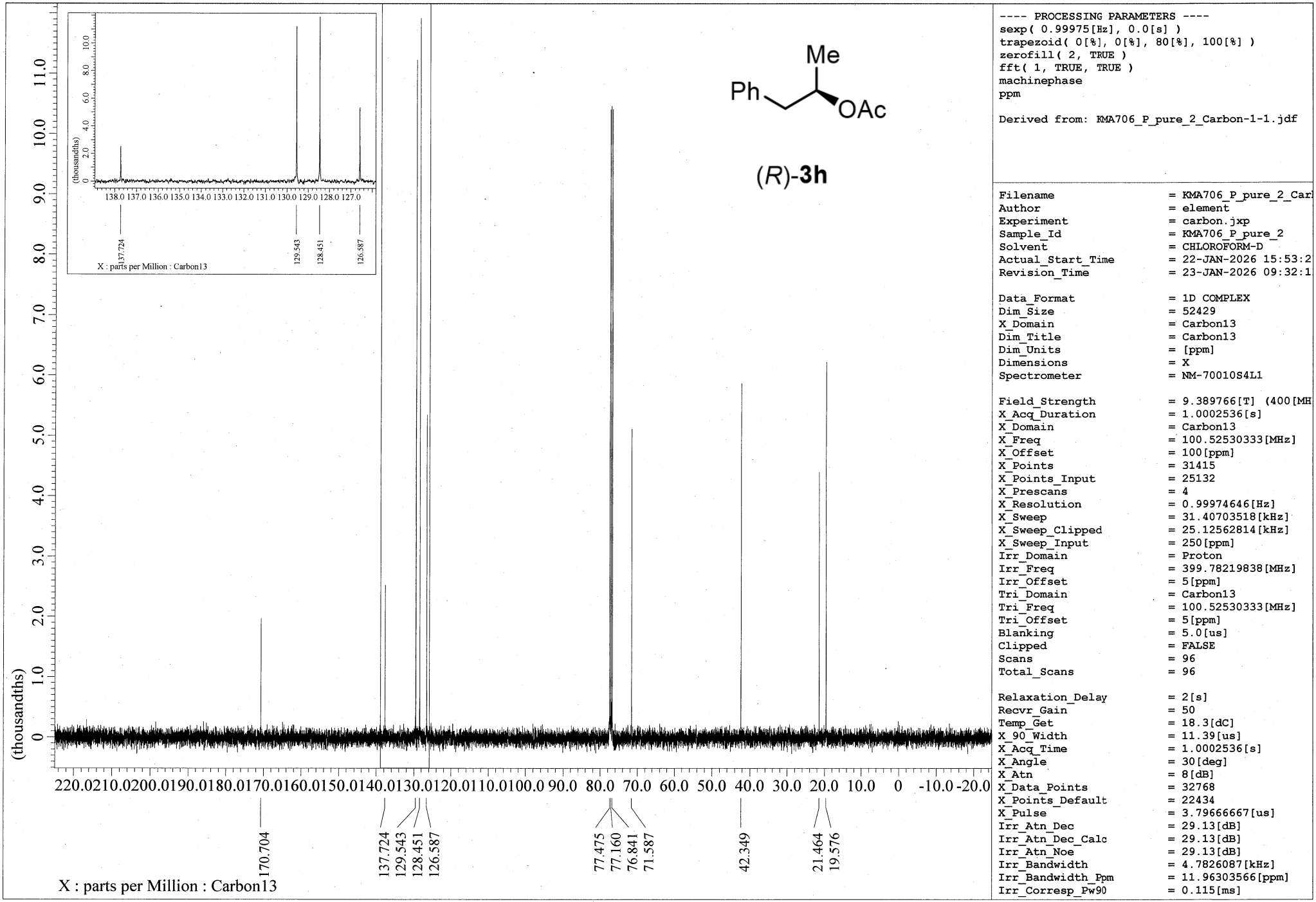
| | |
|---|---|
| Filename | = KMA691_SM_pure_Carbon-1-2. |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA691_SM_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 8-JAN-2026 15:37:09 |
| Revision_Time | = 8-JAN-2026 15:29:10 |
| Comment | = single pulse decoupled gat |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 26214 |
| X_Domain | = Carbon |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 1.04333312[s] |
| X_Domain | = 13C |
| X_Freq | = 100.33735165[MHz] |
| X_Offset | = 100.0[ppm] |
| X_Points | = 32768 |
| X_Prescans | = 4 |
| X_Resolution | = 0.95846665[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 19[dC] |
| X_90_Width | = 11.8[us] |
| X_Acq_Time | = 1.04333312[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 5.4[dB] |
| X_Pulse | = 3.93333333[us] |
| Irr_Atn_Dec | = 25.823[dB] |
| Irr_Atn_Noe | = 25.823[dB] |
| Irr_Noise | = WALTZ |
| Irr_Pwidth | = 0.115[ms] |
| Decoupling | = TRUE |
| Initial_Wait | = 1[s] |
| Noe | = TRUE |
| Noe_Time | = 2[s] |
| Repetition_Time | = 3.04333312[s] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA706_P_pure3_1H_Proton-1-1.jdf
```

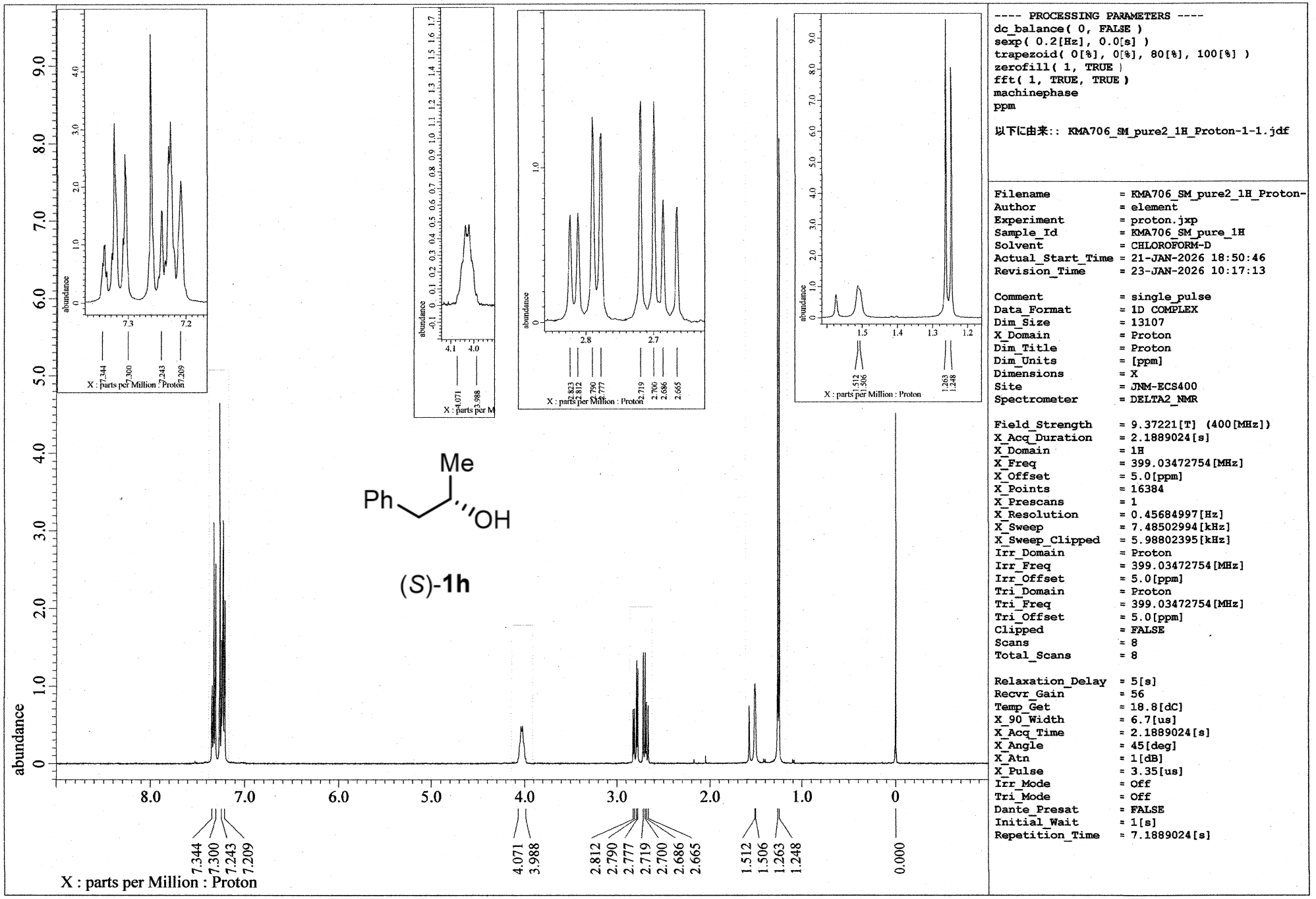
| | |
|---|---|
| Filename | = KMA706_P_pure3_1H_Proton-1 |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA706_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 22-JAN-2026 14:28:41 |
| Revision_Time | = 22-JAN-2026 15:02:28 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 2.1889024[s] |
| X_Domain | = 1H |
| X_Freq | = 399.03472754[MHz] |
| X_Offset | = 5.0[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45684997[Hz] |
| X_Sweep | = 7.48502994[kHz] |
| X_Sweep_Clipped | = 5.98802395[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.03472754[MHz] |
| Tri_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 44 |
| Temp_Get | = 18.9[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.1889024[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.1889024[s] |




```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

Derived from: KMA706_P_pure_2_Carbon-1-1.jdf
```

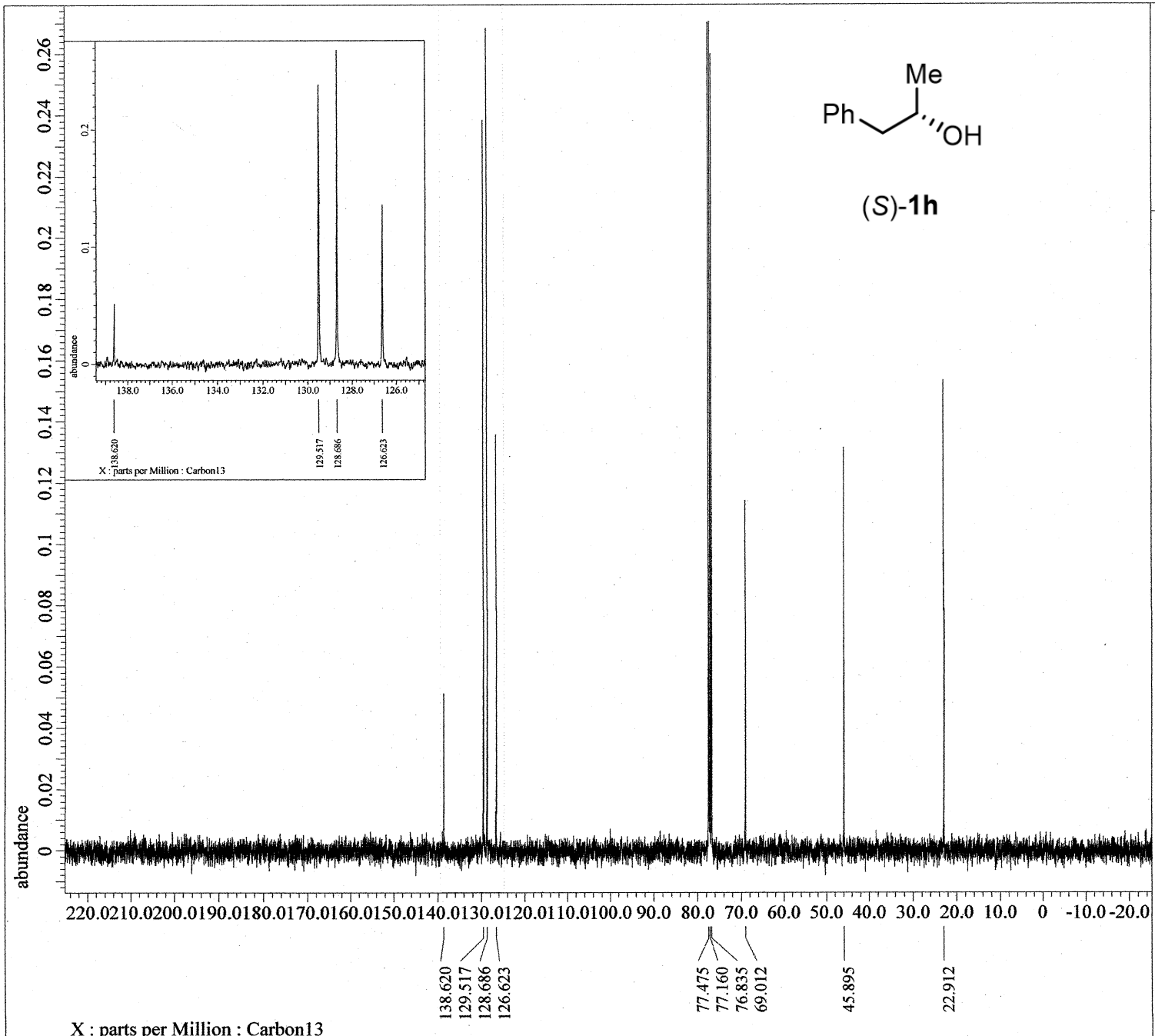
| | |
|---|---|
| Filename | = KMA706_P_pure_2_Carl |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA706_P_pure_2 |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 22-JAN-2026 15:53:2 |
| Revision_Time | = 23-JAN-2026 09:32:1 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = FALSE |
| Scans | = 96 |
| Total_Scans | = 96 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 18.3[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA706_SM_pure2_1H_Proton-1-1.jdf
```

