Electronic Supporting Informations

Synthesis and self-assembly of novel benzimidazole-carbazole-*N*-glycosylamines into nanofibers

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S.I.1: Experimental Procedure

S.I. 1.1: General procedure for gelation

The gelation studies were carried as per reported procedures.[1] A definite amount of benzimidazole-carbazole--*N*-glycosylamine gelator **14-19** was added to 1 ml of a required solvent in a glass vial and warmed gently until clear solution was obtained. After allowing it to cool at ambient temperature, the vessel was turned upside down to verify the gel formation. The reversibility of the gelation was confirmed by repeated heating and cooling. The critical gelator concentration (CGC) of benzimidazole- carbazole-*N*-glcosylamine **14-19** was determined from the minimum amount of gelator required for the gel formation at room temperature.

S.I. 1.2: Scanning electron microscopy (SEM)

Scanning electron microscopic studies were performed by using Hitachi Scanning Electron Microscope SU3500. The samples were prepared by drop casting of gel of benzimidazole-carbazole-*N*-glycosylamines **18** on aluminium studs at its CGC in ethanol at ambient conditions. SEM images were obtained after drying the sample at ambient temperature.

S.I. 1.3: High resolution-Transmission electron microscopy (HR-TEM)

High resolution-Transmission electron microscopic studies were performed by using FEI TECNAI G2 model T-30 at accelerating voltage of 250 kV. The samples were prepared by drop casting of solution, dispersed with gel of benzimidazole-carbazole-*N*-glycosylamine **18** in ethanol on to carbon coated copper grids (400 mesh) at the concentration of 1 X 10^{-4} M at ambient conditions. TEM images were obtained after drying the sample and without staining in vaccum.

S.I. 1.4: XRD analysis

PXRD patterns are recorded by X-ray diffractometer with CuK_{α} radiation source. The scan rate was 0.5^{o}/min. The xerogel was prepared by evaporating gel prepared in ethanol at room temperature.

S.I.1.5: Rheological studies

Rheological measurements were carried out with Anton Paar-Rheoplus instrument. Oscillatory experiments were performed in a 0.001–100 Hz frequency range with 0.1 % constant strain on 0.3 % gel of **18** in ethanol at 25^{o}C.

S.I. 1.5: Dropping ball method

Gel to solution transition temperature (T_{gel}) of gelators **18** was determined by a 'dropping-ball method". A small tin ball of approximate weight 100 mg was placed on top of the gel in a capped vial of diameter 1.0 cm, which was slowly warmed in a silicon oil bath. The temperature in which the tin ball reaches the bottom of the vial is assigned as T_{gel}. The experiment is duplicated one to obtain the reproducibility within $\pm 2^{o}$C. The same condition was repeated in different solvents and increased concentrations.[2]

Reference

1. H. Svobodová, Nonappa, M. Lahtinen, Z. Wimmer and E. Kolehmainen, *Soft Matter*, 2012, **8**, 7840.
2. (a) D. J. Abdallah and R. G. Weiss, *Langmuir*, 2000, **16**, 352; (b) Y. Yu and Y. Ma, *Soft Matter*, 2011, **7**, 884.

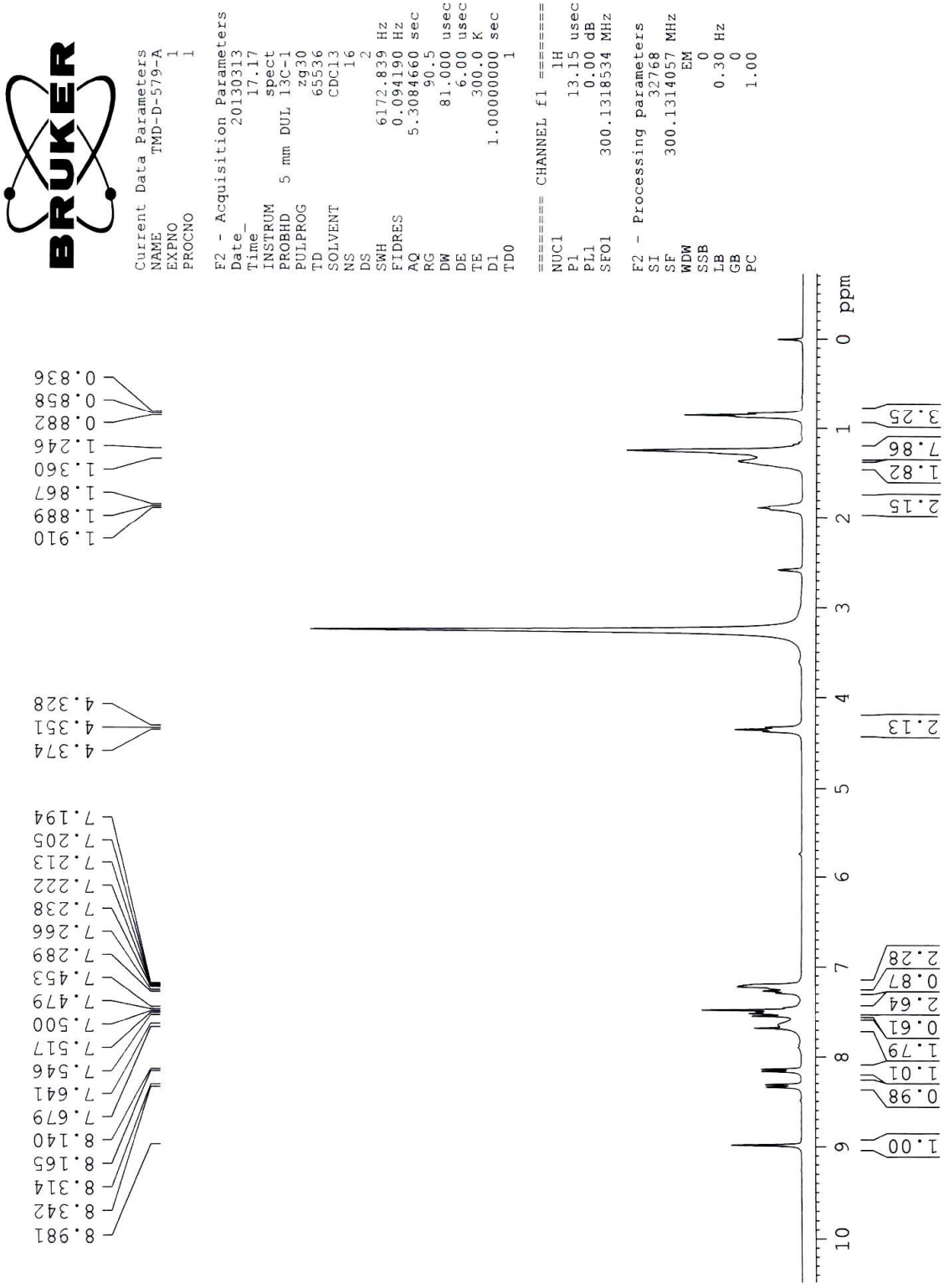

Figure S.I. 1: ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-D_6) Spectrum of Compound **4**.

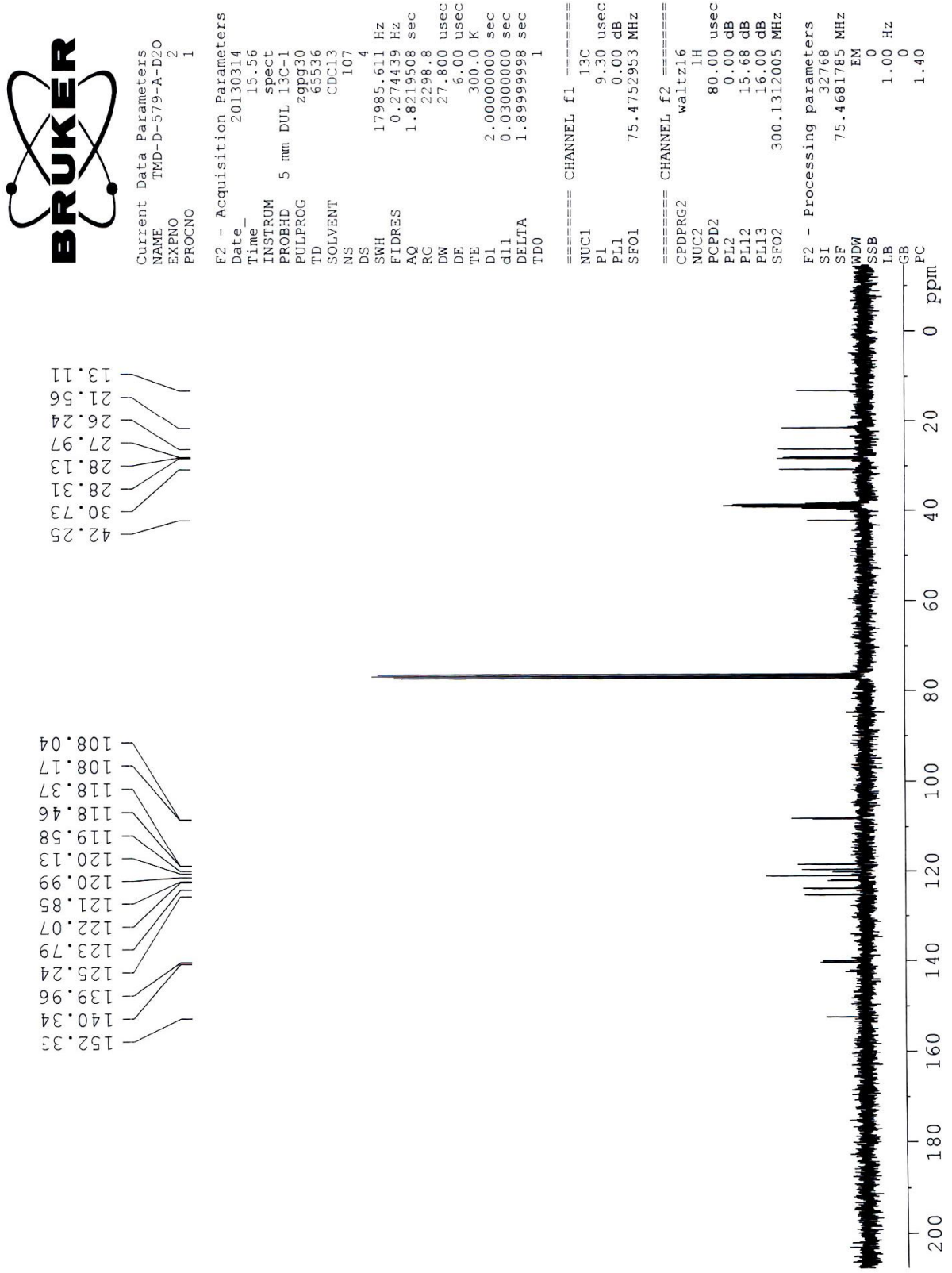

Figure S.I. 2: ^{13}C NMR (300 MHz, $CDCl_3$+DMSO-D_6) Spectrum of Compound **4**.

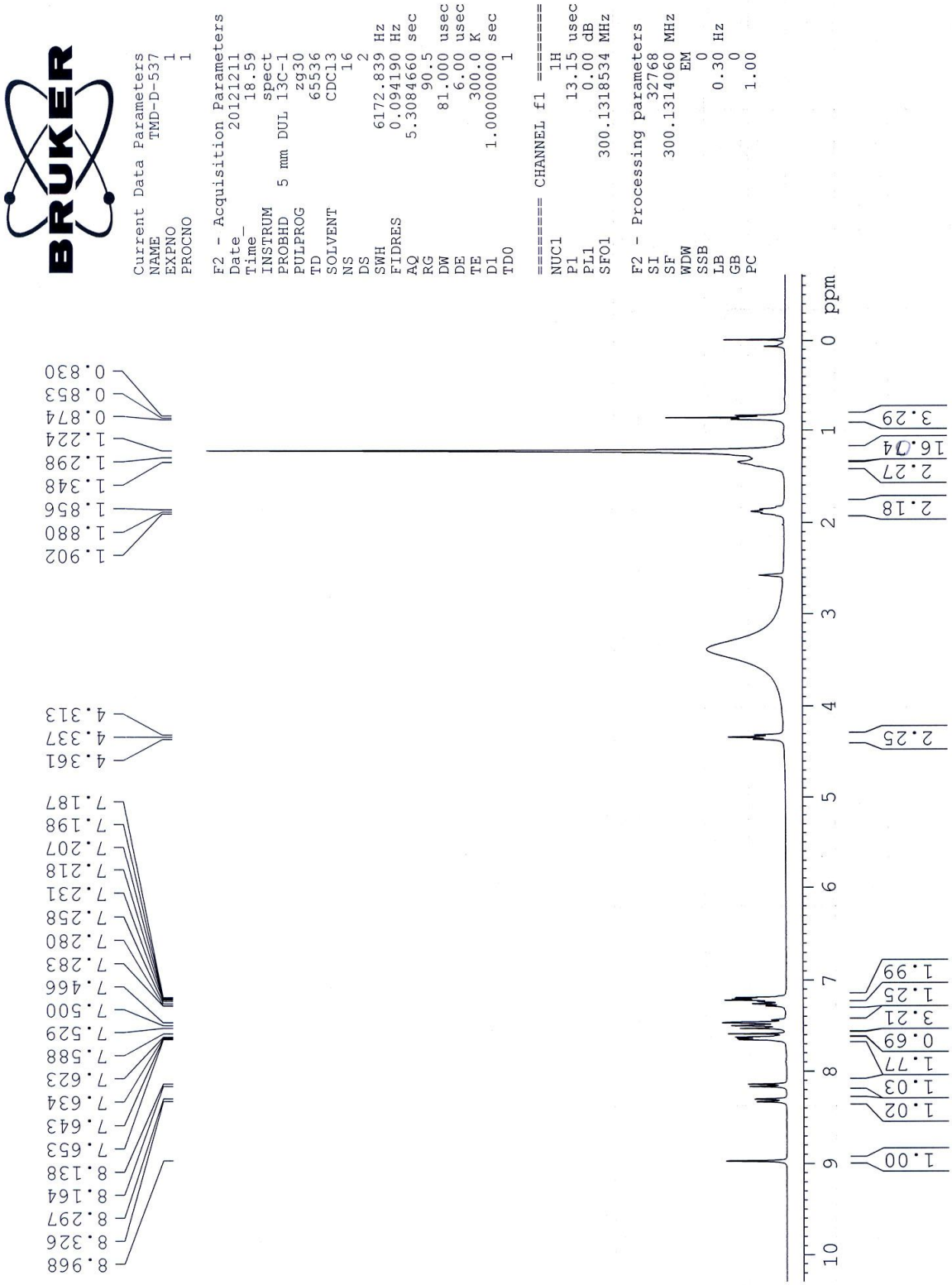

Figure S.I. 3: ^{1}H NMR (300 MHz, $CDCl_3$+DMSO-D_6) Spectrum of Compound **5**.

