

SUPPLEMENTAL MATERIALS

for

Design, synthesis and bioevaluation of novel N-heterocyclic hydroxamic acids as histone deacetylase inhibitors and their antitumor activity study

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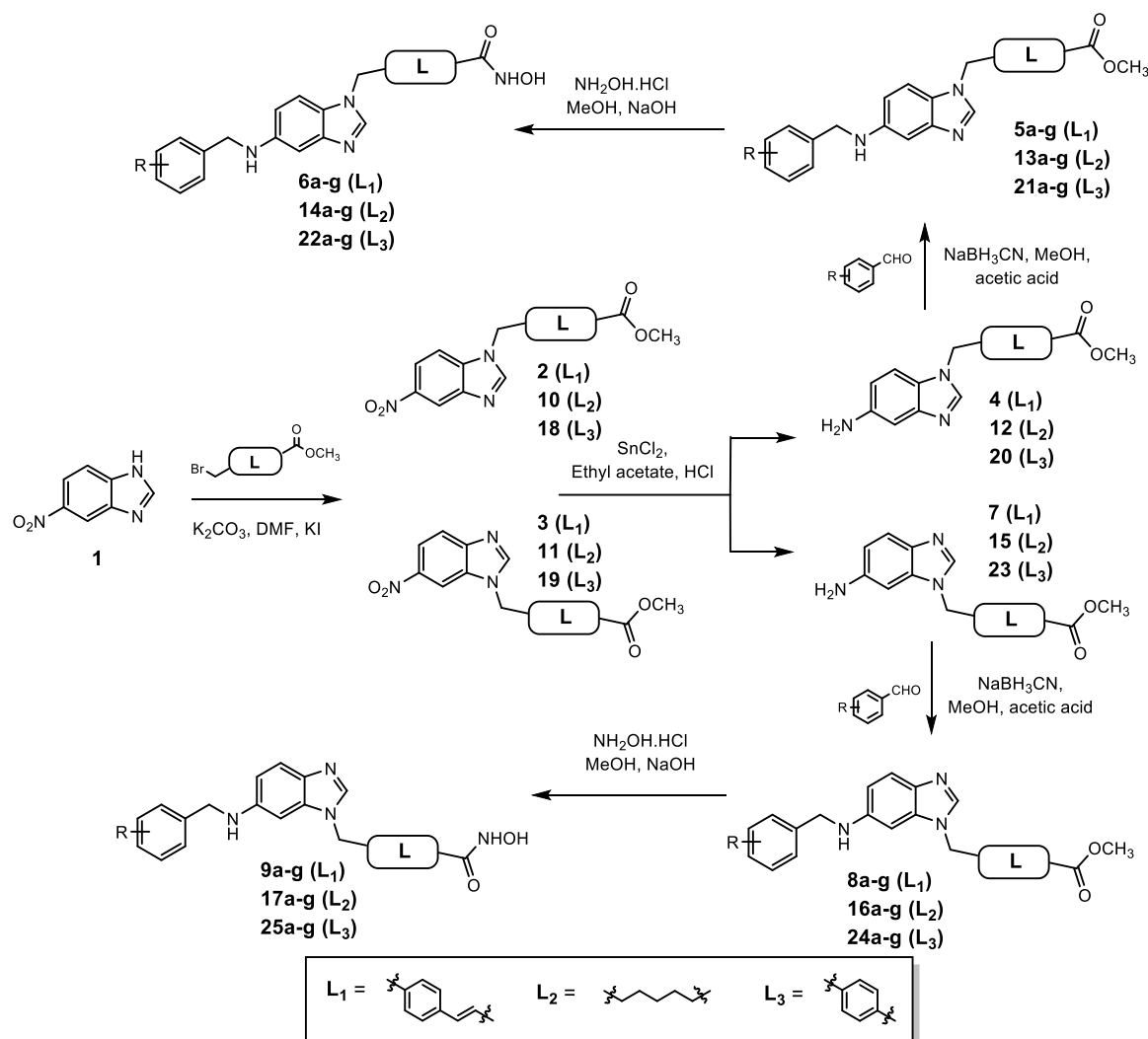
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1. Materials and Methods

1.1. Chemistry

Thin layer chromatography which was performed using Whatman® 250 µm Silica Gel GF Uniplates and visualized under UV light at 254 and 365 nm, was used to check the progress of reactions and preliminary evaluation of compounds' homogeneity. Melting points were measured using a Gallenkamp Melting Point Apparatus (LabMerchant, London, United Kingdom) and are uncorrected. Purification of compounds was carried out using crystallization methods and/or open silica gel column flash chromatography employing Merck silica gel 60 (240 to 400 mesh) as stationary phase. Nuclear magnetic resonance spectra (¹H NMR) were recorded on a Bruker 500 MHz spectrometer with DMSO-*d*₆ as solvent unless otherwise indicated. Tetramethylsilane was used as an internal standard. Chemical shifts are reported in parts per million (ppm), downfield from tetramethylsilane. Mass spectra with different ionization modes including electron ionization (EI), Electrospray ionization (ESI), were recorded using PE Biosystems API2000 (Perkin Elmer, Palo Alto, CA, USA) and Mariner® (Azco Biotech, Inc. Oceanside, CA, USA) mass spectrometers, respectively. The elemental (C, H, N) analyses were performed on a Perkin Elmer model 2400 elemental analyzer. All reagents and solvents were purchased from Aldrich or Fluka Chemical Corp. (Milwaukee, WI, USA) or Merck unless noted otherwise. Solvents were used directly as purchased unless otherwise indicated.

1.2. Synthesis of library compounds



Scheme 1. Synthesis of 1H-benzo[d]imidazole-based hydroxamic acids *via* reductive amination
General procedures for the synthesis of compounds **6a-g**, **9a-g**

To a solution of 5-nitro-1*H*-benzo[d]imidazole (**1**) (4.0 mmol) in dry DMF (10 mL) was added K₂CO₃ (685 mg, 5.0 mmol). The resulting mixture was heated at 60 °C for 60 minutes, then KI (33.2 mg, 0.2 mmol) was added. After stirring for further 15 minutes, methyl 4-bromomethylcinnamate (4.0 mmol) diluted with DMF (2 mL) was dropwise added into the mixture. The reaction mixture was again stirred at 60 °C until the reaction finished (checked by TLC). Subsequently, the mixture was cooled to room temperature, followed by being poured into ice-cold water (30 mL). The obtained light-yellow precipitate was filtered off, washed with water, and dried at 40 °C under a vacuum for 24 hours. The crude product was used directly for the next step without further purification.

Next, the raw material (3 mmol) from the previous step was dissolved in ethyl acetate (30 mL). Then, tin(II) chloride dihydrate (3.38 g, 15 mmol) and 2 drops of glacial acetic acid were added to the mixture and stirring was continued for 4 h. After completion of the reaction, the resulting mixture was cooled, poured into water (50 mL). The aqueous phase was neutralized with sodium carbonate. Celite was used as the filtration medium to remove fine solids such as metal salts and metal hydroxides from reaction mixture. The mixture after filtration was extracted with ethyl acetate (3 x 30 mL). The combined organic layer was washed with brine, dried over sodium sulfate anhydrous, and evaporated under reduced pressure to give the crude products. The residue was purified by column chromatography (silica gel, DCM: MeOH = 98:2) to give two intermediate reductive product isomers **4** and **7**.

In the next step, the aromatic amines **4** or **7** (1 mmol) was dissolved in methanol (10 mL), then 2 drops of concentrated acetic acid, followed by aldehydes (1.0 mmol) was added. After stirring for further 15 minutes, sodium cyanoborohydride (NaBH₃CN) (50 mg) diluted with methanol (1 mL) was dropwise added into the mixture. The mixture was stirred at room temperature until the starting materials were consumed completely (6-8 hours). The resulting mixtures were evaporated under reduced pressure to give the residues, then 10 mL water was added. The aqueous phase was extracted with DCM, and the combined organic layer was evaporated under reduced pressure to give the residue. The crude material was purified via open chromatography (silica gel, DCM: MeOH = 96:4) to afford the yellowish oil (**5a-g**, **8a-g**).

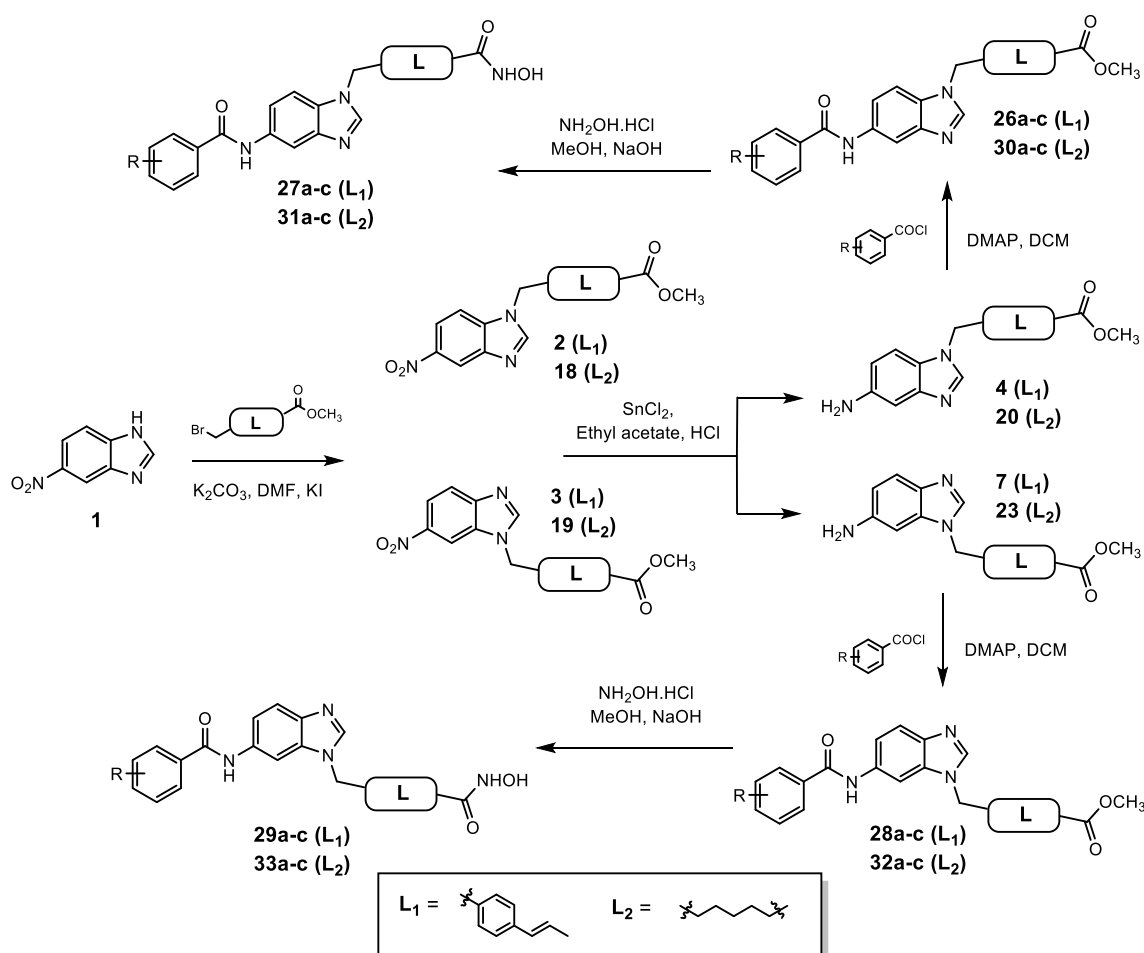
Finally, each of the intermediate esters (**5a-g**, **8a-g**) was dissolved in methanol (10 mL). Then, hydroxylamine hydrochloride (685 mg, 10 mmol) was added, followed by dropwise addition of a solution of NaOH (400 mg in 1 mL of water). The mixture was stirred at 0 °C until the reaction completed (1-2 h). At the end of this reaction, the resulting reaction mixture was poured into ice-cold water, neutralised to pH~7, then acidified by dropwise addition of a solution of HCl 5% to induce the maximum precipitation. The precipitates were filtered, dried and re-crystallised in methanol to give the desired compounds **6a-g** and **9a-g**.

General procedures for the synthesis of compounds 14a-g, 17a-g

Compounds **14a-g** and **17a-g** were synthesized by a similar synthetic pathway described for **6a-g**, **9a-g**, except that methyl 7-bromoheptanoate was used instead of methyl (*E*)-4-bromomethylcinnamate (Scheme 1).

General procedures for the synthesis of compounds 22a-g, 25a-g

Compounds **22a-g** and **25a-g** were prepared following a synthetic route analogous to that outlined for **6a-g** and **9a-g**, with the only difference being the substitution of methyl 4-bromomethylbenzoate for methyl (*E*)-4-bromomethylcinnamate, as illustrated in Scheme 1.



Scheme 2. Synthesis of 1*H*-benzo[d]imidazole-based hydroxamic acids *via* amide coupling reaction

General procedures for the synthesis of compounds 27a-c, 29a-c

Compounds **27a-c** and **29a-c** were synthesized via a four-step pathway as illustrated in Scheme 2. The first two reactions in the synthetic pathway of these compounds were similar to those in the synthesis of **6a-g**, **9a-g**.

In the next step, the aromatic amines **4** or **7** (1 mmol) were dissolved in 30 mL DCM, and DMAP (122 mg, 1 mmol) was added. After stirring for 10 minutes, a respective benzoyl chloride (1.2 mmol) was added. The reaction mixture was stirred at 40 °C for 12 hours. After the reaction was finished (monitored by TLC), the solvent was removed in vacuo. A solution of NaHCO₃ 5% was gradually added to adjust pH to 7, which led to the formation of white solids. The solids were filtered, washed with cold water and dried at 60 °C. The crude product was further purified by column chromatography (DCM/methanol = 95:5) to give the corresponding derivatives **26a-c** and **28a-c**, yields 72-81%.

In the final step, each of the intermediate esters **26** or **28** (0.5 mmol) was dissolved in methanol (10 mL). Then, hydroxylamine hydrochloride (343 mg, 5 mmol) was added, followed by dropwise addition of a solution of NaOH (200 mg in 1 mL of water). The mixture was stirred at 0 °C until the reaction completed (1-2 h, checked by TLC). At the end of this reaction, the resulting reaction mixture was poured into ice-cold water, neutralised to pH~7 and acidified by dropwise addition of a solution of HCl 5% to induce the maximum precipitation. The precipitates were filtered, dried and re-crystallised in methanol to give the designed hydroxamic acids **27a-c**, **29a-c**.

General procedures for the synthesis of compounds 31a-c, 33a-c

Compounds **31a-c** and **33a-c** were produced following a synthetic route akin to the one delineated for **27a-c** and **29a-c**, with the modification of employing methyl 4-bromoheptanoate instead of methyl (*E*)-4-bromomethylcinnamate, as depicted in Scheme 2.

1.3. Biology

Cytotoxicity assay

The cytotoxicity of the synthesized compounds was evaluated against three cell lines, including SW620 (colon cancer), MDA-MB-231 (breast cancer), MRC-5 (human fetal lung fibroblast cells). The cell lines were purchased from a Cancer Cell Bank at the Korea Research Institute of Bioscience and Biotechnology (KRIBB). The media, sera and other reagents that were used for cell culture in this assay were obtained from GIBCO Co. Ltd. (Grand Island, New York, USA). The cells were cultured in DMEM (Dulbecco's Modified Eagle Medium) until confluence. The cells were then trypsinized and suspended at 3×10^4 cells/mL of cell culture medium. On day 0, each well of the 96-well plates was seeded with 180 μ L of cell suspension. The plates were then incubated in a 5% CO₂ incubator at 37 °C for 24 h. Compounds were initially dissolved in dimethyl sulfoxide (DMSO) and diluted to appropriate concentrations by culture medium. Then 20 μ L of each compounds' samples, which were prepared as described above, were added to each well of the 96-well plates, which had been seeded with cell suspension and incubated for 24-h, at various concentrations. The plates were further incubated for 48 h. Cytotoxicity of the compounds was measured by the colorimetric method, as described previously [26] with slight modifications [27-29]. The IC₅₀ values were calculated using a Probits method [30] and were averages of three independent determinations (SD \leq 10%).

HDAC enzymes assay

The HDAC enzymes (Hela cell nuclear extract) were purchased from Enzo Life Sciences Inc. (Farmingdale, New York, USA). The HDAC enzymatic assay was performed using a Fluorogenic HDAC Assay Kit (Enzo Life Sciences Inc.) according to the manufacturer's instructions. Briefly, HDAC enzymes were incubated with vehicle or various concentrations of the assayed samples or SAHA for 30 min at 37°C in the presence of an HDAC fluorometric substrate. The HDAC assay developer (which produces a fluorophore in reaction mixture) was added, and the fluorescence was measured using VICTOR (PerkinElmer, Waltham, MA, USA) with excitation at 360 nm and emission at 460 nm. The measured activities were subtracted by the vehicle-treated control enzyme activities and IC₅₀ values were calculated using GraphPad Prism (GraphPad Software, San Diego, CA, USA).

Cell cycle analysis

SW620 human colon cancer cells (2×10^5 /ml per well) were seeded in 6-well culture plates and allowed to adhere for either 2 hours or 24 hours. Subsequently, the cells were treated with various concentrations of compounds for either 24 hours or 48 hours, respectively, followed by harvesting. The harvested cells underwent two washes with ice-cold PBS, were fixed in 75% ice-cold ethanol, and then stained with propidium iodide (PI) along with RNase at room temperature for 30 minutes. The stained cells were then subjected to DNA content analysis using a FACScalibur flow cytometer (BD Biosciences, San Jose, CA, USA), and the resulting data were processed utilizing Cell Quest Pro software (BD Biosciences).

Apoptosis assay

The Annexin V-FITC/PI dual staining assay was employed to assess the proportion of apoptotic cells. SW620 human colon cancer cells (2×10^5 /ml per well) were seeded in 6-well culture plates and allowed to adhere for either 2 hours or 24 hours. Subsequently, the cells were treated with varying concentrations of compounds for either 24 hours or 48 hours, respectively, followed by harvesting. The harvested cells underwent two washes with ice-cold PBS and were then incubated in the dark at room temperature in 100 μ L of 1 \times binding buffer containing 1 μ L Annexin V-FITC and 12.5 μ L PI. After a 15-minute incubation period, the cells were analyzed for the percentage undergoing apoptosis using a FACScalibur flow cytometer (BD Biosciences). The resulting data were processed utilizing Cell Quest Pro software (BD Biosciences).

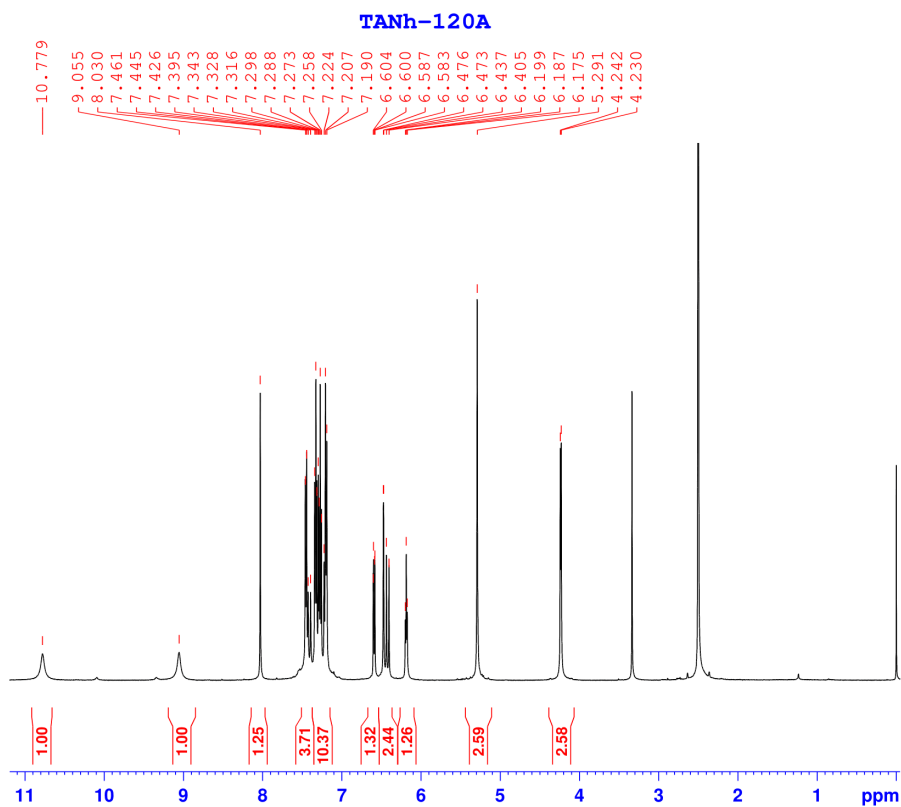
1.4. Molecular docking studies

Compound structures were generated by ChemDraw version 9.0 and subsequently subjected to minimize energy within a rms gradient of 0.1 kcal⁻¹.mol⁻¹.Å⁻¹ by MOE 2015 package. The force field was set to the 94s variant of the Merck Molecular force field (MMFF94s). The hydroxamic acid groups were deprotonated according to the

previous reports [31-33]. The X-ray crystallographic structure of SAHA in complex with HDAC2 and HDAC6 were taken from Protein Data Bank with ID of 4LXZ and 5EEI, respectively [34-35]. The structure was prepared using the QuickPrep tool in MOE for adding hydrogen, protonating, deleting water, and editing atom types, assigning AMBER FF99 charges according to the same procedures mentioned before [32-33]. For the docking setting, simulations of flexible-ligand rigid-protein were performed using the method of MOE Triangle matcher placement with retaining 30 poses for analysis. The results that showed appropriate binding geometry with Zn^{2+} ion was considered. The finally selected conformations were scored using London dG (Score1) and GBVI/WSA dG functions (Score2) to estimate the free binding energy between the ligands and the enzyme. All the selected poses were visualized using BIOVIA Discovery Studio v3.5 program.