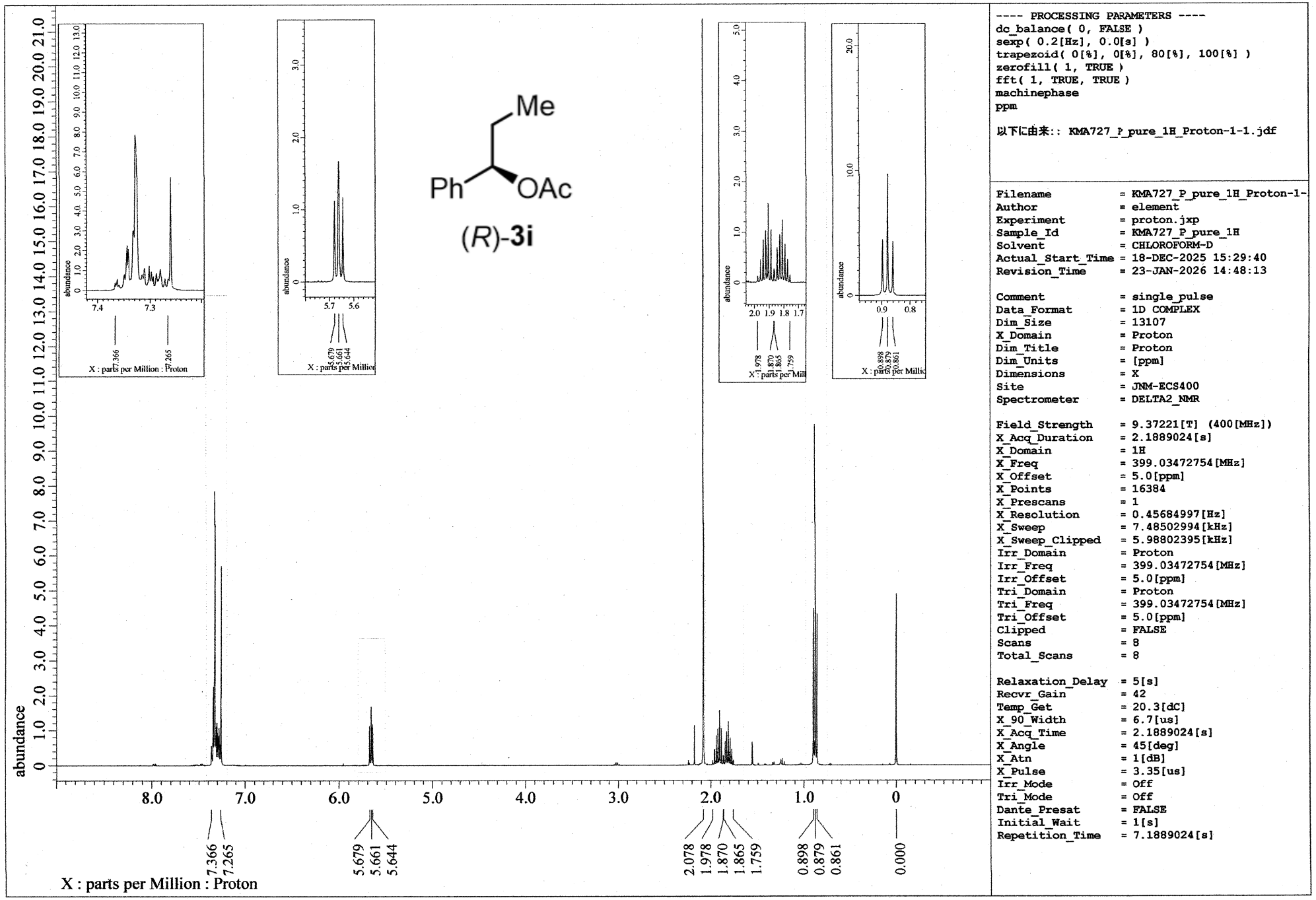
| | |
|---|---|
| Filename | = KMA706_SM_pure2_1H_Proton- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA706_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 21-JAN-2026 18:50:46 |
| Revision_Time | = 23-JAN-2026 10:17:13 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 2.1889024[s] |
| X_Domain | = 1H |
| X_Freq | = 399.03472754[MHz] |
| X_Offset | = 5.0[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45684997[Hz] |
| X_Sweep | = 7.48502994[kHz] |
| X_Sweep_Clipped | = 5.98802395[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.03472754[MHz] |
| Tri_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 56 |
| Temp_Get | = 18.8[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.1889024[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.1889024[s] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 2.0[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA706_SM_pure_Carbon-1-1.jdf
```

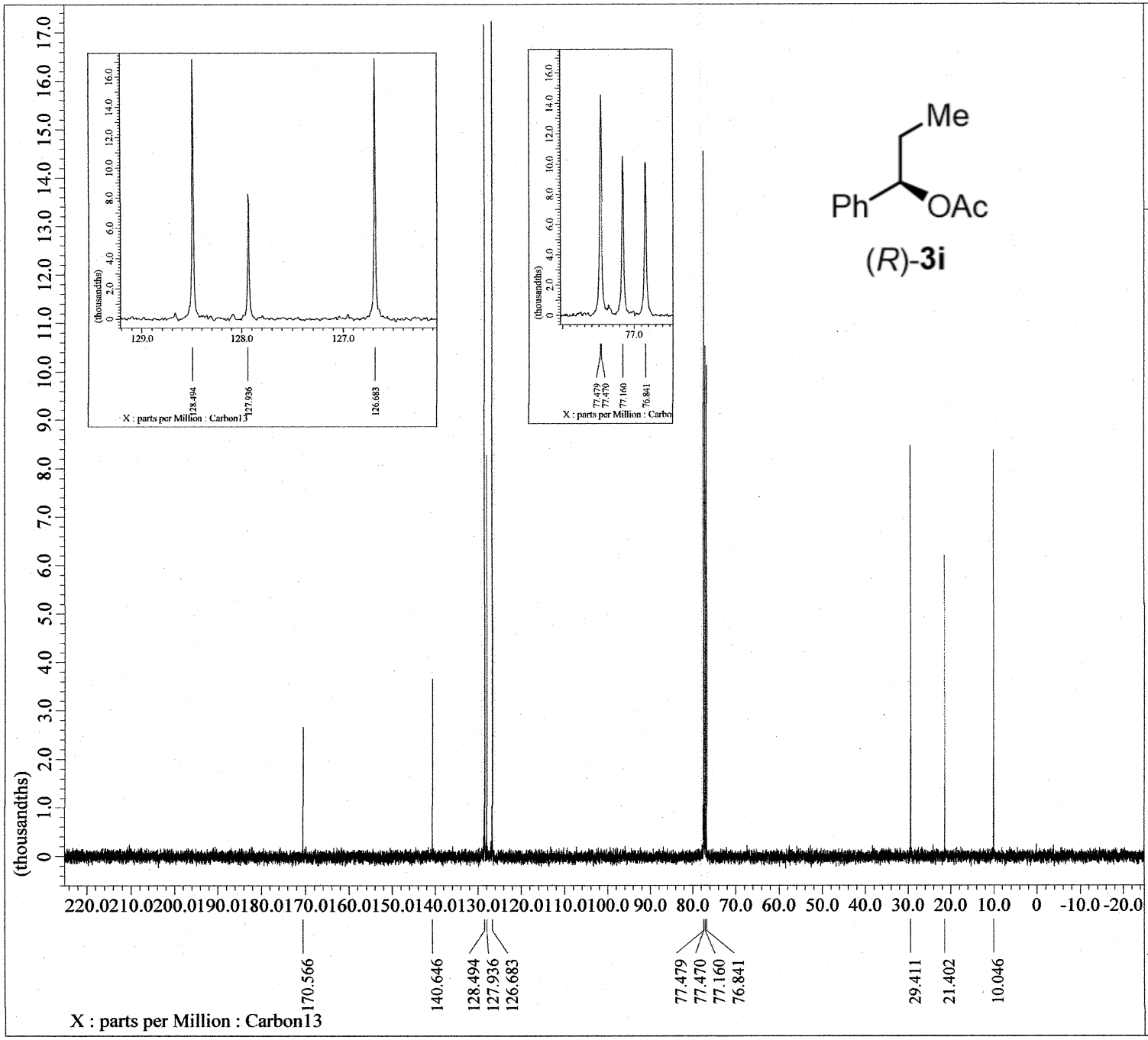
| | |
|---|---|
| Filename | = KMA706_SM_pure_Carbon-1-2. |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA706_SM_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 21-JAN-2026 18:58:22 |
| Revision_Time | = 23-JAN-2026 10:46:04 |
| Comment | = single pulse decoupled gat |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 26214 |
| X_Domain | = Carbon |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 1.04333312[s] |
| X_Domain | = 13C |
| X_Freq | = 100.33735165[MHz] |
| X_Offset | = 100.0[ppm] |
| X_Points | = 32768 |
| X_Prescans | = 4 |
| X_Resolution | = 0.95846665[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 18.9[dC] |
| X_90_Width | = 11.8[us] |
| X_Acq_Time | = 1.04333312[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 5.4[dB] |
| X_Pulse | = 3.93333333[us] |
| Irr_Atn_Dec | = 25.823[dB] |
| Irr_Atn_Noe | = 25.823[dB] |
| Irr_Noise | = WALTZ |
| Irr_Pwidth | = 0.115[ms] |
| Decoupling | = TRUE |
| Initial_Wait | = 1[s] |
| Noe | = TRUE |
| Noe_Time | = 2[s] |
| Repetition_Time | = 3.04333312[s] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA727_P_pure_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA727_P_pure_1H_Proton-1- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA727_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 18-DEC-2025 15:29:40 |
| Revision_Time | = 23-JAN-2026 14:48:13 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 2.1889024[s] |
| X_Domain | = 1H |
| X_Freq | = 399.03472754[MHz] |
| X_Offset | = 5.0[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45684997[Hz] |
| X_Sweep | = 7.48502994[kHz] |
| X_Sweep_Clipped | = 5.98802395[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.03472754[MHz] |
| Tri_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 42 |
| Temp_Get | = 20.3[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.1889024[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.1889024[s] |





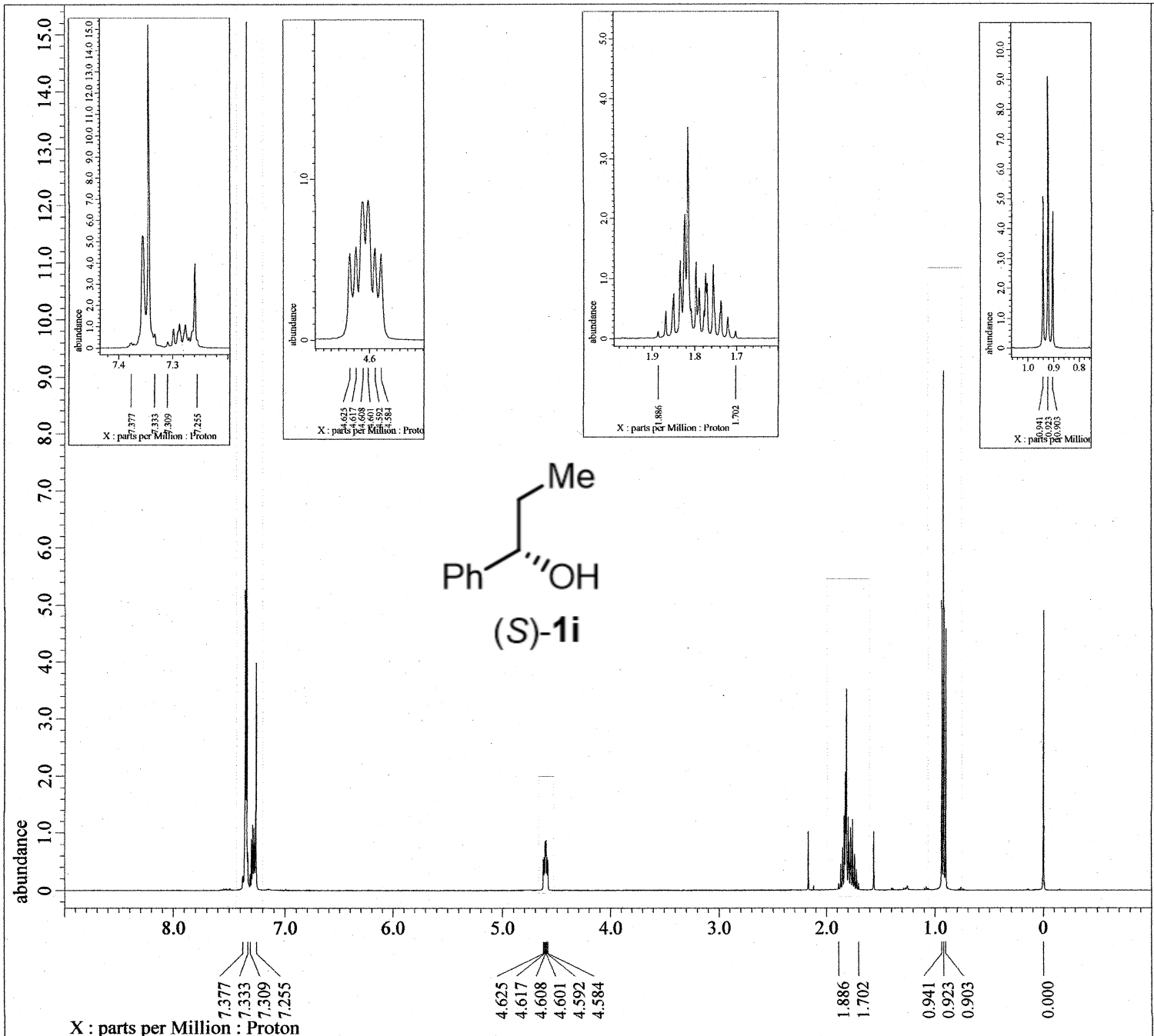


(*R*)-**3i**

```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA727_P_pure_Carbon-1-1.jdf
```

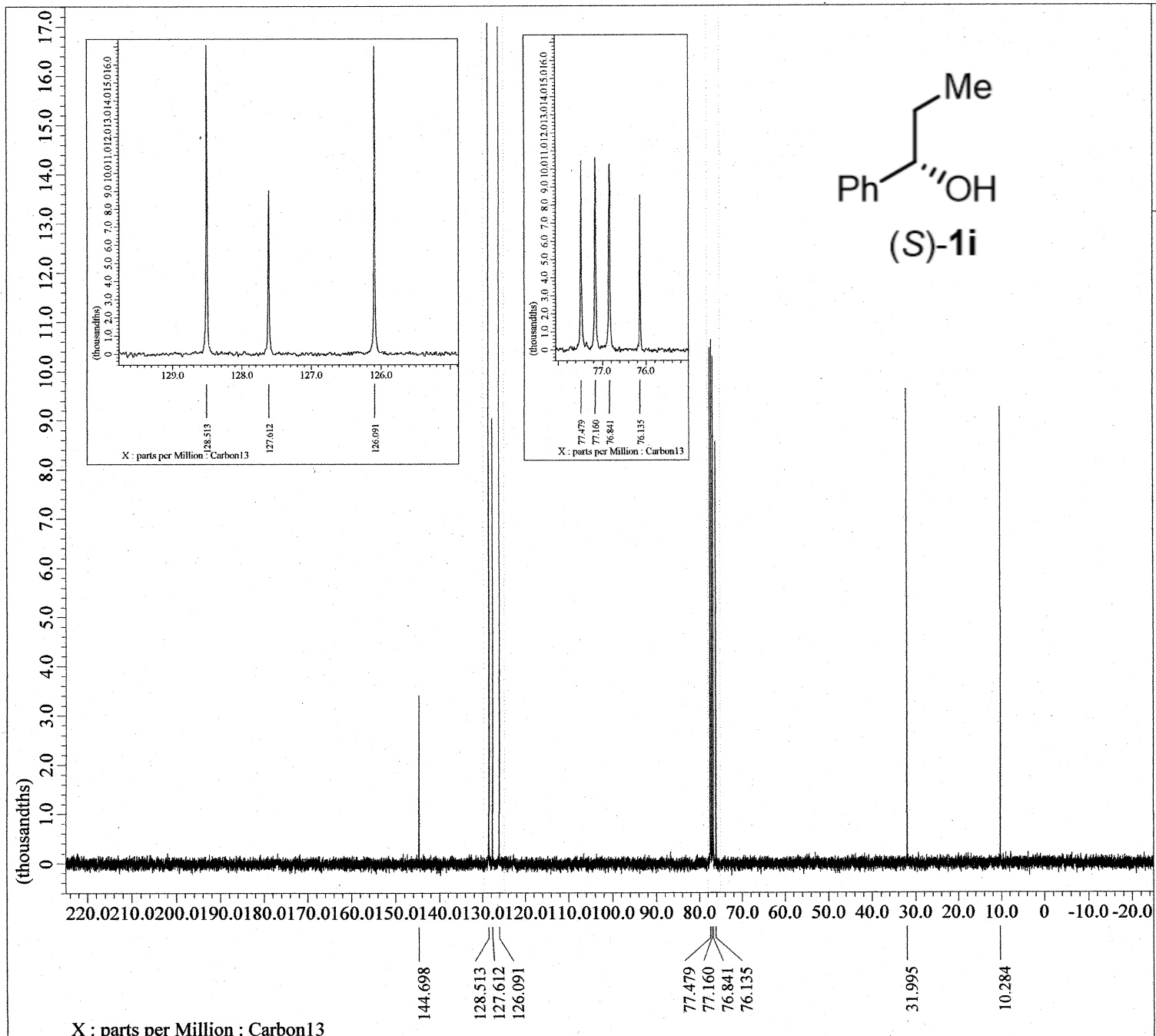
| | |
|---|---|
| Filename | = KMA727_P_pure_Carbo |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA727_P_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 23-JAN-2026 15:37:4 |
| Revision_Time | = 23-JAN-2026 18:44:3 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 18.2[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |




```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA727_SM_pure_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA727_SM_pure_1H_Proton-1 |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA727_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 18-DEC-2025 15:36:14 |
| Revision_Time | = 23-JAN-2026 14:52:18 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 2.1889024[s] |
| X_Domain | = 1H |
| X_Freq | = 399.03472754[MHz] |
| X_Offset | = 5.0[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45684997[Hz] |
| X_Sweep | = 7.48502994[kHz] |
| X_Sweep_Clipped | = 5.98802395[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.03472754[MHz] |
| Tri_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 42 |
| Temp_Get | = 20.3[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.1889024[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.1889024[s] |











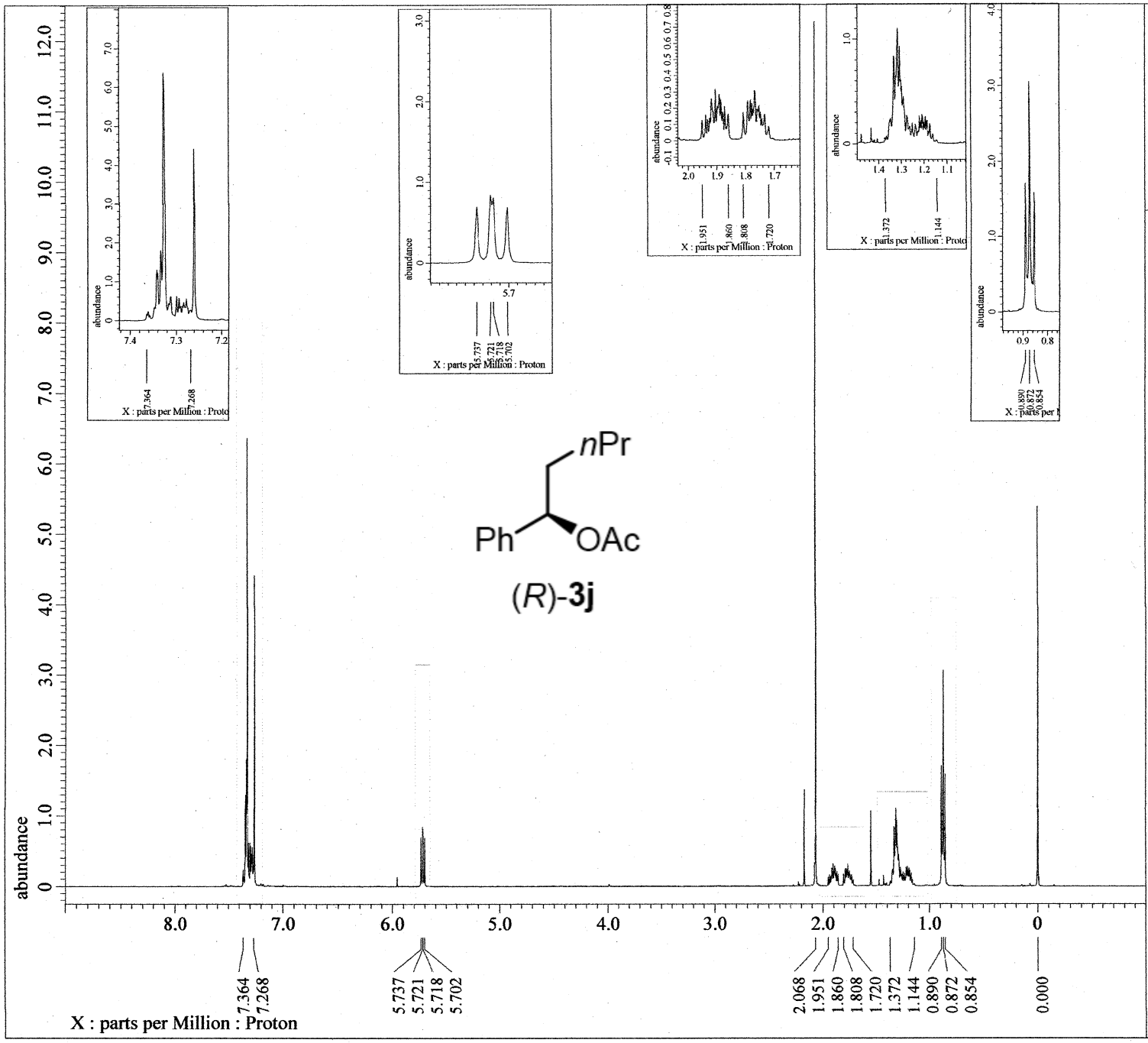


(*S*)-**1i**

```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA727_SM_pure_Carbon-1-1.jdf
```

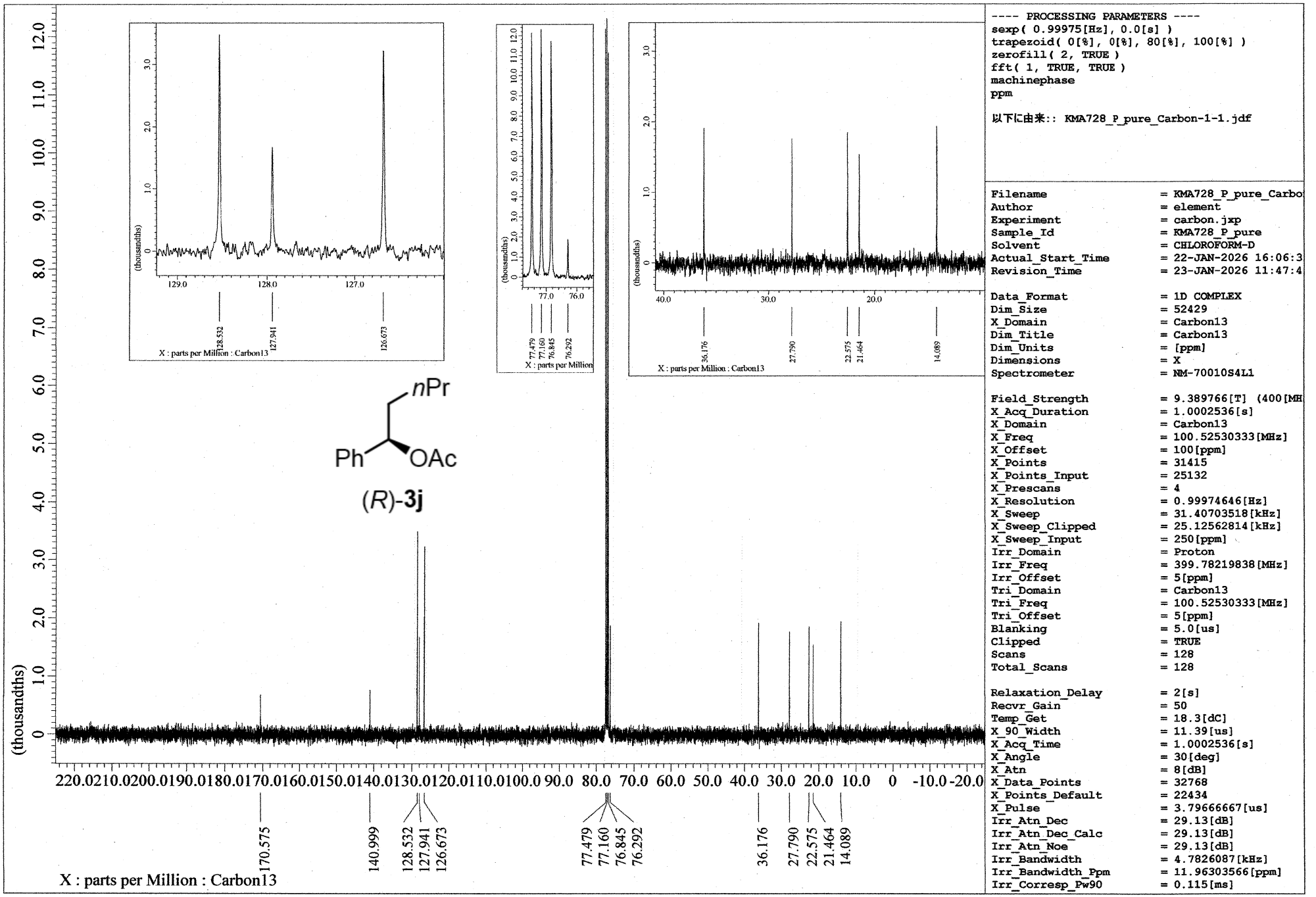
| | |
|---|---|
| Filename | = KMA727_SM_pure_Carb |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA727_SM_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 23-JAN-2026 16:01:1 |
| Revision_Time | = 23-JAN-2026 18:46:1 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 18.3[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |