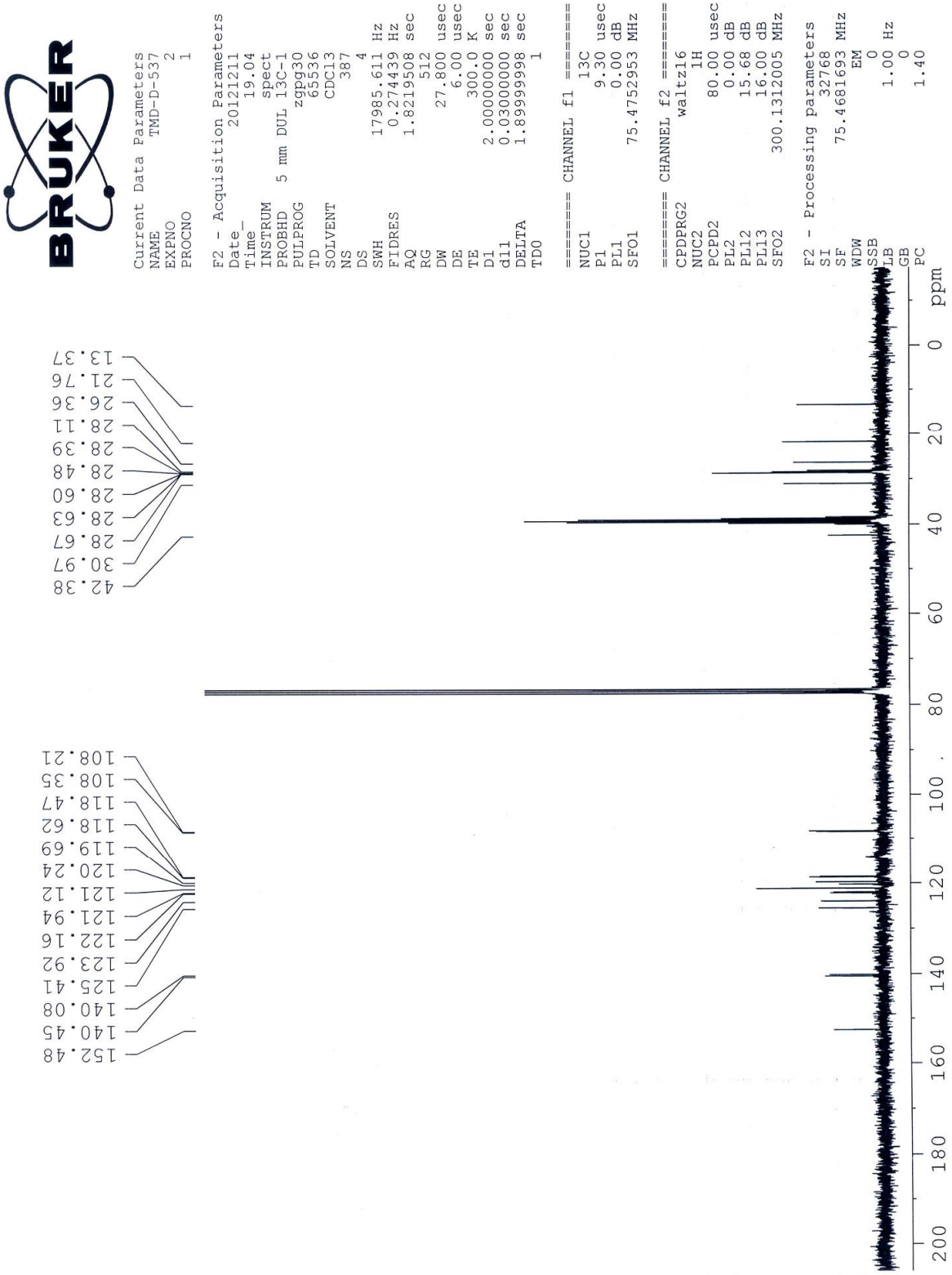

Figure S.I. 4: ^{13}C NMR (300 MHz, $CDCl_3$+DMSO-D_6) Spectrum of Compound **5**.

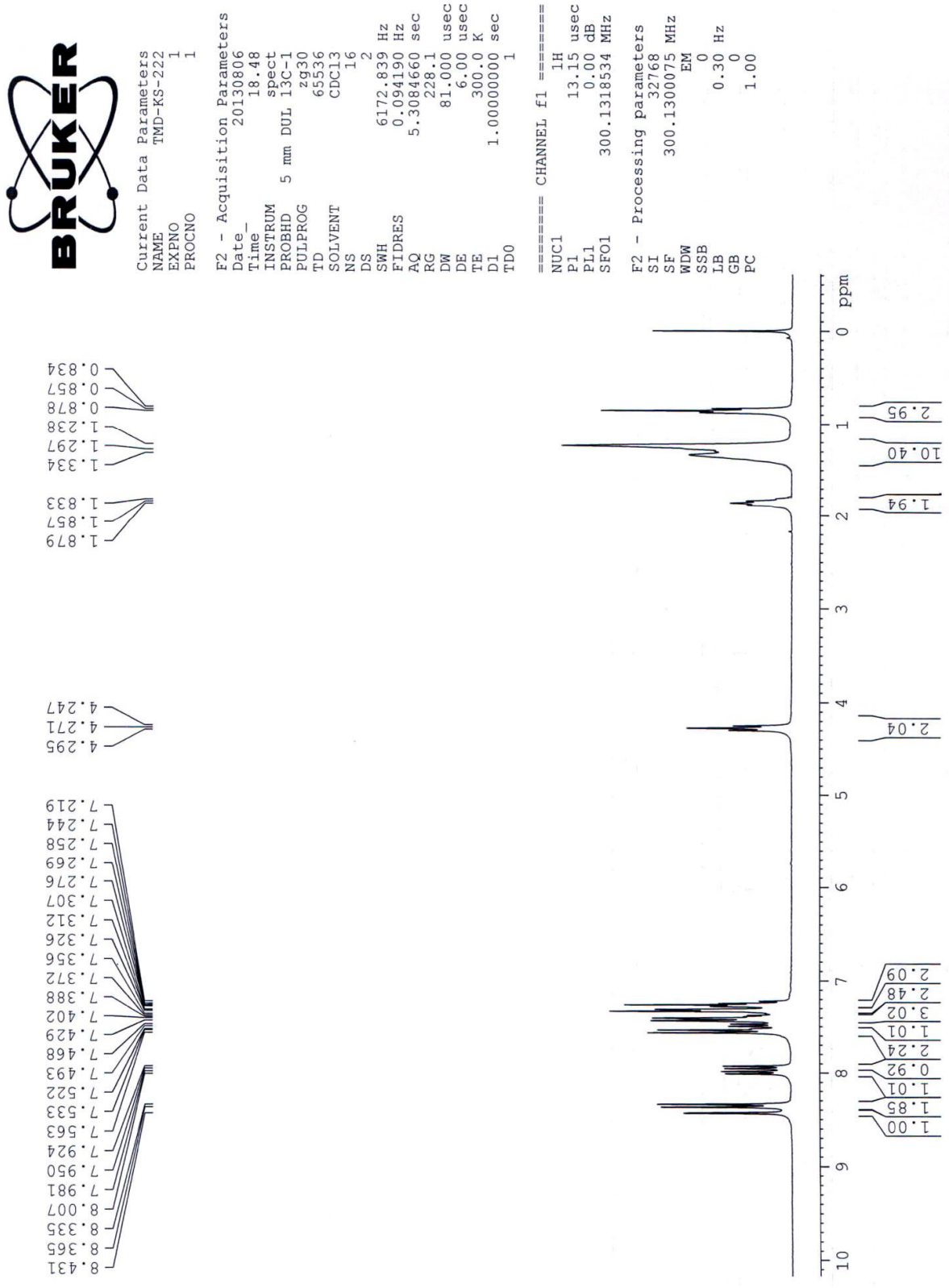

Figure S.I. 5: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **7**.

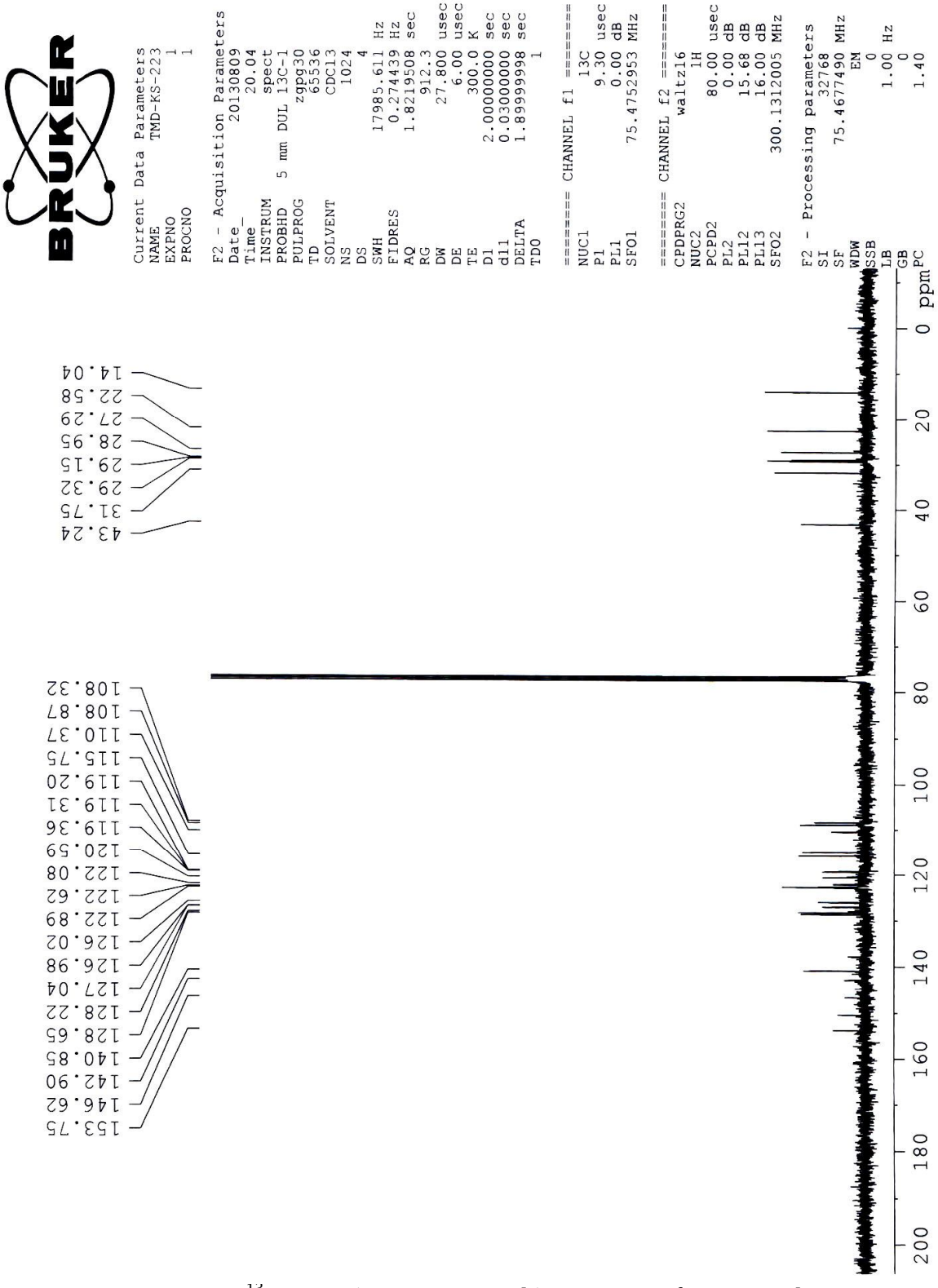

Figure S.I. 6: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **7**.

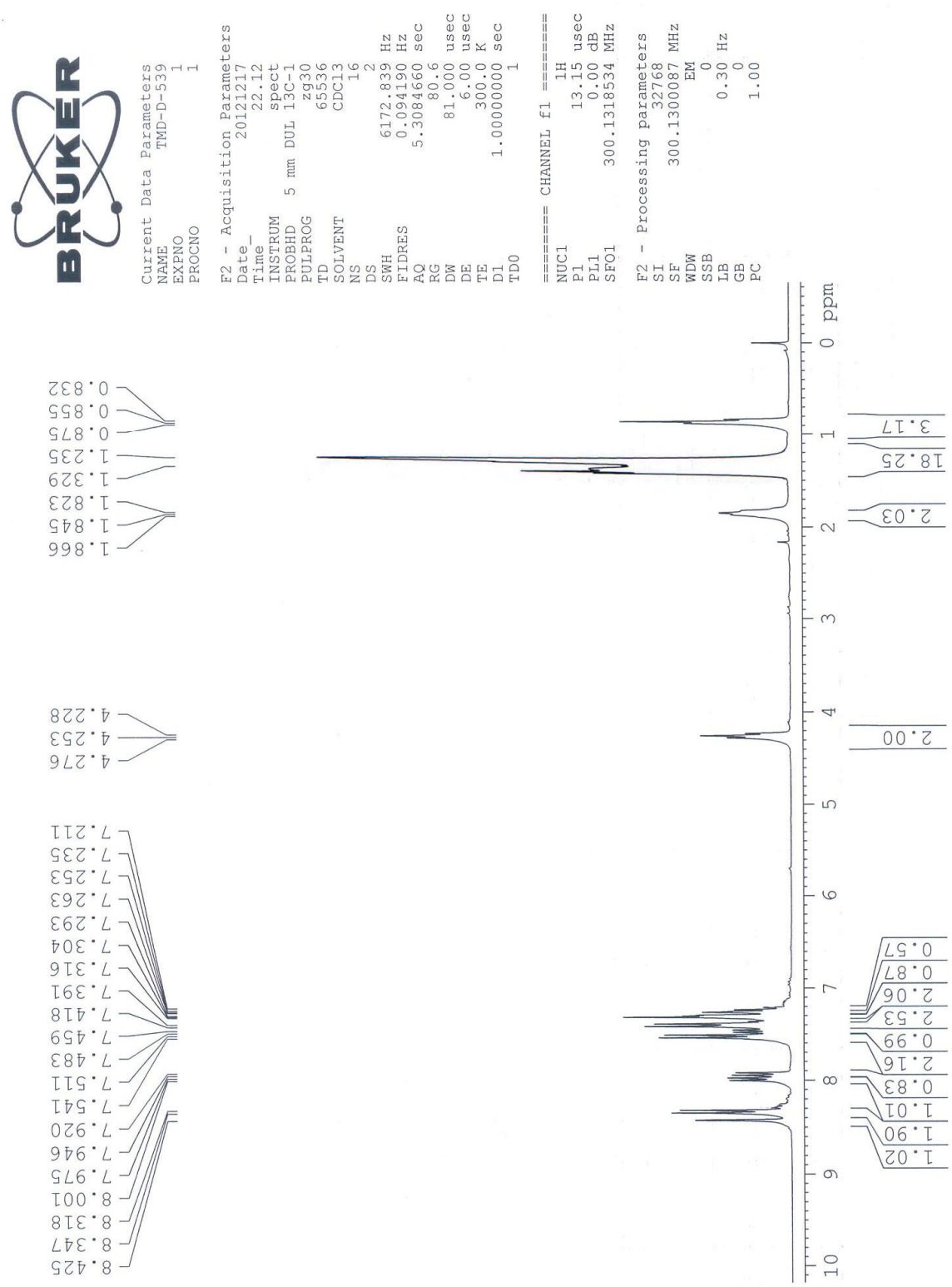

Figure S.I. 7: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **8**.