2. All ^1H & ^{13}C NMR spectra of the compounds

¹H NMR of compound 6a



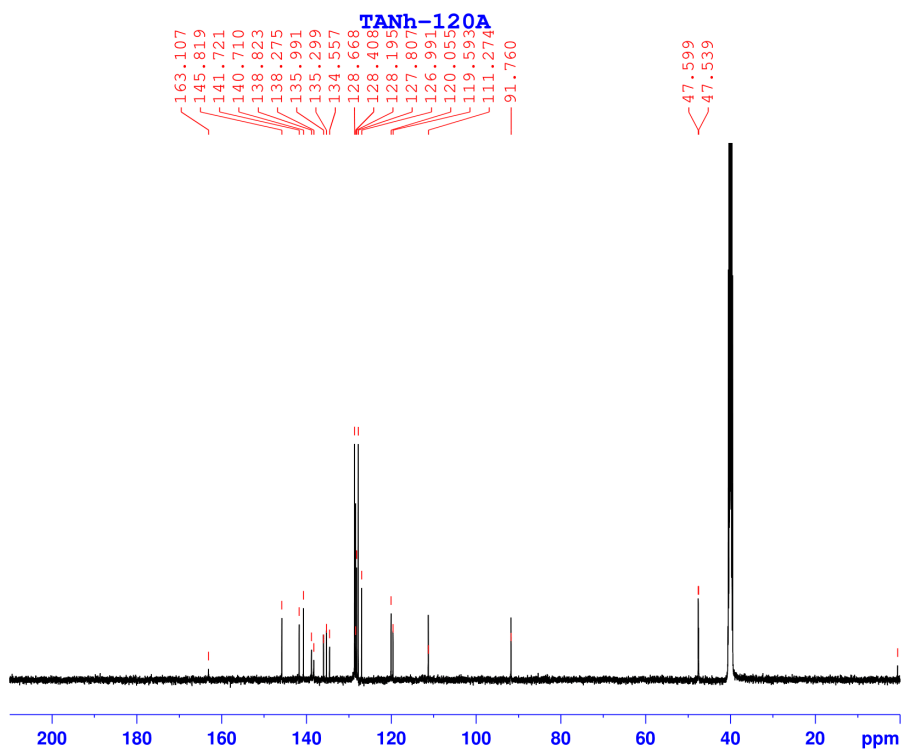
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¹³C NMR of compound 6a



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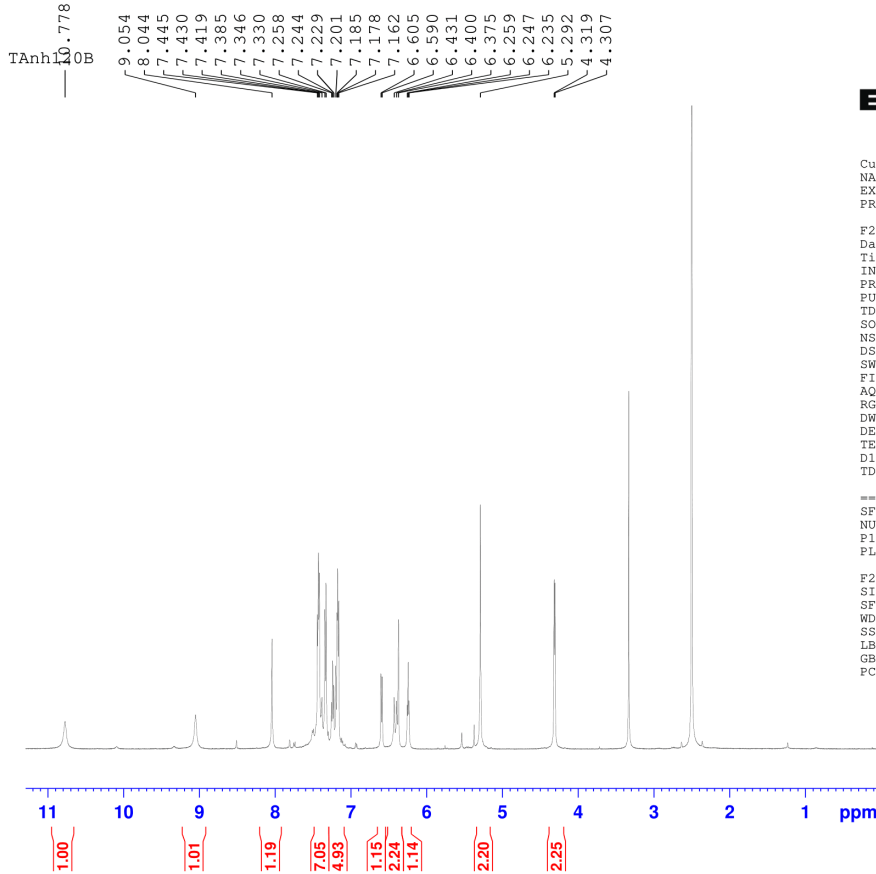
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¹H NMR of compound 6b



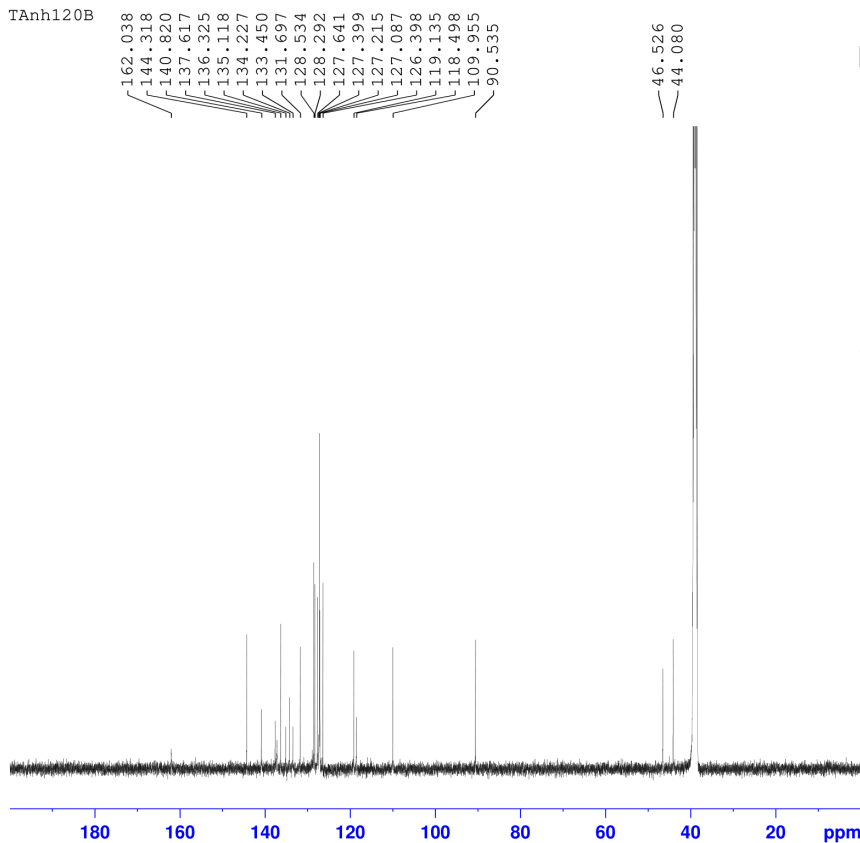
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¹³C NMR of compound 6b



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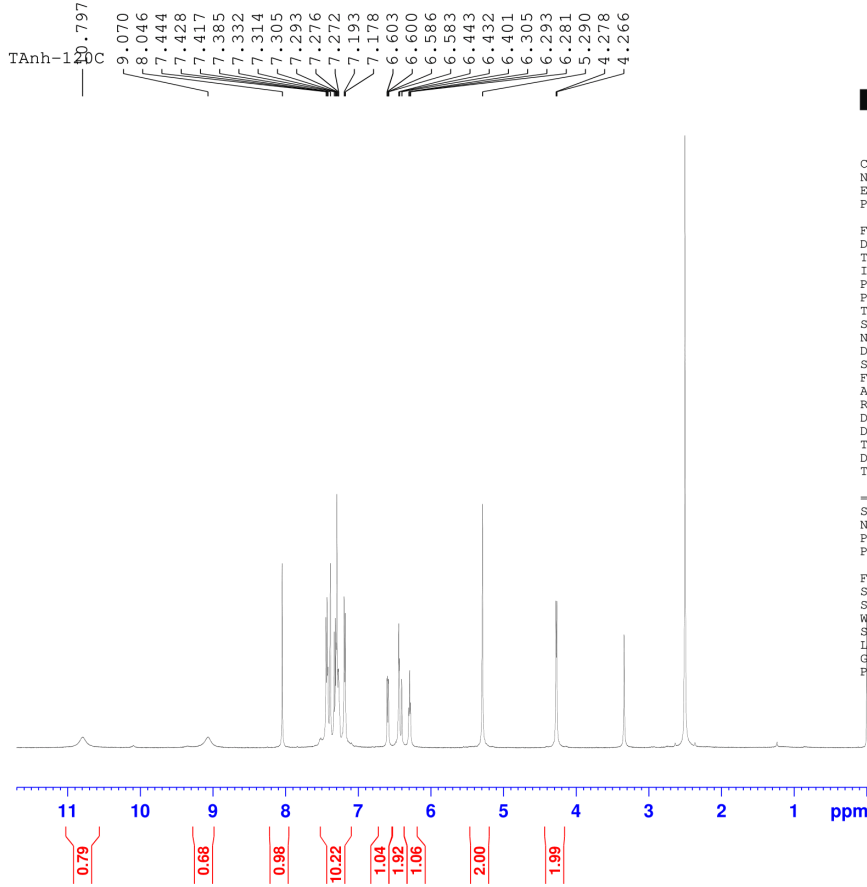
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¹H NMR of compound 6c



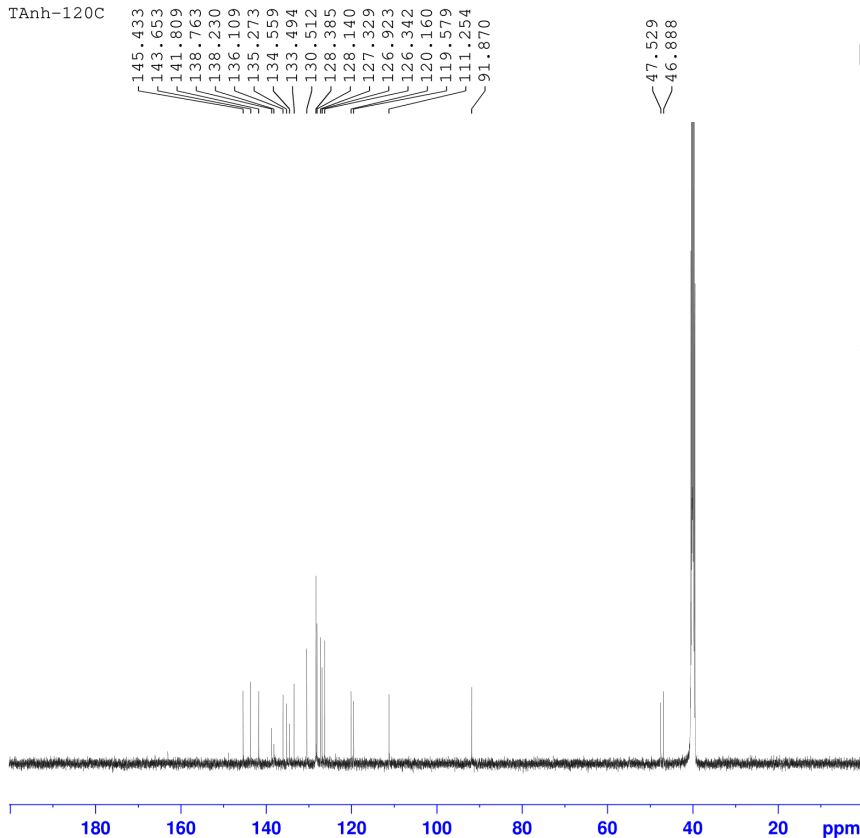
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¹³C NMR of compound 6c



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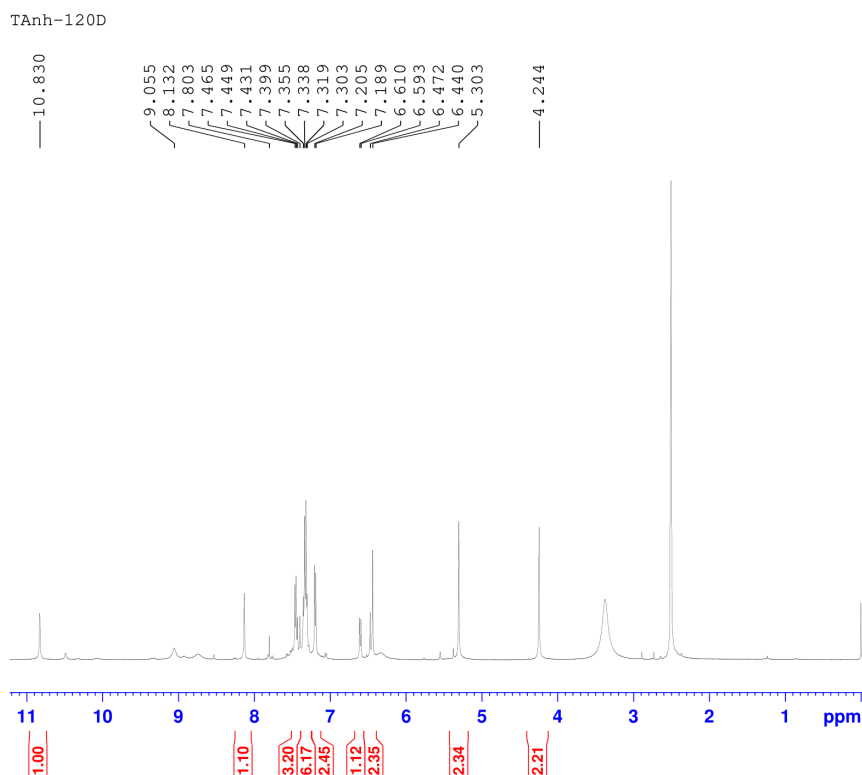
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¹H NMR of compound 6d



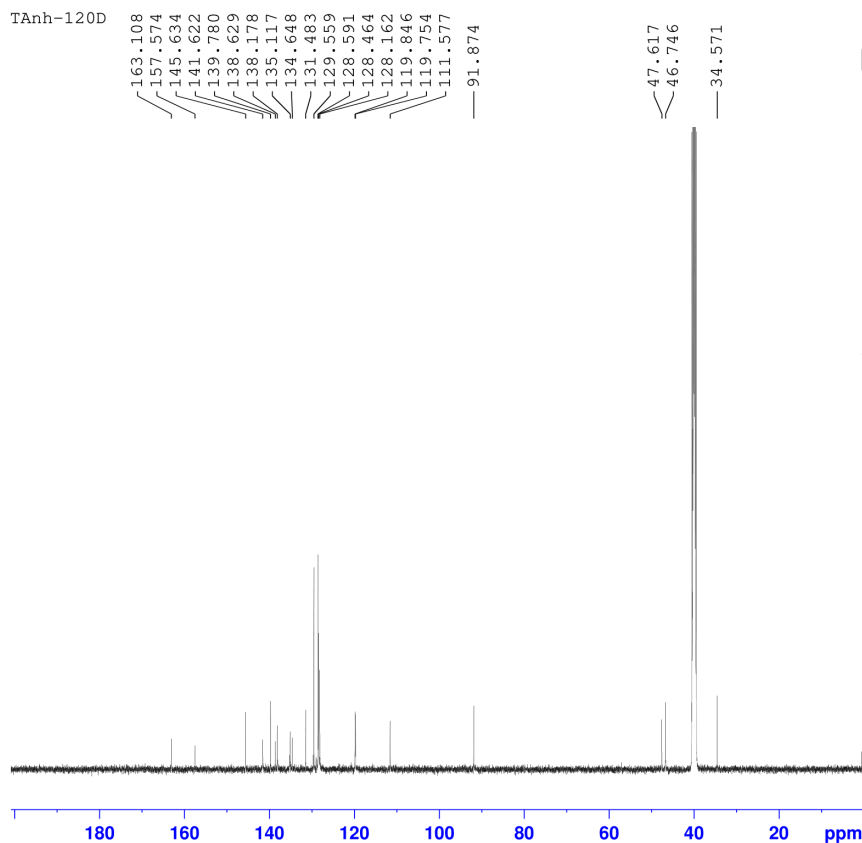
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¹³C NMR of compound 6d



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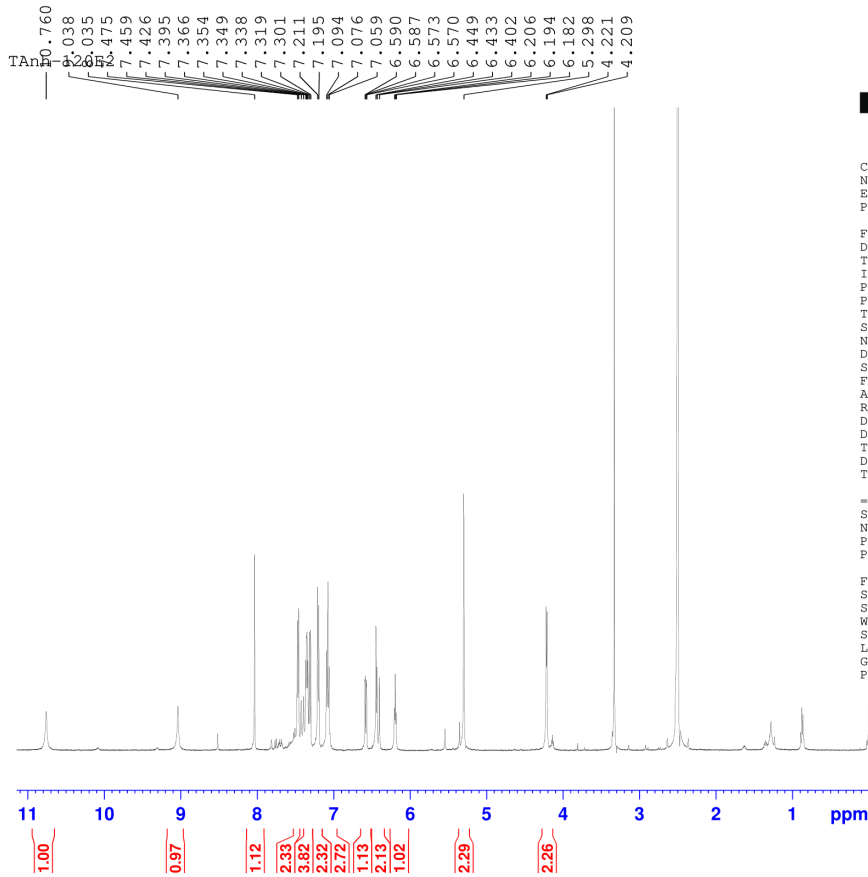
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¹H NMR of compound 6c



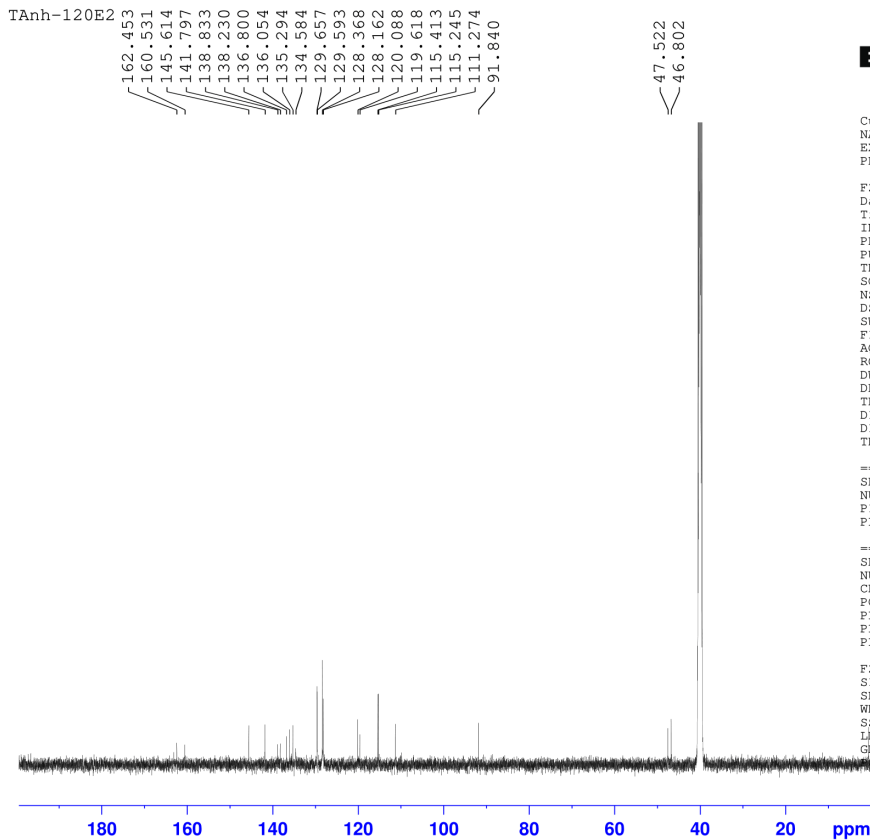
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¹³C NMR of compound 6c