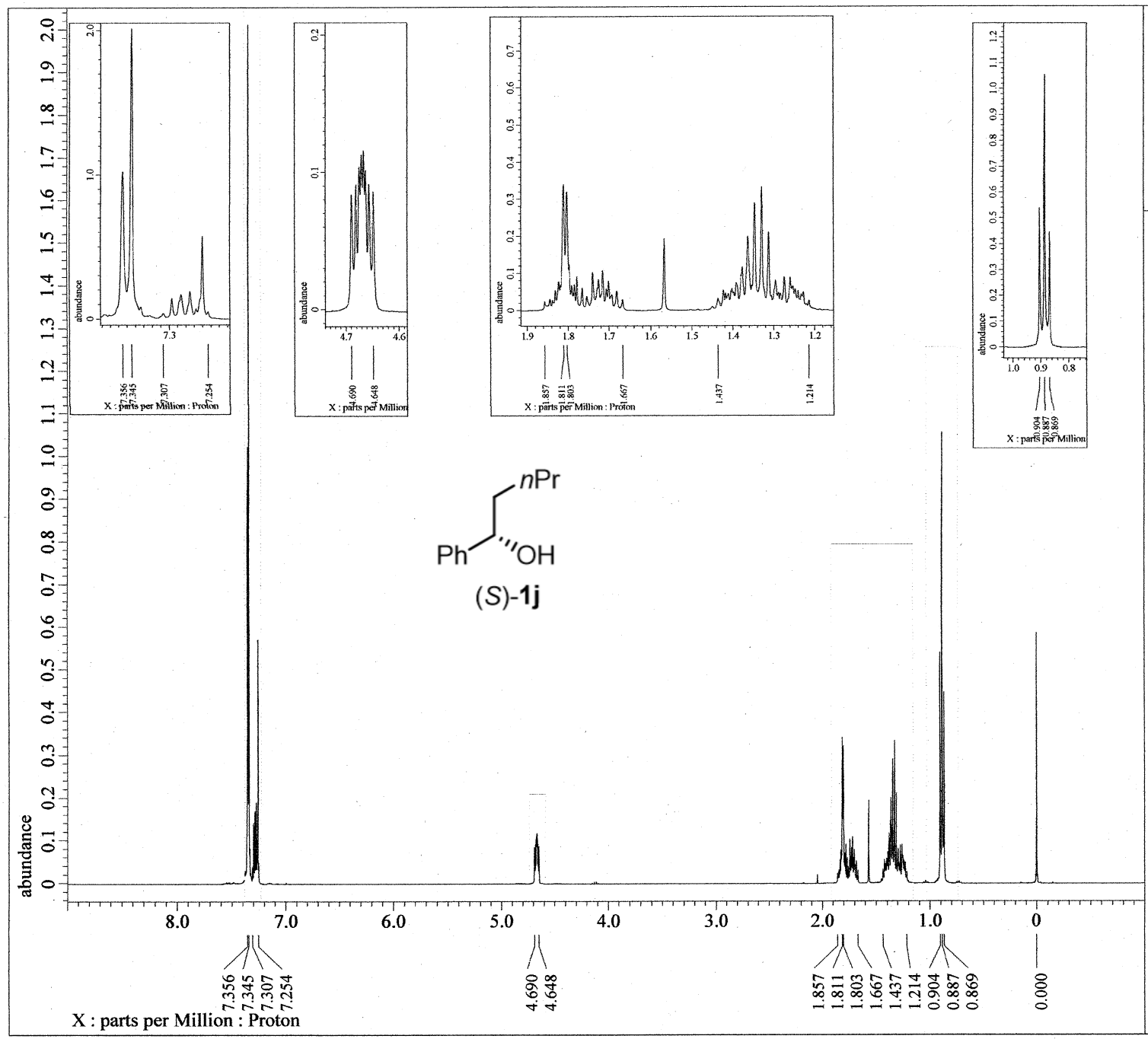



```
---- PROCESSING PARAMETERS ----
dc_balance( 0, FALSE )
sexp( 0.2[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA728_P_pure_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA728_P_pure_1H_Proton-1- |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA728_P_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 18-DEC-2025 15:43:01 |
| Revision_Time | = 23-JAN-2026 11:20:33 |
| Comment | = single_pulse |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 13107 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Site | = JNM-ECS400 |
| Spectrometer | = DELTA2_NMR |
| Field_Strength | = 9.37221[T] (400[MHz]) |
| X_Acq_Duration | = 2.1889024[s] |
| X_Domain | = 1H |
| X_Freq | = 399.03472754[MHz] |
| X_Offset | = 5.0[ppm] |
| X_Points | = 16384 |
| X_Prescans | = 1 |
| X_Resolution | = 0.45684997[Hz] |
| X_Sweep | = 7.48502994[kHz] |
| X_Sweep_Clipped | = 5.98802395[kHz] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.03472754[MHz] |
| Irr_Offset | = 5.0[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.03472754[MHz] |
| Tri_Offset | = 5.0[ppm] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 42 |
| Temp_Get | = 20.3[dC] |
| X_90_Width | = 6.7[us] |
| X_Acq_Time | = 2.1889024[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 1[dB] |
| X_Pulse | = 3.35[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Presat | = FALSE |
| Initial_Wait | = 1[s] |
| Repetition_Time | = 7.1889024[s] |

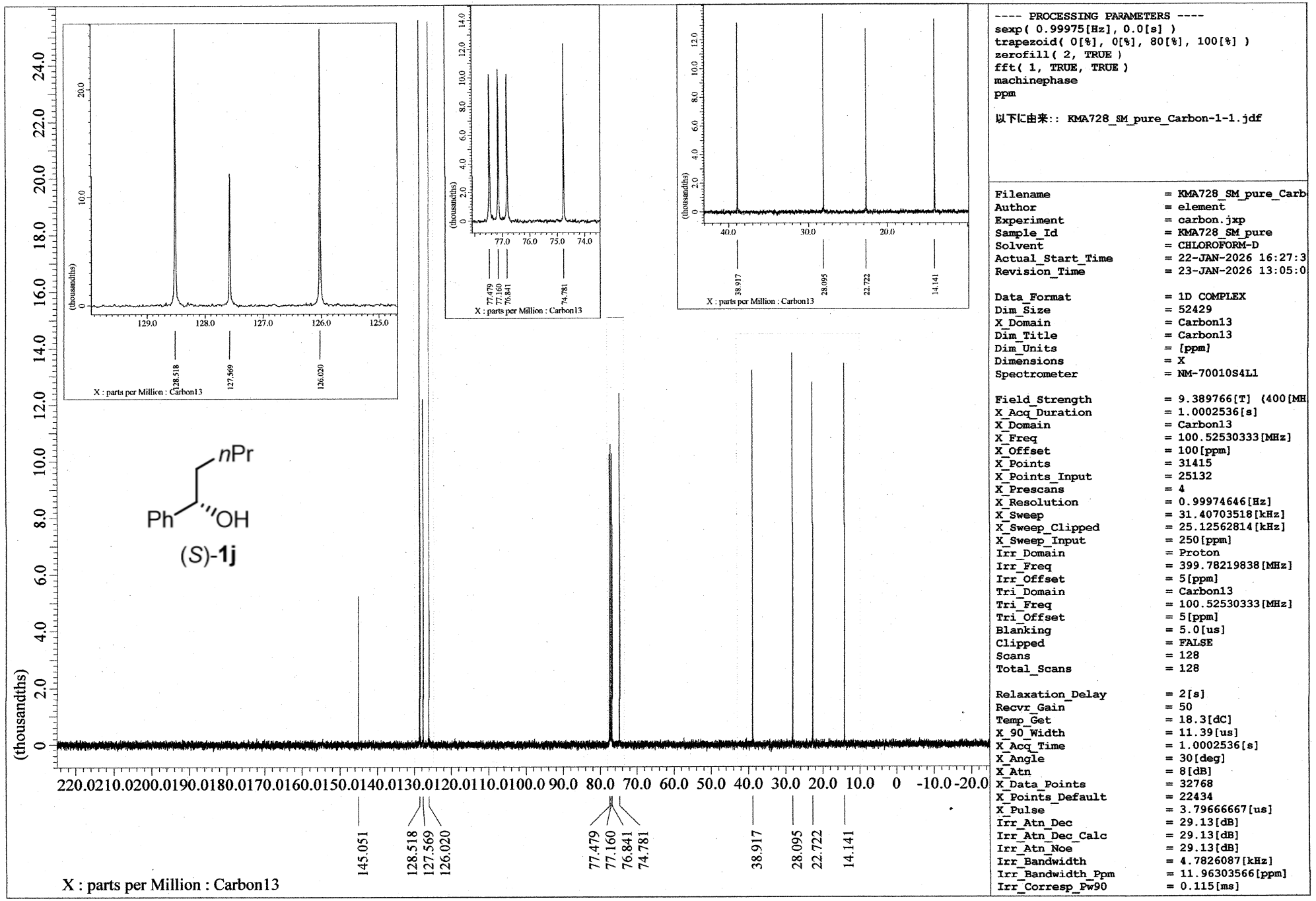

nPr
Ph
OAc
(R)-3j
X : parts per Million : Carbon13
(thousandths)
170.575
140.999
128.532
127.941
126.673
77.479
77.160
76.845
76.292
36.176
27.790
22.575
21.464
14.089
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm
以下に由来:: KMA728_P_pure_Carbon-1-1.jdf
Filename = KMA728_P_pure_Carbo
Author = element
Experiment = carbon.jxp
Sample_Id = KMA728_P_pure
Solvent = CHLOROFORM-D
Actual_Start_Time = 22-JAN-2026 16:06:3
Revision_Time = 23-JAN-2026 11:47:4
Data_Format = 1D COMPLEX
Dim_Size = 52429
X_Domain = Carbon13
Dim_Title = Carbon13
Dim_Units = [ppm]
Dimensions = X
Spectrometer = NM-70010S4L1
Field_Strength = 9.389766[T] (400[MH
X_Acq_Duration = 1.0002536[s]
X_Domain = Carbon13
X_Freq = 100.52530333[MHz]
X_Offset = 100[ppm]
X_Points = 31415
X_Points_Input = 25132
X_Prescans = 4
X_Resolution = 0.99974646[Hz]
X_Sweep = 31.40703518[kHz]
X_Sweep_Clipped = 25.12562814[kHz]
X_Sweep_Input = 250[ppm]
Irr_Domain = Proton
Irr_Freq = 399.78219838[MHz]
Irr_Offset = 5[ppm]
Tri_Domain = Carbon13
Tri_Freq = 100.52530333[MHz]
Tri_Offset = 5[ppm]
Blanking = 5.0[us]
Clipped = TRUE
Scans = 128
Total_Scans = 128
Relaxation_Delay = 2[s]
Recvr_Gain = 50
Temp_Get = 18.3[dC]
X_90_Width = 11.39[us]
X_Acq_Time = 1.0002536[s]
X_Angle = 30[deg]
X_Atn = 8[dB]
X_Data_Points = 32768
X_Points_Default = 22434
X_Pulse = 3.79666667[us]
Irr_Atn_Dec = 29.13[dB]
Irr_Atn_Dec_Calc = 29.13[dB]
Irr_Atn_Noe = 29.13[dB]
Irr_Bandwidth = 4.7826087[kHz]
Irr_Bandwidth_Ppm = 11.96303566[ppm]
Irr_Corresp_Pw90 = 0.115[ms]




```
---- PROCESSING PARAMETERS ----
sexp( 0.24382[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA728_SM_pure2_1H_Proton-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA728_SM_pure2_1H_ |
| Author | = element |
| Experiment | = proton.jxp |
| Sample_Id | = KMA728_SM_pure_1H |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 22-JAN-2026 16:21:4 |
| Revision_Time | = 23-JAN-2026 12:47:3 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 26214 |
| X_Domain | = Proton |
| Dim_Title | = Proton |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 2.05070592[s] |
| X_Domain | = Proton |
| X_Freq | = 399.78219838[MHz] |
| X_Offset | = 5[ppm] |
| X_Points | = 15368 |
| X_Points_Input | = 12294 |
| X_Prescans | = 1 |
| X_Resolution | = 0.48763696[Hz] |
| X_Sweep | = 7.4940048[kHz] |
| X_Sweep_Clipped | = 5.99520384[kHz] |
| X_Sweep_Input | = 15[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Proton |
| Tri_Freq | = 399.78219838[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 2.0[us] |
| Clipped | = FALSE |
| Scans | = 8 |
| Total_Scans | = 8 |
| Relaxation_Delay | = 5[s] |
| Recvr_Gain | = 56 |
| Temp_Get | = 18.3[dC] |
| X_90_Width | = 7.2[us] |
| X_Acq_Time | = 2.05070592[s] |
| X_Angle | = 45[deg] |
| X_Atn | = 5.06[dB] |
| X_Data_Points | = 65536 |
| X_Points_Default | = 23890 |
| X_Pulse | = 3.6[us] |
| Irr_Mode | = Off |
| Tri_Mode | = Off |
| Dante_Loop | = 500 |
| Dante_Presat | = FALSE |
| Decimation_Rate | = 0 |
| Default_X_Resolution | = 0.3137[Hz] |




```
---- PROCESSING PARAMETERS ----
sexp( 0.99975[Hz], 0.0[s] )
trapezoid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 2, TRUE )
fft( 1, TRUE, TRUE )
machinephase
ppm

以下に由来:: KMA728_SM_pure_Carbon-1-1.jdf
```

| | |
|---|---|
| Filename | = KMA728_SM_pure_Carb |
| Author | = element |
| Experiment | = carbon.jxp |
| Sample_Id | = KMA728_SM_pure |
| Solvent | = CHLOROFORM-D |
| Actual_Start_Time | = 22-JAN-2026 16:27:3 |
| Revision_Time | = 23-JAN-2026 13:05:0 |
| Data_Format | = 1D COMPLEX |
| Dim_Size | = 52429 |
| X_Domain | = Carbon13 |
| Dim_Title | = Carbon13 |
| Dim_Units | = [ppm] |
| Dimensions | = X |
| Spectrometer | = NM-70010S4L1 |
| Field_Strength | = 9.389766[T] (400[MH |
| X_Acq_Duration | = 1.0002536[s] |
| X_Domain | = Carbon13 |
| X_Freq | = 100.52530333[MHz] |
| X_Offset | = 100[ppm] |
| X_Points | = 31415 |
| X_Points_Input | = 25132 |
| X_Prescans | = 4 |
| X_Resolution | = 0.99974646[Hz] |
| X_Sweep | = 31.40703518[kHz] |
| X_Sweep_Clipped | = 25.12562814[kHz] |
| X_Sweep_Input | = 250[ppm] |
| Irr_Domain | = Proton |
| Irr_Freq | = 399.78219838[MHz] |
| Irr_Offset | = 5[ppm] |
| Tri_Domain | = Carbon13 |
| Tri_Freq | = 100.52530333[MHz] |
| Tri_Offset | = 5[ppm] |
| Blanking | = 5.0[us] |
| Clipped | = FALSE |
| Scans | = 128 |
| Total_Scans | = 128 |
| Relaxation_Delay | = 2[s] |
| Recvr_Gain | = 50 |
| Temp_Get | = 18.3[dC] |
| X_90_Width | = 11.39[us] |
| X_Acq_Time | = 1.0002536[s] |
| X_Angle | = 30[deg] |
| X_Atn | = 8[dB] |
| X_Data_Points | = 32768 |
| X_Points_Default | = 22434 |
| X_Pulse | = 3.79666667[us] |
| Irr_Atn_Dec | = 29.13[dB] |
| Irr_Atn_Dec_Calc | = 29.13[dB] |
| Irr_Atn_Noe | = 29.13[dB] |
| Irr_Bandwidth | = 4.7826087[kHz] |
| Irr_Bandwidth_Ppm | = 11.96303566[ppm] |
| Irr_Corresp_Pw90 | = 0.115[ms] |

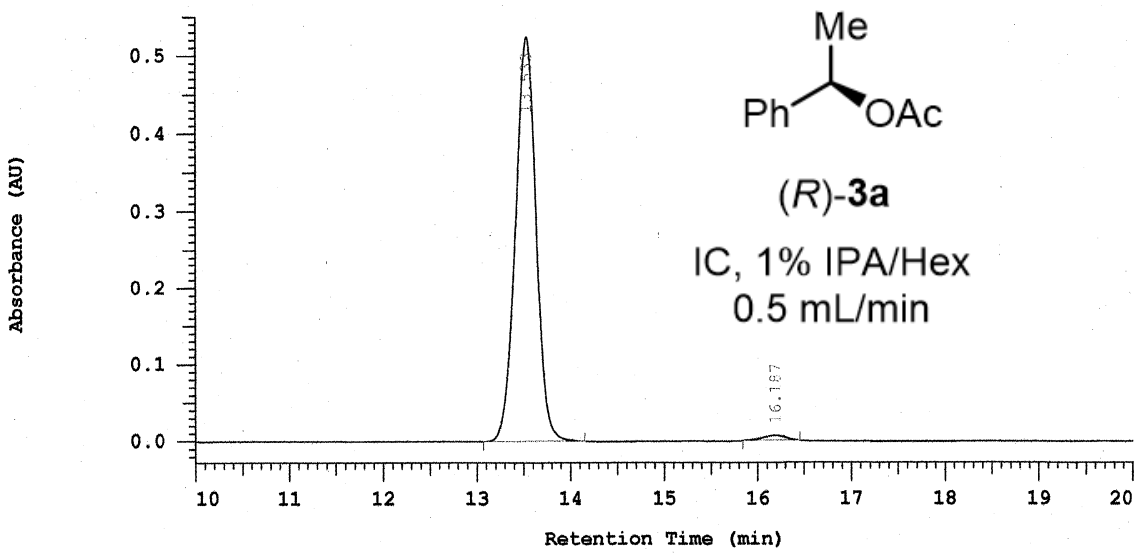
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/16 22:26
Reported Date and Time: 2025/10/17 11:40:35
Processed Date and Time: 2025/10/17 11:39
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0158\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA655_P_pure_IA_1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0158
Vial Number: 3
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 13.533 | 4054420 | 98.405 | MC |
| 2 | 16.187 | 65708 | 1.595 | MC |
| | | 4120128 | 100.000 | |

Peak rejection level: 0

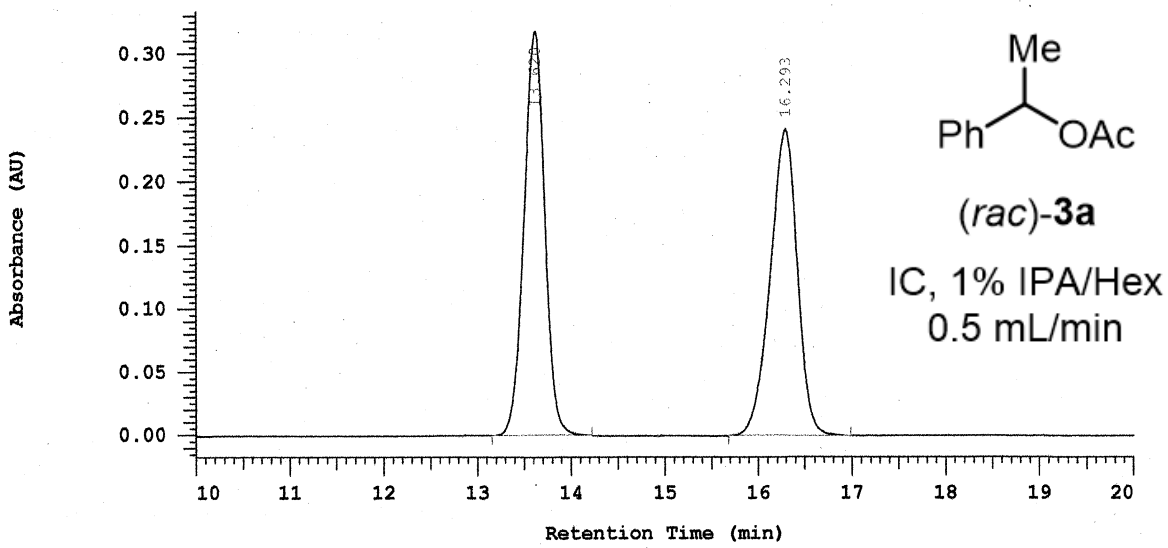
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/16 19:03
Reported Date and Time: 2025/10/17 11:36:13
Processed Date and Time: 2025/10/17 11:35
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0156\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_Ph_OAc_IA_1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0156
Vial Number: 1
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 13.620 | 2454791 | 49.940 | MC |
| 2 | 16.293 | 2460709 | 50.060 | MC |
| | | 4915500 | 100.000 | |