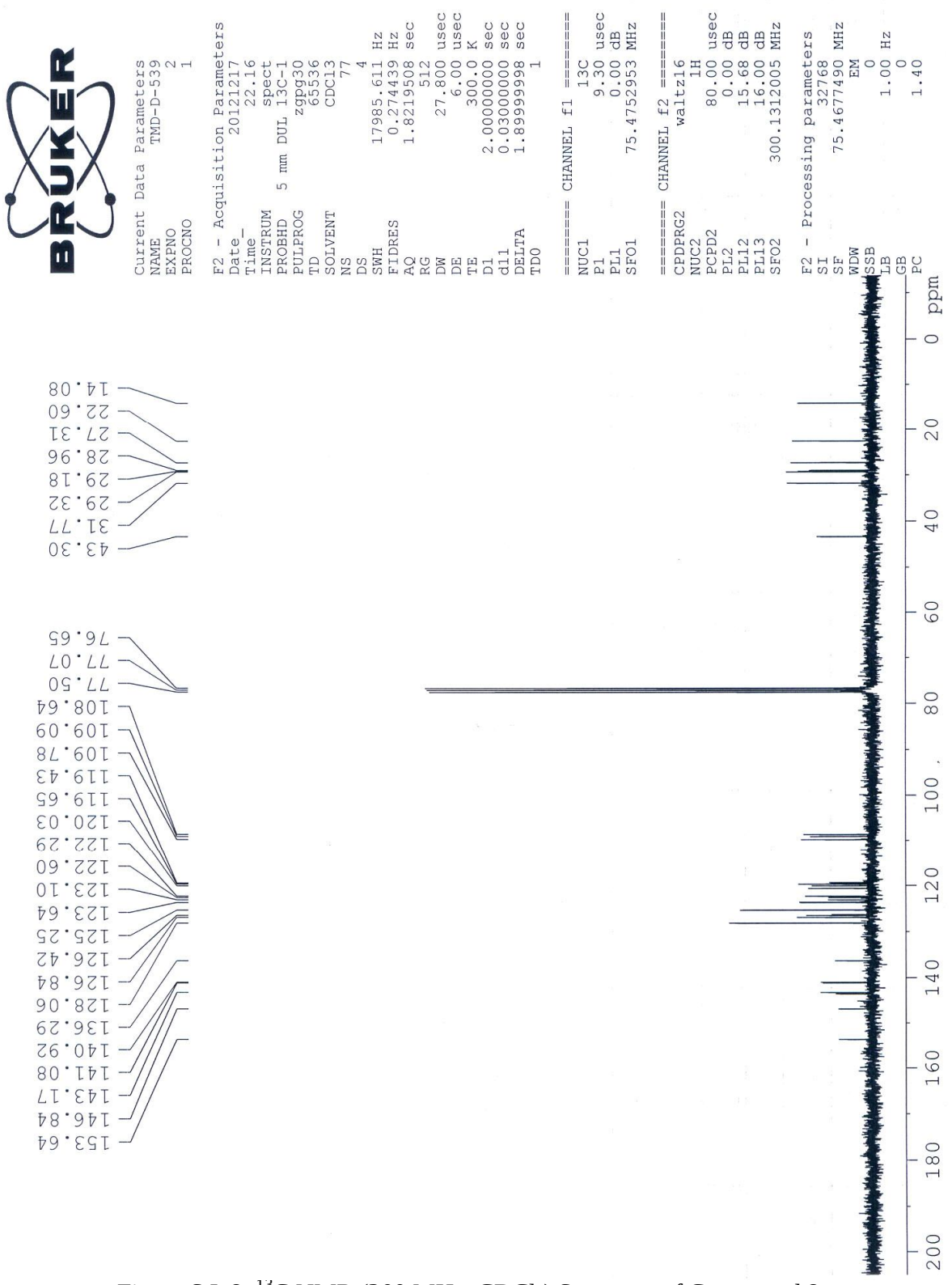

Figure S.I. 8: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **8**.

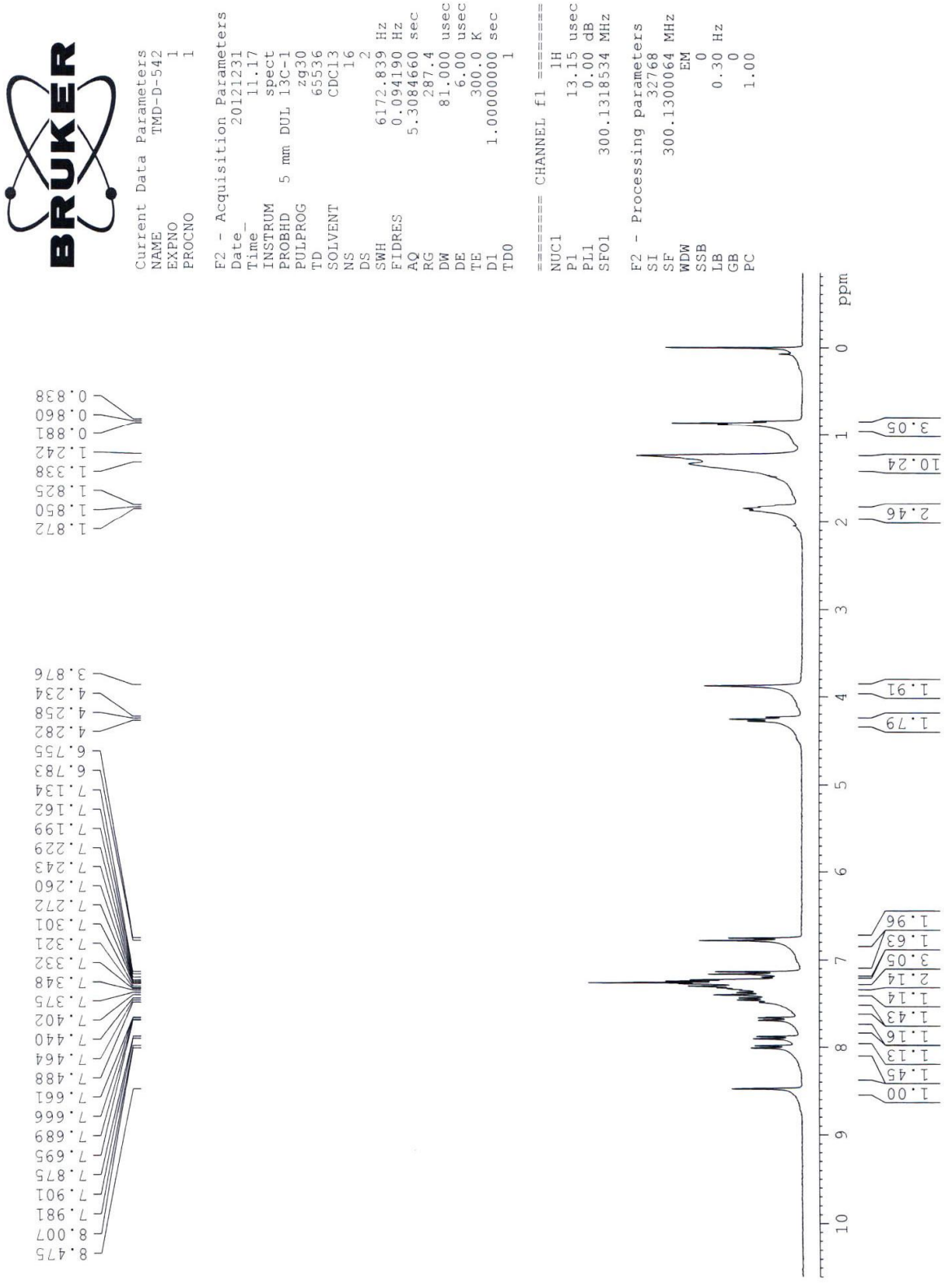

Figure S.I. 9: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **9**.

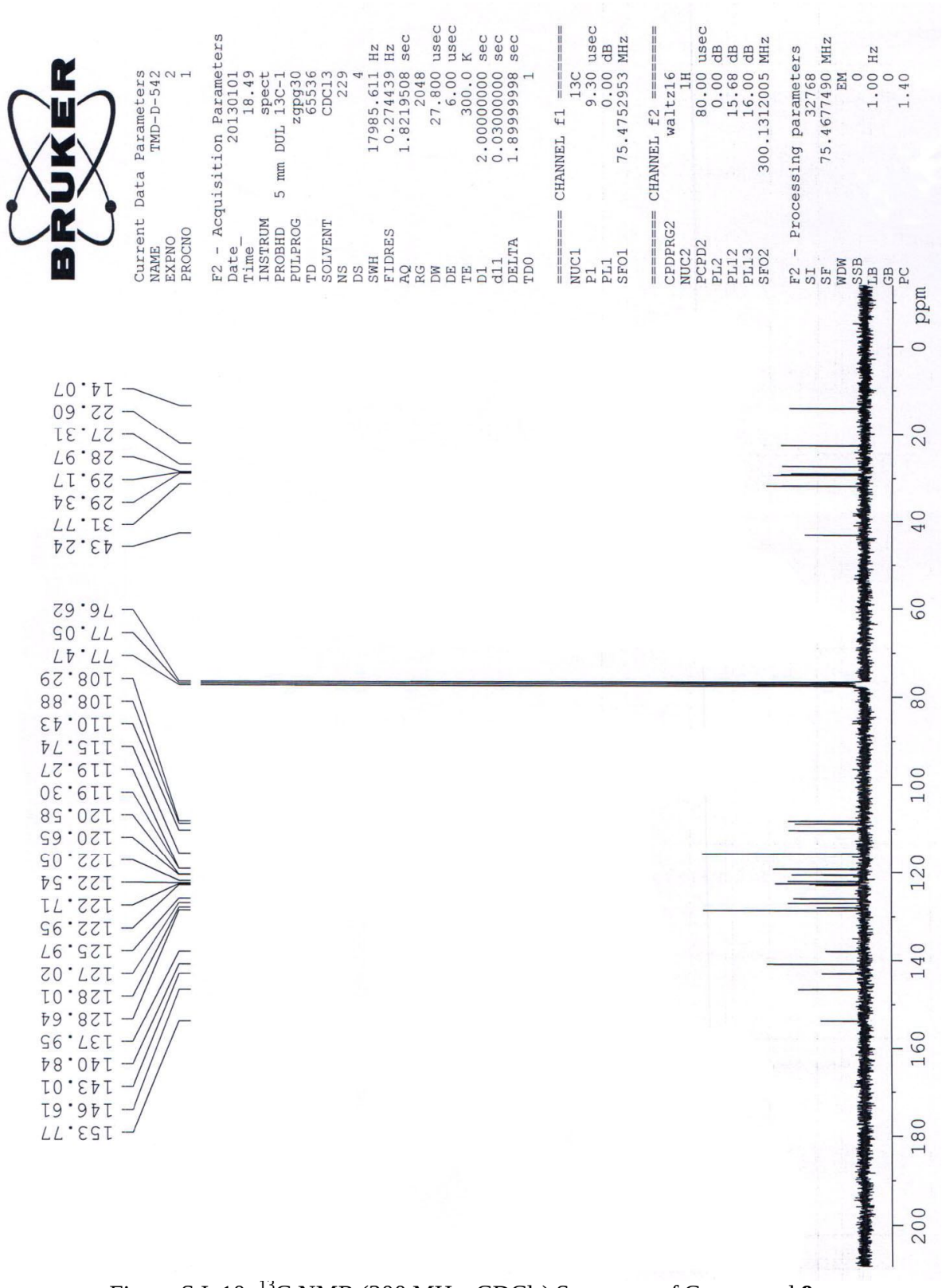

Figure S.I. 10: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **9**.

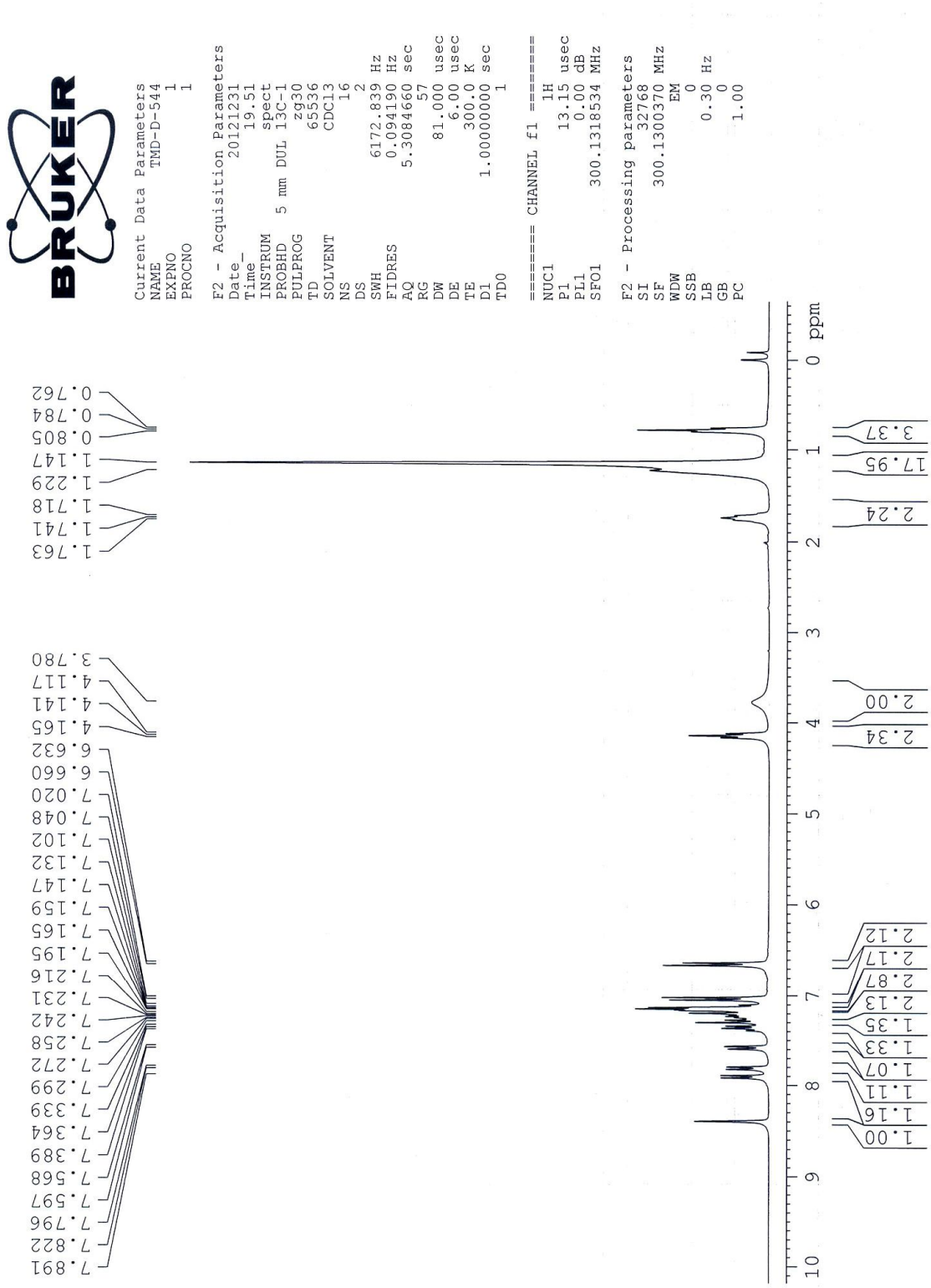

Figure S.I. 11: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **10**.