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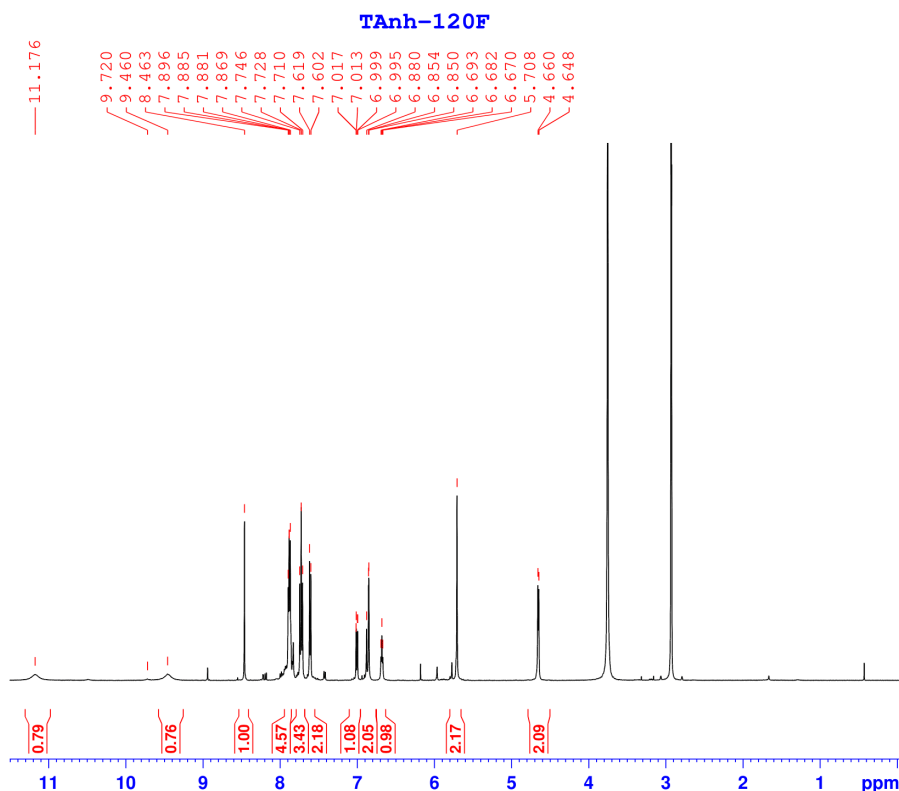
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¹H NMR of compound 6f



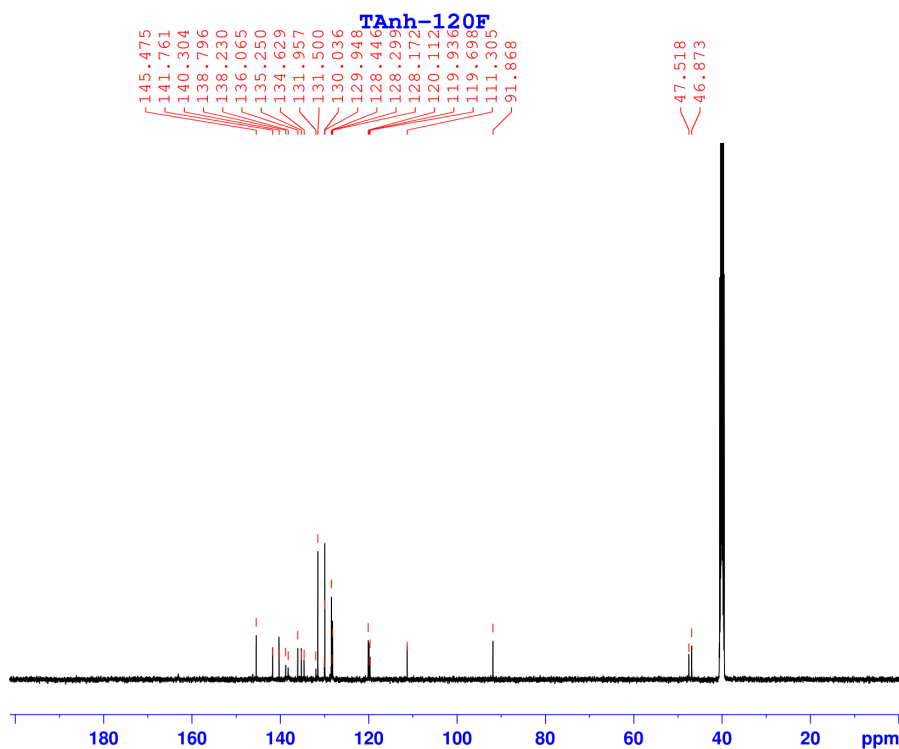
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 PLW1 24.00000000 W

F2 - Processing parameters
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¹³C NMR of compound 6f



Current Data Parameters
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 EXPNO 11
 PROCNO 1

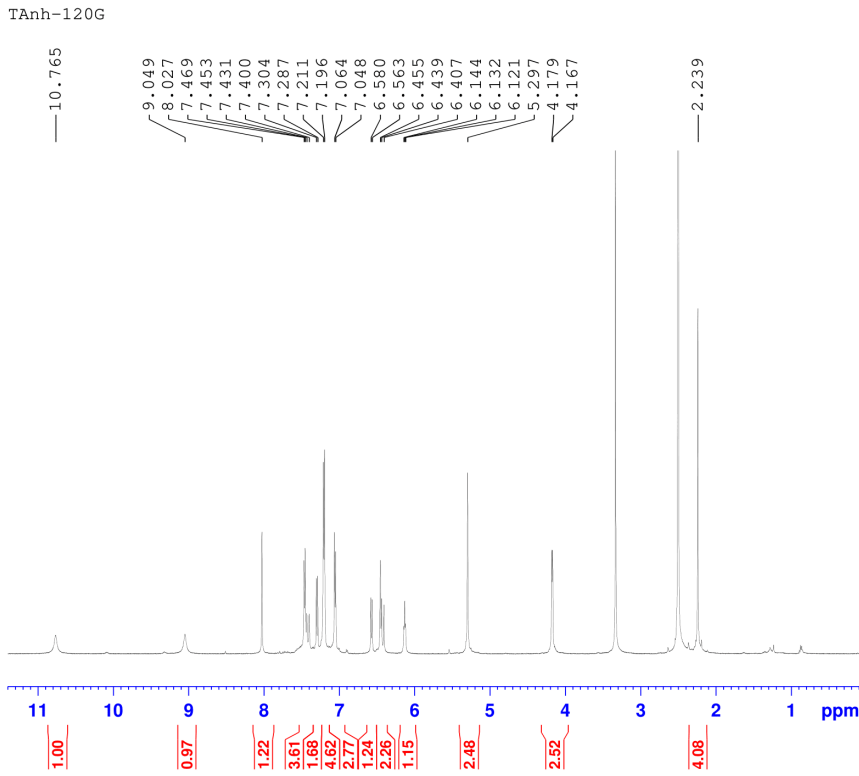
F2 - Acquisition Parameters
 Date_ 20210710
 Time 19.24
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 301.9 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 125.7703637 MHz
 NUC1 13C
 P1 9.50 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SF02 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 6g



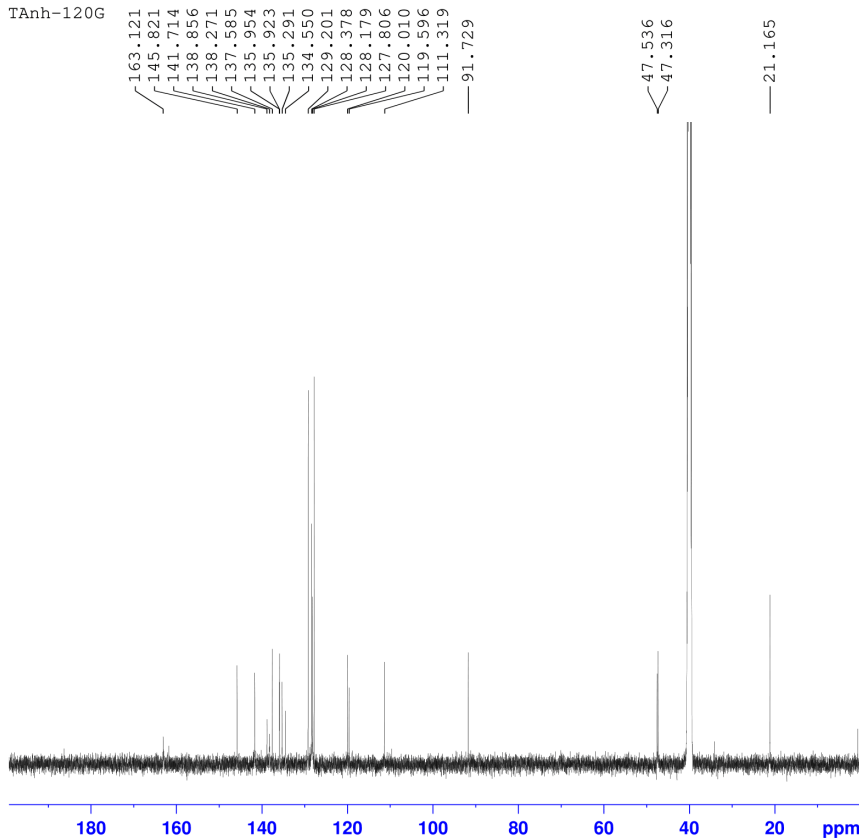
Current Data Parameters
 NAME TAnh-120G
 EXPNO 70
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220105
 Time 8.38
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.8 K
 D1 1.0000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.130052 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 6g



Current Data Parameters
 NAME TAnh-120G
 EXPNO 71
 PROCNO 1

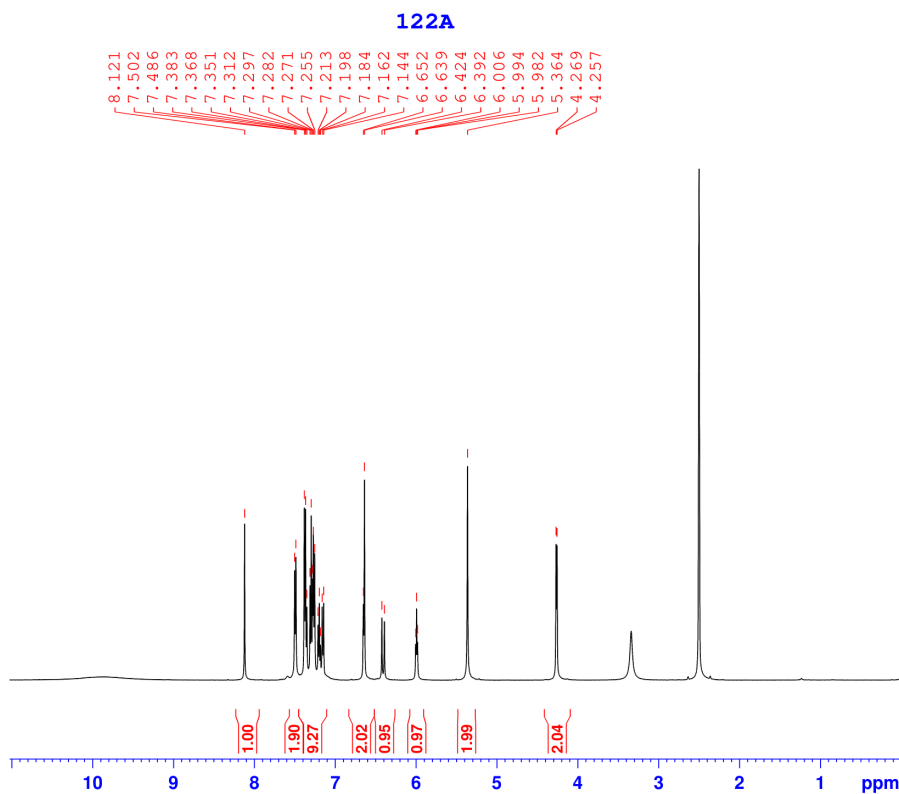
F2 - Acquisition Parameters
 Date_ 20220105
 Time 22.25
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 298.1 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 9a



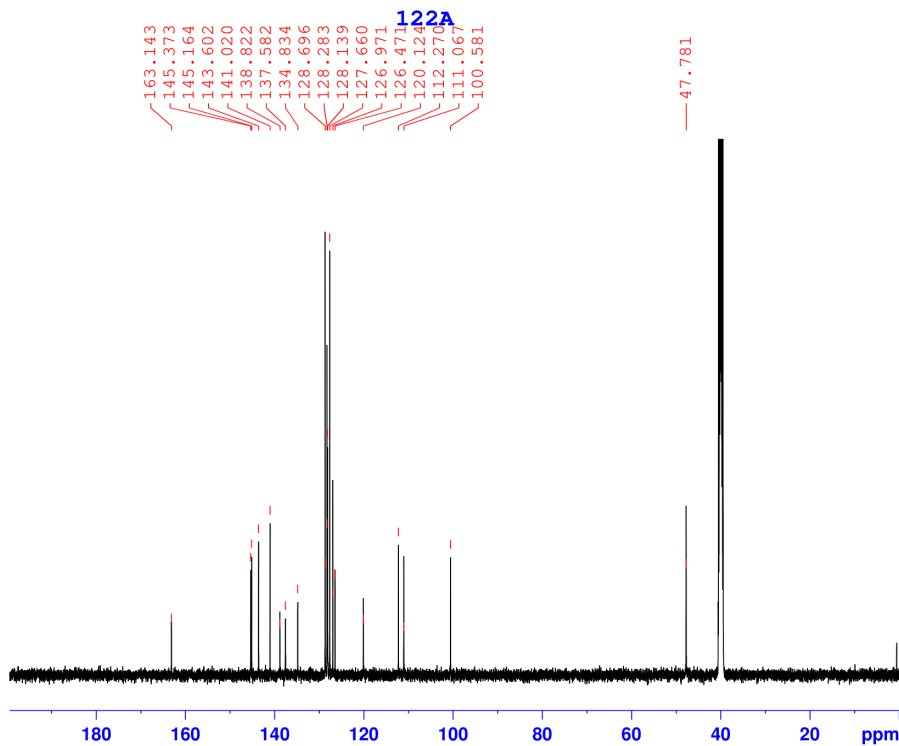
Current Data Parameters
 NAME Tanh-122A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20211210
 Time_ 16.18
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.0 K
 D1 1.00000000 sec
 TD0 1

==== CHANNEL f1 =====
 SF01 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1330045 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 9a



Current Data Parameters
 NAME Tanh-122A
 EXPNO 11
 PROCNO 1

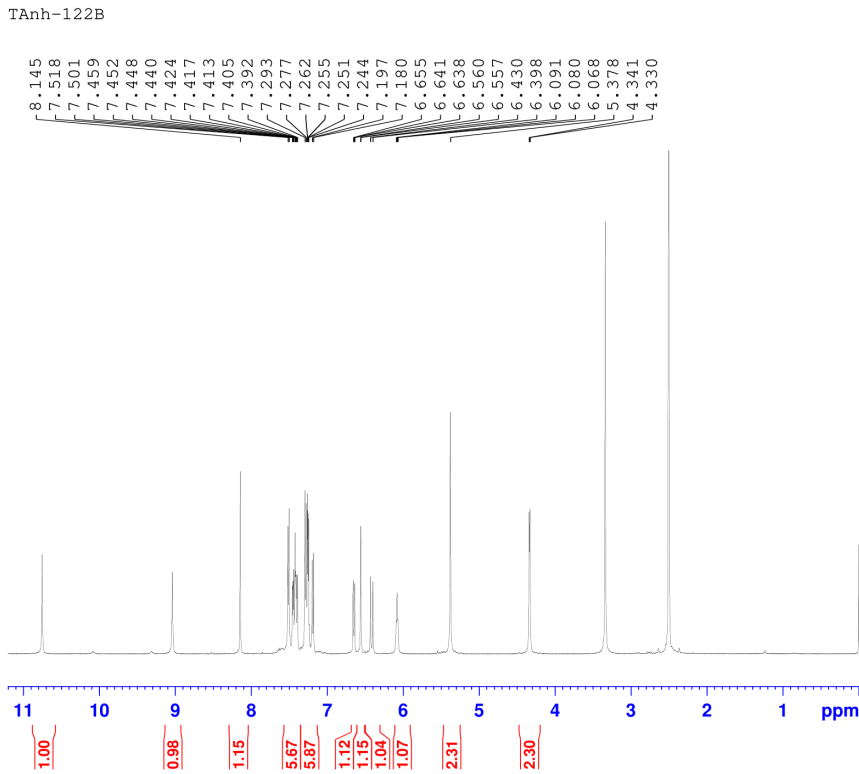
F2 - Acquisition Parameters
 Date_ 20211211
 Time_ 10.20
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 2048
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.5 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

==== CHANNEL f1 =====
 SF01 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.00000000 W

==== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 9b



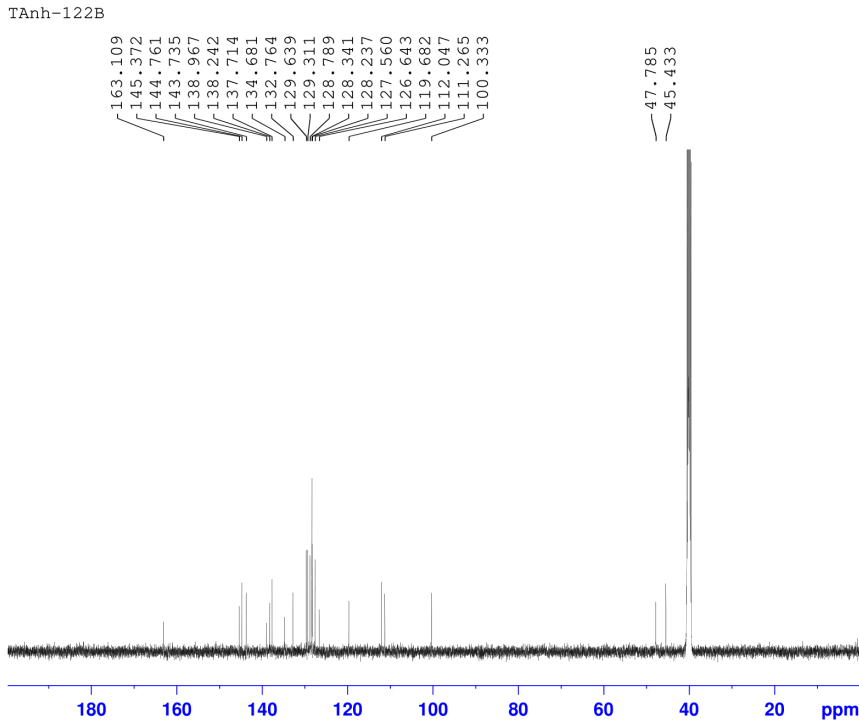
Current Data Parameters
NAME TAnh-122B
EXPNO 60
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220106
Time 9.16
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.8 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300048 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 9b



Current Data Parameters
NAME TAnh-122B
EXPNO 61
PROCNO 1

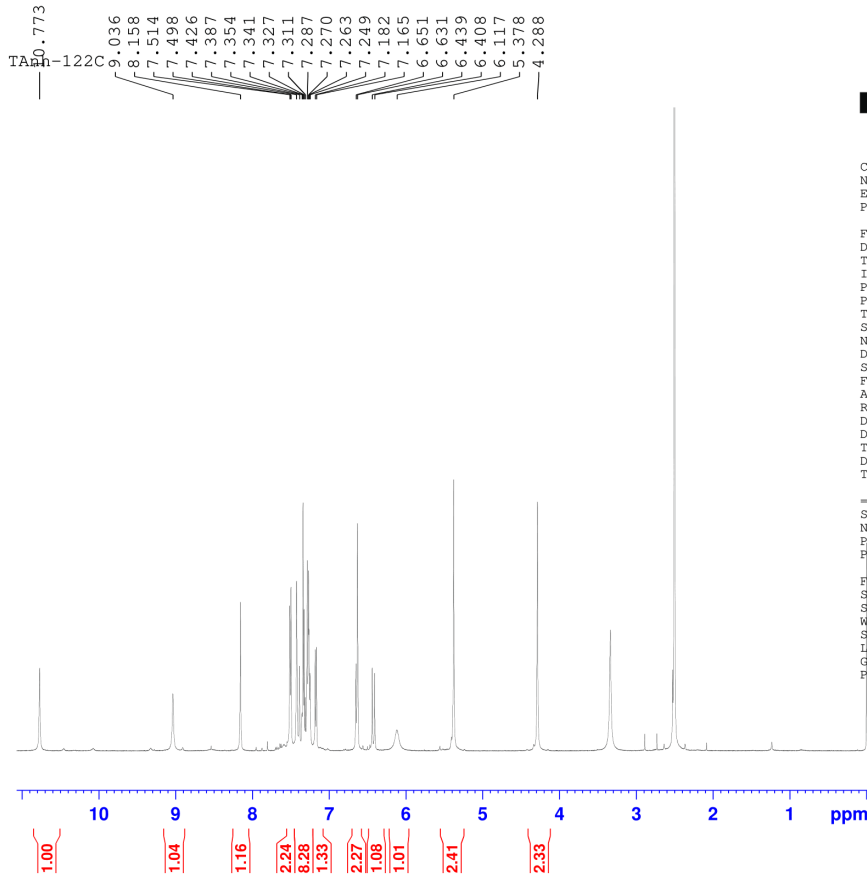
F2 - Acquisition Parameters
Date_ 20220107
Time 7.44
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 82
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.7 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 9c