Peak rejection level: 0

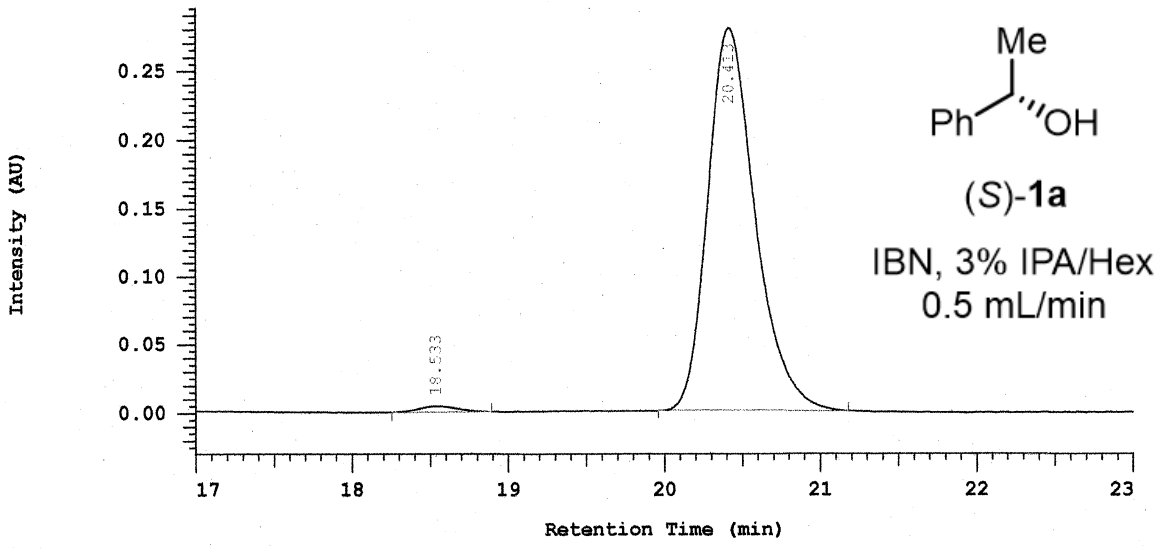
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/17 05:11
Reported Date and Time: 2025/10/17 11:46:51
Processed Date and Time: 2025/10/17 11:46
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0161\
Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA655_SM_pure_IB_3%
Injection from this vial: 1 of 1
Sample Description:

Series: 0161
Vial Number: 6
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 200 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 200 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 18.533 | 35108 | 1.173 | MC |
| 2 | 20.413 | 2957176 | 98.827 | MC |
| | | 2992284 | 100.000 | |

Peak rejection level: 0

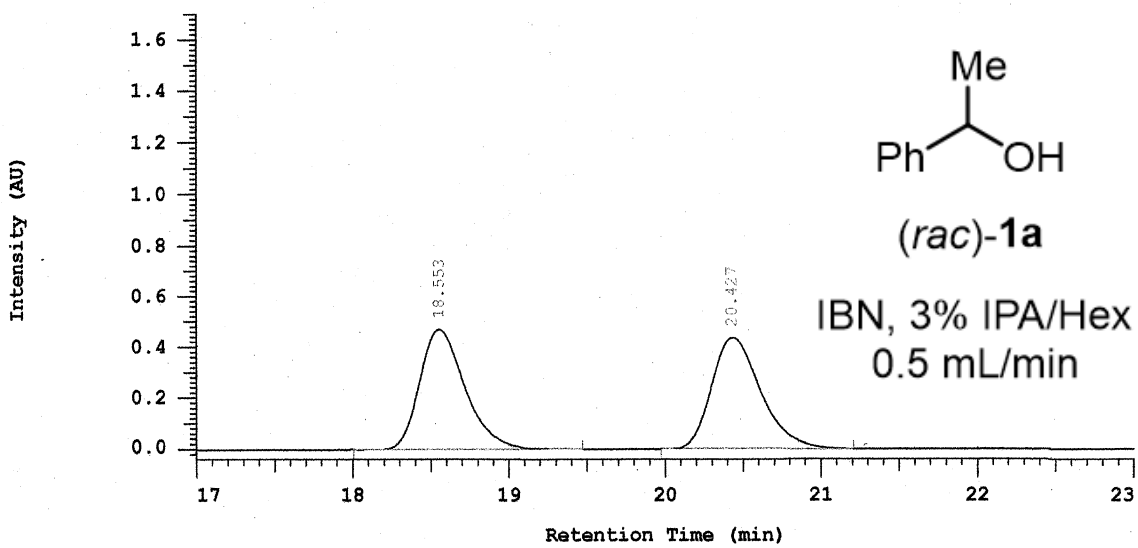
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/17 01:08
Reported Date and Time: 2025/10/17 11:43:12
Processed Date and Time: 2025/10/17 11:42
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0159\
Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_Ph_OH_IB_3%
Injection from this vial: 1 of 1
Sample Description:

Series: 0159
Vial Number: 4
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 200 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 200 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 18.553 | 4766299 | 49.902 | MC |
| 2 | 20.427 | 4785097 | 50.098 | MC |
| | | 9551396 | 100.000 | |

Peak rejection level: 0

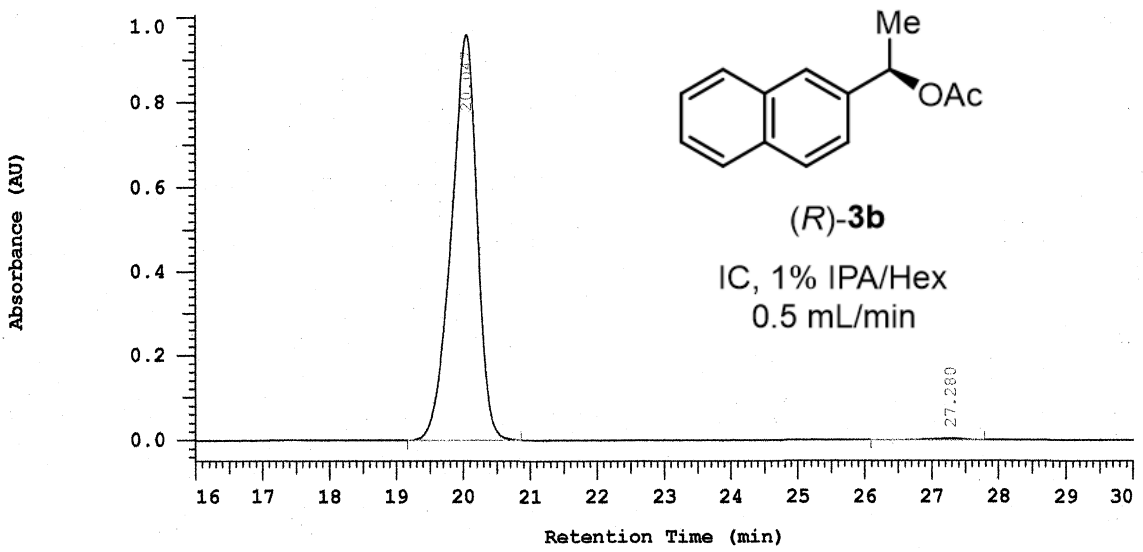
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/08 16:03
Reported Date and Time: 2025/10/09 10:11:25
Processed Date and Time: 2025/10/09 10:10
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0141\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA643_P_IC_1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0141
Vial Number: 3
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 20.047 | 12808625 | 99.462 | MC |
| 2 | 27.280 | 69303 | 0.538 | MC |
| | | 12877928 | 100.000 | |

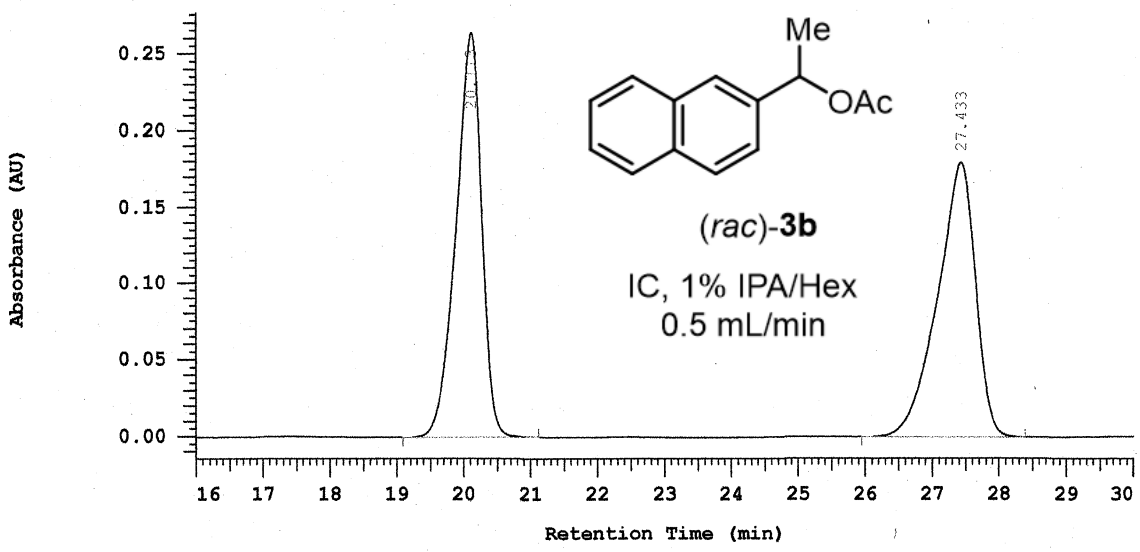
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/08 12:50
Reported Date and Time: 2025/10/09 10:07:49
Processed Date and Time: 2025/10/09 10:06
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0139\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Series: 0139
Application(data): KMA
Vial Number: 1
Sample Name: KMArac_NaPh_OAc_IC_1%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 20.113 | 3512558 | 49.911 | MC |
| 2 | 27.433 | 3525040 | 50.089 | MC |
| | | 7037598 | 100.000 | |

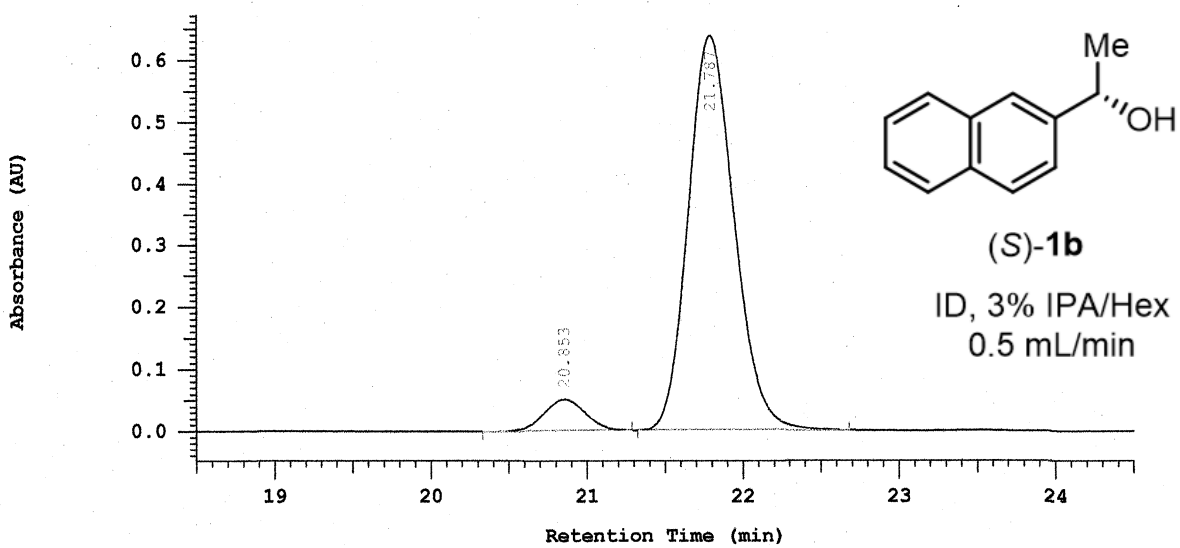
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/08 22:48
Reported Date and Time: 2025/10/09 10:27:47
Processed Date and Time: 2025/10/09 10:27
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0144\
Processing Method: column4(ID-3)_3%

System (acquisition): Sys 1
Series: 0144
Application(data): KMA
Vial Number: 6
Sample Name: KMA643_SM_ID_3%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 203 nm




Processing Method: column4(ID-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: acetone
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 203 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 20.853 | 481032 | 6.849 | MC |
| 2 | 21.787 | 6542139 | 93.151 | MC |
| | | 7023171 | 100.000 | |

Peak rejection level: 0

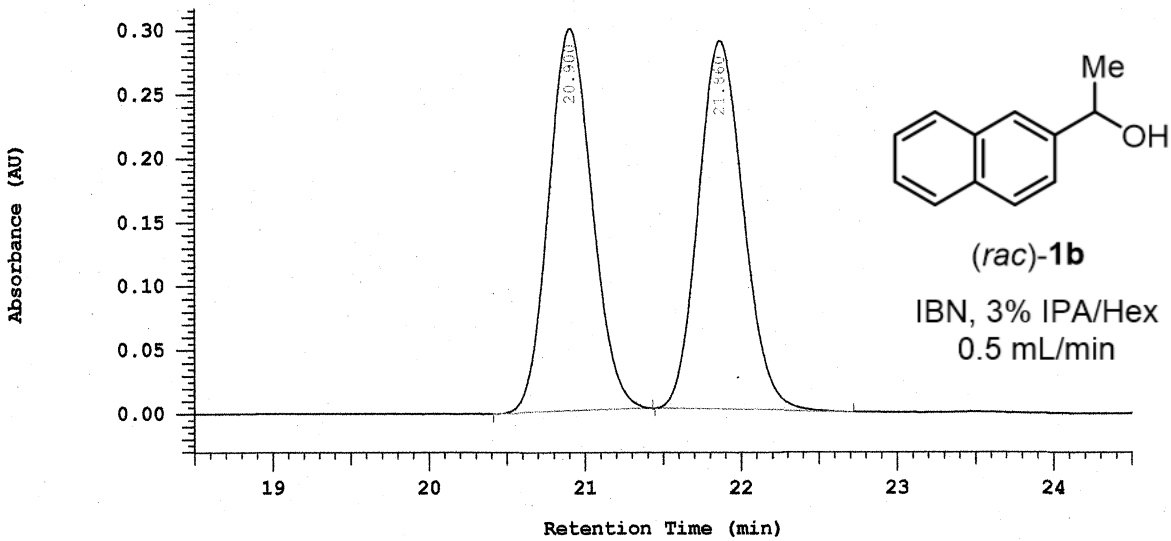
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/08 18:45
Reported Date and Time: 2025/10/09 10:16:18
Processed Date and Time: 2025/10/09 10:15
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0142\
Processing Method: column4(ID-3)_3%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_NaPh_OH_ID_3%
Injection from this vial: 1 of 1
Sample Description:

Series: 0142
Vial Number: 4
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 203 nm




Processing Method: column4(ID-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: acetone
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 203 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 20.900 | 2899674 | 49.928 | MC |
| 2 | 21.860 | 2907980 | 50.072 | MC |
| | | 5807654 | 100.000 | |

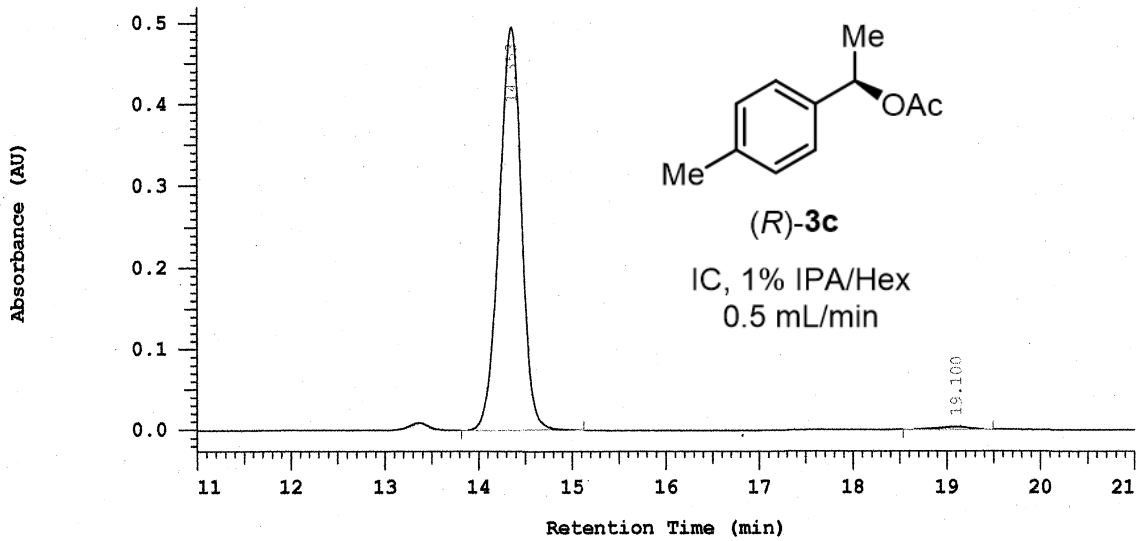
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/10 17:29
Reported Date and Time: 2025/11/11 10:49:49
Processed Date and Time: 2025/11/11 10:49
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0209\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Series: 0209
Application(data): KMA
Vial Number: 2
Sample Name: KMA689_P_IC_1%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 14.353 | 4095563 | 98.977 | MC |
| 2 | 19.100 | 42316 | 1.023 | MC |
| | | 4137879 | 100.000 | |

Peak rejection level: 0

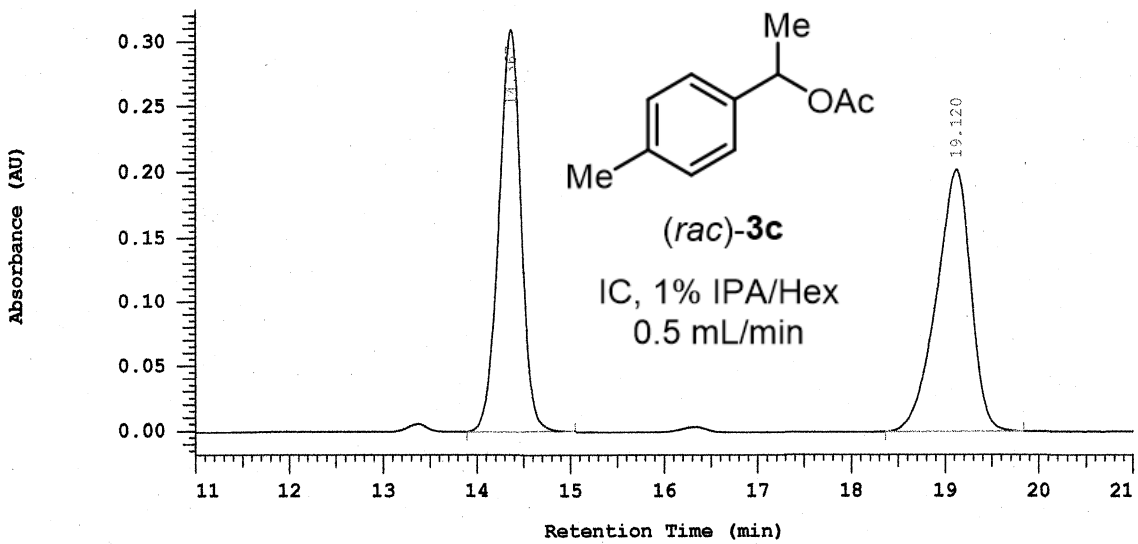
# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/10 15:58
Reported Date and Time: 2025/11/11 10:48:08
Processed Date and Time: 2025/11/11 10:46
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0208\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_Me_OAc_IC_1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0208
Vial Number: 1
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 14.367 | 2553339 | 49.970 | MC |
| 2 | 19.120 | 2556428 | 50.030 | MC |
| | | 5109767 | 100.000 | |