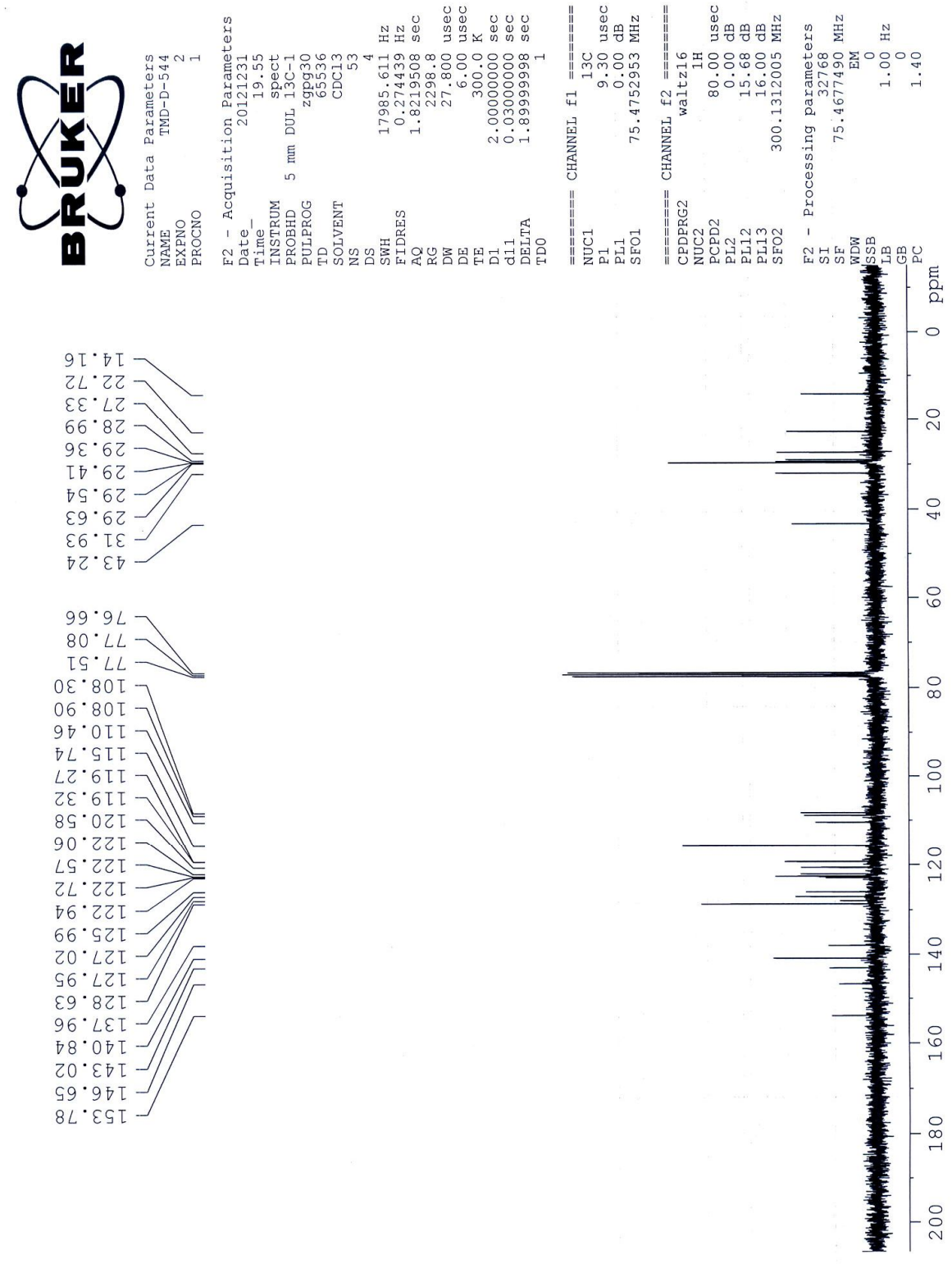

Figure S.I. 12: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **10**.

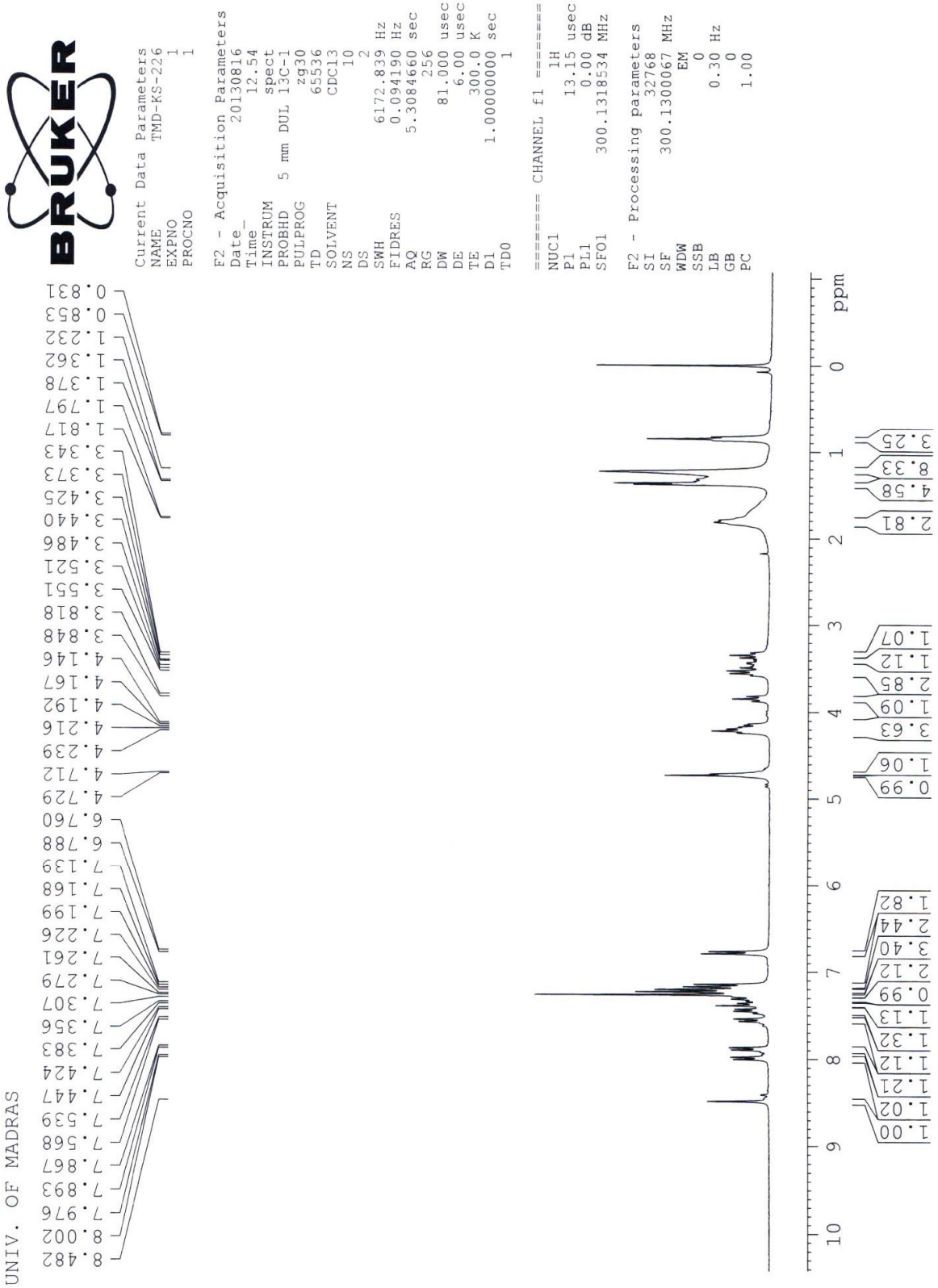

Figure S.I. 13: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **14**.

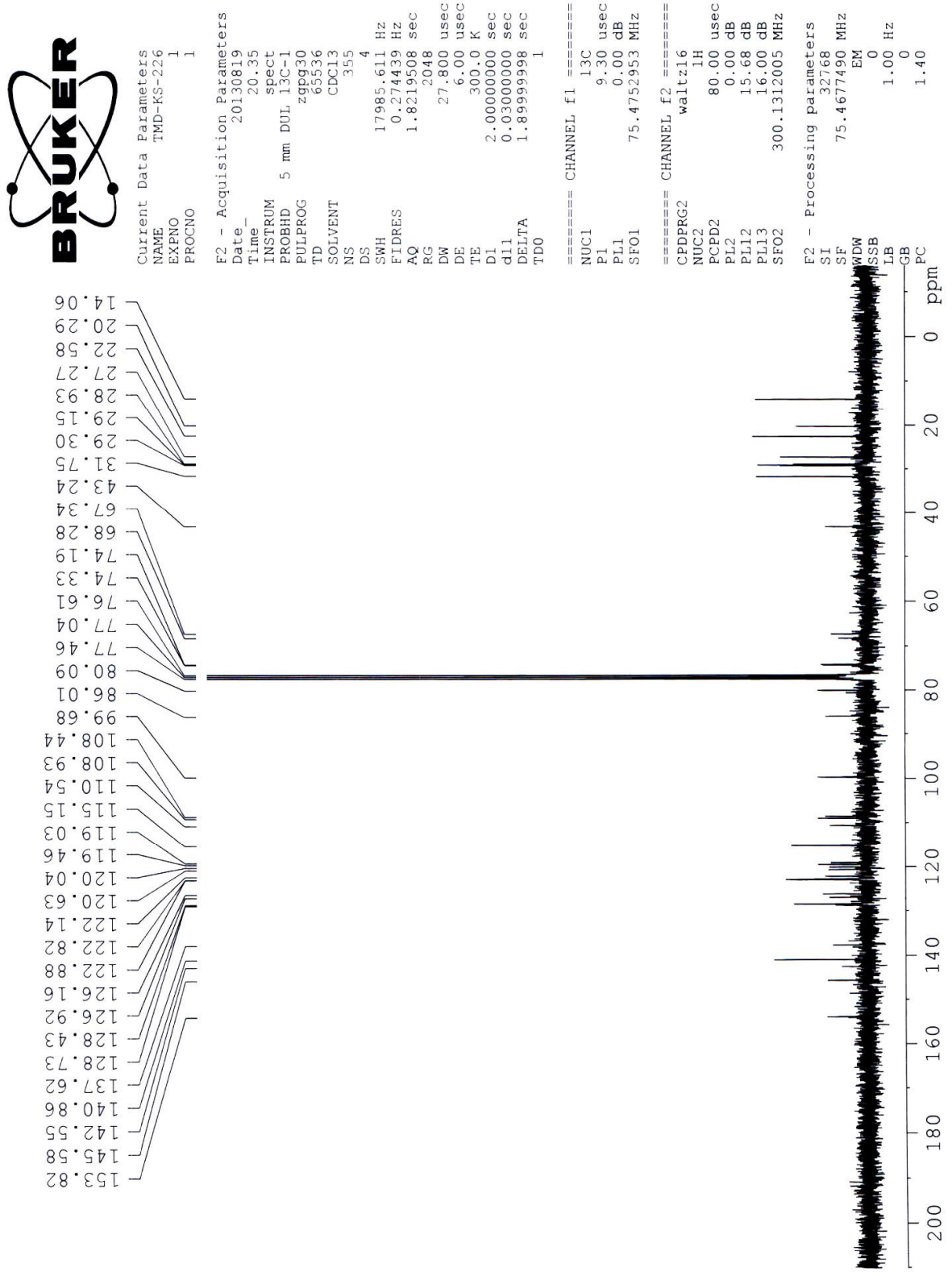

Figure S.I. 14: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **14**.