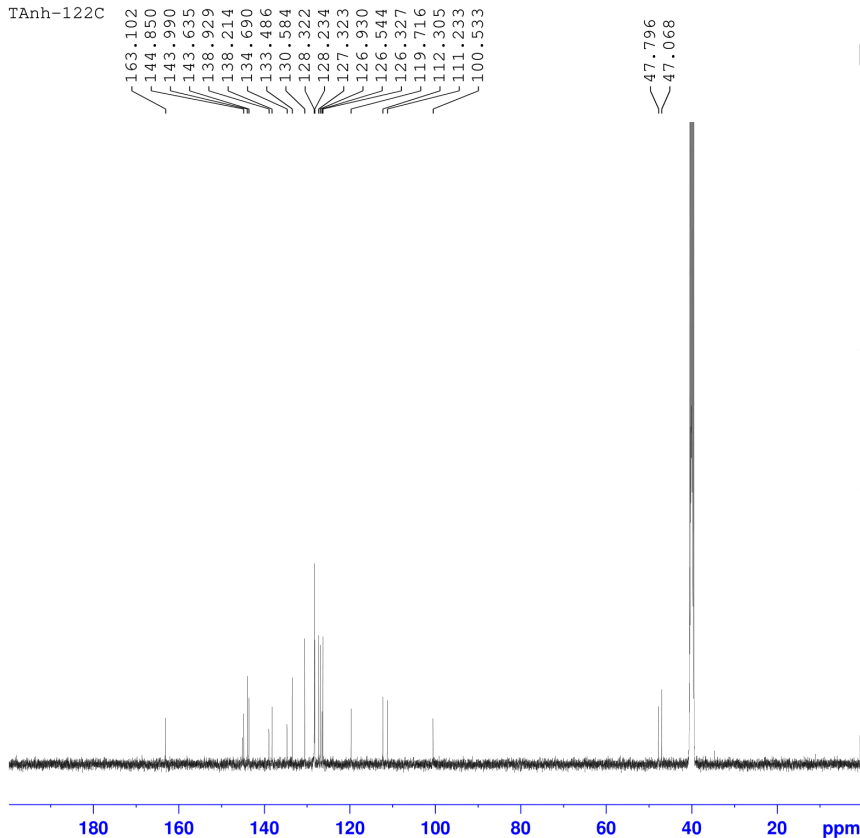
Current Data Parameters
NAME TAnh-122C
EXPNO 20
PROCNO 1

F2 - Acquisition Parameters
Date_ 20211218
Time 11.28
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.2 K
D1 1.00000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300044 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
HC 1.00

¹³C NMR of compound 9c



Current Data Parameters
NAME TAnh-122C
EXPNO 22
PROCNO 1

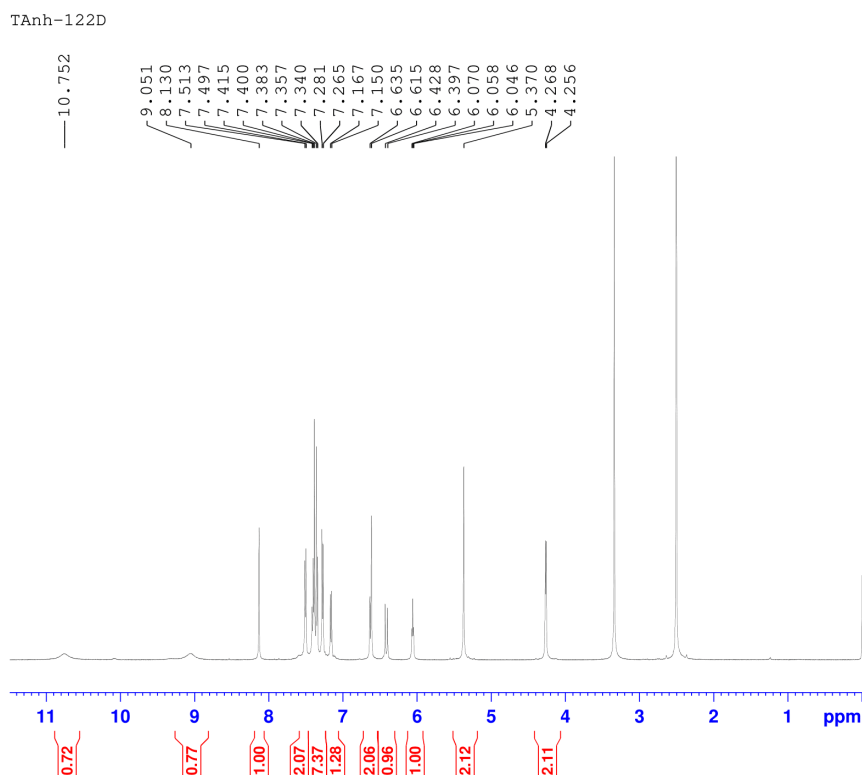
F2 - Acquisition Parameters
Date_ 20211218
Time 13.16
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 2048
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

----- CHANNEL f2 -----
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
FC 1.40

¹H NMR of compound 9d



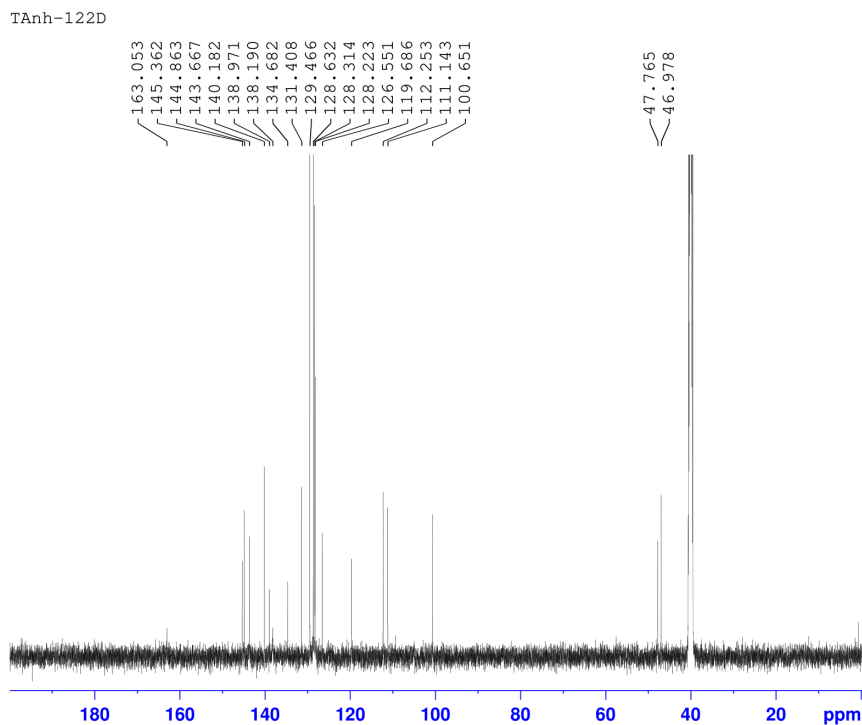
Current Data Parameters
 NAME TAnh-122D
 EXPNO 20
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220106
 Time 9.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.0 K
 D1 1.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300048 MHz
 WF EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 9d



Current Data Parameters
 NAME TAnh-122D
 EXPNO 21
 PROCNO 1

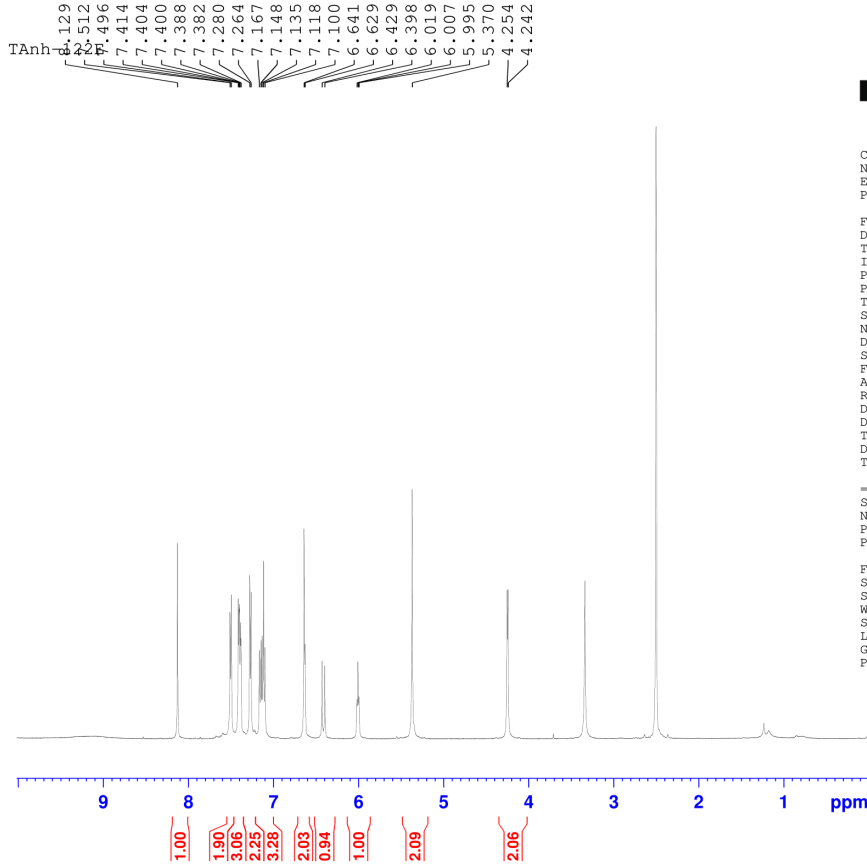
F2 - Acquisition Parameters
 Date_ 20220107
 Time 8.52
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 1295
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WF EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 9e



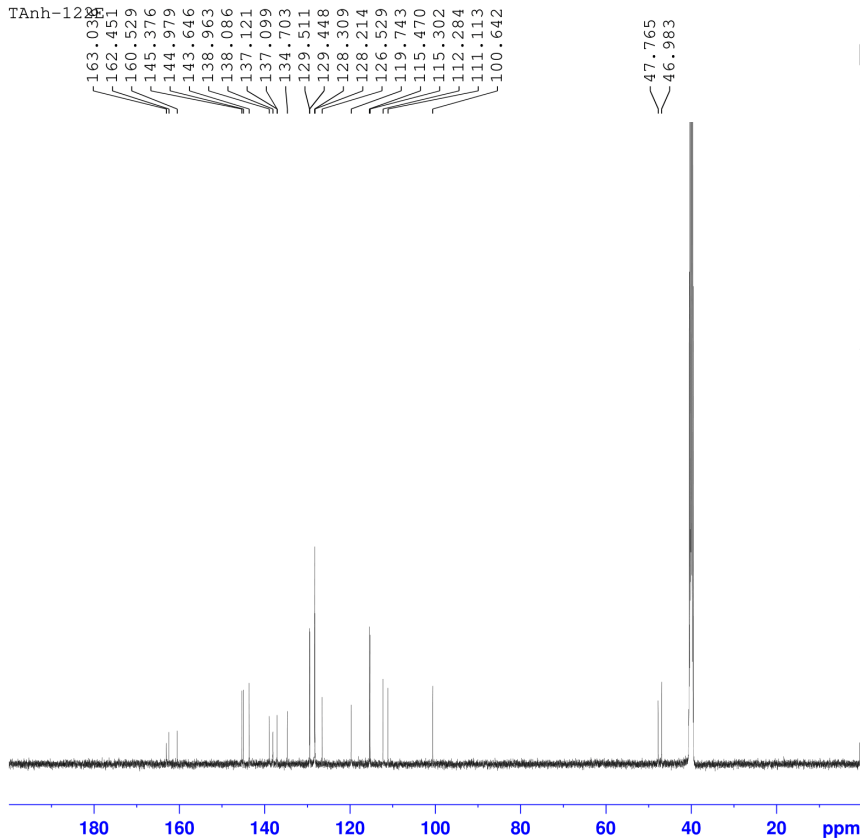
Current Data Parameters
 NAME TAnh-122E
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20211218
 Time 9.37
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.1 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300051 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 9e



Current Data Parameters
 NAME TAnh-122E
 EXPNO 11
 PROCNO 1

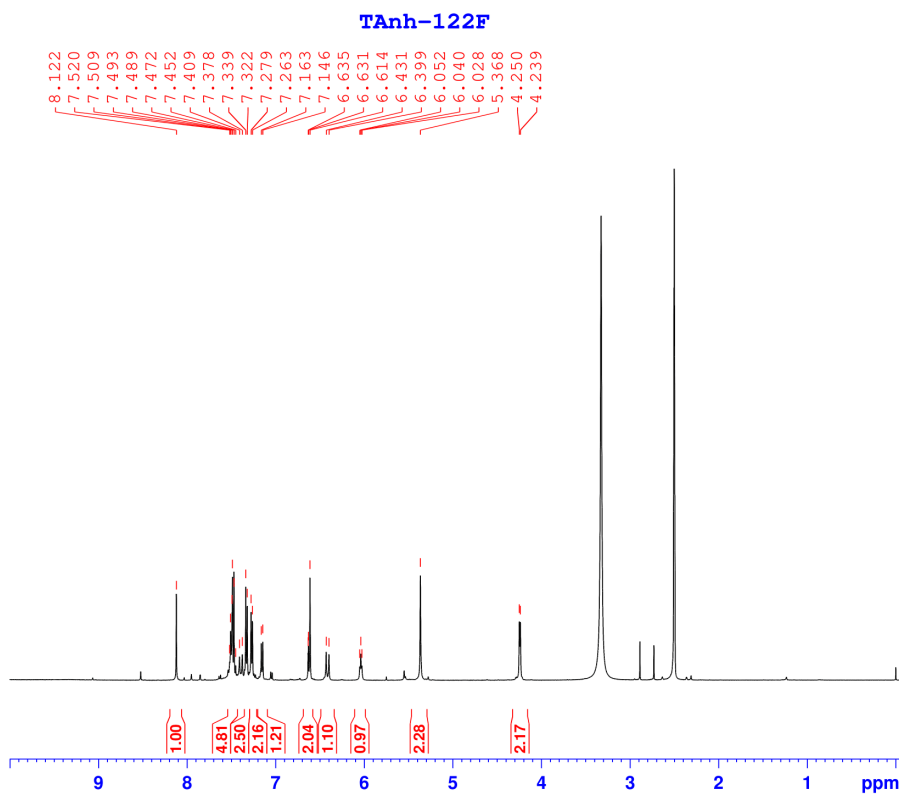
F2 - Acquisition Parameters
 Date_ 20211218
 Time 9.39
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 2048
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.3 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 9f



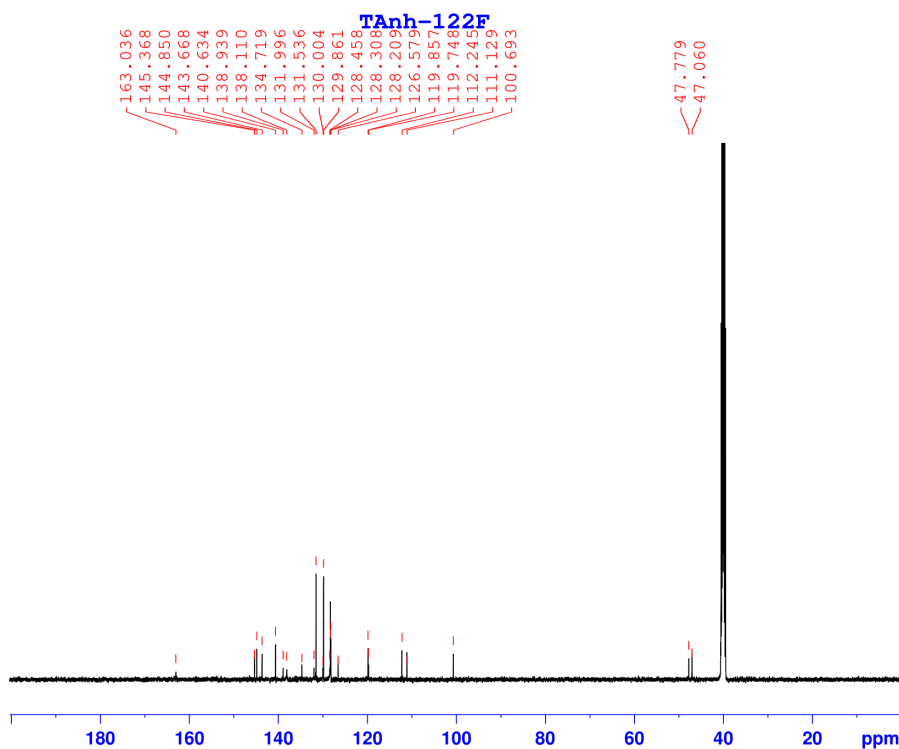
Current Data Parameters
 NAME TAnh-122F
 EXPNO 20
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20210709
 Time_ 13.34
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 301.1 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300048 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 9f



Current Data Parameters
 NAME TAnh-122F
 EXPNO 21
 PROCNO 1

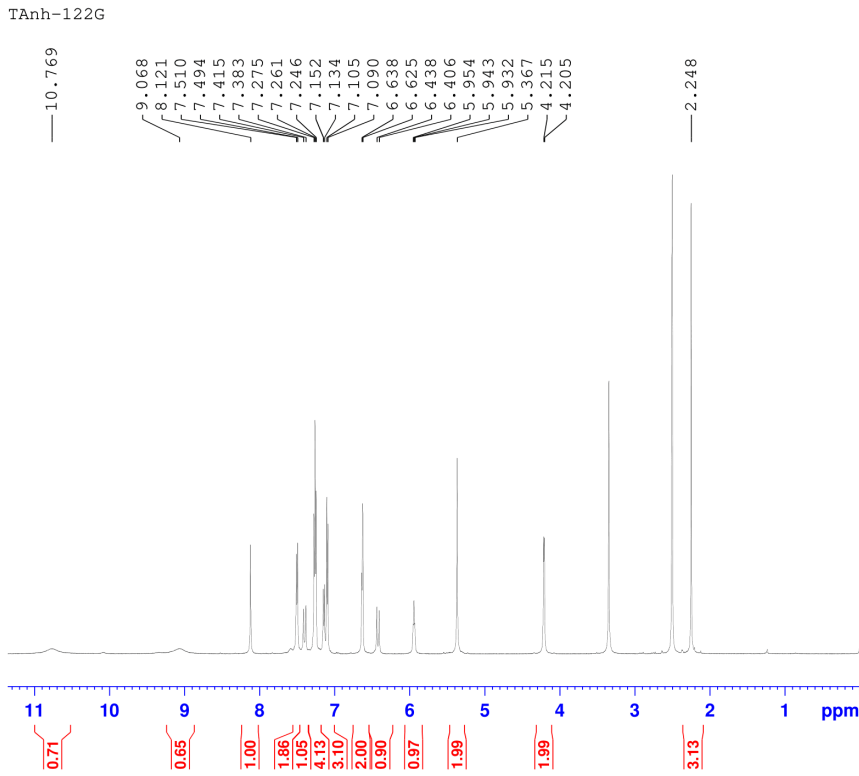
F2 - Acquisition Parameters
 Date_ 20210710
 Time_ 22.06
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 302.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 125.7703637 MHz
 NUC1 13C
 P1 9.50 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 9g



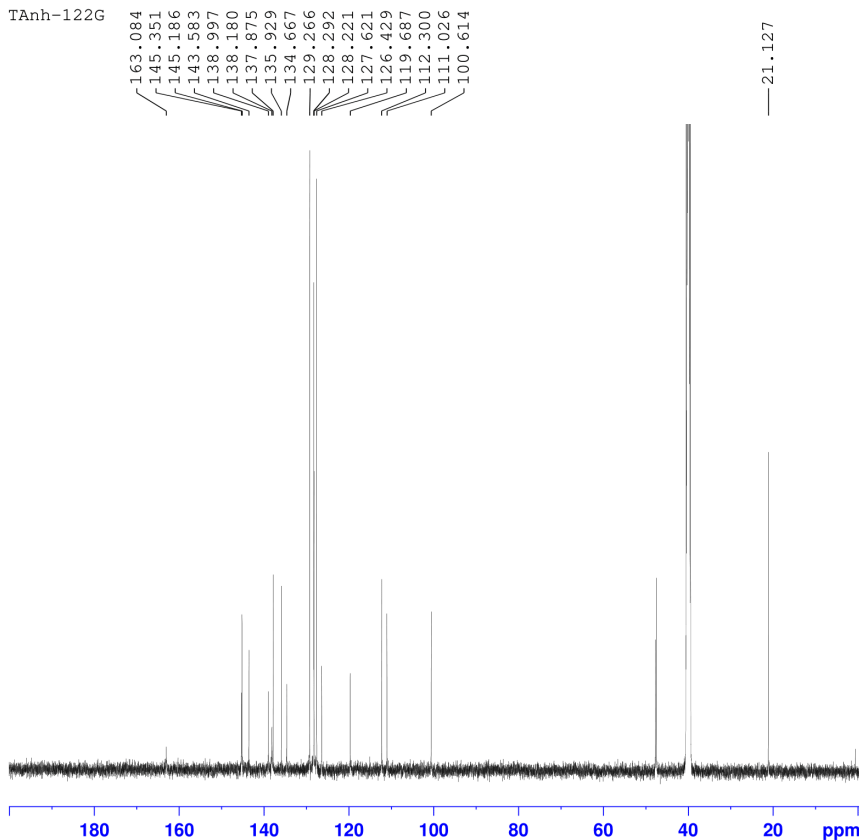
Current Data Parameters
 NAME TAnh-122G
 EXPNO 70
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220106
 Time 9.19
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.8 K
 D1 1.0000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300052 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 9g



Current Data Parameters
 NAME TAnh-122G
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220108
 Time 9.52
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.6 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

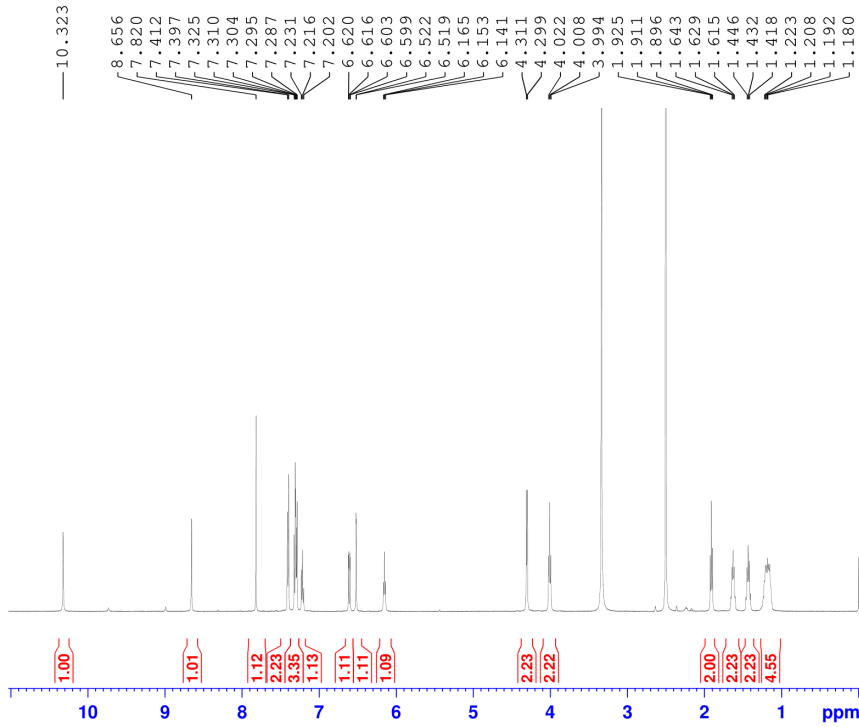
===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 14a