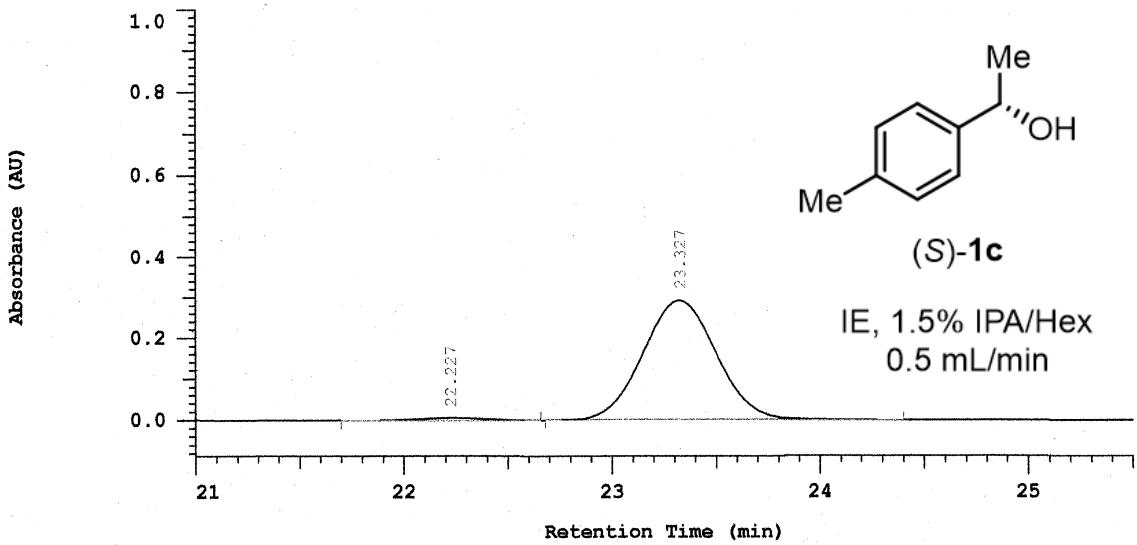
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/10 21:43
Reported Date and Time: 2025/11/11 10:58:00
Processed Date and Time: 2025/11/11 10:56
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0211\
Processing Method: column5(IE-3)_1.5%

System (acquisition): Sys 1
Series: 0211
Application(data): KMA
Vial Number: 4
Sample Name: KMA689_SM_IE_1.5%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 216 nm




Processing Method: column5(IE-3)_1.5%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 216 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 22.227 | 70633 | 1.933 | MC |
| 2 | 23.327 | 3582739 | 98.067 | MC |
| | | 3653372 | 100.000 | |

Peak rejection level: 0

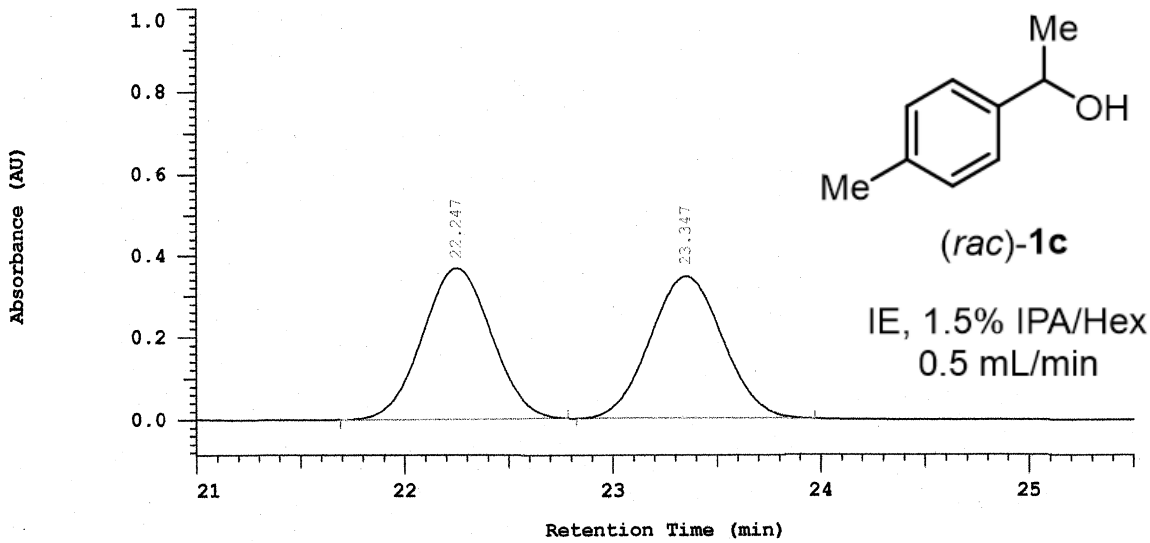
# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/10 20:01
Reported Date and Time: 2025/11/11 10:54:31
Processed Date and Time: 2025/11/11 10:53
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0210\
Processing Method: column5(IE-3)_1.5%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_Me_OH_IE_1.5%
Injection from this vial: 1 of 1
Sample Description:

Series: 0210
Vial Number: 3
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 216 nm




Processing Method: column5(IE-3)_1.5%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 216 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 22.247 | 4205180 | 50.051 | MC |
| 2 | 23.347 | 4196673 | 49.949 | MC |
| | | 8401853 | 100.000 | |

Peak rejection level: 0

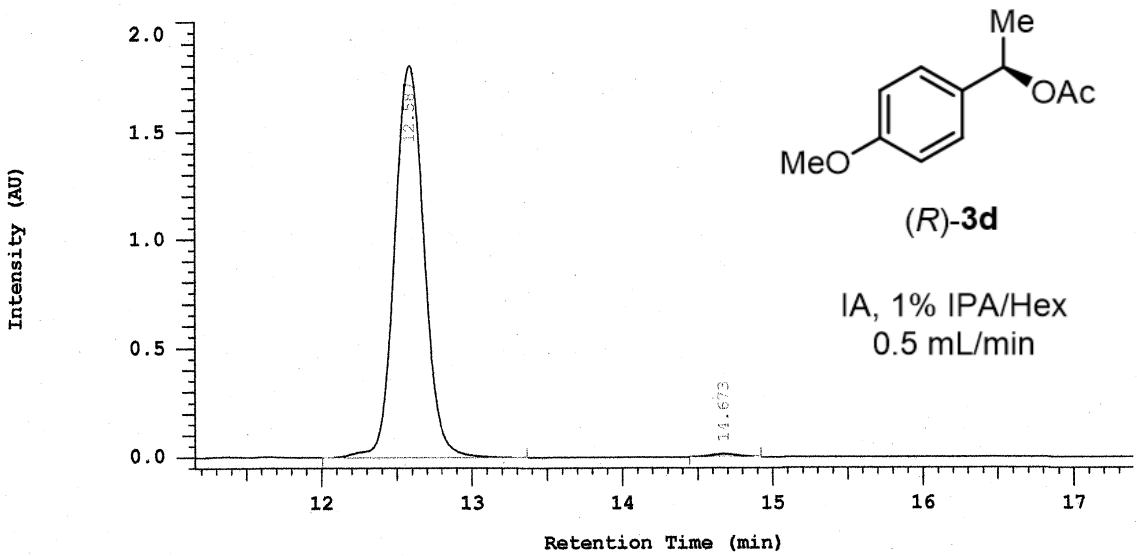
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/04 23:56
Reported Date and Time: 2025/10/06 10:21:09
Processed Date and Time: 2025/10/06 10:18
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0135\
Processing Method: column1(IA-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA654_P_pure_IA1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0135
Vial Number: 3
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column1(IA-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 12.587 | 12239392 | 99.208 | MC |
| 2 | 14.673 | 97674 | 0.792 | MC |
| | | 12337066 | 100.000 | |

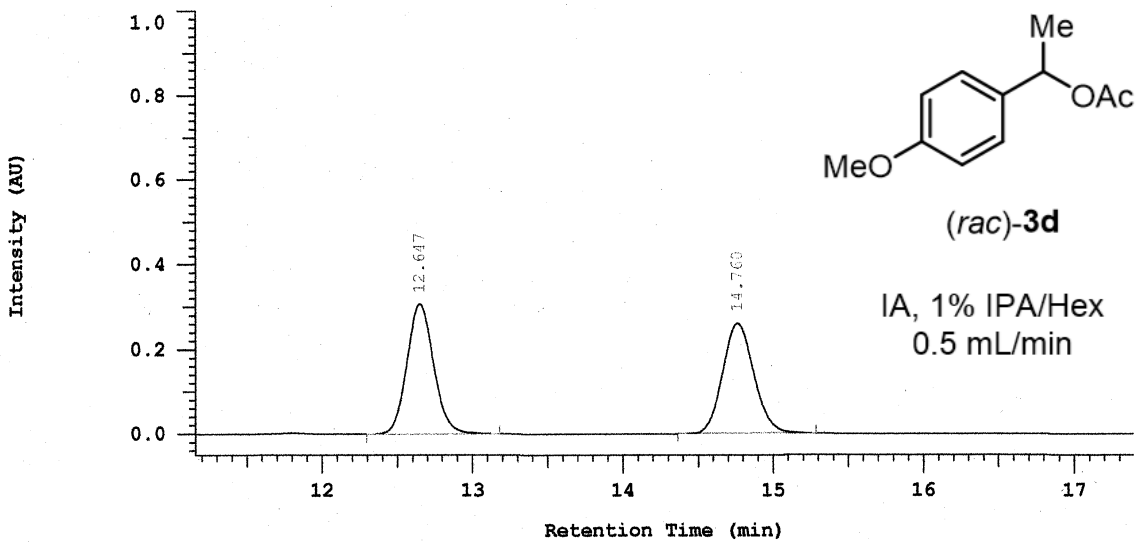
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/04 18:52
Reported Date and Time: 2025/10/06 10:13:39
Processed Date and Time: 2025/10/06 10:08
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0133\
Processing Method: column1(IA-3)_1%

System (acquisition): Sys 1
Series: 0133
Application(data): KMA
Vial Number: 1
Sample Name: KMA_OMe_OAc_IA_1%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column1(IA-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 12.647 | 1909675 | 50.029 | MC |
| 2 | 14.760 | 1907453 | 49.971 | MC |
| | | 3817128 | 100.000 | |

Peak rejection level: 0

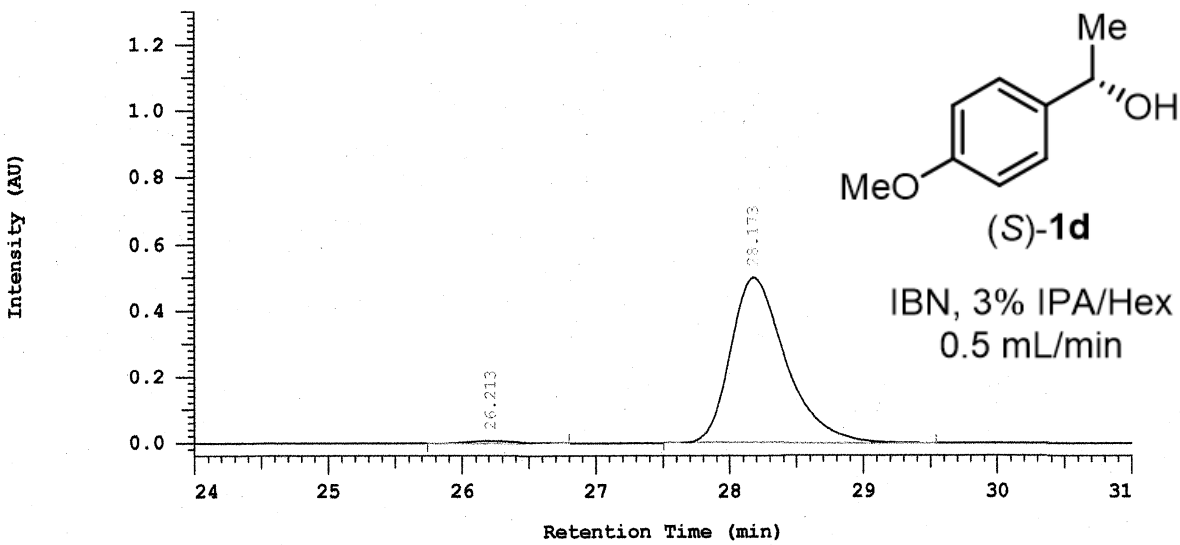
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/05 06:31
Reported Date and Time: 2025/10/06 10:29:19
Processed Date and Time: 2025/10/06 10:28
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0138\
Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA654_SM_pure_IB3%
Injection from this vial: 1 of 1
Sample Description:

Series: 0138
Vial Number: 6
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 26.213 | 84854 | 1.173 | MC |
| 2 | 28.173 | 7151377 | 98.827 | MC |
| | | 7236231 | 100.000 | |

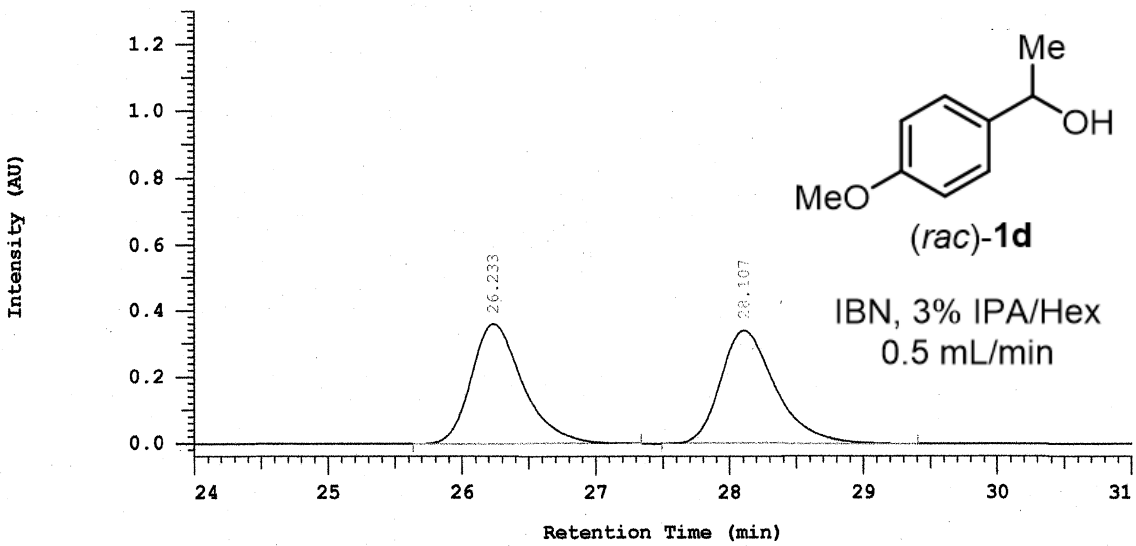
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/05 02:27
Reported Date and Time: 2025/10/06 10:25:15
Processed Date and Time: 2025/10/06 10:24
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0136\
Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1
Series: 0136
Application(data): KMA
Vial Number: 4
Sample Name: KMA_OMe_OH_pure_IB3%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 26.233 | 4806045 | 49.981 | MC |
| 2 | 28.107 | 4809770 | 50.019 | MC |
| | | 9615815 | 100.000 | |

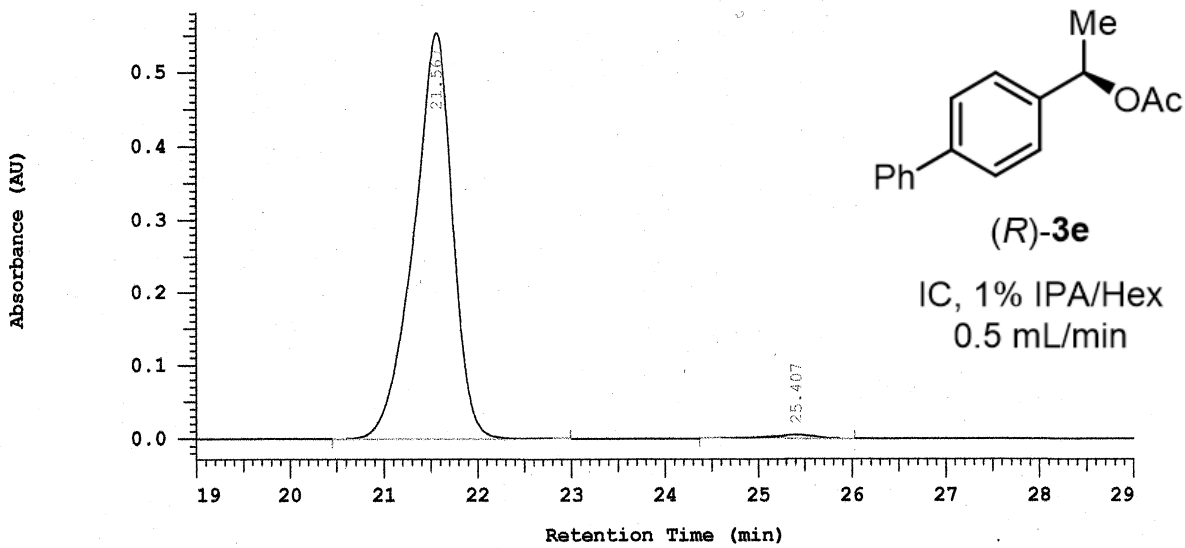
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/27 14:53
Reported Date and Time: 2025/10/28 17:56:43
Processed Date and Time: 2025/10/27 18:48
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0186\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Series: 0186
Application(data): KMA
Vial Number: 3
Sample Name: KMA662_P_IC_1%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 21.567 | 8013286 | 98.855 | MC |
| 2 | 25.407 | 92841 | 1.145 | MC |
| | | 8106127 | 100.000 | |

Peak rejection level: 0

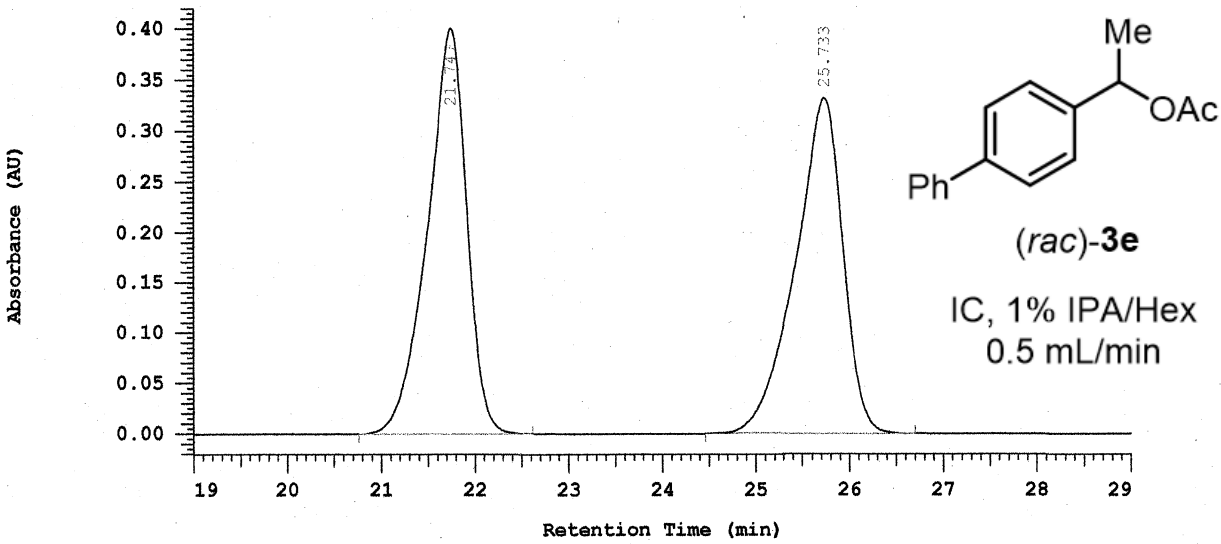
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/27 11:30
Reported Date and Time: 2025/10/28 17:54:36
Processed Date and Time: 2025/10/27 18:37
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0184\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_biPh_OAc_IC_1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0184
Vial Number: 1
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 21.747 | 5843960 | 49.981 | MC |
| 2 | 25.733 | 5848348 | 50.019 | MC |
| | | 11692308 | 100.000 | |

Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/27 20:37 Reported Date and Time: 2025/10/30 10:26:32

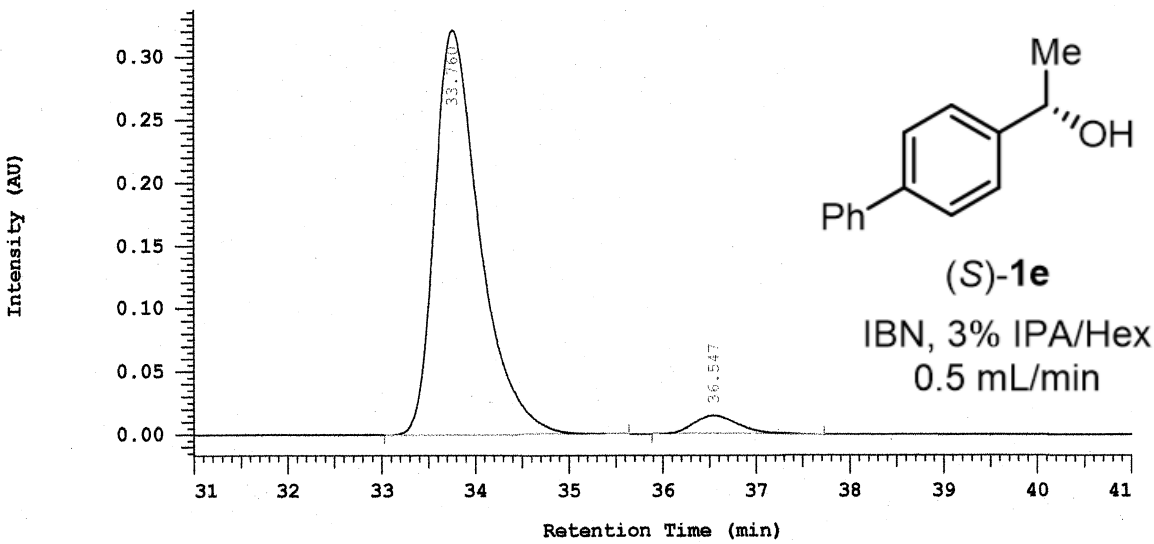
Processed Date and Time: 2025/10/30 10:26

Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0189\

Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1 Series: 0189
Application(data): KMA Vial Number: 6
Sample Name: KMA662_SM_IB_3% Vial Type: UNK
Injection from this vial: 1 of 1 Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 33.760 | 5398981 | 95.381 | MC |
| 2 | 36.547 | 261473 | 4.619 | MC |
| | | 5660454 | 100.000 | |

Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/27 16:35 Reported Date and Time: 2025/10/28 17:59:36

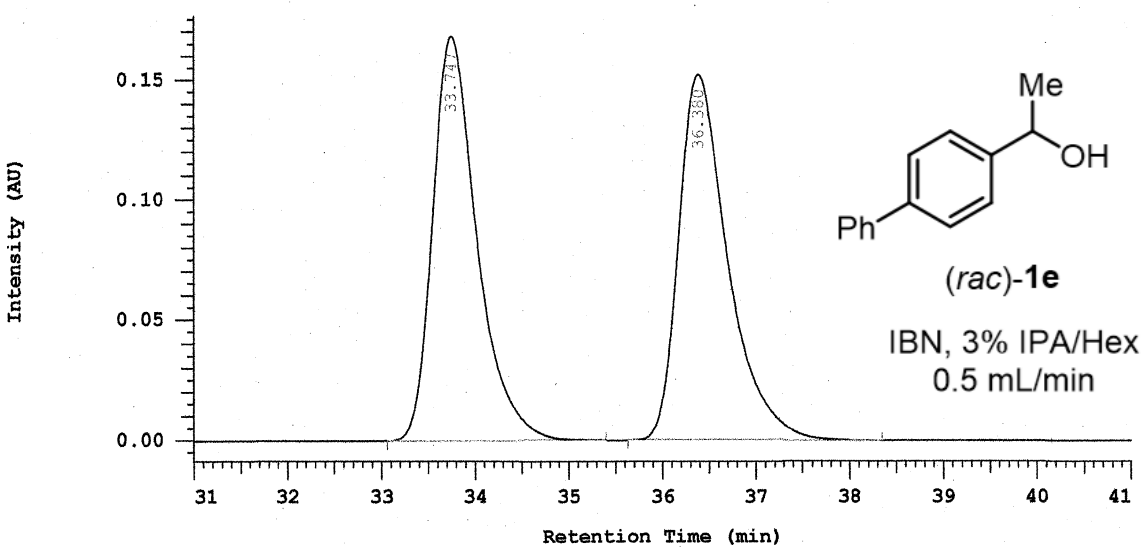
Processed Date and Time: 2025/10/27 18:52

Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0187\

Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1 Series: 0187
Application(data): KMA Vial Number: 4
Sample Name: KMArac_biPh_OH_IB_3% Vial Type: UNK
Injection from this vial: 1 of 1 Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 33.747 | 2769811 | 49.983 | MC |
| 2 | 36.380 | 2771696 | 50.017 | MC |
| | | 5541507 | 100.000 | |

Peak rejection level: 0

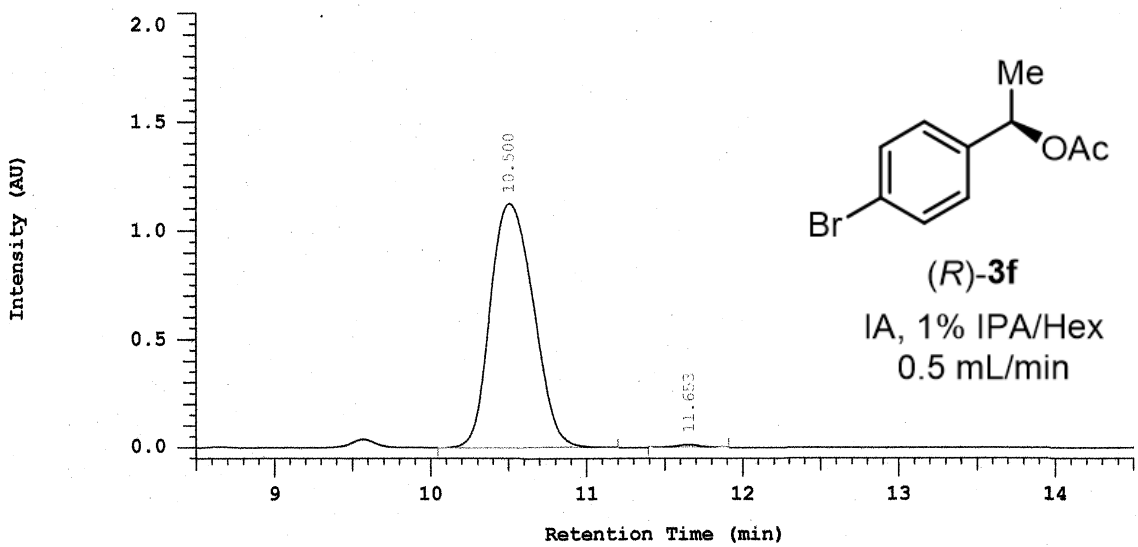
# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/10 18:46
Reported Date and Time: 2025/10/14 13:56:05
Processed Date and Time: 2025/10/14 13:51
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0152\
Processing Method: column1(IA-3)_1%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA656_P_pure_IA_1%
Injection from this vial: 1 of 1
Sample Description:

Series: 0152
Vial Number: 3
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column1(IA-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 10.500 | 10825743 | 99.258 | MC |
| 2 | 11.653 | 80894 | 0.742 | MC |
| | | 10906637 | 100.000 | |

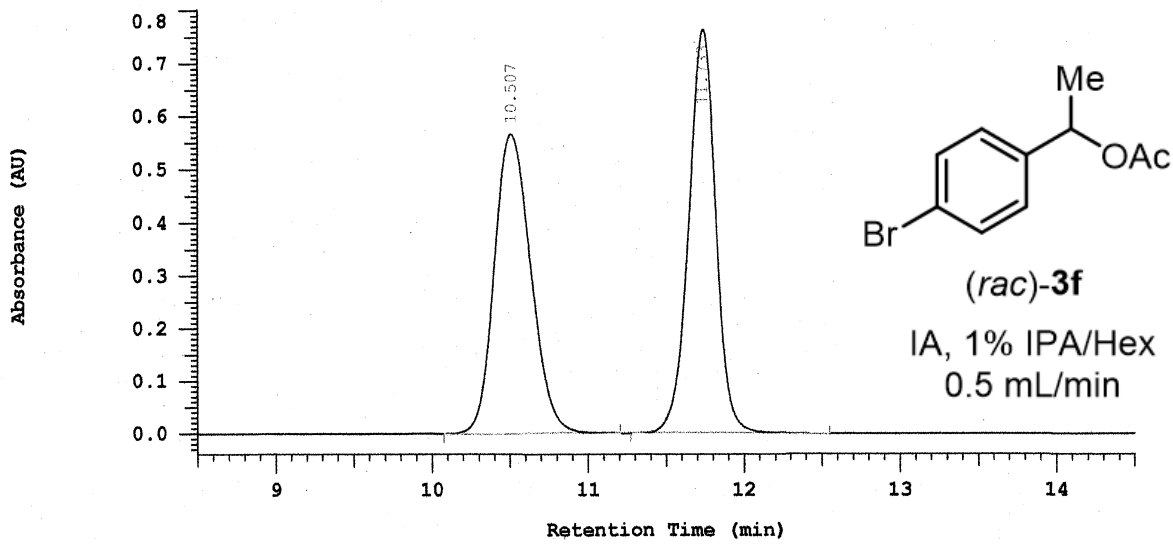
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/10 15:23
Reported Date and Time: 2025/10/14 13:46:50
Processed Date and Time: 2025/10/14 13:46
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0150\
Processing Method: column3(IC-3)_1%

System (acquisition): Sys 1
Series: 0150
Application(data): KMA
Vial Number: 1
Sample Name: KMArac_Br_OAc_IA_1%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column3(IC-3)_1%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 10.507 | 4645222 | 50.022 | MC |
| 2 | 11.733 | 4641066 | 49.978 | MC |
| | | 9286288 | 100.000 | |

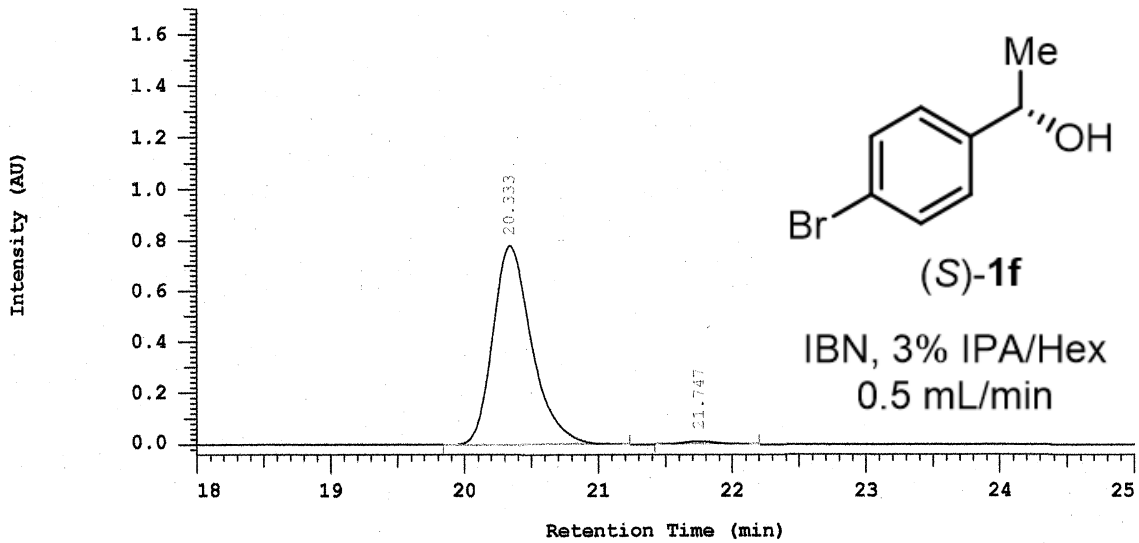
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/11 01:31
Reported Date and Time: 2025/10/14 13:59:24
Processed Date and Time: 2025/10/14 13:58
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0155\
Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1
Series: 0155
Application(data): KMA
Vial Number: 6
Sample Name: KMA656_SM_pure_IB_3%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 20.333 | 7868382 | 98.331 | MC |
| 2 | 21.747 | 133547 | 1.669 | MC |
| | | 8001929 | 100.000 | |

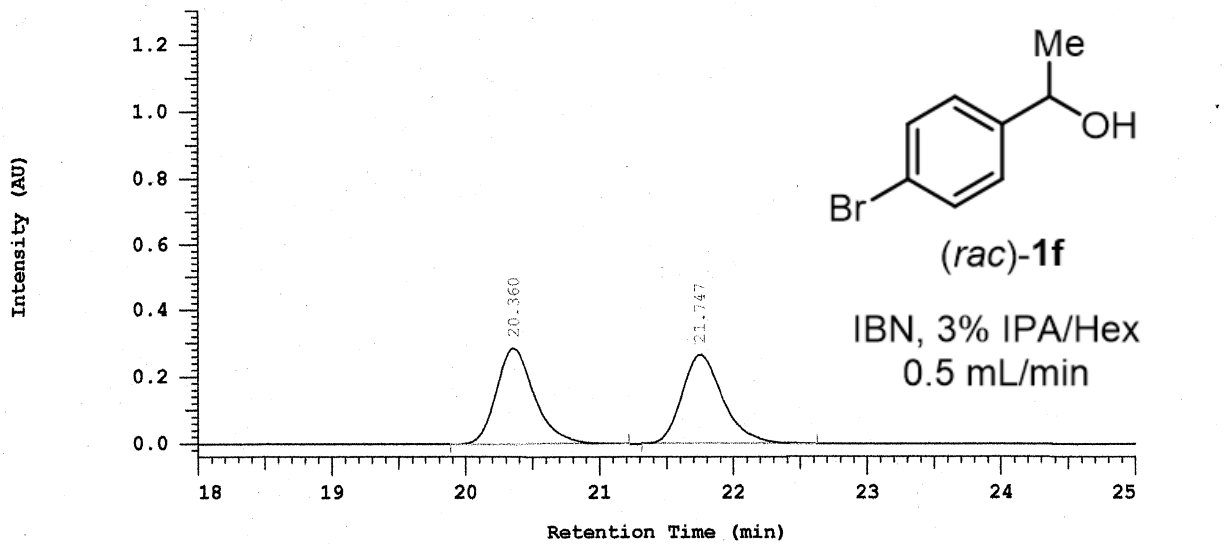
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/10/10 21:28
Reported Date and Time: 2025/10/14 13:55:33
Processed Date and Time: 2025/10/14 13:54
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0153\
Processing Method: column2(IBN-3)_3%

System (acquisition): Sys 1
Series: 0153
Application(data): KMA
Vial Number: 4
Sample Name: KMArac_Br_OH_IB_3%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column2(IBN-3)_3%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 20.360 | 2841445 | 50.057 | MC |
| 2 | 21.747 | 2834975 | 49.943 | MC |
| | | 5676420 | 100.000 | |

Peak rejection level: 0

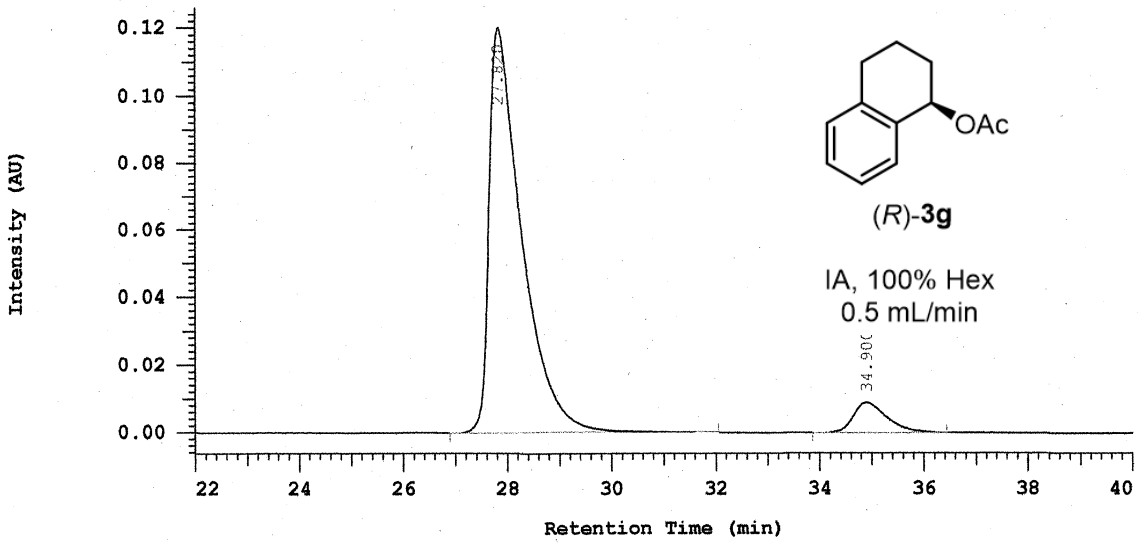
# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/08 19:49
Reported Date and Time: 2025/11/10 10:59:29
Processed Date and Time: 2025/11/10 10:58
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0205\
Processing Method: column1(IA-3)_0%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA691_P_IA_0%
Injection from this vial: 1 of 1
Sample Description:

Series: 0205
Vial Number: 2
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 204 nm




Processing Method: column1(IA-3)_0%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 204 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 27.820 | 2629040 | 92.885 | BB |
| 2 | 34.900 | 201391 | 7.115 | BB |
| | | 2830431 | 100.000 | |