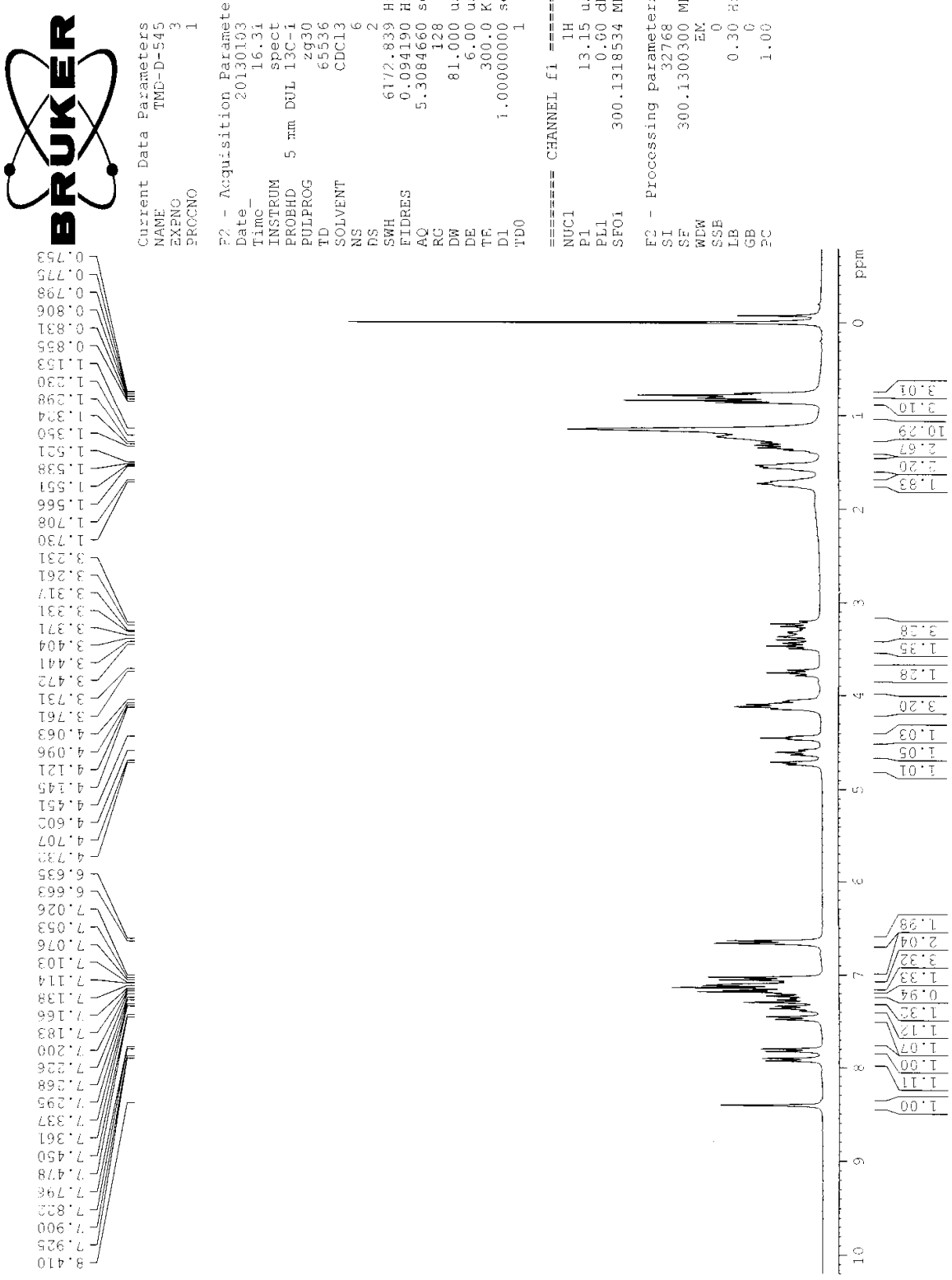

Figure S.I. 15: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **15**.

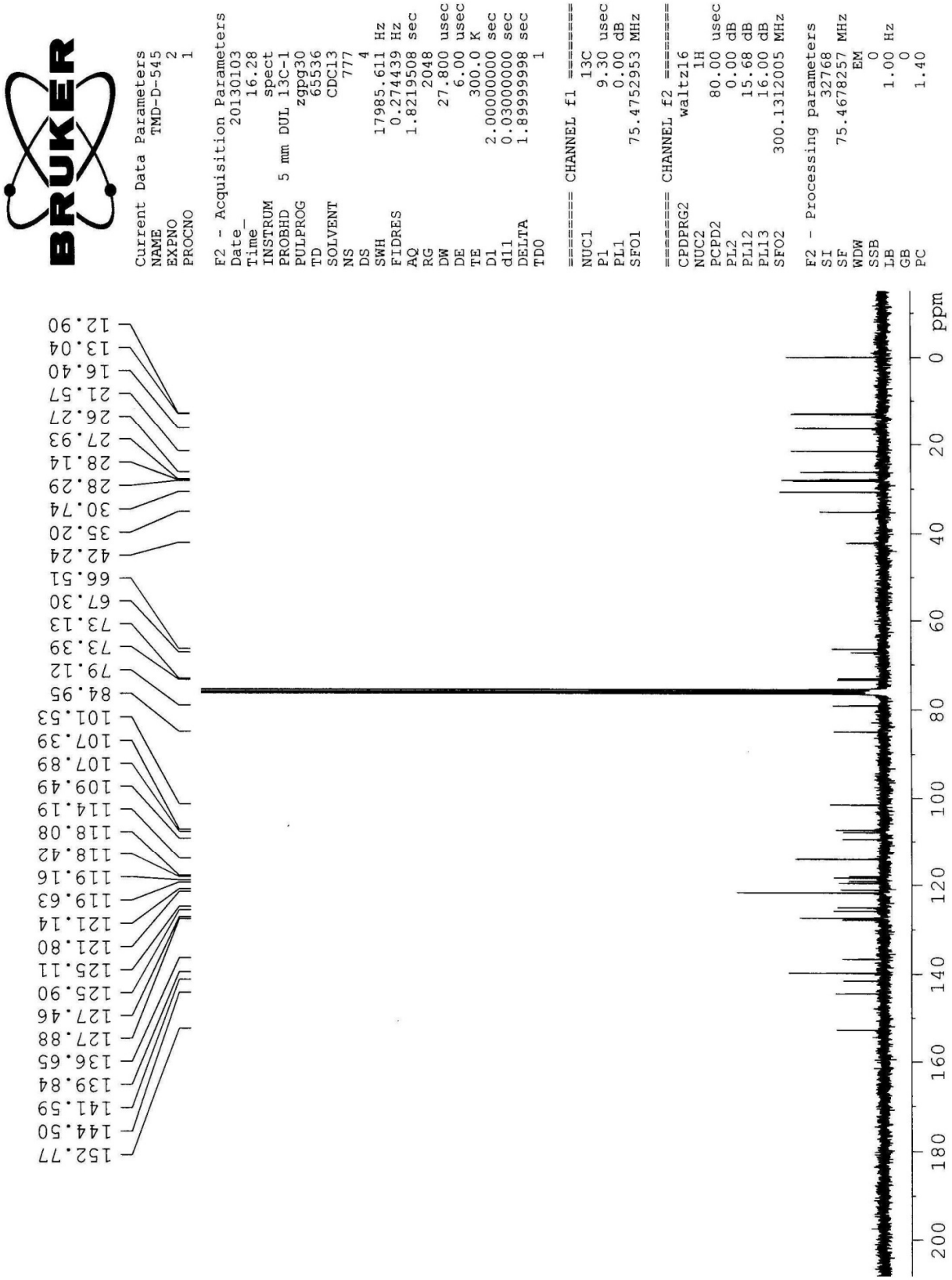

Figure S.I. 16: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **15**.

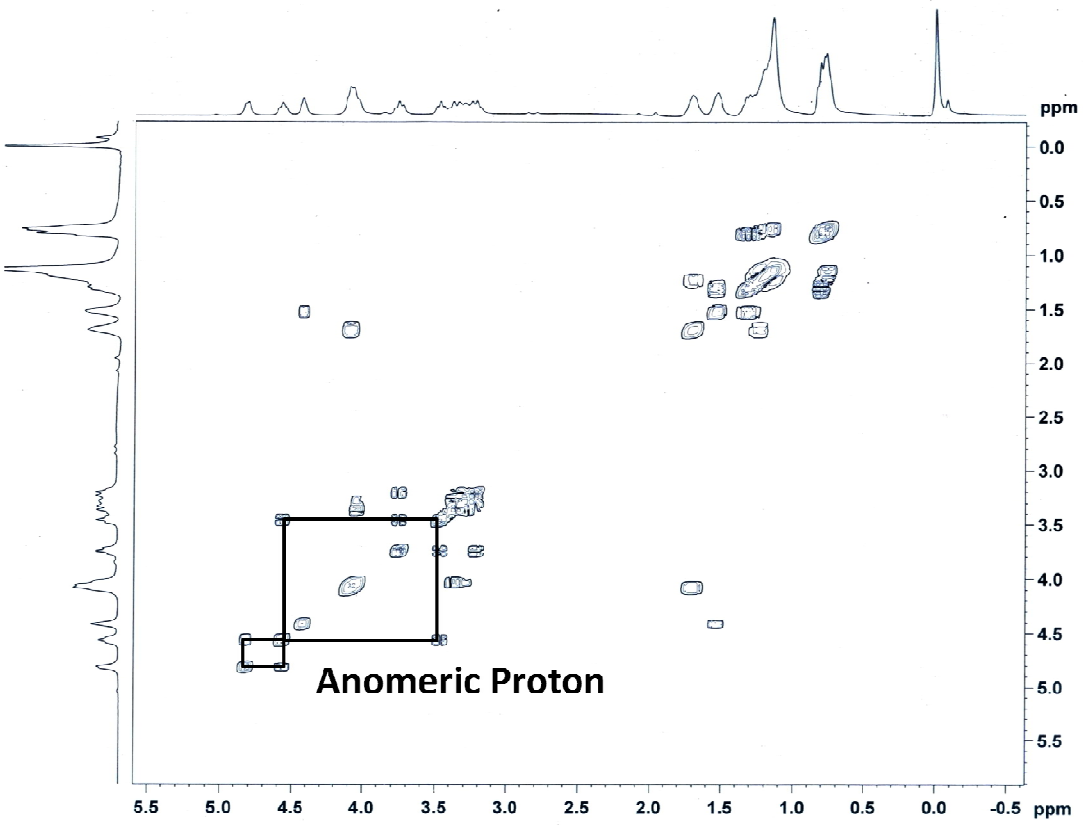

Figure S.I. 17: ^{1}H-^{1}H COSY NMR (300 MHz, $CDCl_3$) Spectrum of Compound **15**.

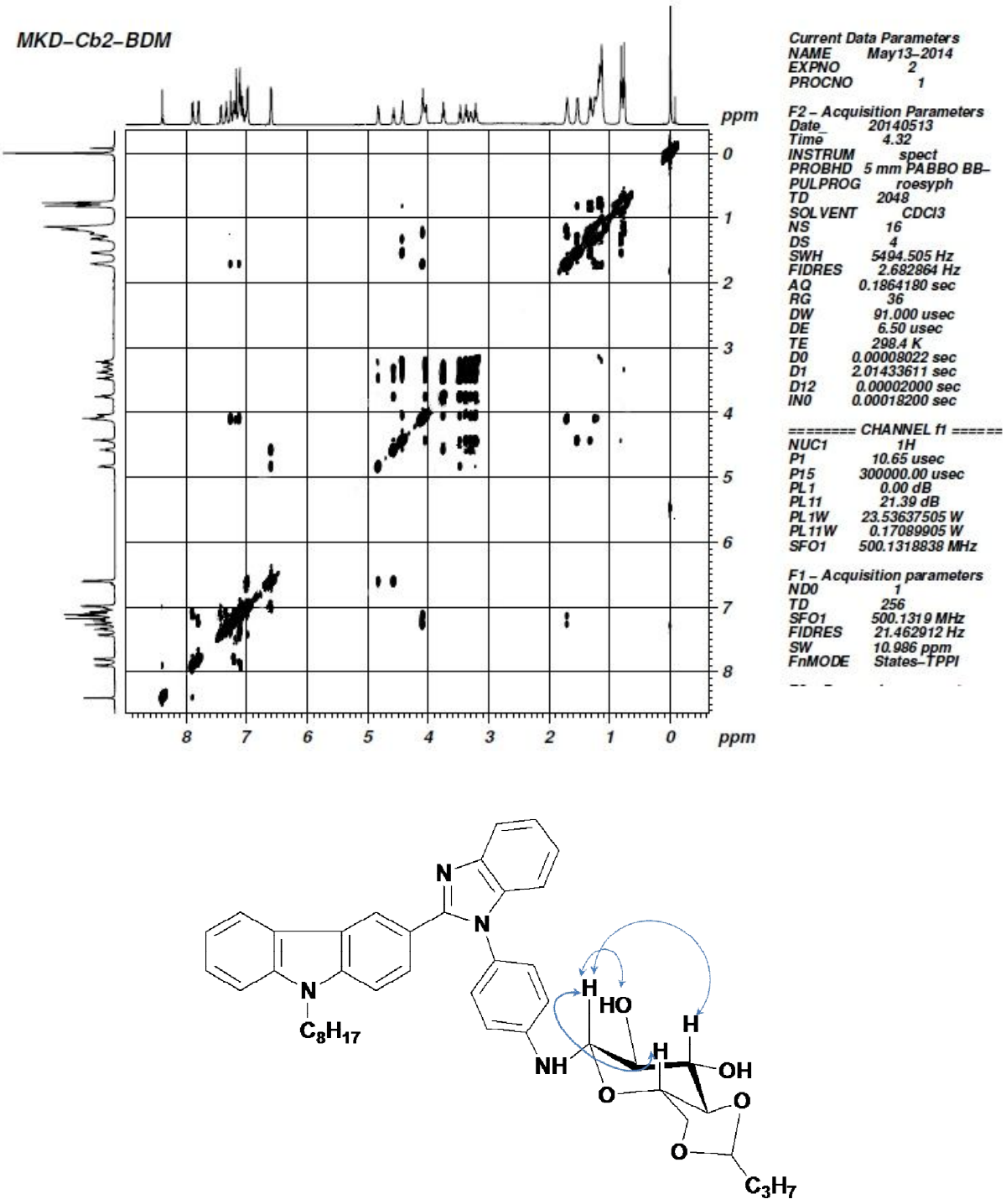

Figure S.I. 18: 2D-REOSY (500 MHz, $CDCl_3$) NMR Spectrum and 2D NOE correlation of Compound **15**.