TAnh-126A



Current Data Parameters
NAME TAnh-126A
EXPNO 10
PROCNO 1

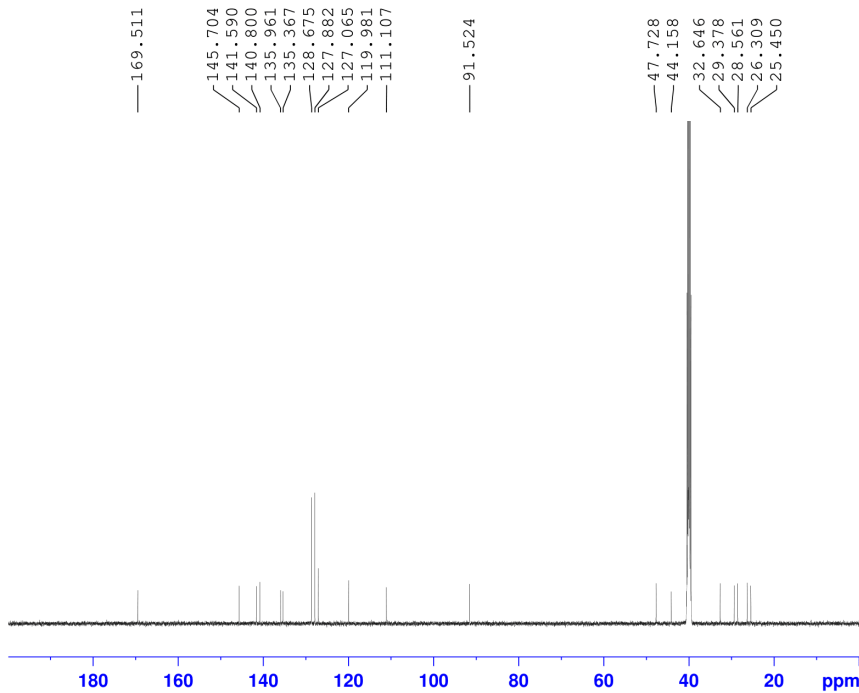
F2 - Acquisition Parameters
Date_ 20220812
Time 14.30
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.1 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300044 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14a

TAnh-126A



Current Data Parameters
NAME TAnh-126A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220812
Time 17.33
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

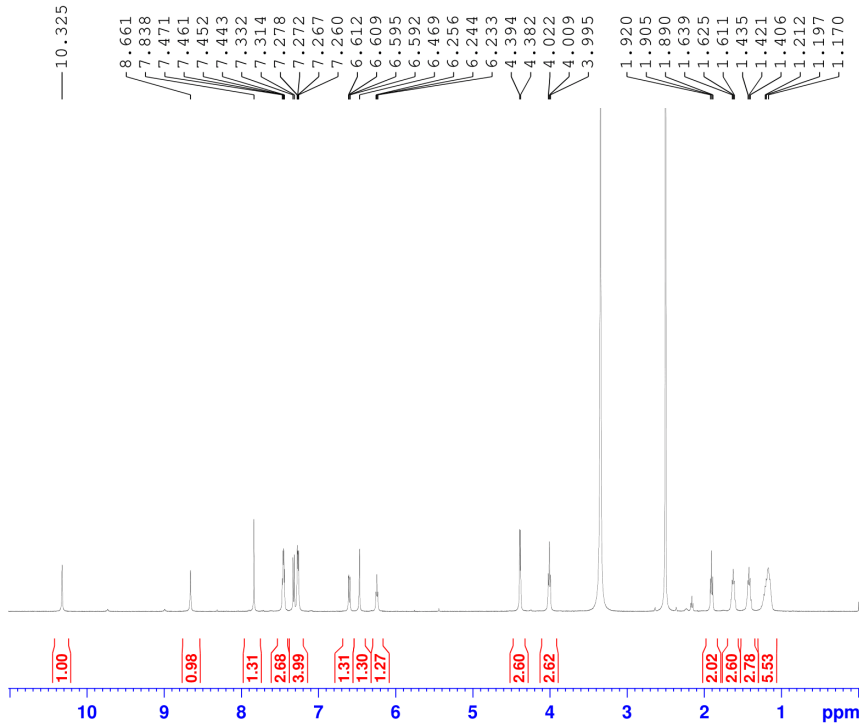
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 14b

TAnh-126B



Current Data Parameters
NAME TAnh-126B
EXPNO 31
PROCNO 1

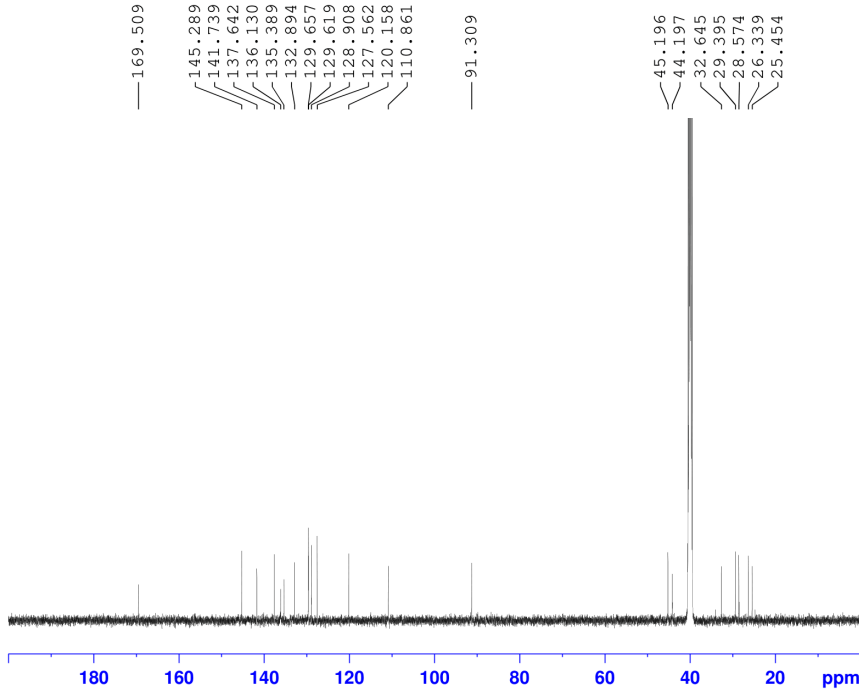
F2 - Acquisition Parameters
Date_ 20220819
Time 9.42
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300043 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14b

TAnh-126B



Current Data Parameters
NAME TAnh-126B
EXPNO 32
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220819
Time 19.34
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

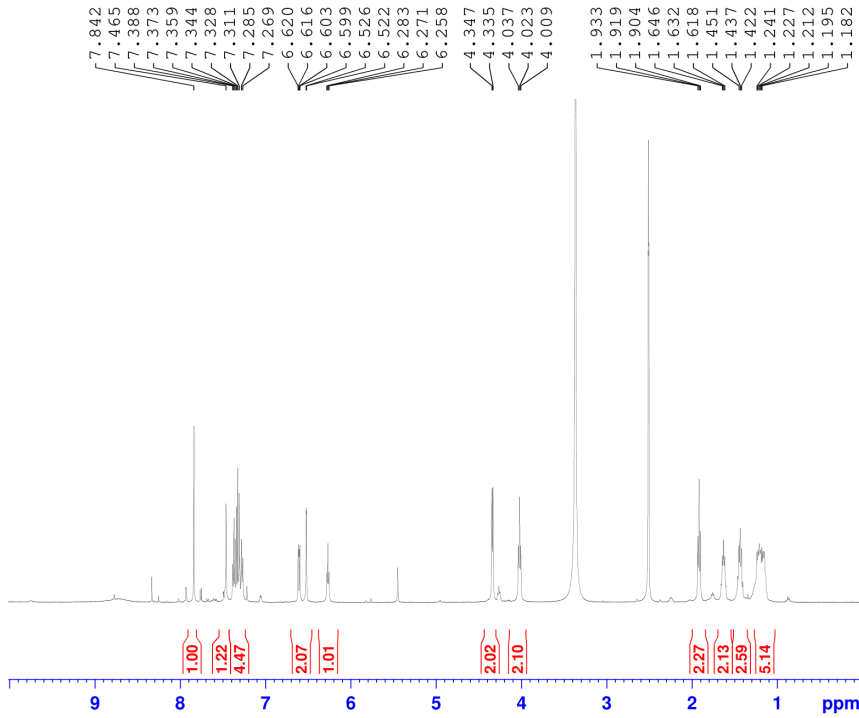
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 14c

TAnh-126C



Current Data Parameters
NAME TAnh-126C
EXPNO 20
PROCNO 1

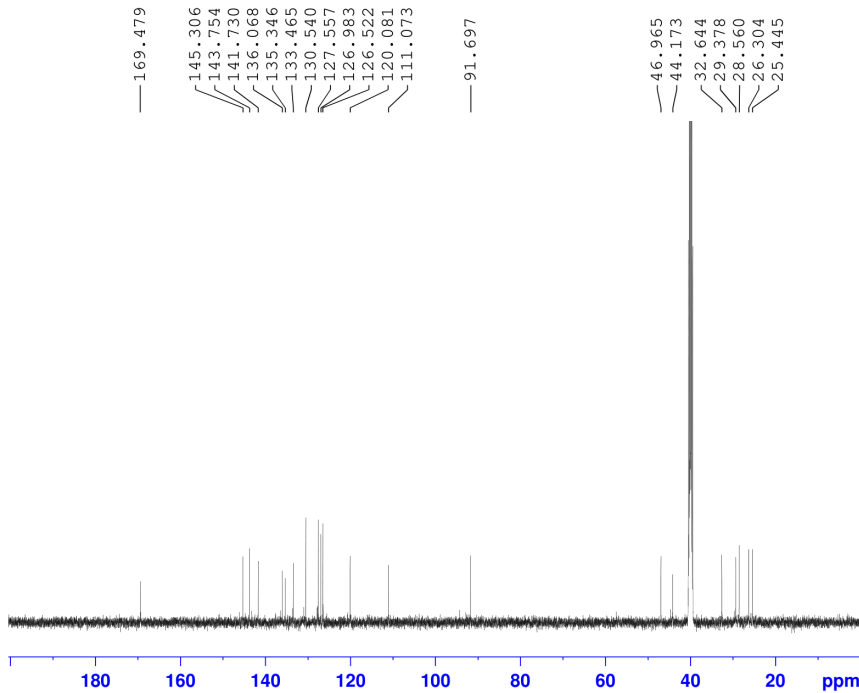
F2 - Acquisition Parameters
Date_ 20220922
Time 9.24
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.7 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14c

TAnh-126C



Current Data Parameters
NAME TAnh-126C
EXPNO 21
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220922
Time 10.27
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 540
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.4 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

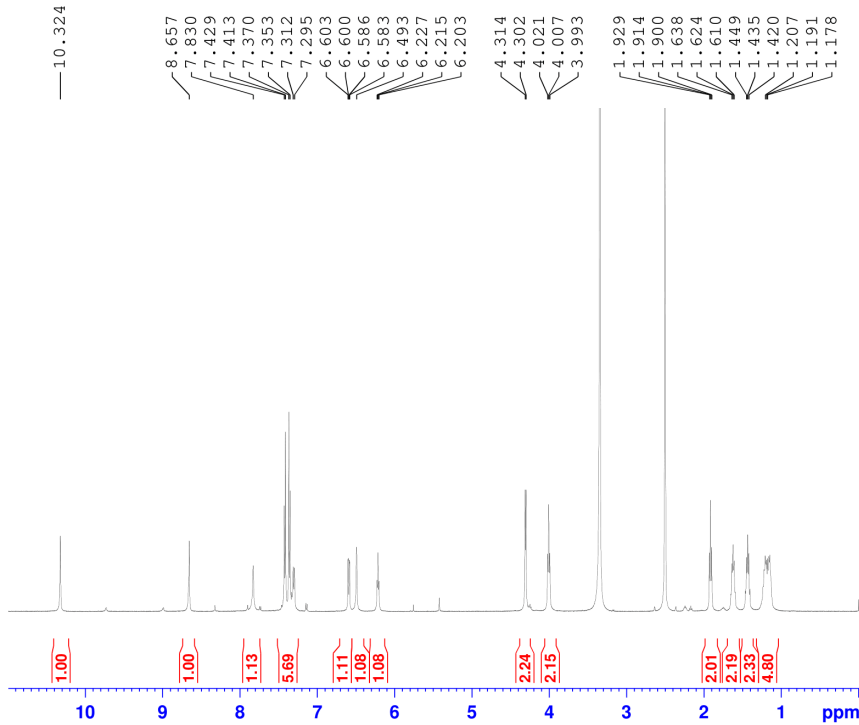
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 14d

TAnh-126D



Current Data Parameters
NAME TAnh-126D
EXPNO 20
PROCNO 1

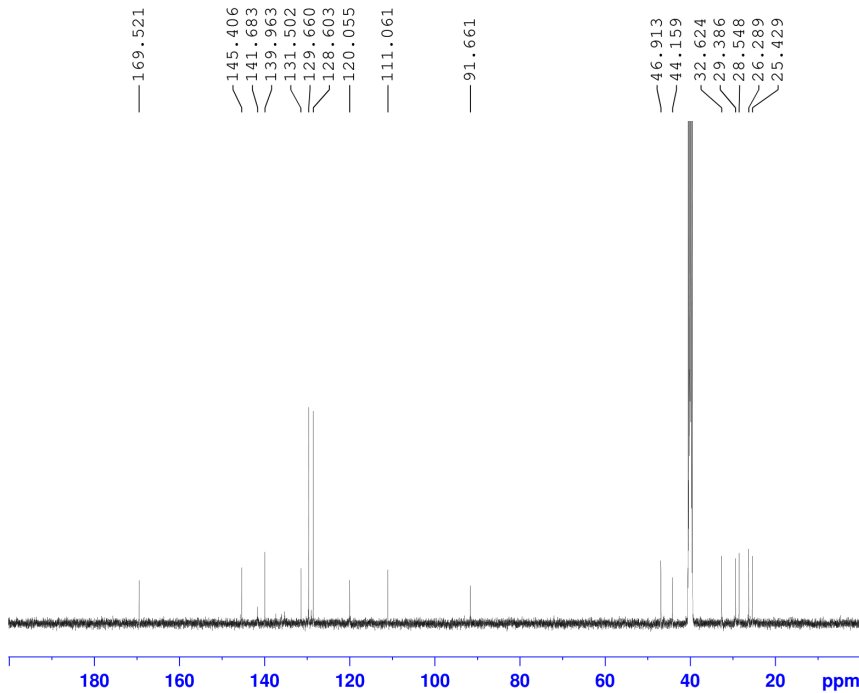
F2 - Acquisition Parameters
Date_ 20220819
Time 9.38
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.1 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300042 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14d

TAnh-126D



Current Data Parameters
NAME TAnh-126D
EXPNO 21
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220819
Time 13.30
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 2048
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

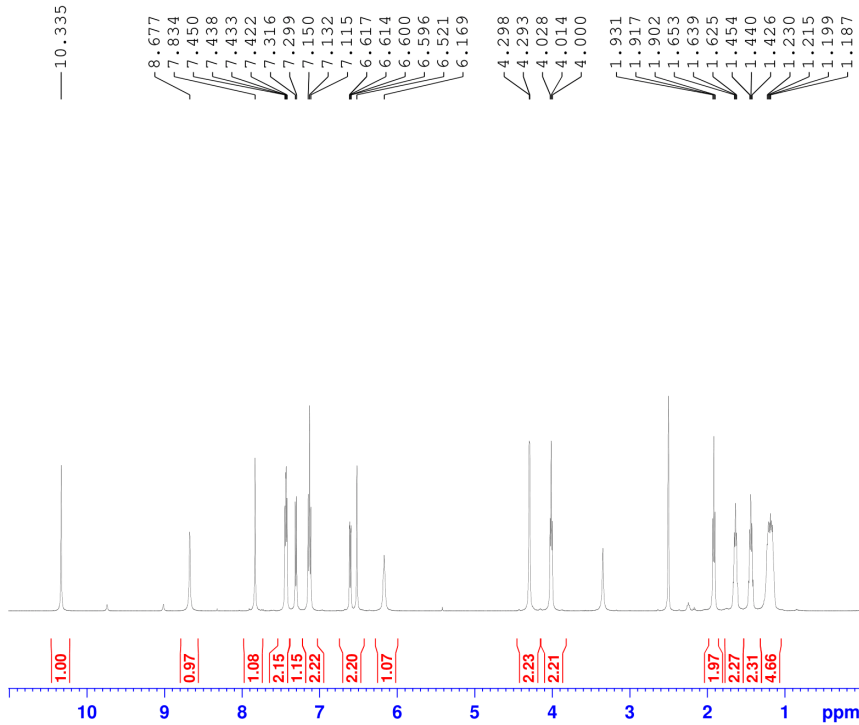
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 14e

TAnh-126E



Current Data Parameters
NAME TAnh-126E
EXPNO 10
PROCNO 1

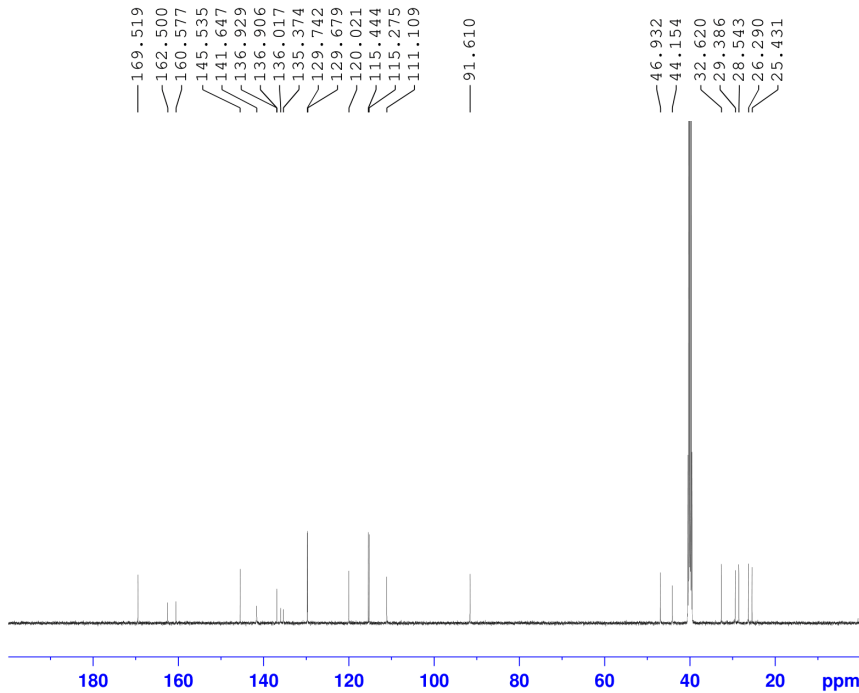
F2 - Acquisition Parameters
Date_ 20221201
Time 10.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.1 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300045 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14e

TAnh-126E



Current Data Parameters
NAME TAnh-126E
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20221201
Time 16.17
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 1024
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.1 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

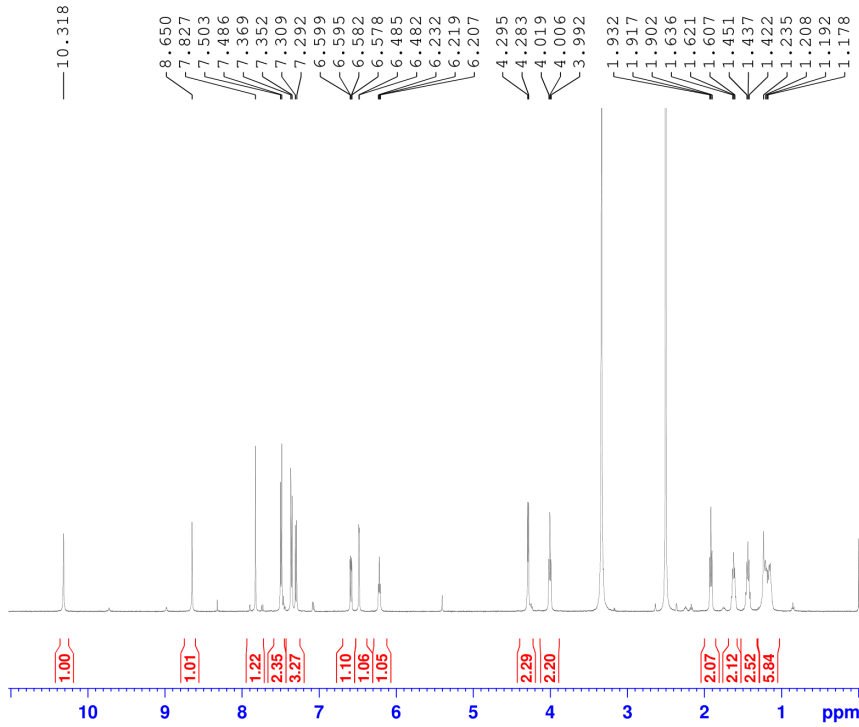
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 14f