Peak rejection level: 0

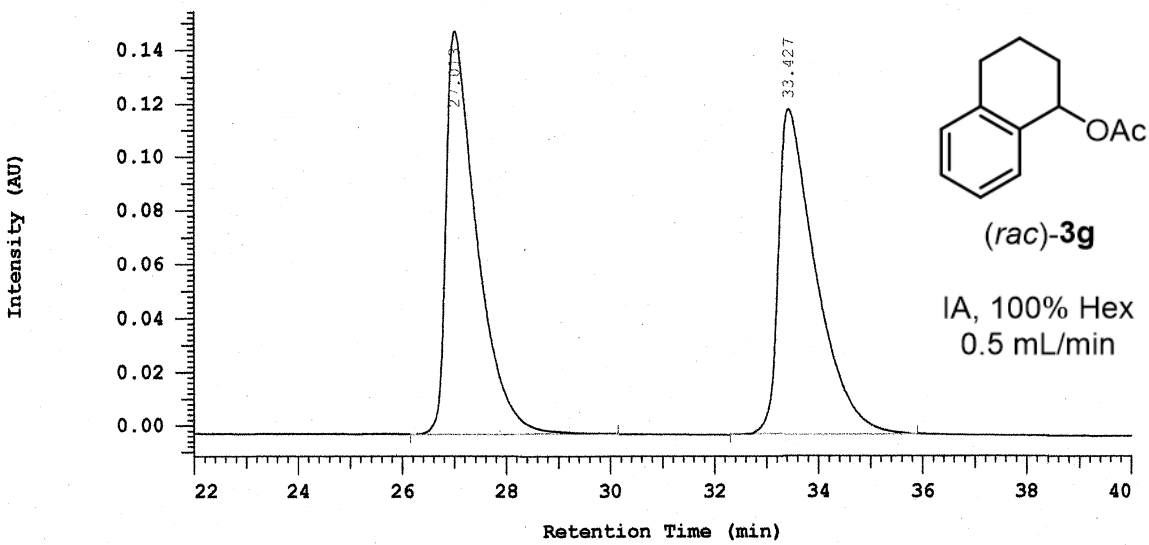
# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/08 18:07
Reported Date and Time: 2025/11/10 10:57:41
Processed Date and Time: 2025/11/10 10:56
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0204\
Processing Method: column1(IA-3)_0%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_cycHex_OAc_IA_0%
Injection from this vial: 1 of 1
Sample Description:

Series: 0204
Vial Number: 1
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 204 nm




Processing Method: column1(IA-3)_0%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 204 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 27.013 | 3083531 | 50.318 | BB |
| 2 | 33.427 | 3044612 | 49.682 | BB |
| | | 6128143 | 100.000 | |

Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/09 00:22 Reported Date and Time: 2025/11/10 11:08:09

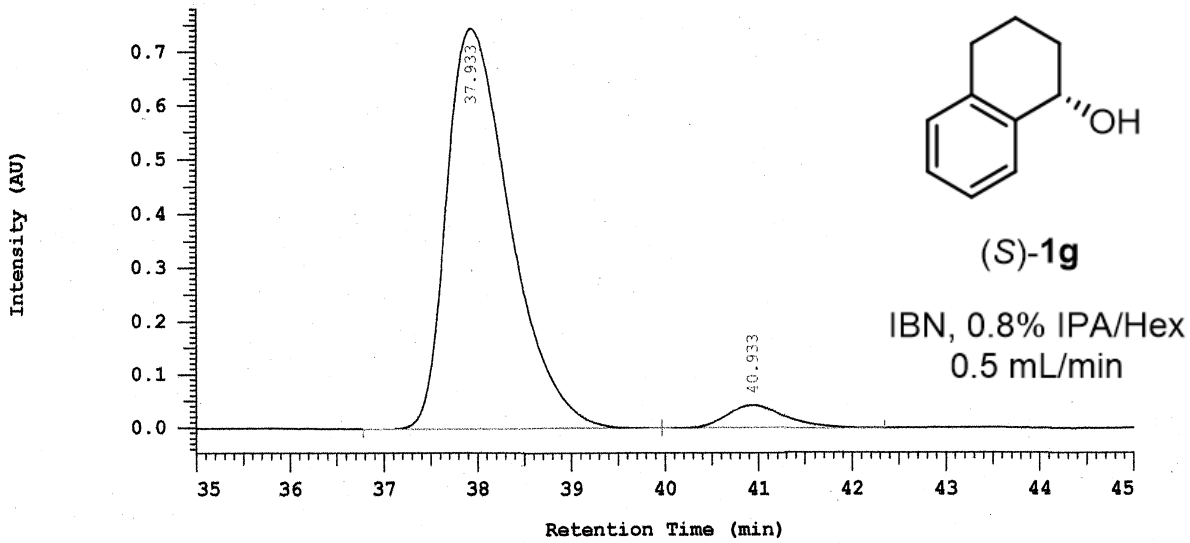
Processed Date and Time: 2025/11/10 11:07

Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0207\

Processing Method: column1(IA-3)_0%

System (acquisition): Sys 1 Series: 0207
Application(data): KMA Vial Number: 4
Sample Name: KMA691_SM_IB_0.8% Vial Type: UNK
Injection from this vial: 1 of 1 Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 200 nm




Processing Method: column1(IA-3)_0%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 200 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 37.933 | 17550839 | 95.001 | BB |
| 2 | 40.933 | 923482 | 4.999 | BB |
| | | 18474321 | 100.000 | |

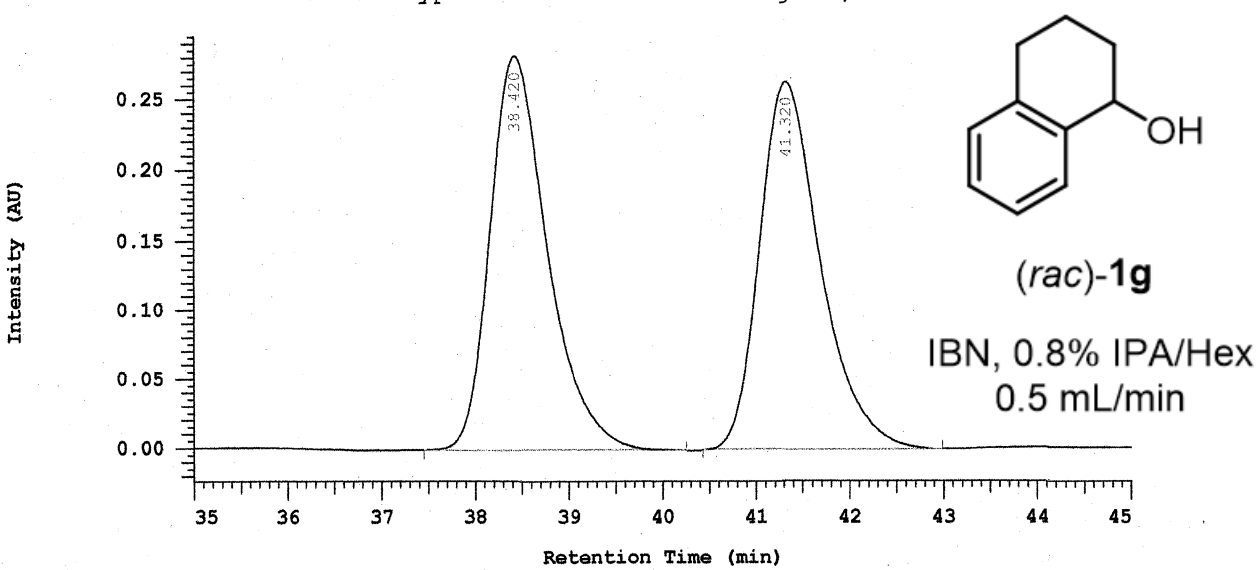
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/11/08 22:31
Reported Date and Time: 2025/11/10 11:05:29
Processed Date and Time: 2025/11/10 11:04
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0206\
Processing Method: column1(IA-3)_0%

System (acquisition): Sys 1
Series: 0206
Application(data): KMA
Vial Number: 3
Sample Name: KMArac_cycHex_OH_IB_0.8%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 200 nm




Processing Method: column1(IA-3)_0%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 200 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 38.420 | 6050484 | 50.268 | MC |
| 2 | 41.320 | 5985940 | 49.732 | MC |
| | | 12036424 | 100.000 | |

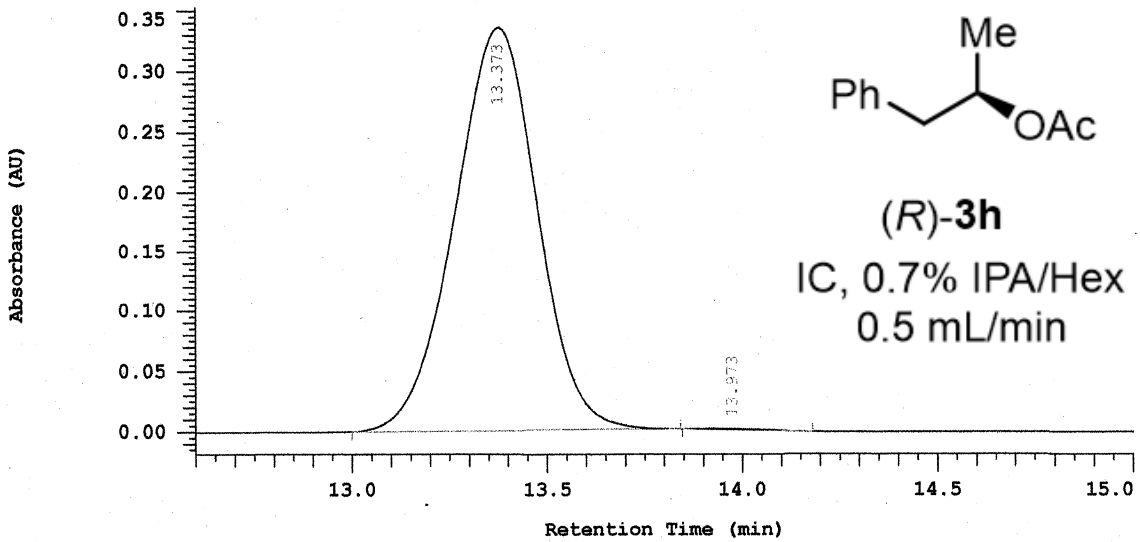
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/06 19:08
Reported Date and Time: 2025/12/08 11:37:50
Processed Date and Time: 2025/12/08 11:37
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0229\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Series: 0229
Application(data): KMA
Vial Number: 2
Sample Name: KMA706_P_IC_0.7%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

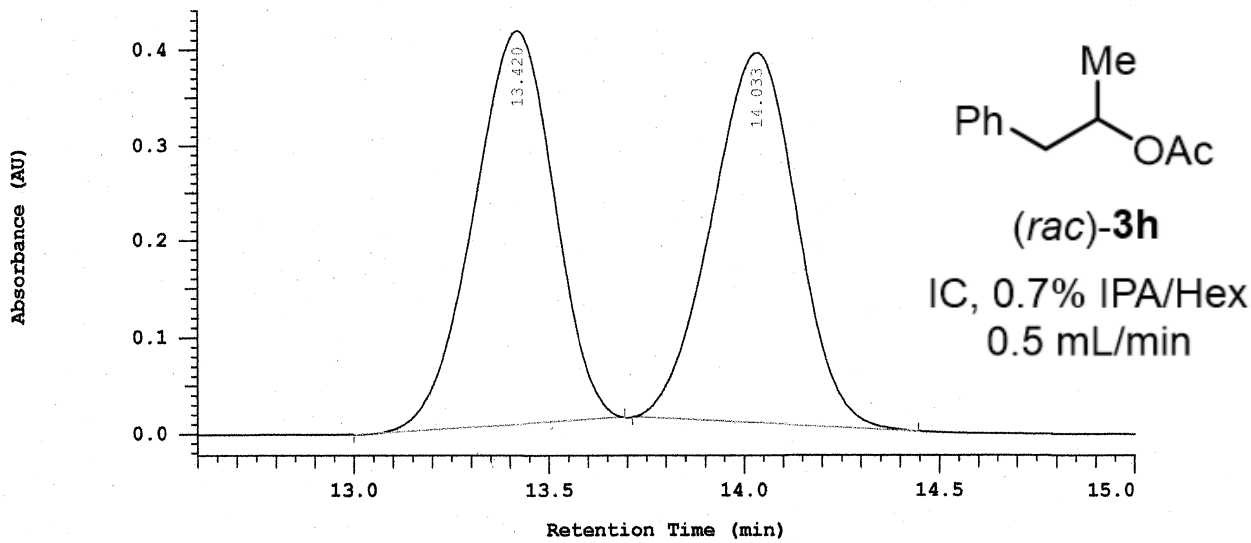
| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 13.373 | 2466730 | 99.725 | BB |
| 2 | 13.973 | 6802 | 0.275 | MC |
| | | 2473532 | 100.000 | |

Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/06 17:36
Reported Date and Time: 2025/12/08 11:36:07
Processed Date and Time: 2025/12/08 11:33
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0228\
Processing Method: column3(IC-3)_0.7%
System (acquisition): Sys 1
Series: 0228
Application(data): KMA
Vial Number: 1
Sample Name: KMArac_phenetyl_OAc_IC_0.7 %
Vial Type: UNK
Volume: 10.0 ul
Injection from this vial: 1 of 1
Sample Description:

Chrom Type: Fixed WL Chromatogram, 206 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 206 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 13.420 | 2922841 | 49.933 | MC |
| 2 | 14.033 | 2930702 | 50.067 | MC |
| | | 5853543 | 100.000 | |

Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/06 23:31 Reported Date and Time: 2025/12/08 11:45:35

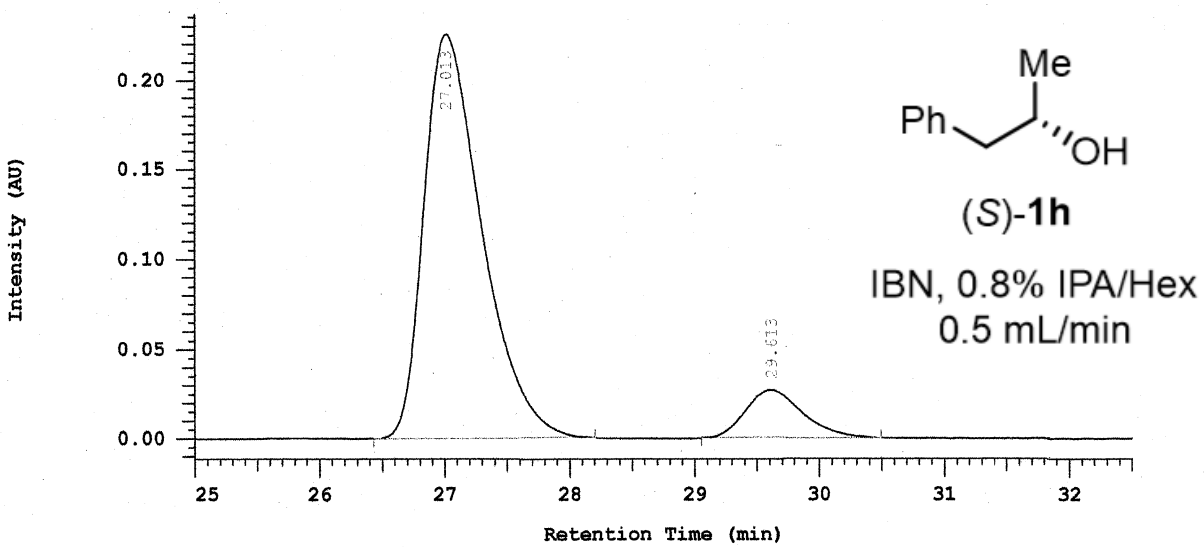
Processed Date and Time: 2025/12/08 11:44

Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0231\

Processing Method: column2(IBN-3)_0.8%

System (acquisition): Sys 1 Series: 0231
Application(data): KMA Vial Number: 4
Sample Name: KMA706_SM_IB_0.8% Vial Type: UNK
Injection from this vial: 1 of 1 Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column2(IBN-3)_0.8%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

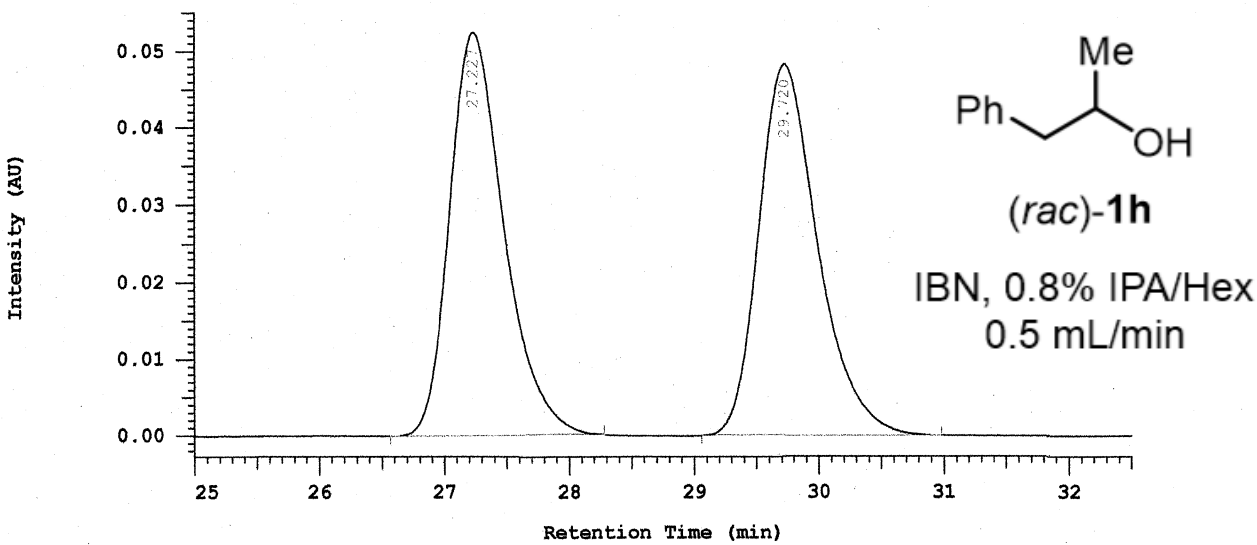
| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 27.013 | 3652598 | 89.386 | MC |
| 2 | 29.613 | 433719 | 10.614 | MC |
| | | 4086317 | 100.000 | |

Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/06 21:39
Reported Date and Time: 2025/12/08 11:42:59
Processed Date and Time: 2025/12/08 11:40
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0230\
Processing Method: column2(IBN-3)_0.8%
System (acquisition): Sys 1
Series: 0230
Application(data): KMA
Vial Number: 3
Sample Name: KMArac_phenetyl_OH_IB_0.8%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 220 nm




Processing Method: column2(IBN-3)_0.8%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 220 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 27.227 | 793612 | 49.899 | MC |
| 2 | 29.720 | 796837 | 50.101 | MC |
| | | 1590449 | 100.000 | |

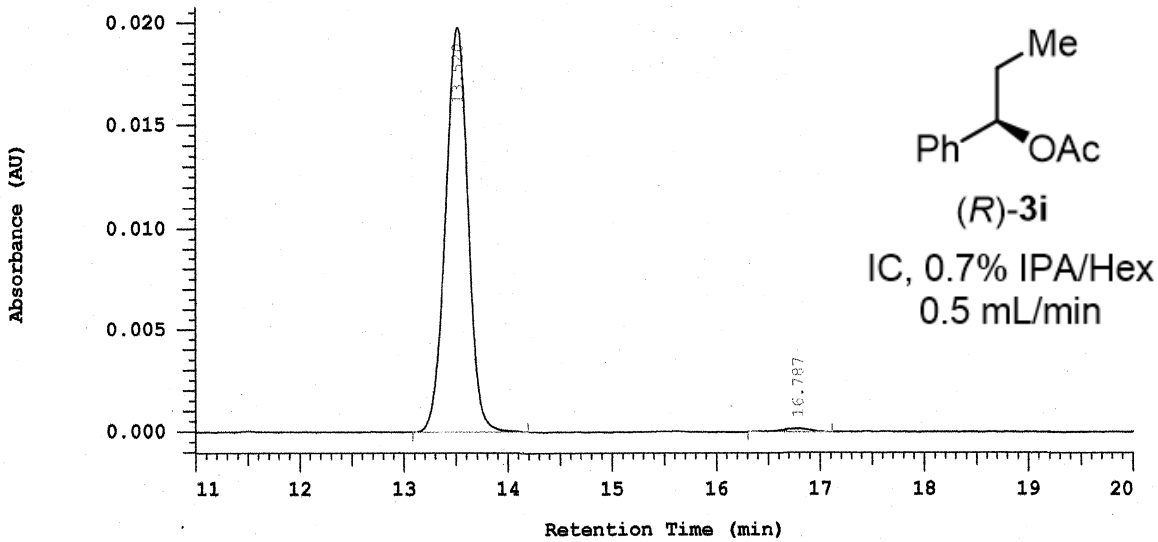
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 12:28
Reported Date and Time: 2025/12/20 10:20:27
Processed Date and Time: 2025/12/20 10:19
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0258\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Series: 0258
Application(data): KMA
Vial Number: 2
Sample Name: KMA727_P_IC_0.7%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 13.520 | 148758 | 98.805 | MC |
| 2 | 16.787 | 1799 | 1.195 | MC |
| | | 150557 | 100.000 | |