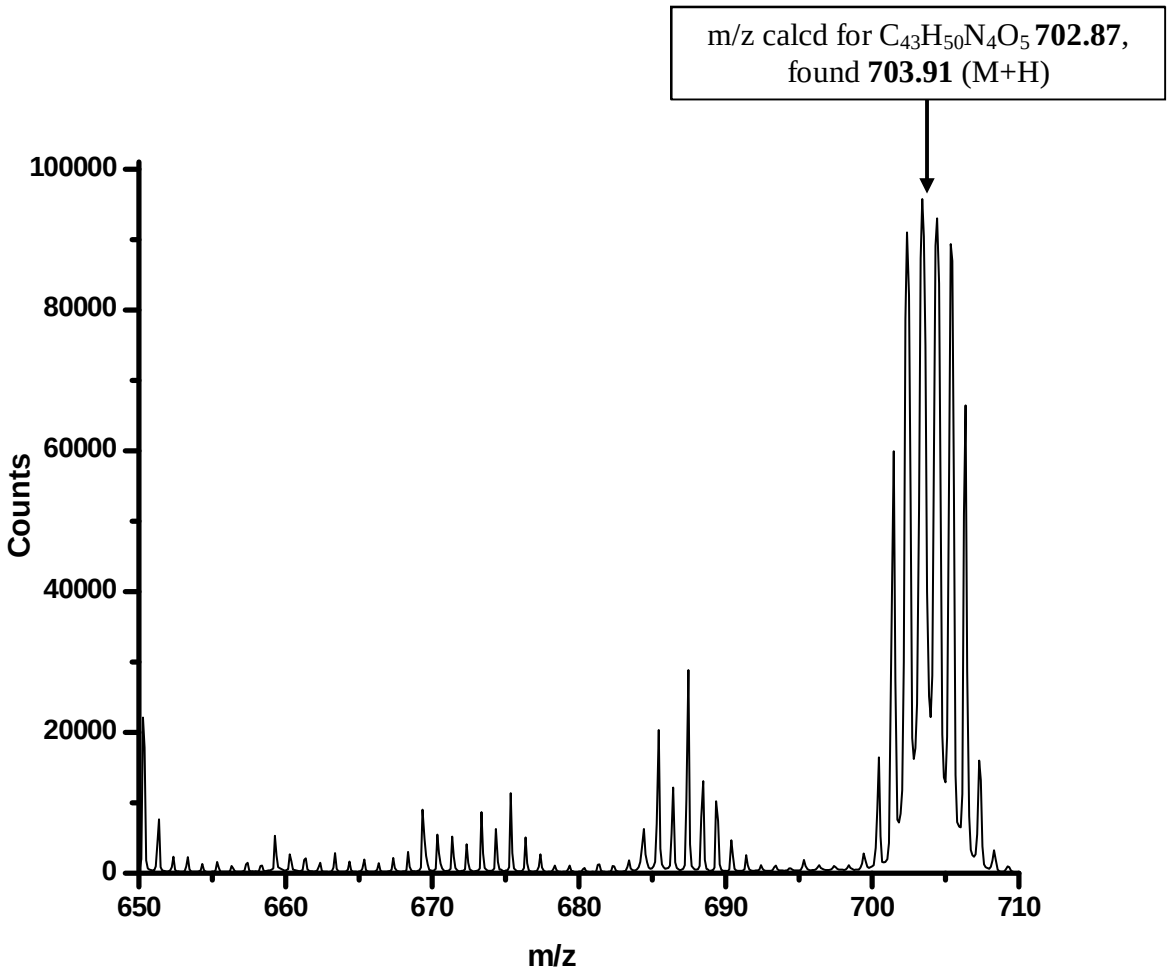

Figure S.I. 19: MALDI-TOF mass spectrum of compound **15.**

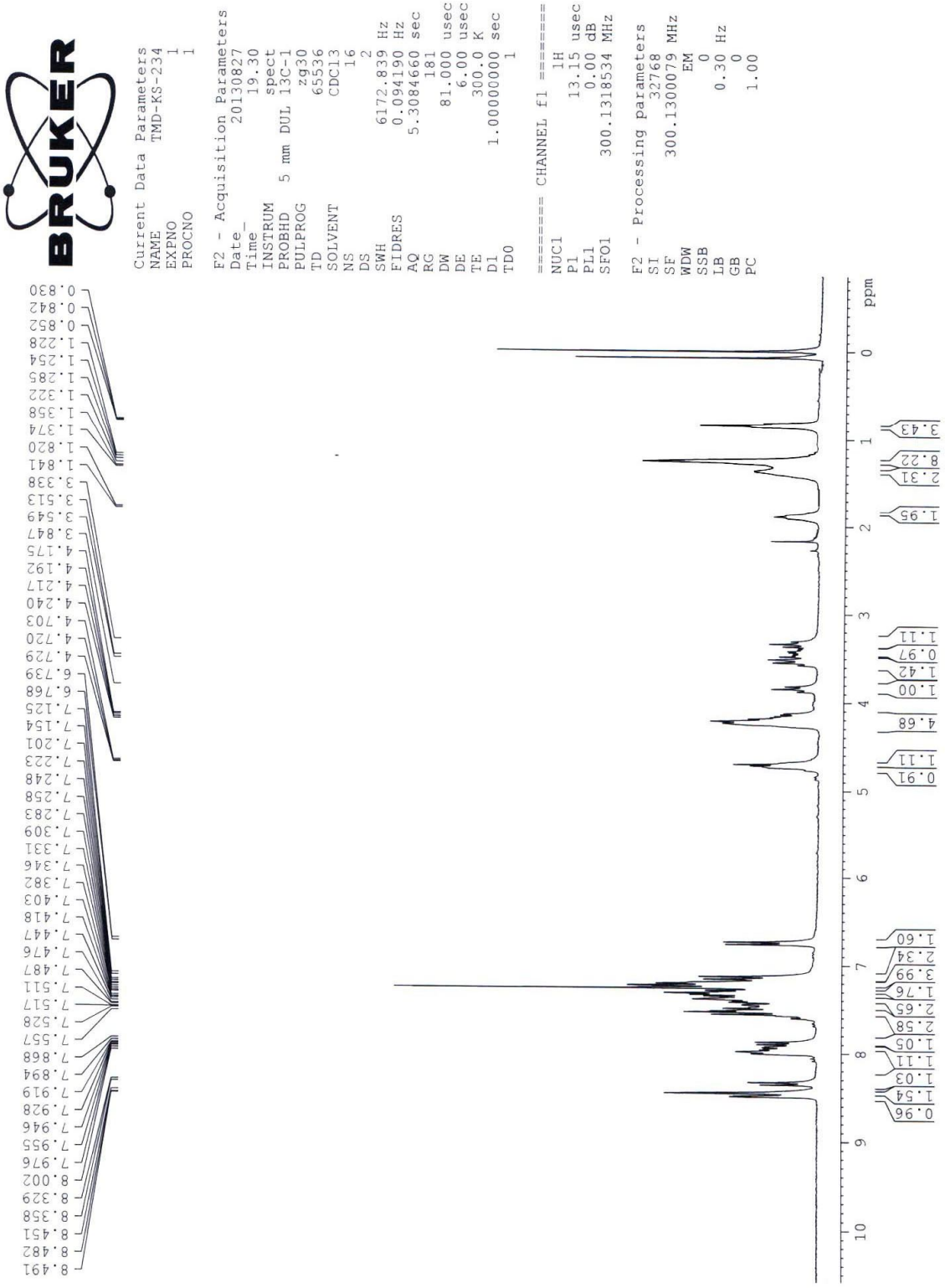

Figure S.I. 20: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **16**.

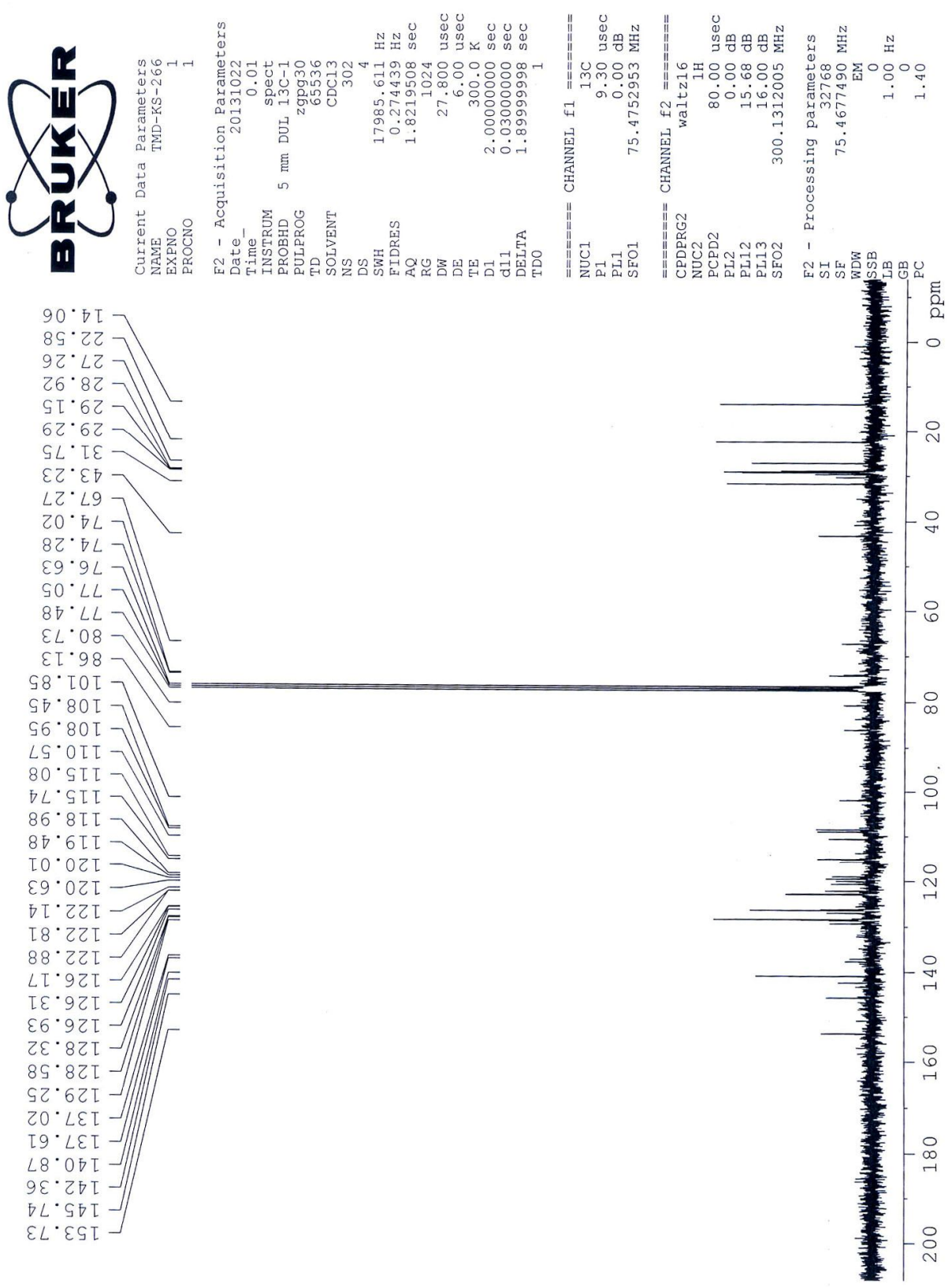

Figure S.I. 21: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **16**.

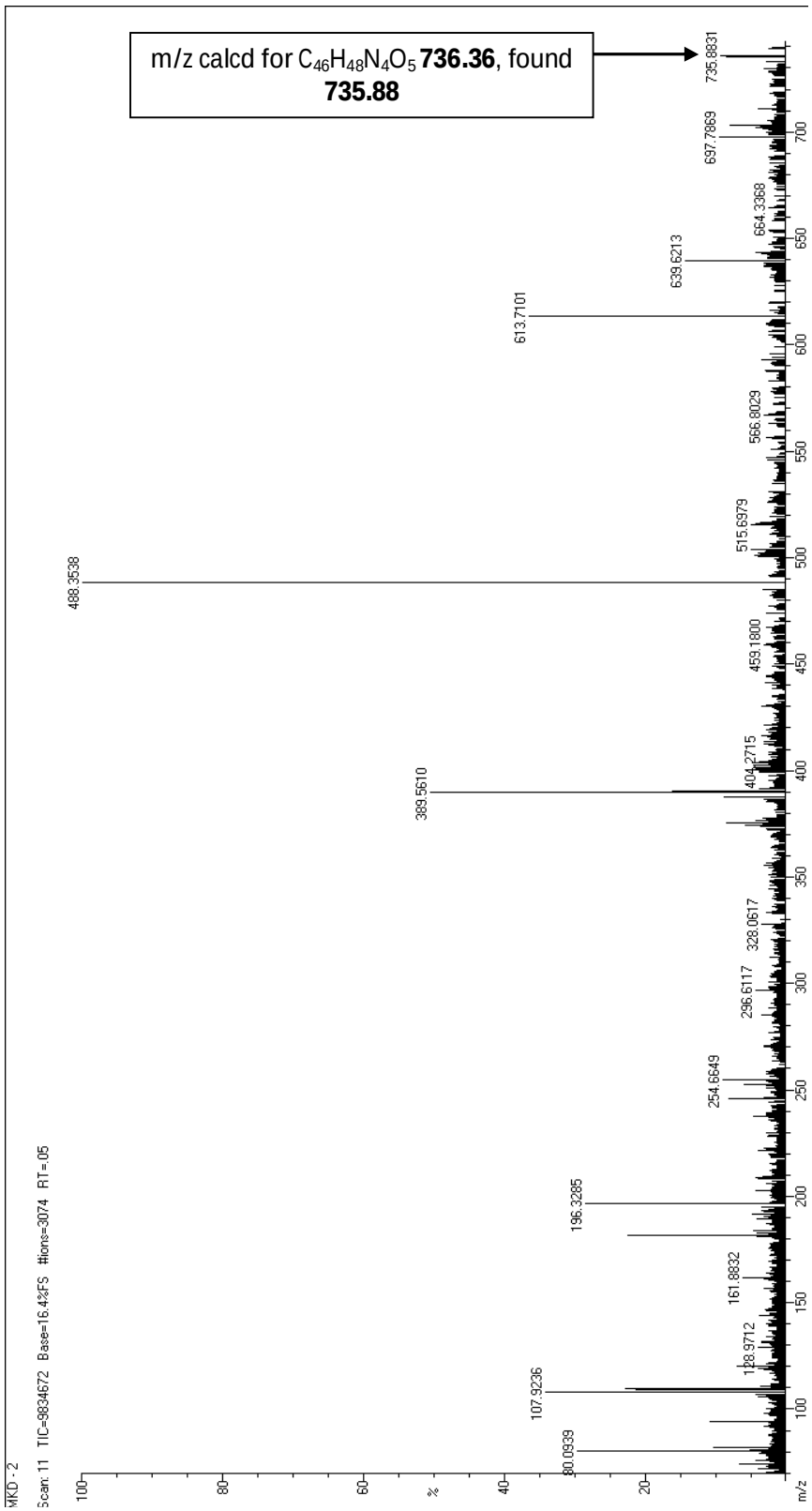

Figure S.I. 22: EI-Mass spectrum of Compound **16**.