TAnh-126F



Current Data Parameters
NAME TAnh-126F
EXPNO 20
PROCNO 1

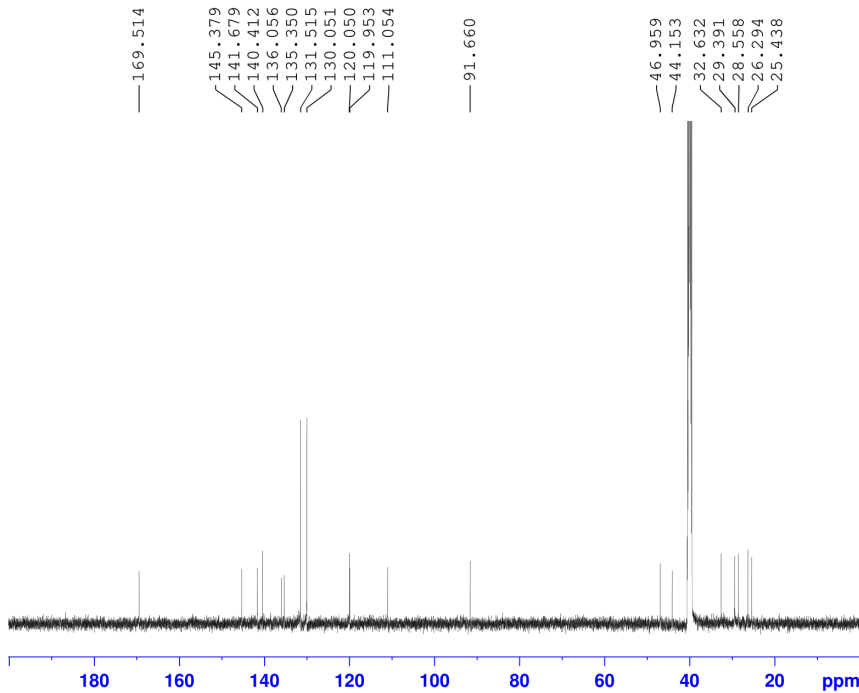
F2 - Acquisition Parameters
Date_ 20220812
Time 14.35
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.2 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300043 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14f

TAnh-126F



Current Data Parameters
NAME TAnh-126F
EXPNO 21
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220812
Time 20.15
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

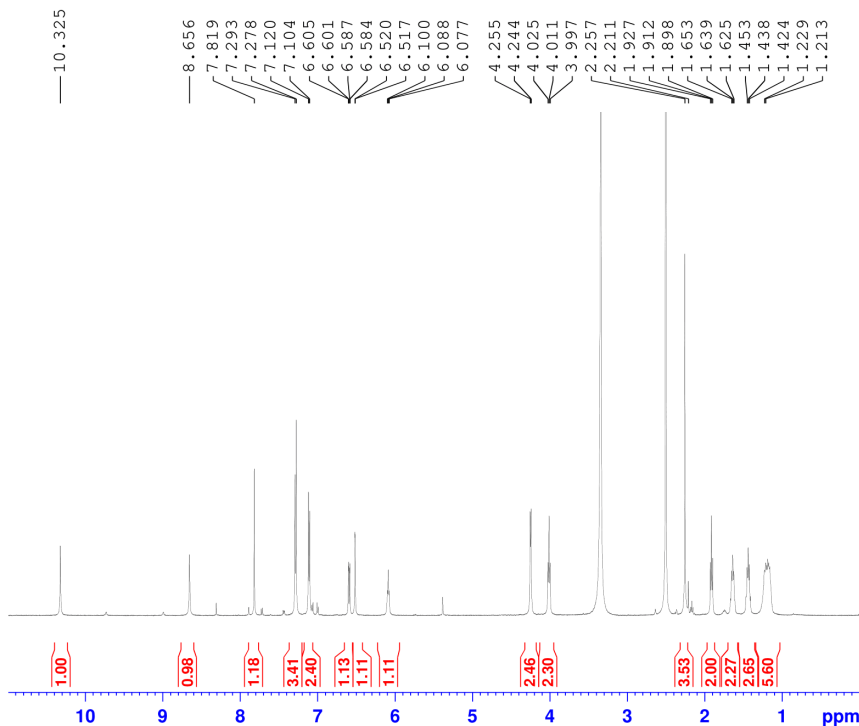
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 14g

TAnh-126G



Current Data Parameters
NAME TAnh-126G
EXPNO 41
PROCNO 1

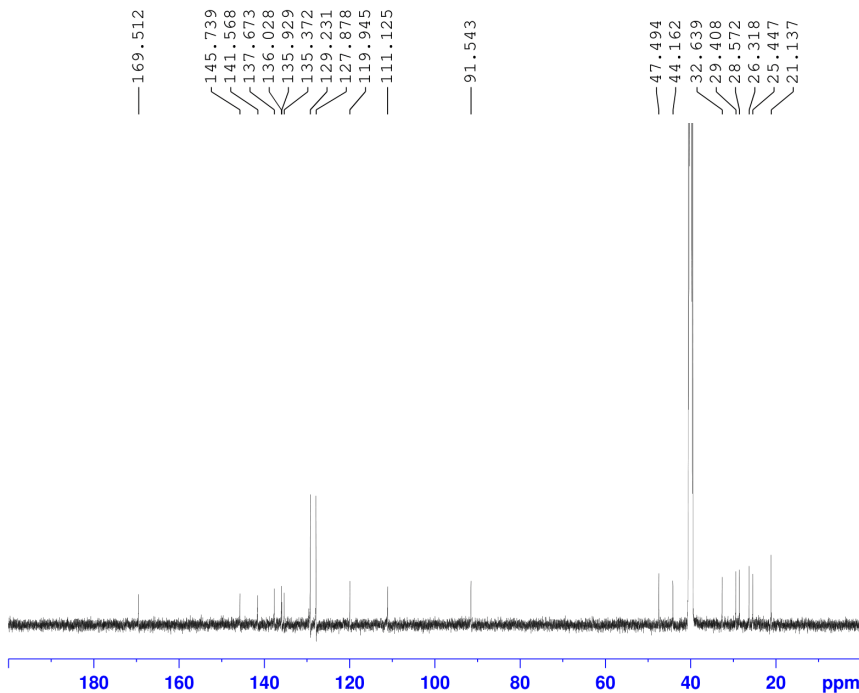
F2 - Acquisition Parameters
Date_ 20220819
Time 9.46
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.1 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300046 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 14g

TAnh-126G



Current Data Parameters
NAME TAnh-126G
EXPNO 42
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220819
Time 22.27
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 299.2 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

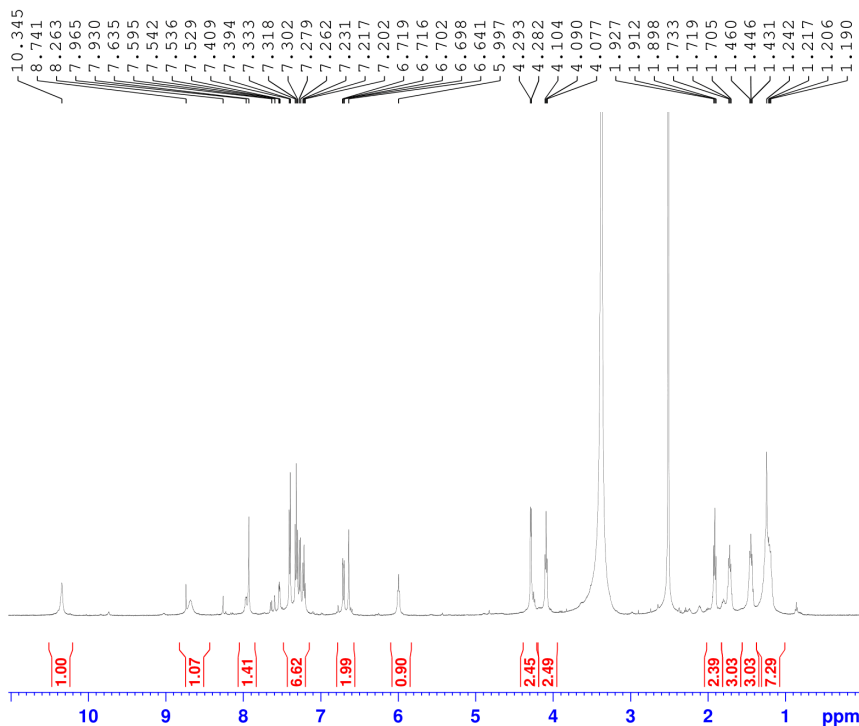
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 17a

TAnh-127A



Current Data Parameters
 NAME TAnh-127A
 EXPNO 10
 PROCNO 1

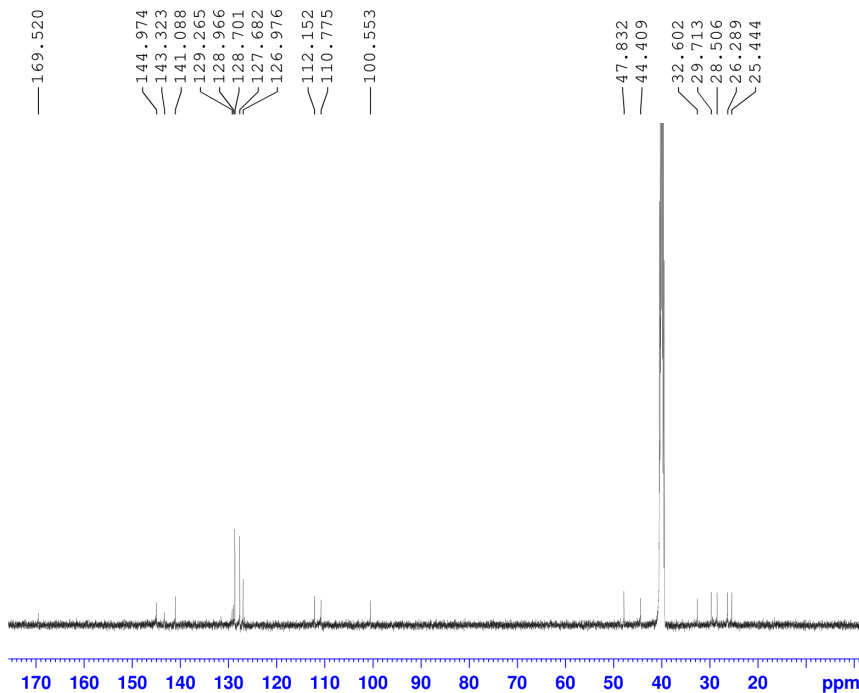
F2 - Acquisition Parameters
 Date_ 20221012
 Time 10.05
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 295.7 K
 D1 1.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300000 MHz
 WF EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 17a

TAnh-127A



Current Data Parameters
 NAME TAnh-127A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20221012
 Time 16.28
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 1433
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 296.6 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

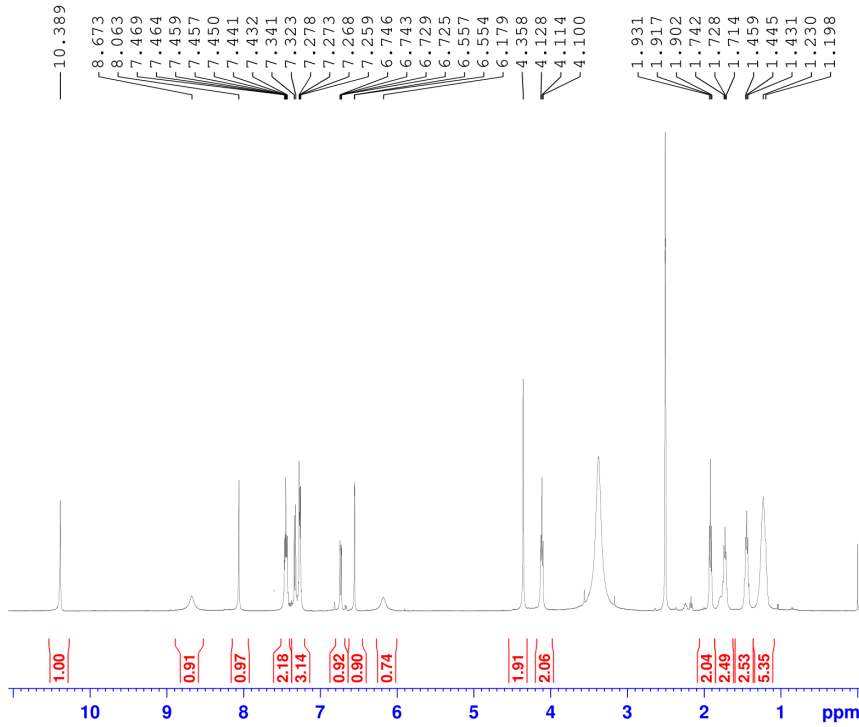
===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WF EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 17b

TAnh-127B



Current Data Parameters
NAME TAnh-127B
EXPNO 90
PROCNO 1

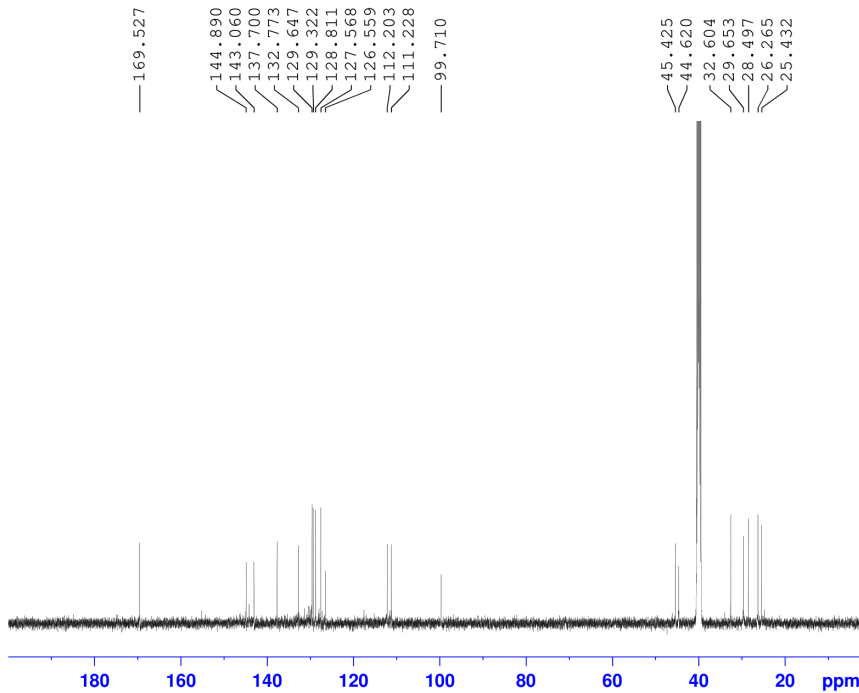
F2 - Acquisition Parameters
Date_ 20221201
Time 11.10
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.8 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300027 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 17b

TAnh-127B



Current Data Parameters
NAME TAnh-127B
EXPNO 91
PROCNO 1

F2 - Acquisition Parameters
Date_ 20221203
Time 13.37
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 2048
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

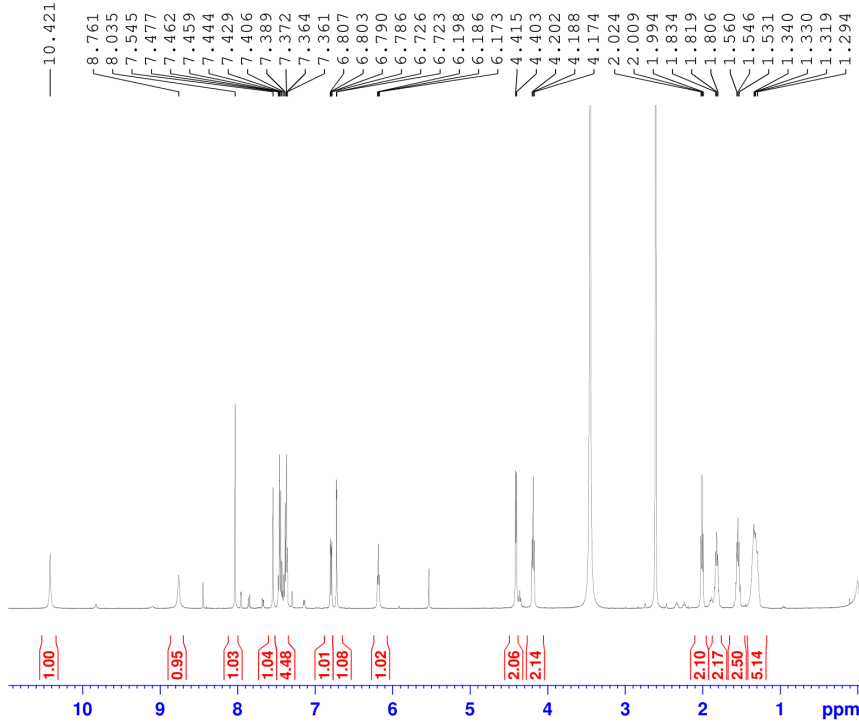
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 17c

TAnh-127C



Current Data Parameters
NAME TAnh-127C
EXPNO 10
PROCNO 1

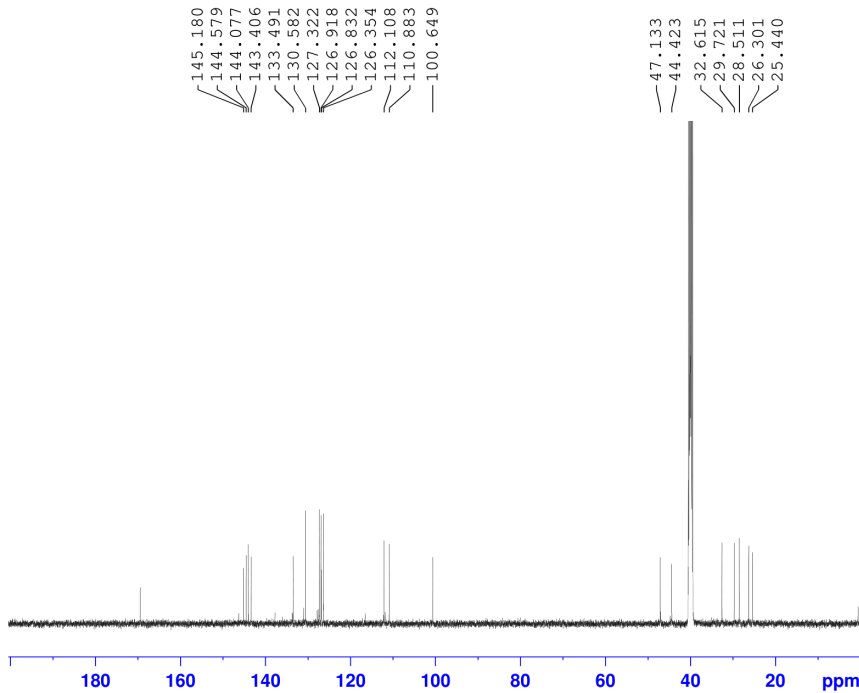
F2 - Acquisition Parameters
Date_ 20220904
Time 14.48
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.1 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1299516 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 17c

TAnh-127C



Current Data Parameters
NAME TAnh-127C
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220904
Time 18.22
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 4096
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.3 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

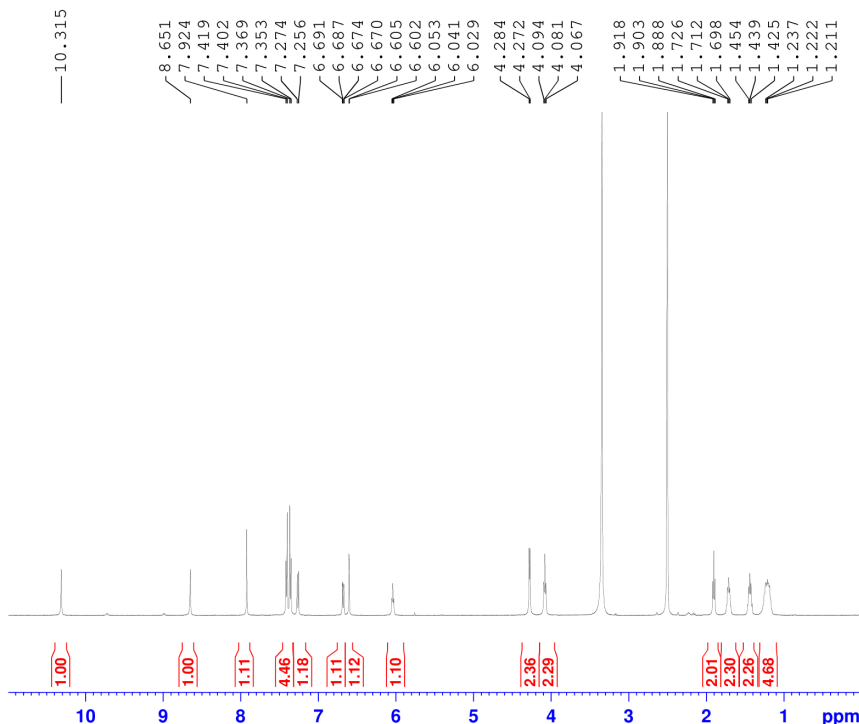
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 17d