Peak rejection level: 0

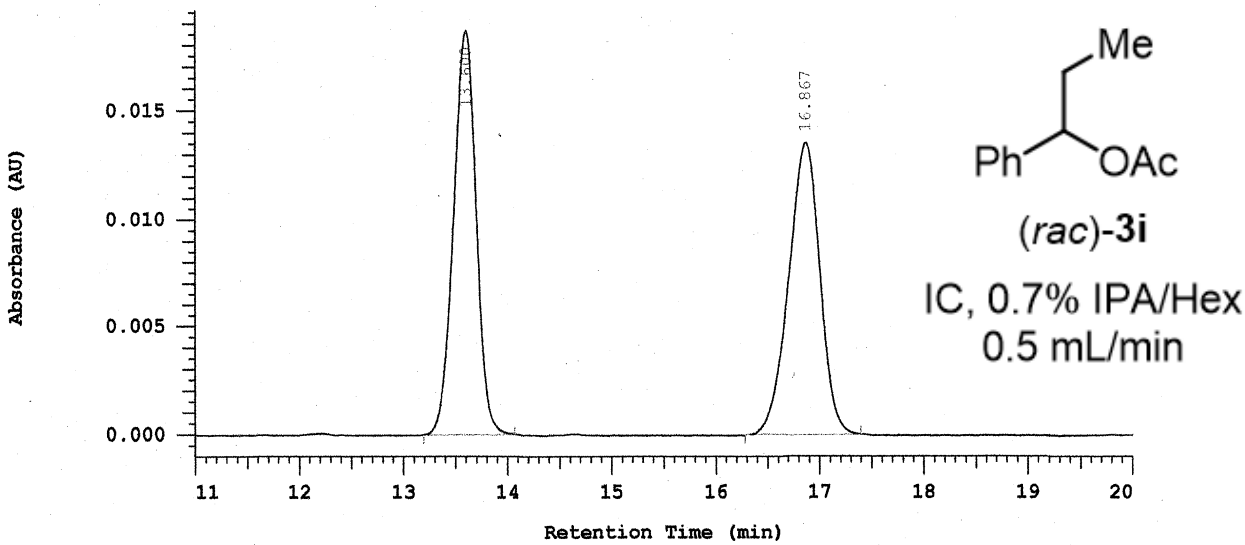
# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 11:06
Reported Date and Time: 2025/12/20 10:24:25
Processed Date and Time: 2025/12/20 10:18
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0257\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_PhEt_OAc_IC_0.7%
Injection from this vial: 1 of 1
Sample Description:

Series: 0257
Vial Number: 1
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 13.600 | 140631 | 49.836 | MC |
| 2 | 16.867 | 141557 | 50.164 | MC |
| | | 282188 | 100.000 | |

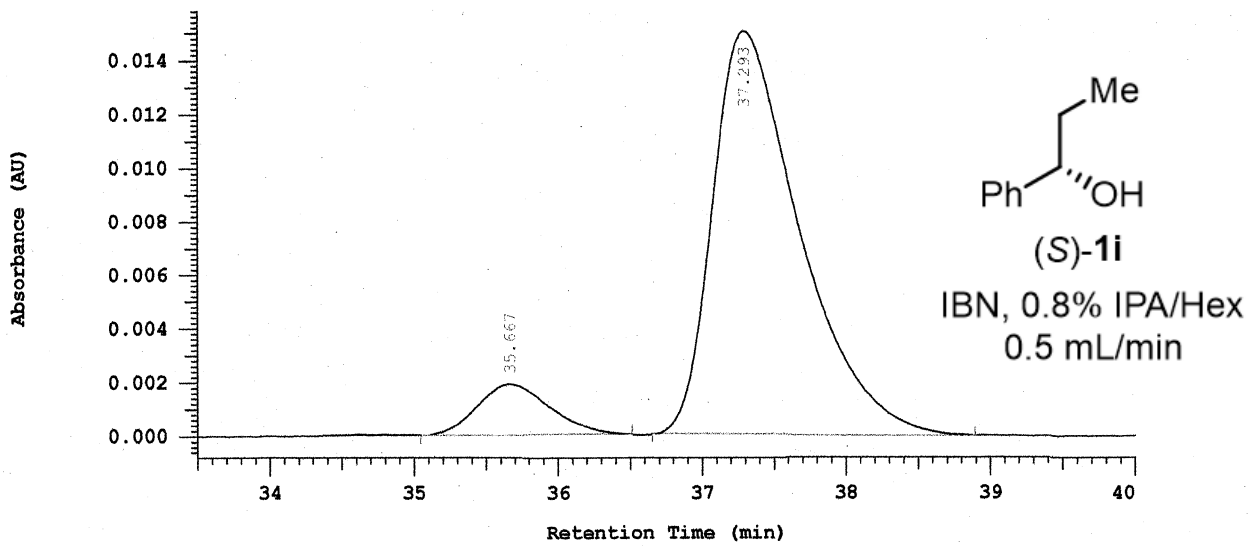
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 15:31
Reported Date and Time: 2025/12/20 10:24:00
Processed Date and Time: 2025/12/20 10:23
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0260\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Series: 0260
Application(data): KMA
Vial Number: 4
Sample Name: KMA727_SM_IB_0.8%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 35.667 | 32986 | 9.469 | MC |
| 2 | 37.293 | 315364 | 90.531 | MC |
| | | 348350 | 100.000 | |

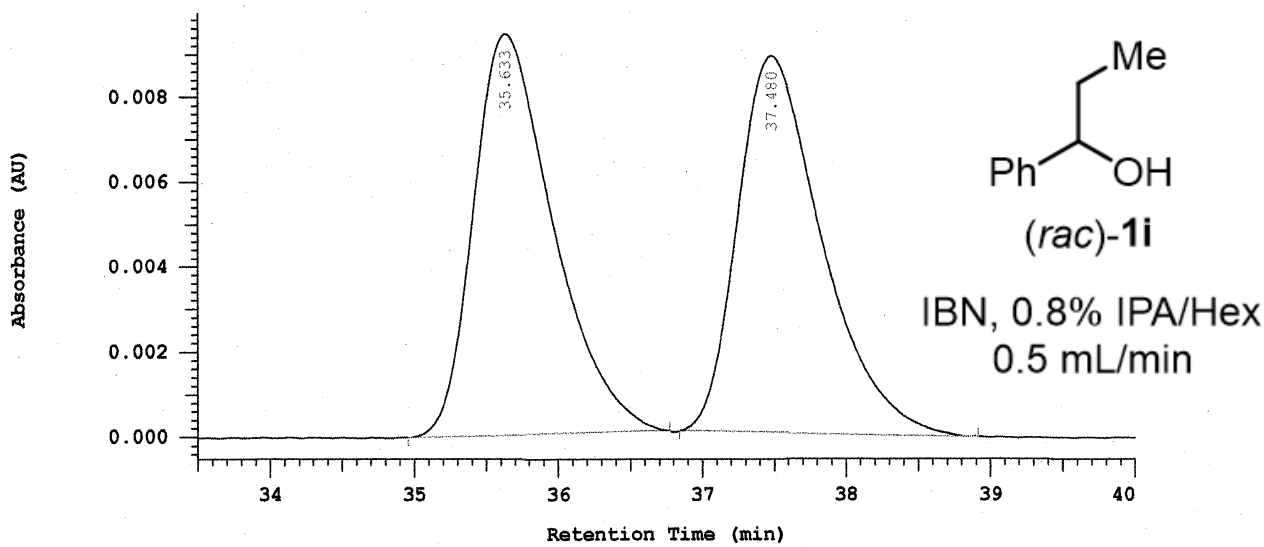
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 13:49
Reported Date and Time: 2025/12/20 10:24:44
Processed Date and Time: 2025/12/20 10:21
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0259\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Series: 0259
Application(data): KMA
Vial Number: 3
Sample Name: KMA_rac_PhEt_OH_IB_0.8%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 35.633 | 181105 | 50.077 | MC |
| 2 | 37.480 | 180551 | 49.923 | MC |
| | | 361656 | 100.000 | |

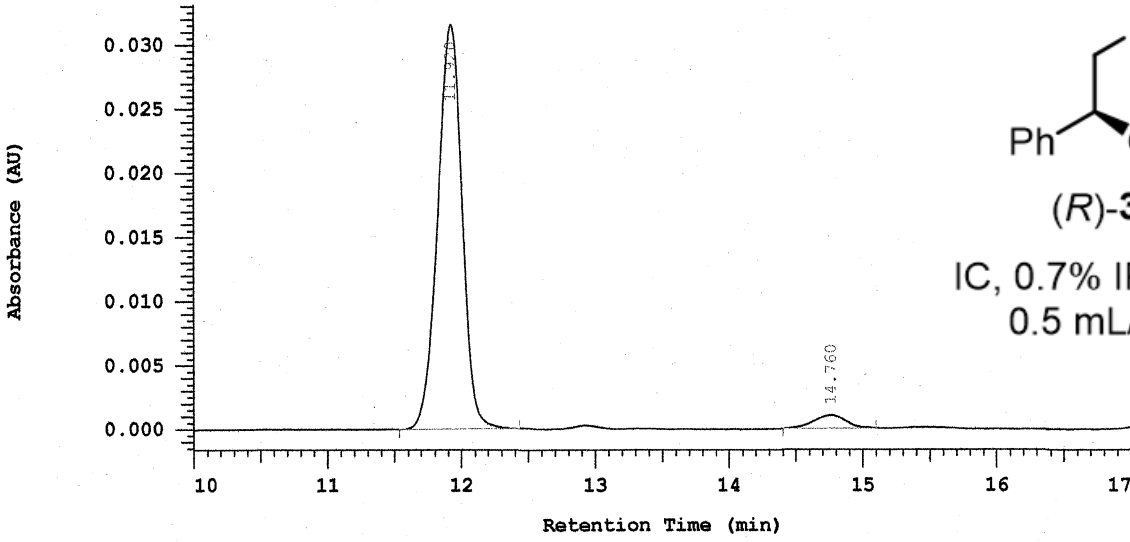
Peak rejection level: 0

# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 18:34
Reported Date and Time: 2025/12/20 10:27:51
Processed Date and Time: 2025/12/20 10:27
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0262\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Series: 0262
Application(data): KMA
Vial Number: 6
Sample Name: KMA728_P_IC_0.7%
Vial Type: UNK
Injection from this vial: 1 of 1
Volume: 10.0 ul
Sample Description:

Chrom Type: Fixed WL Chromatogram, 250 nm







(*R*)-**3j**

IC, 0.7% IPA/Hex
0.5 mL/min

Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 11.920 | 199698 | 95.947 | MC |
| 2 | 14.760 | 8435 | 4.053 | MC |
| | | 208133 | 100.000 | |

Peak rejection level: 0

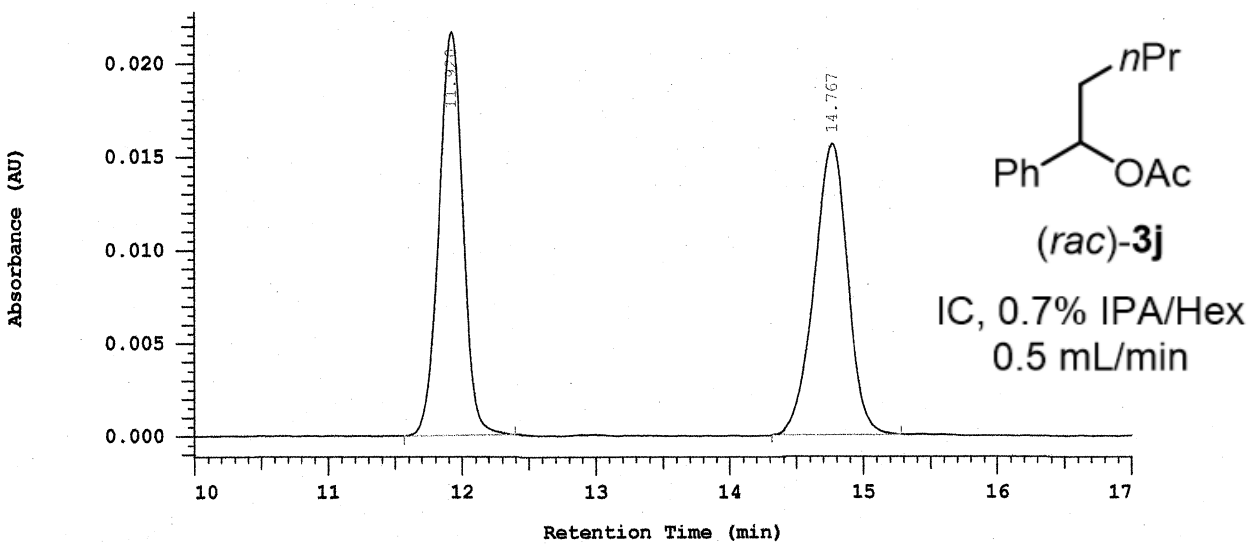
# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 17:13
Reported Date and Time: 2025/12/20 10:26:23
Processed Date and Time: 2025/12/20 10:25
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0261\
Processing Method: column3(IC-3)_0.7%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMArac_PhBu_OAc_IC_0.7%
Injection from this vial: 1 of 1
Sample Description:

Series: 0261
Vial Number: 5
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column3(IC-3)_0.7%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C:
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 11.920 | 135413 | 49.921 | MC |
| 2 | 14.767 | 135839 | 50.079 | MC |
| | | 271252 | 100.000 | |

Peak rejection level: 0

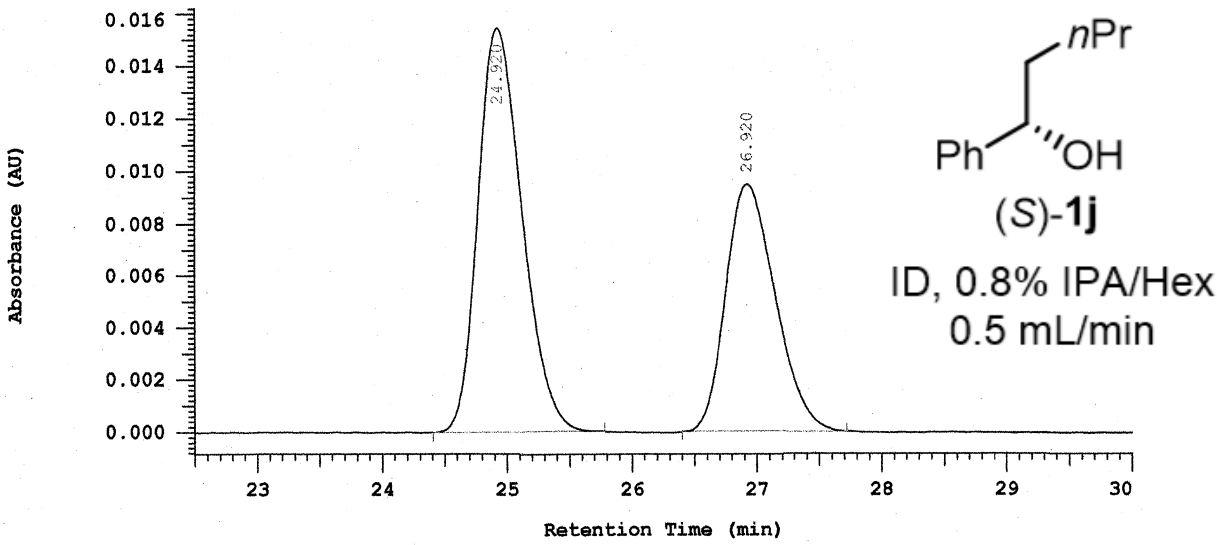
# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 21:32
Reported Date and Time: 2025/12/20 10:30:46
Processed Date and Time: 2025/12/20 10:30
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0264\
Processing Method: column4(ID-3)_0.8%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA728_SM_ID_0.8%
Injection from this vial: 1 of 1
Sample Description:

Series: 0264
Vial Number: 8
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column4(ID-3)_0.8%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: acetone
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 24.920 | 189428 | 59.175 | MC |
| 2 | 26.920 | 130684 | 40.825 | BB |
| | | 320112 | 100.000 | |

Peak rejection level: 0

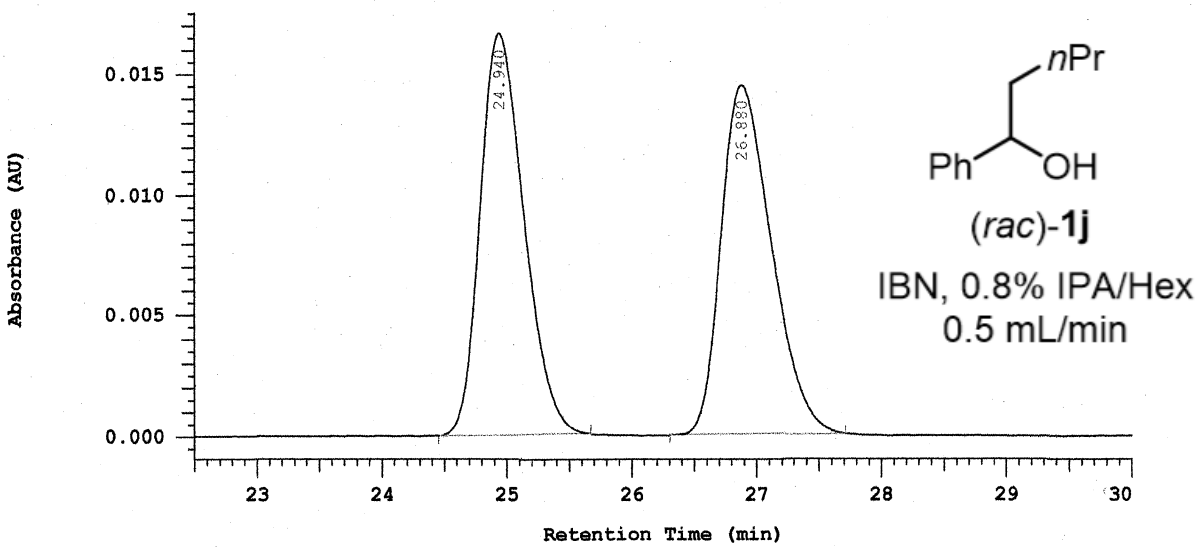
# Chromaster System Manager Report

Analyzed Date and Time: 2025/12/19 19:56
Reported Date and Time: 2025/12/20 10:29:32
Processed Date and Time: 2025/12/20 10:29
Data Path: C:\WIN32APP\CHROMASTER\KMA\DATA\0263\
Processing Method: column4(ID-3)_0.8%

System (acquisition): Sys 1
Application(data): KMA
Sample Name: KMA_rac_PhBu_OH_ID_0.8%
Injection from this vial: 1 of 1
Sample Description:

Series: 0263
Vial Number: 7
Vial Type: UNK
Volume: 10.0 ul

Chrom Type: Fixed WL Chromatogram, 250 nm




Processing Method: column4(ID-3)_0.8%
Method Developer:
Pump 1: 5110
Pump 1 Solvent A: hexane
Pump 1 Solvent B: 2-propanol
Pump 1 Solvent C: acetone
Pump 1 Solvent D:
Method Description:

Chrom Type: Fixed WL Chromatogram, 250 nm
Peak Quantitation: AREA
Calculation Method: AREA%

| No. | RT | Area | Conc 1 | BC |
|---|---|---|---|---|
| 1 | 24.940 | 201997 | 49.958 | BB |
| 2 | 26.880 | 202339 | 50.042 | BB |
| | | 404336 | 100.000 | |

Peak rejection level: 0