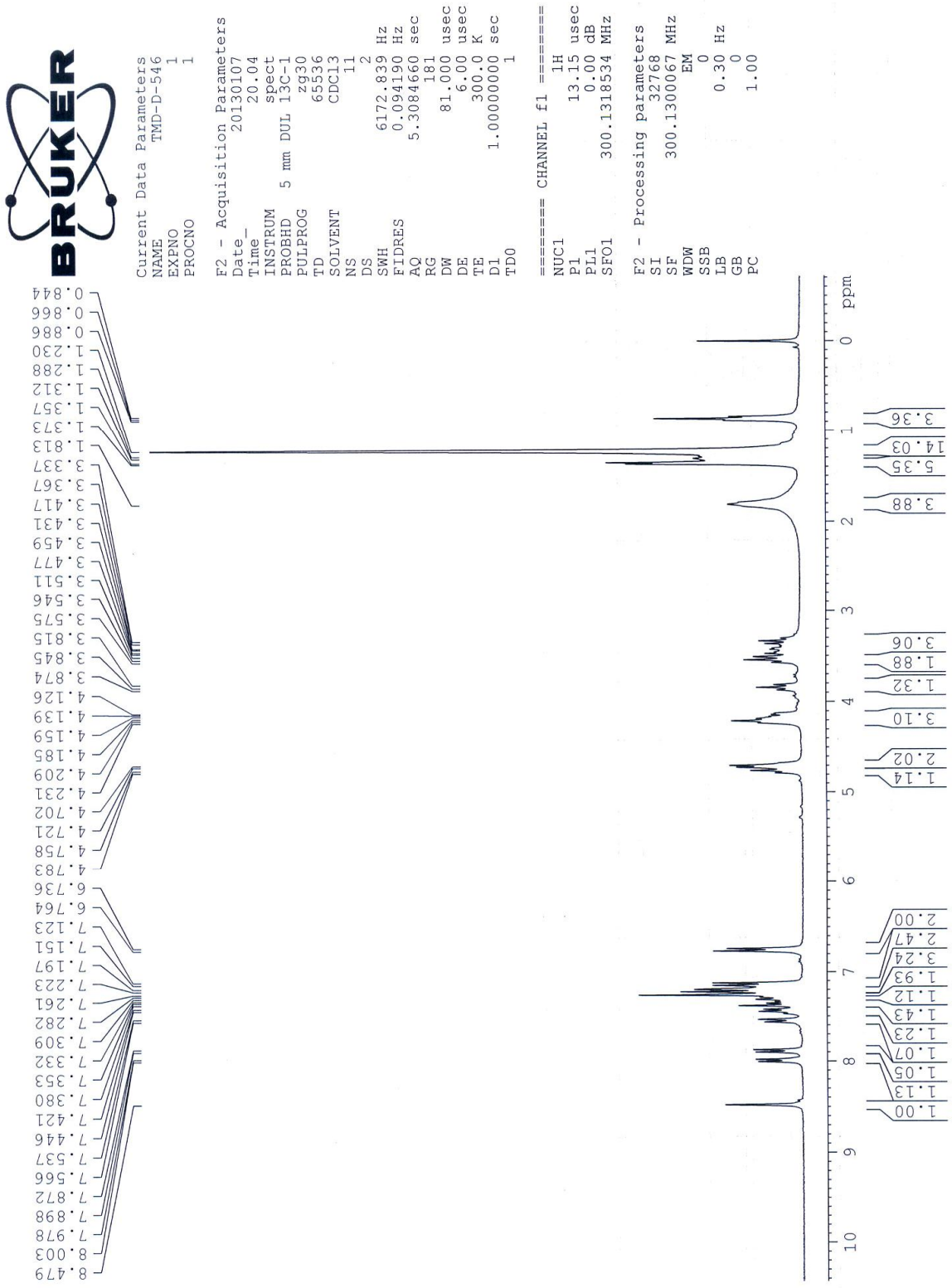

Figure S.I. 23: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **17**.

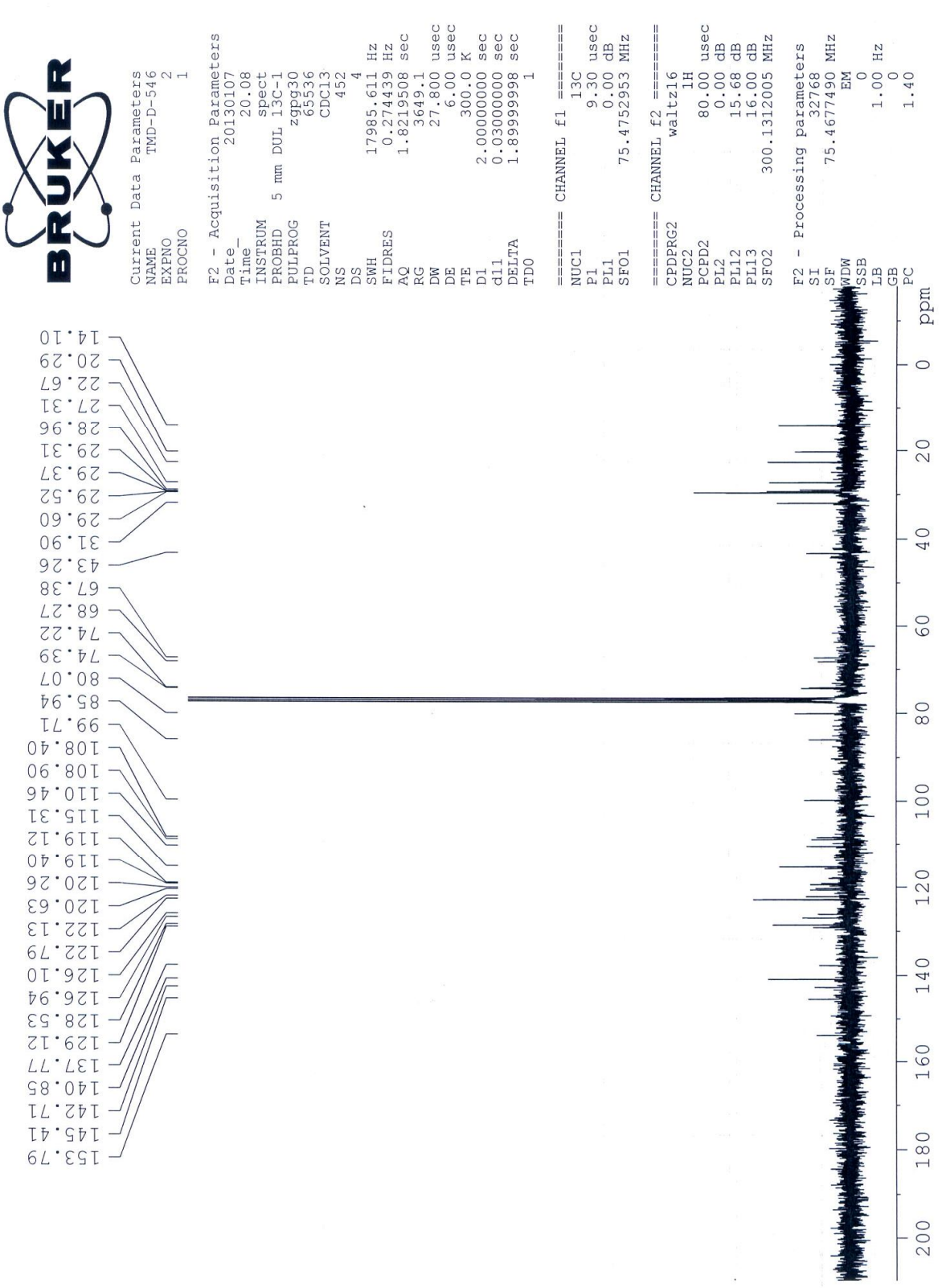

Figure S.I. 24: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **17**.

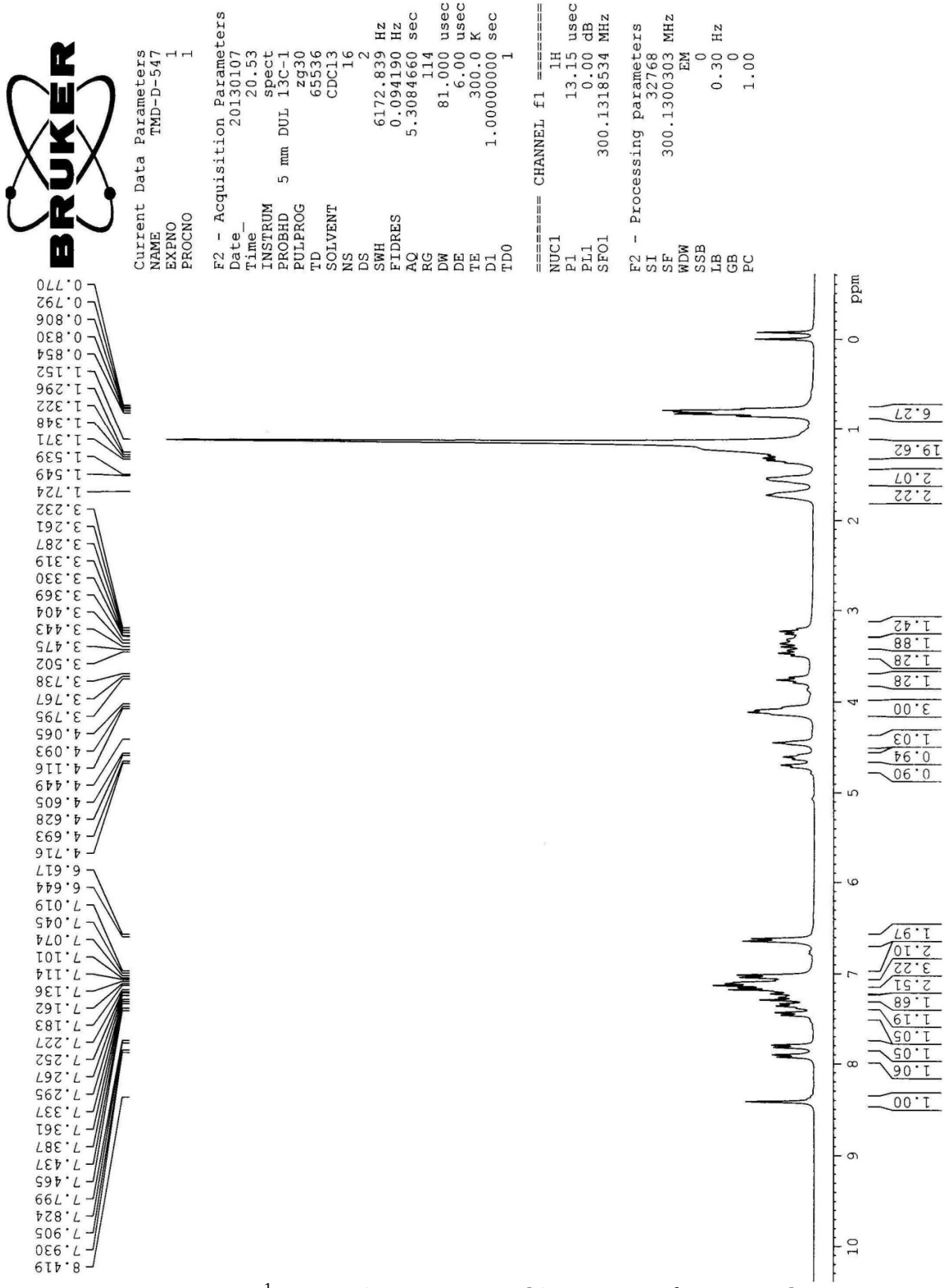

Figure S.I. 25: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **18**.

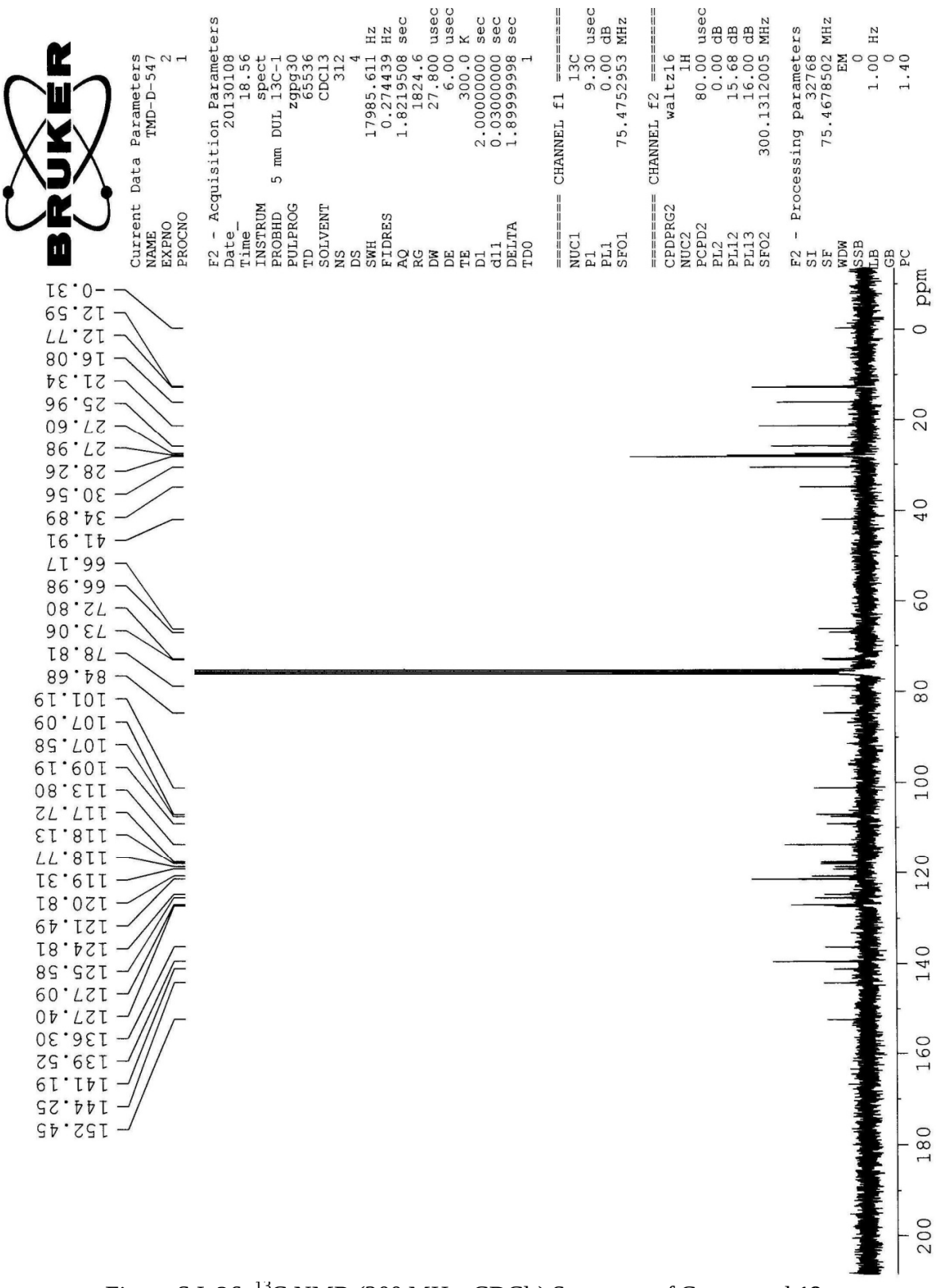

Figure S.I. 26: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **18**.