TAnh-127D



Current Data Parameters
NAME TAnh-127D
EXPNO 10
PROCNO 1

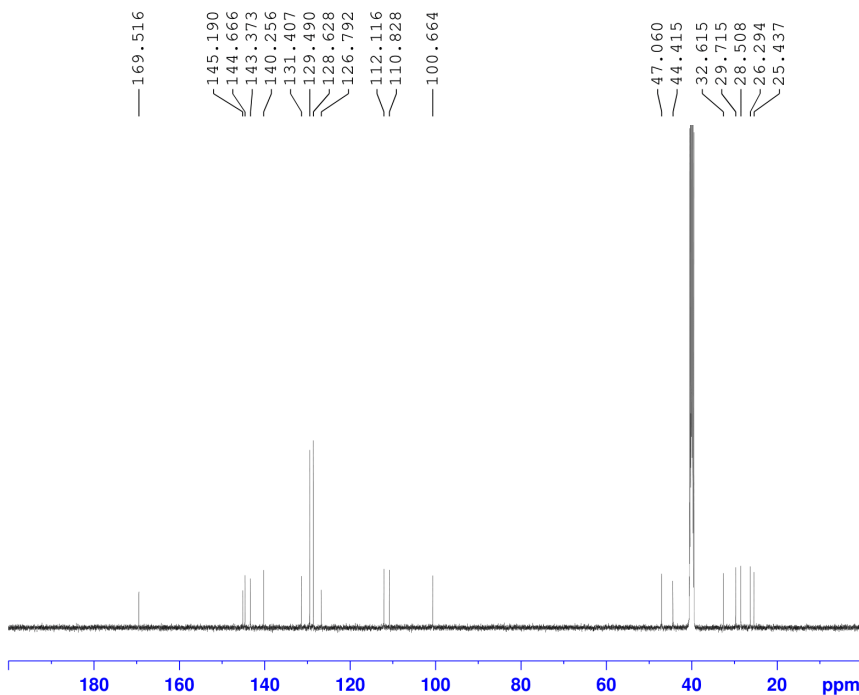
F2 - Acquisition Parameters
Date_ 20220817
Time 9.45
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.8 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300042 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 17d

TAnh-127D



Current Data Parameters
NAME TAnh-127D
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220819
Time 3.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 4096
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

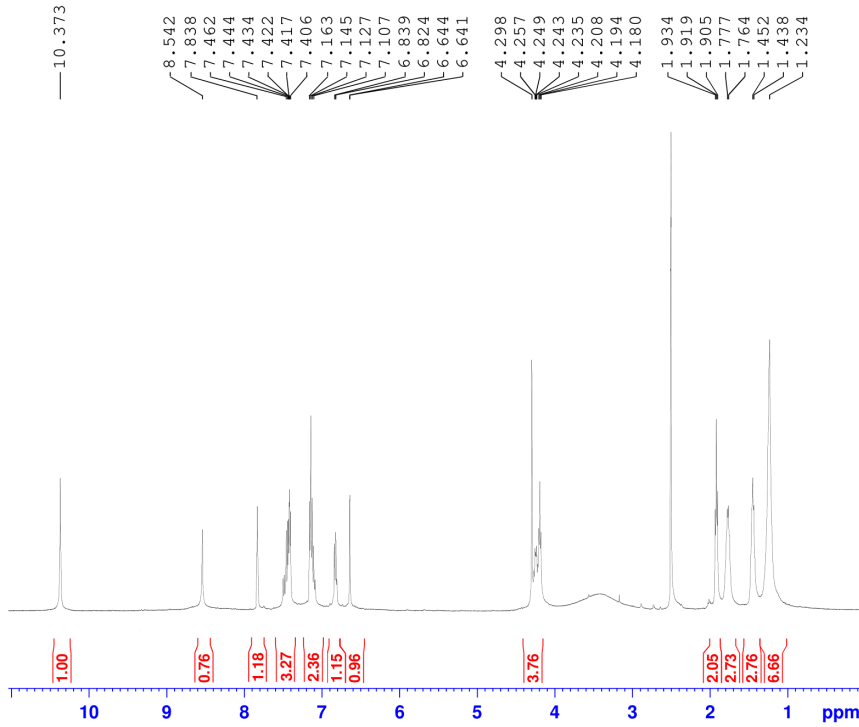
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 17e

TAnh-127E



Current Data Parameters
NAME TAnh-127E
EXPNO 100
PROCNO 1

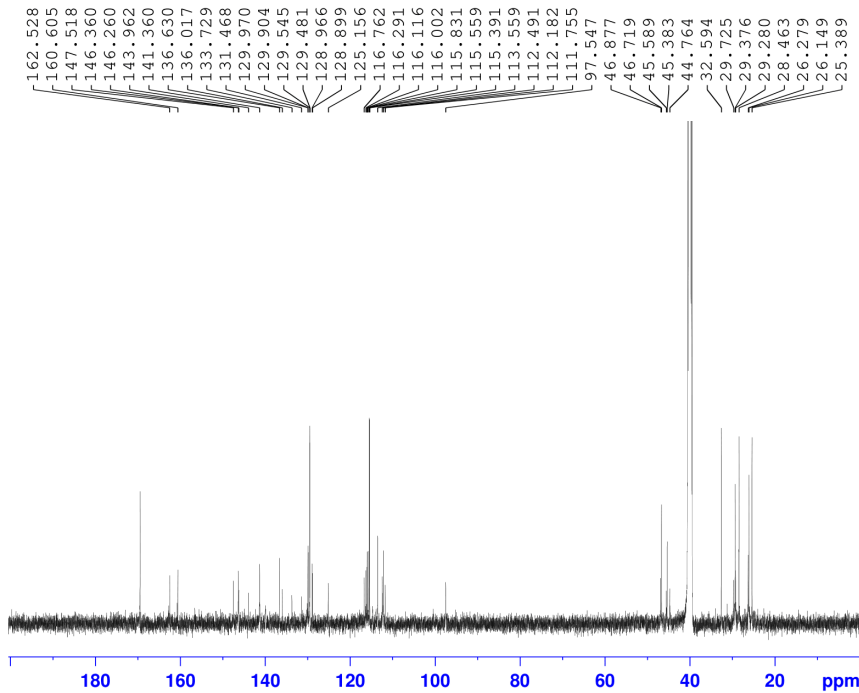
F2 - Acquisition Parameters
Date_ 20221201
Time 11.14
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.9 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300031 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 17e

TAnh-127E



Current Data Parameters
NAME TAnh-127E
EXPNO 101
PROCNO 1

F2 - Acquisition Parameters
Date_ 20221203
Time 15.26
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 2048
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.3 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

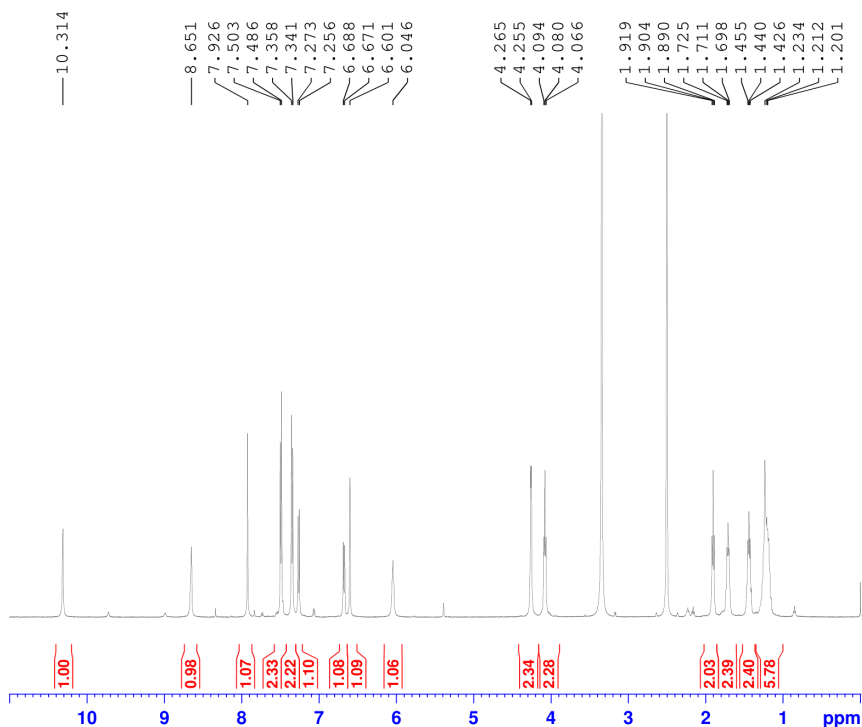
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 17f

TAnh-127F



Current Data Parameters
NAME TAnh-127F
EXPNO 30
PROCNO 1

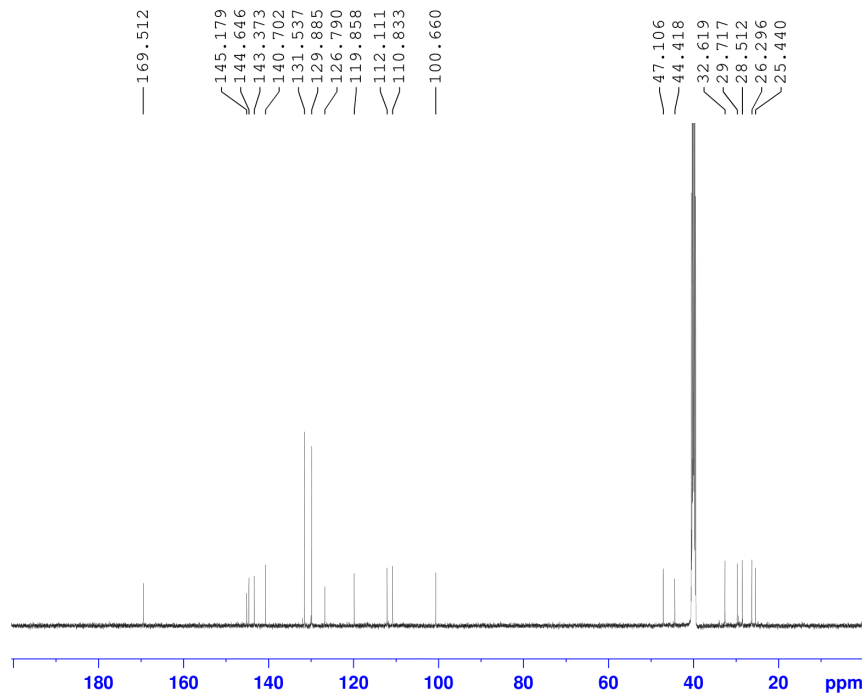
F2 - Acquisition Parameters
Date_ 20220812
Time 14.38
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300044 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 17f

TAnh-127F



Current Data Parameters
NAME TAnh-127F
EXPNO 31
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220812
Time 22.58
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

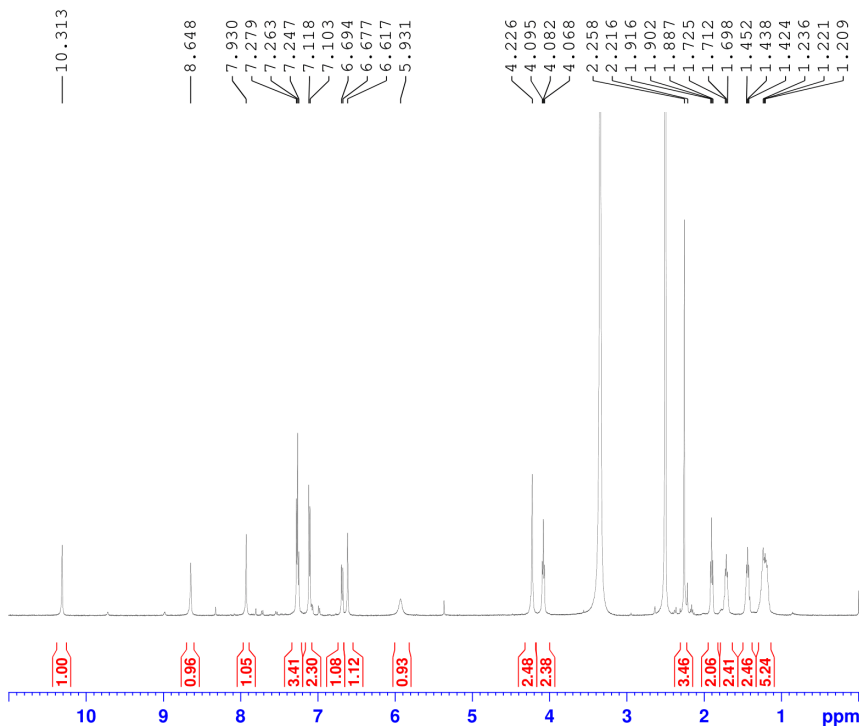
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 17g

TAnh-127G



Current Data Parameters
NAME TAnh-127G
EXPNO 20
PROCNO 1

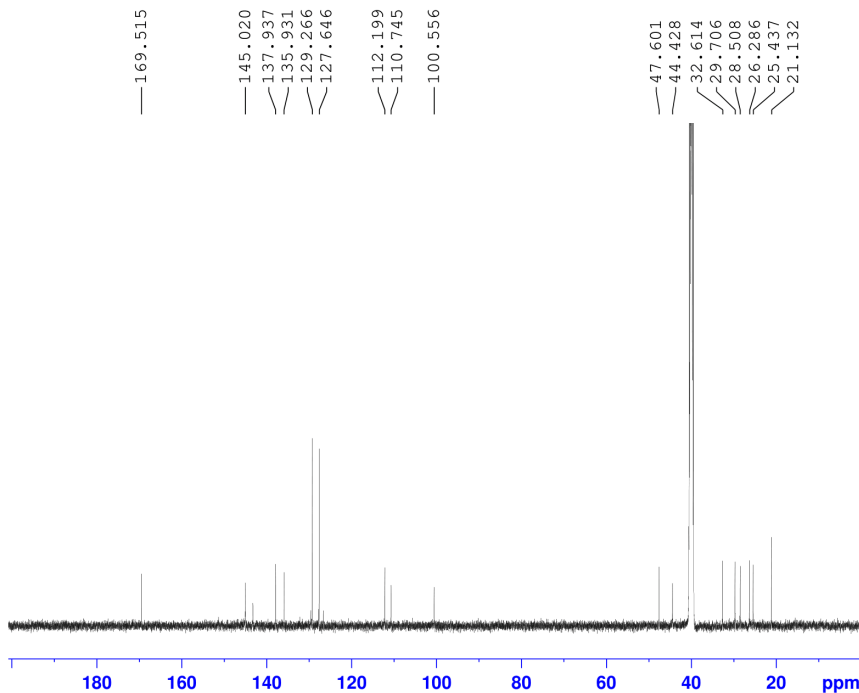
F2 - Acquisition Parameters
Date_ 20220817
Time 9.48
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.7 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300045 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 17g

TAnh-127G



Current Data Parameters
NAME TAnh-127G
EXPNO 22
PROCNO 1

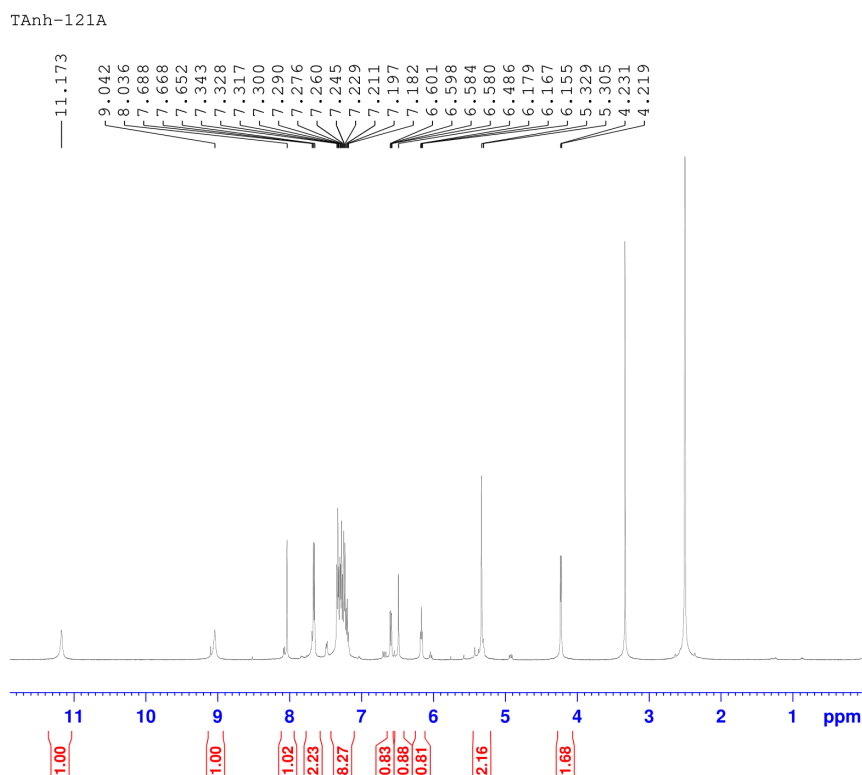
F2 - Acquisition Parameters
Date_ 20220819
Time 7.15
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 4096
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 22a



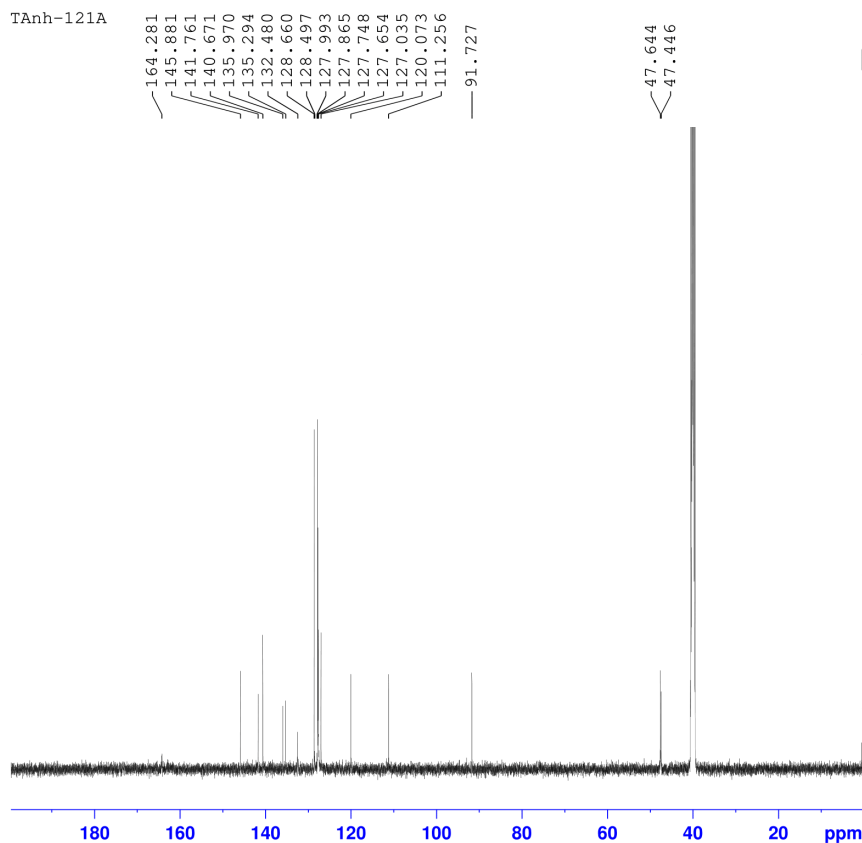
Current Data Parameters
 NAME TAnh-121A
 EXPNO 30
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220105
 Time 8.07
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.1 K
 D1 1.0000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300060 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 22a



Current Data Parameters
 NAME TAnh-121A
 EXPNO 32
 PROCNO 1

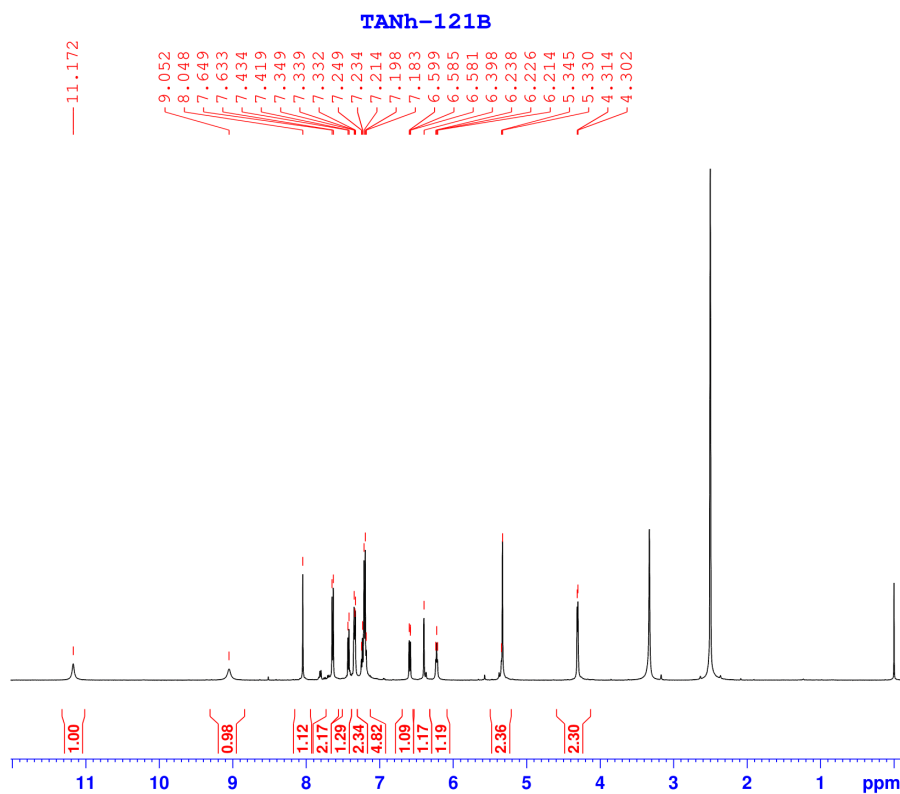
F2 - Acquisition Parameters
 Date_ 20220105
 Time 17.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 2048
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.7 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 22b