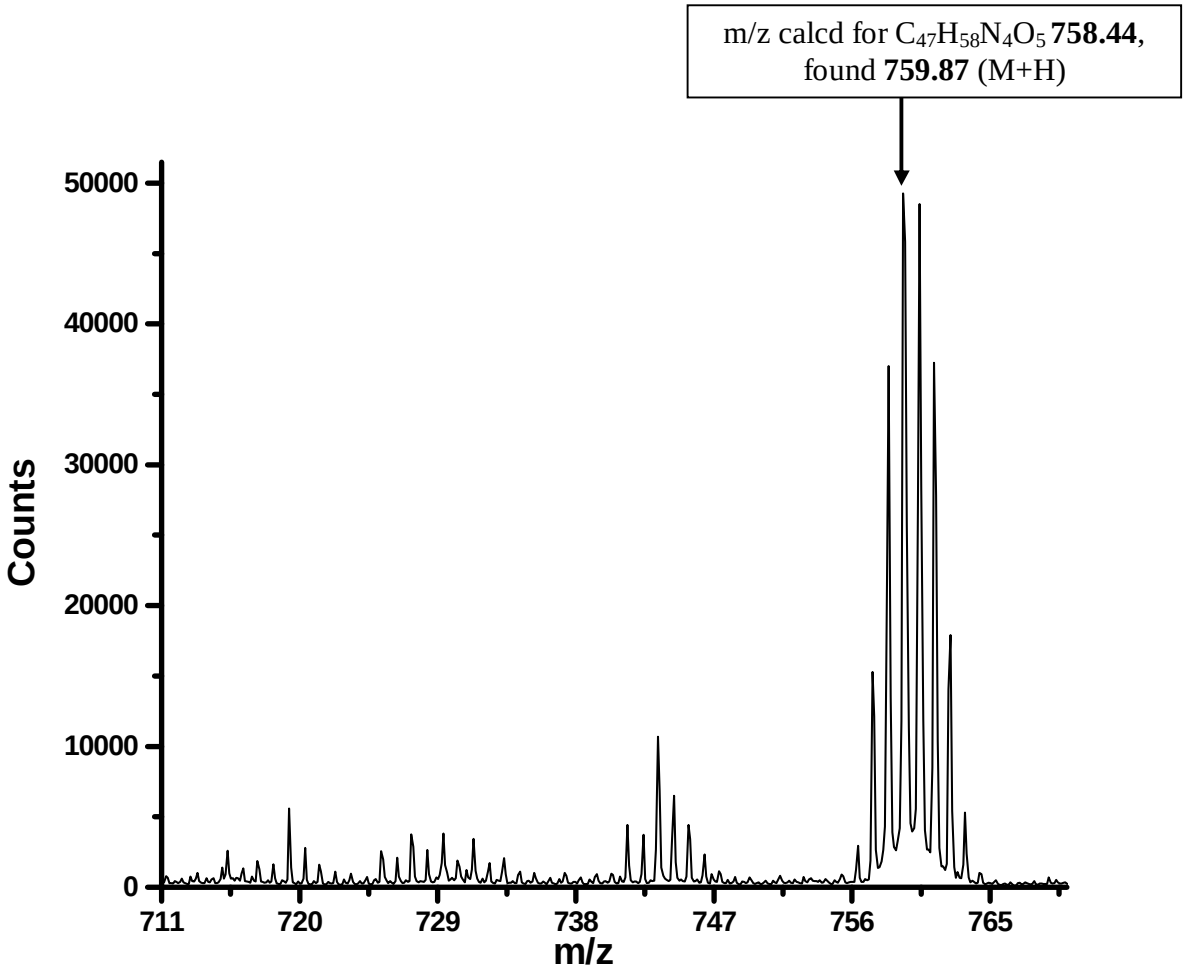

Figure S.I. 27: MALDI-TOF mass spectrum of compound **18.**

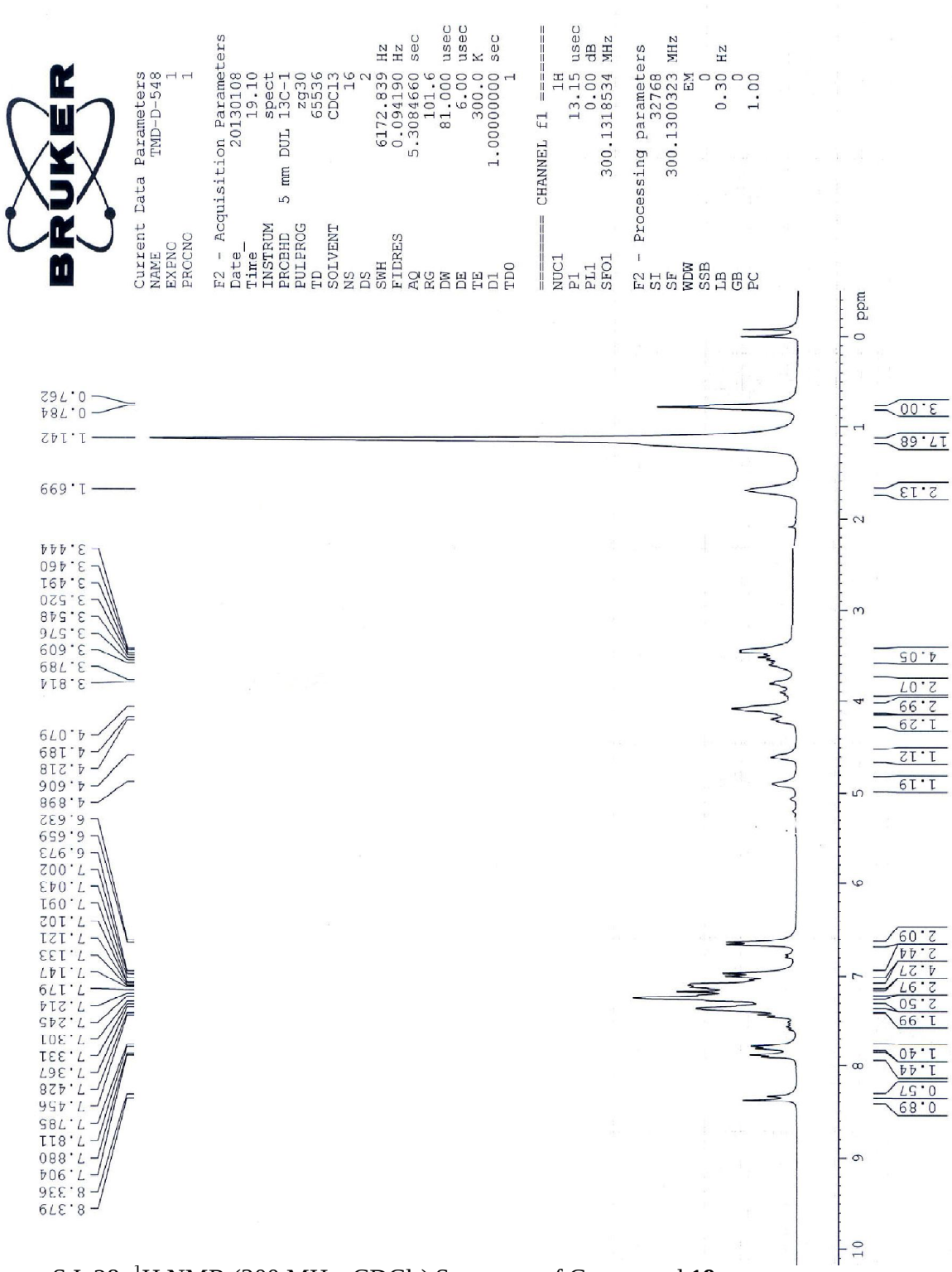

Figure S.I. 28: ^{1}H NMR (300 MHz, $CDCl_3$) Spectrum of Compound **19**.

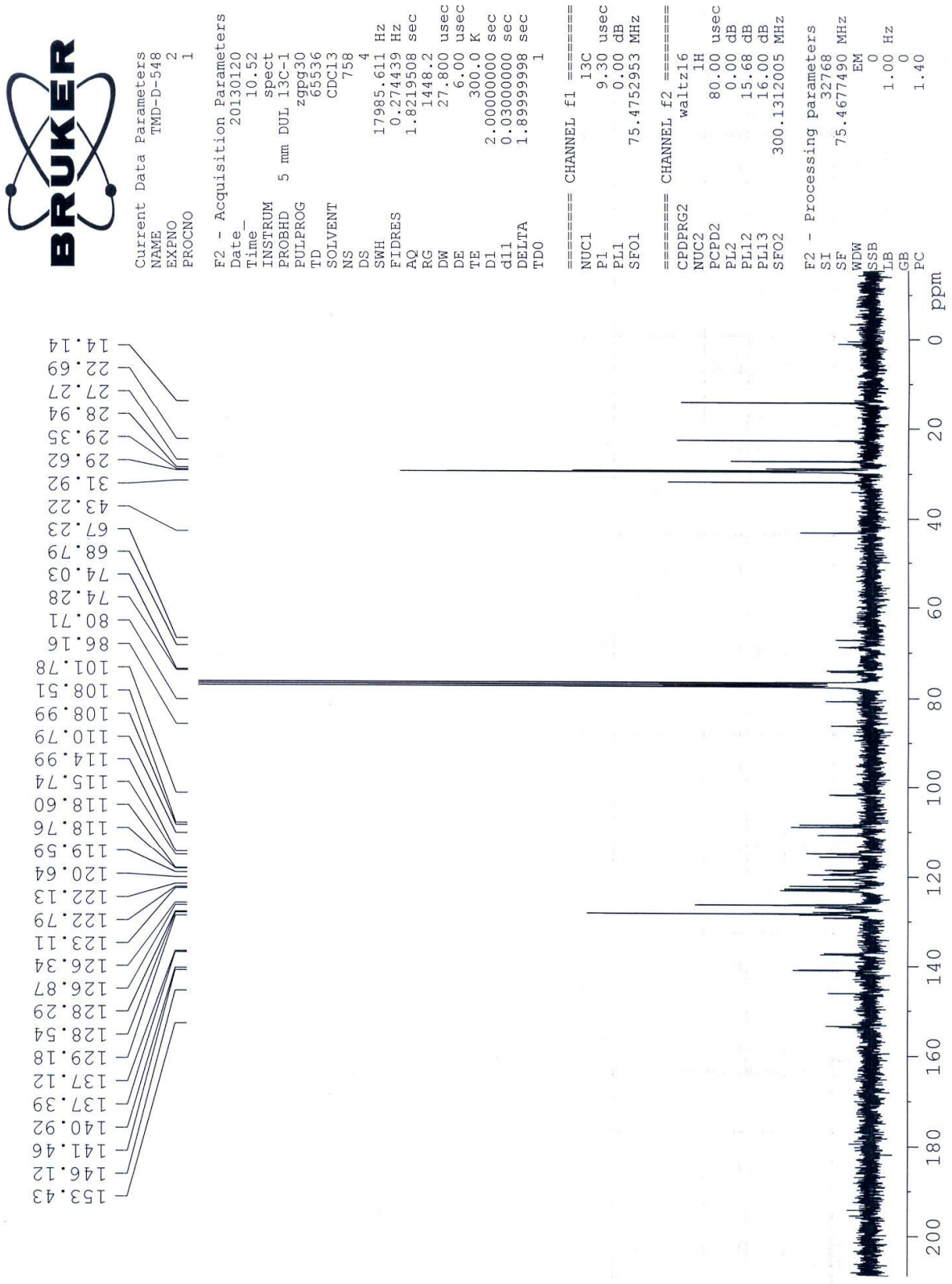

Figure S.I. 29: ^{13}C NMR (300 MHz, $CDCl_3$) Spectrum of Compound **19**.

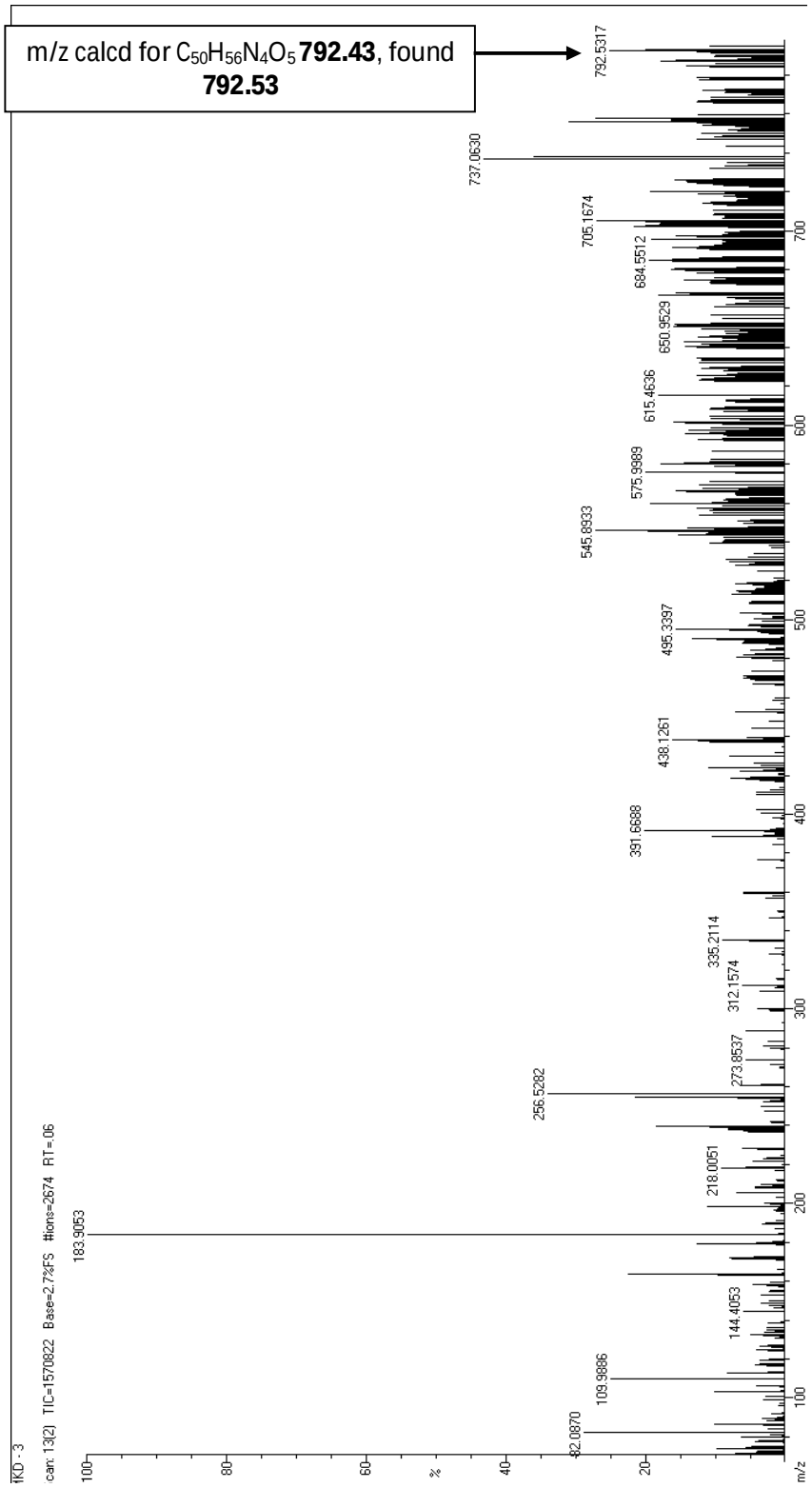

Figure S.I. 30: EI-Mass spectrum of Compound **19**.