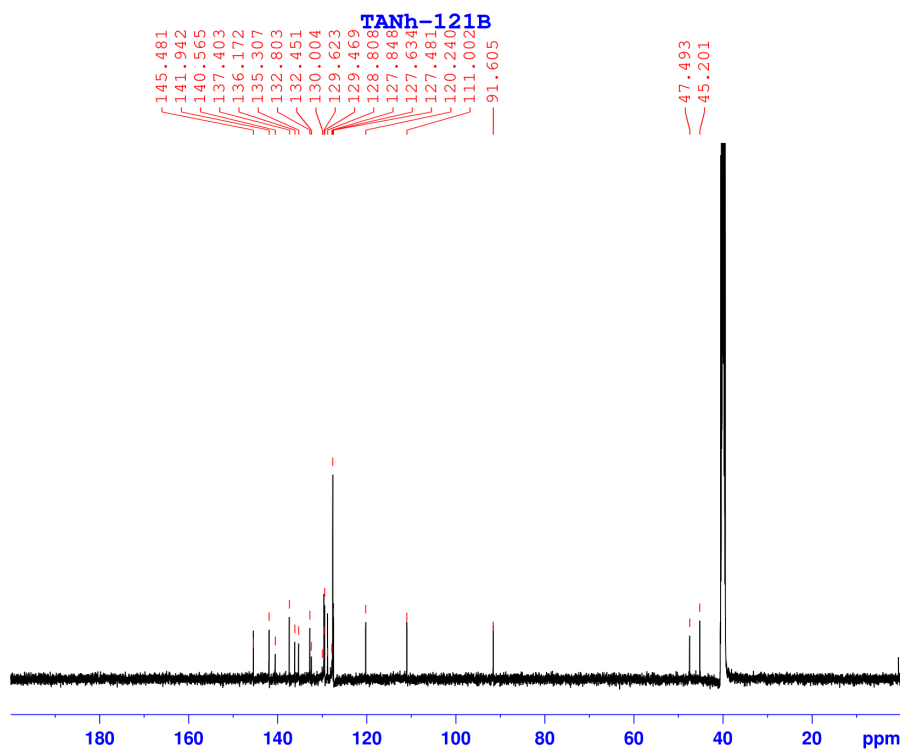
Current Data Parameters
NAME TANh-121B
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20211208
Time_ 20.54
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.5 K
D1 1.00000000 sec
TD0 1

==== CHANNEL f1 =====
SF01 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300048 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 22b



Current Data Parameters
NAME TANh-121B
EXPNO 20
PROCNO 1

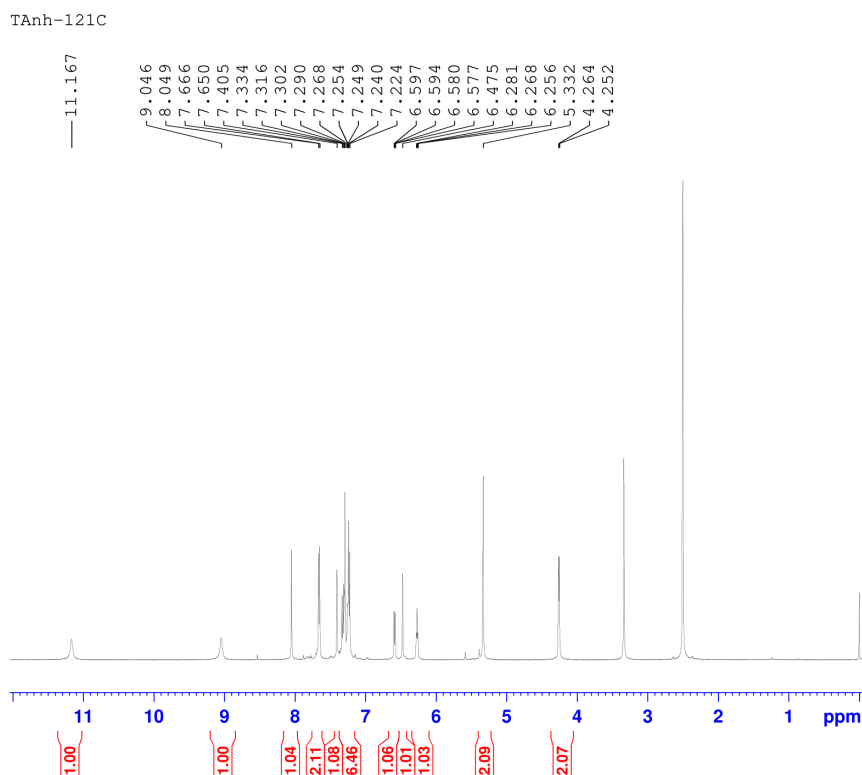
F2 - Acquisition Parameters
Date_ 20211210
Time_ 10.06
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 1676
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.5 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

==== CHANNEL f1 =====
SF01 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

==== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 22c



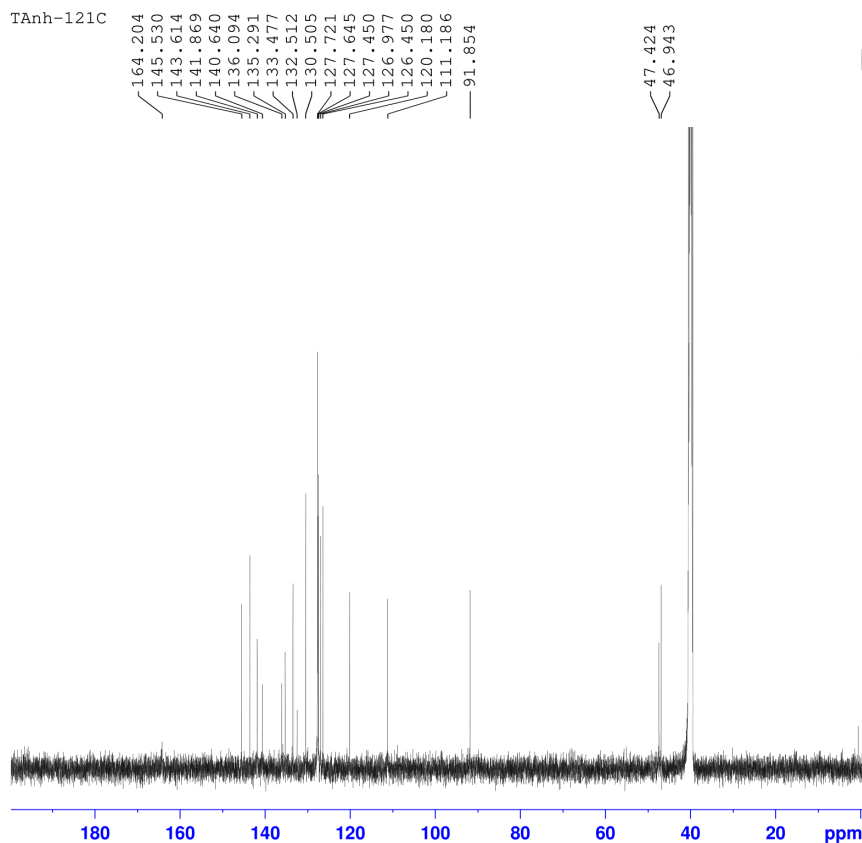
Current Data Parameters
 NAME TAnh-121C
 EXPNO 40
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220105
 Time 8.11
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.0 K
 D1 1.0000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300052 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 22c



Current Data Parameters
 NAME TAnh-121C
 EXPNO 41
 PROCNO 1

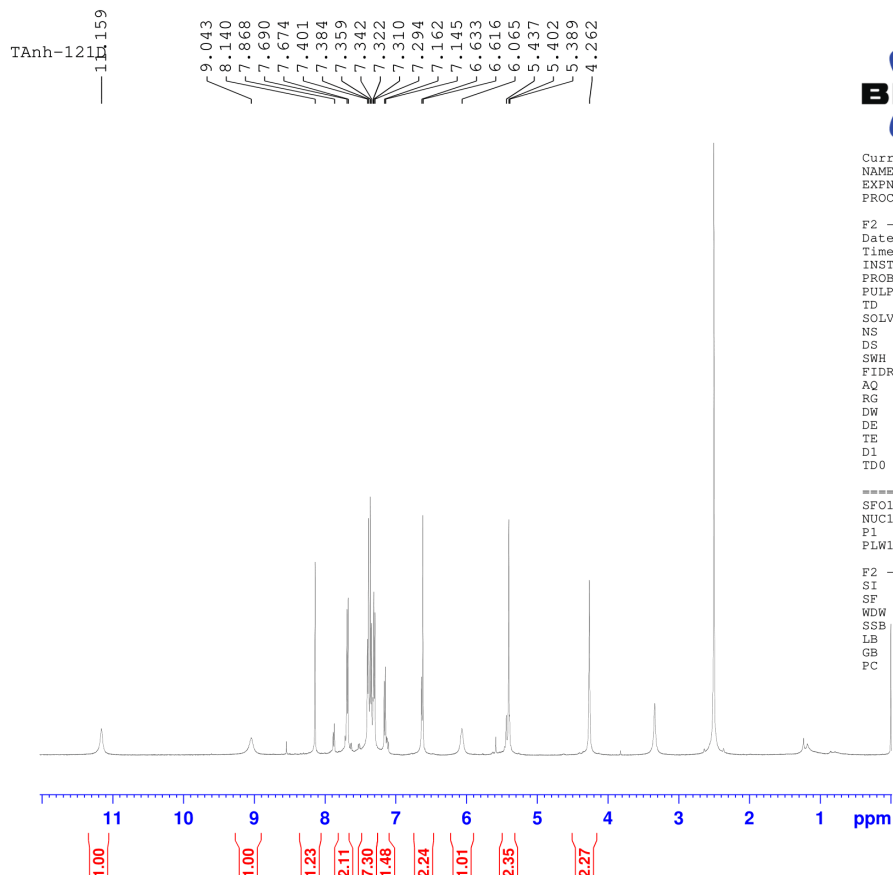
F2 - Acquisition Parameters
 Date_ 20220105
 Time 10.30
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 1024
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 22d



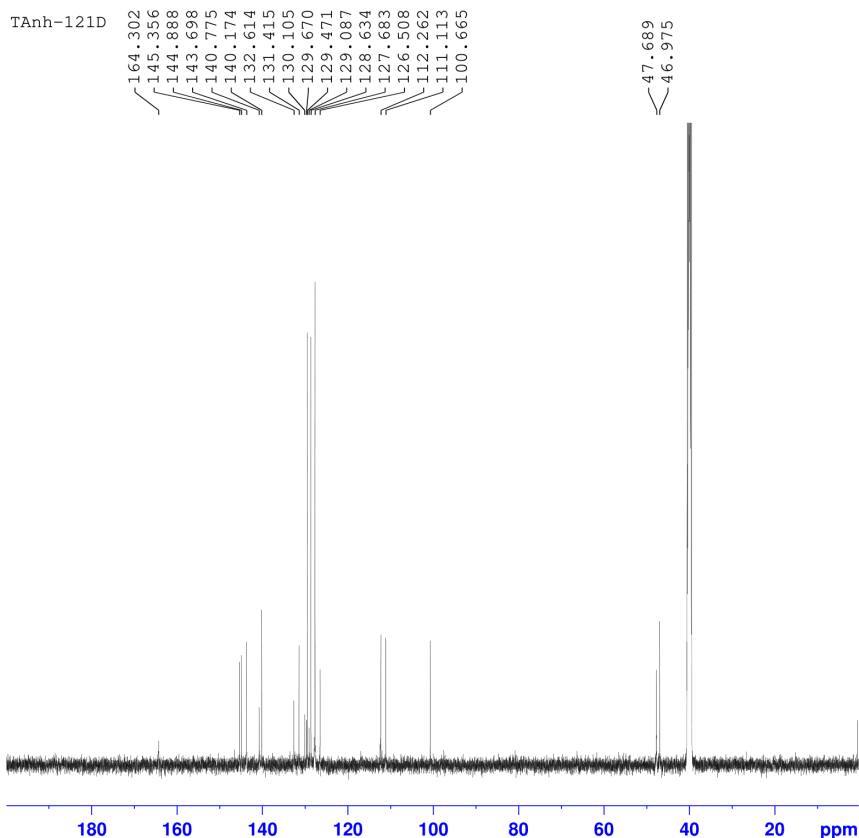
Current Data Parameters
 NAME TAnh-121D
 EXPNO 30
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20211222
 Time 8.40
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.7 K
 D1 1.0000000 sec
 TD0 1

----- CHANNEL f1 -----
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300045 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 22d



Current Data Parameters
 NAME TAnh-121D
 EXPNO 31
 PROCNO 1

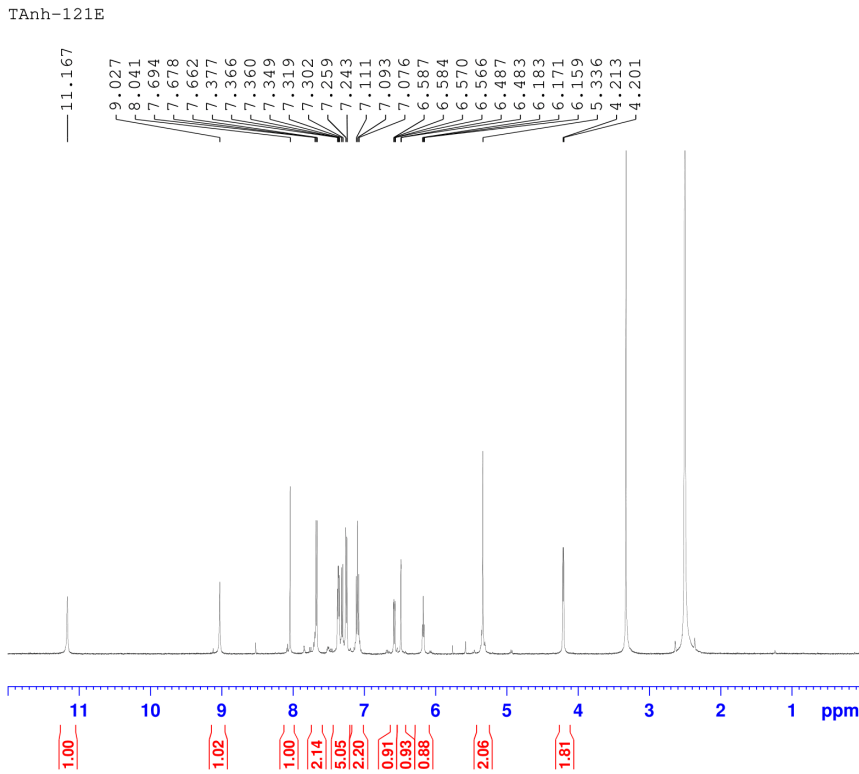
F2 - Acquisition Parameters
 Date_ 20211222
 Time 12.57
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 2048
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.8 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

----- CHANNEL f1 -----
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

----- CHANNEL f2 -----
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 22e



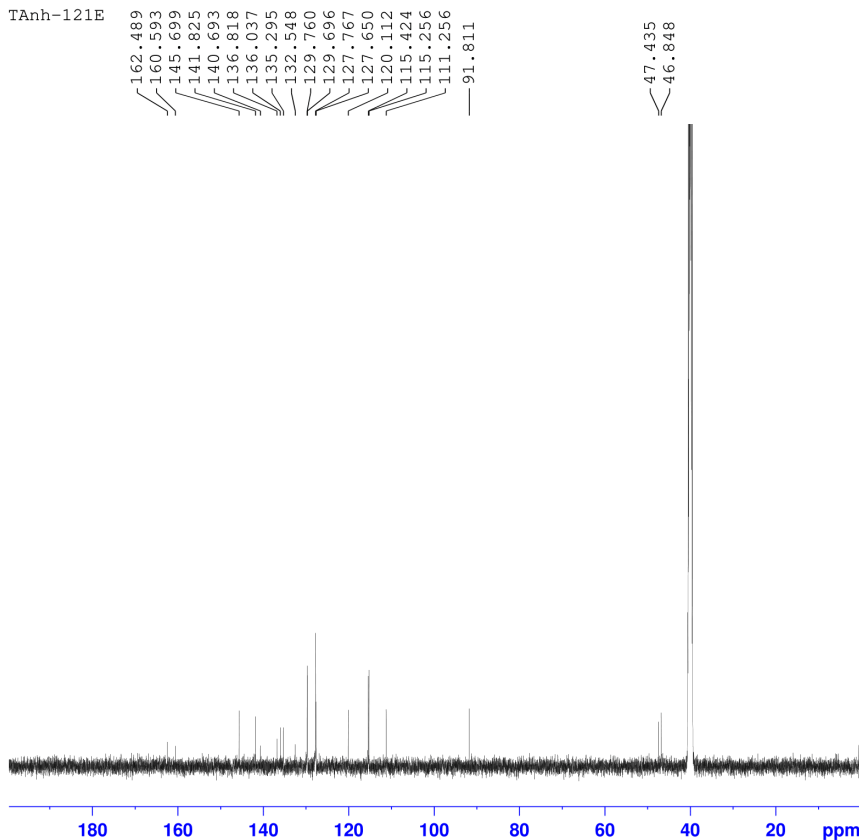
Current Data Parameters
NAME TAnh-121E
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220106
Time 8.57
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.8 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300050 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 22e



Current Data Parameters
NAME TAnh-121E
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220107
Time 22.56
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 4096
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 298.0 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

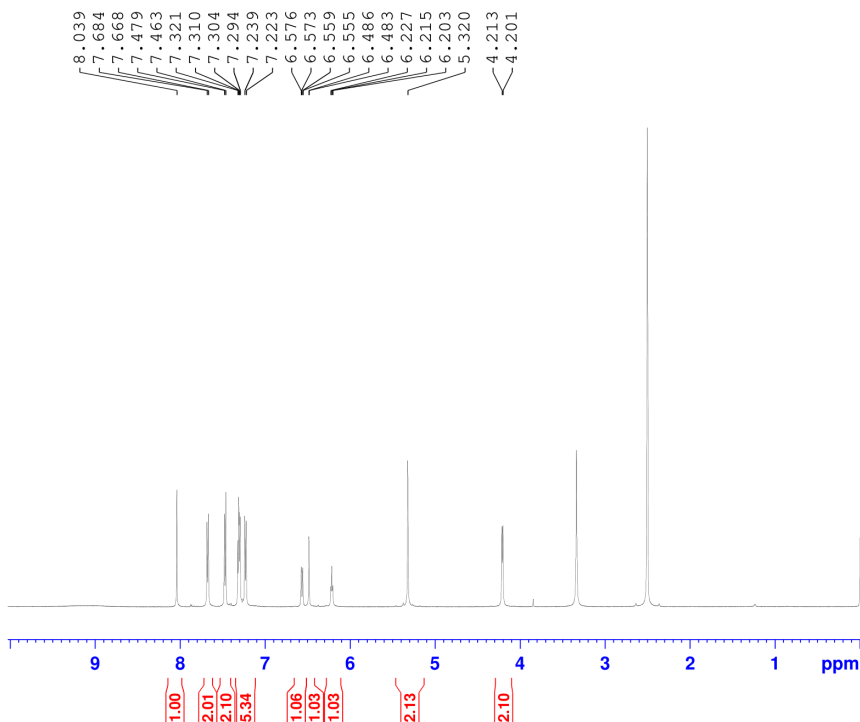
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 22f

TAnh-121F



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Current Data Parameters
NAME      TAnh-121F
EXPNO    51
PROCNO   1

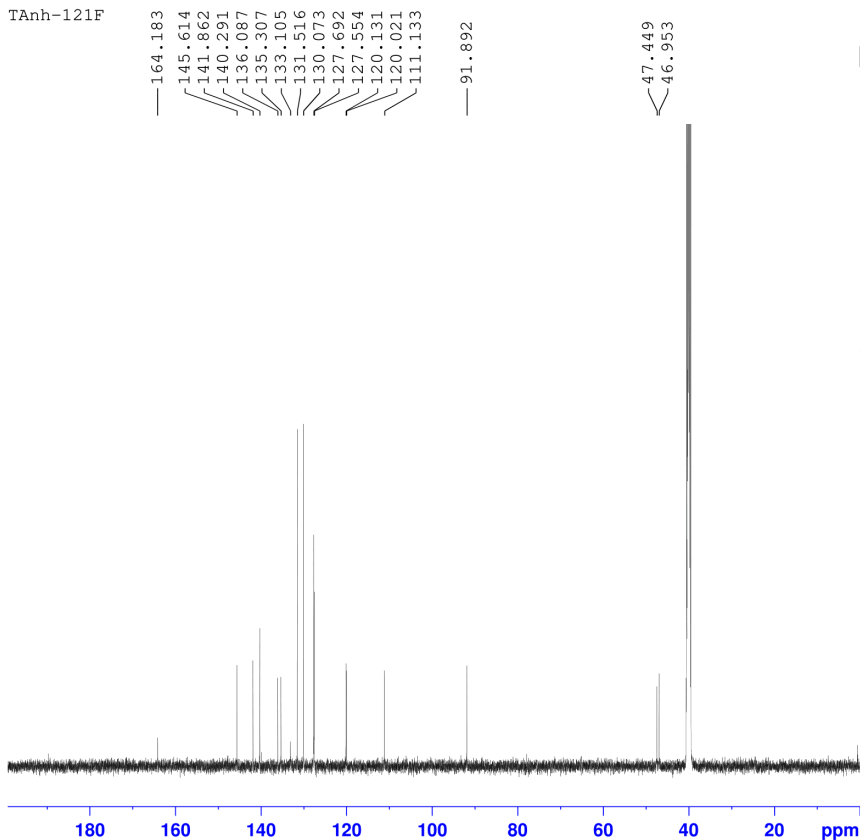
F2 - Acquisition Parameters
Date_    20220105
Time     8.41
INSTRUM spect
PROBHD   5 mm PABBO BB/
PULPROG zg30
TD       65536
SOLVENT  DMSO
NS       16
DS       2
SWH      10000.000 Hz
FIDRES   0.152588 Hz
AQ       3.2767999 sec
RG       191.38
DW       50.000 usec
DE       6.50 usec
TE       296.7 K
D1       1.00000000 sec
TD0      1

===== CHANNEL f1 =====
SFO1    500.1330885 MHz
NUC1    1H
P1      9.80 usec
PLW1    24.00000000 W

F2 - Processing parameters
SI      65536
SF      500.130052 MHz
WDW     EM
SSB     0
LB      0.30 Hz
GB      0
PC      1.00
    
```

¹³C NMR of compound 22f

TAnh-121F



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Current Data Parameters
NAME      TAnh-121F
EXPNO    52
PROCNO   1

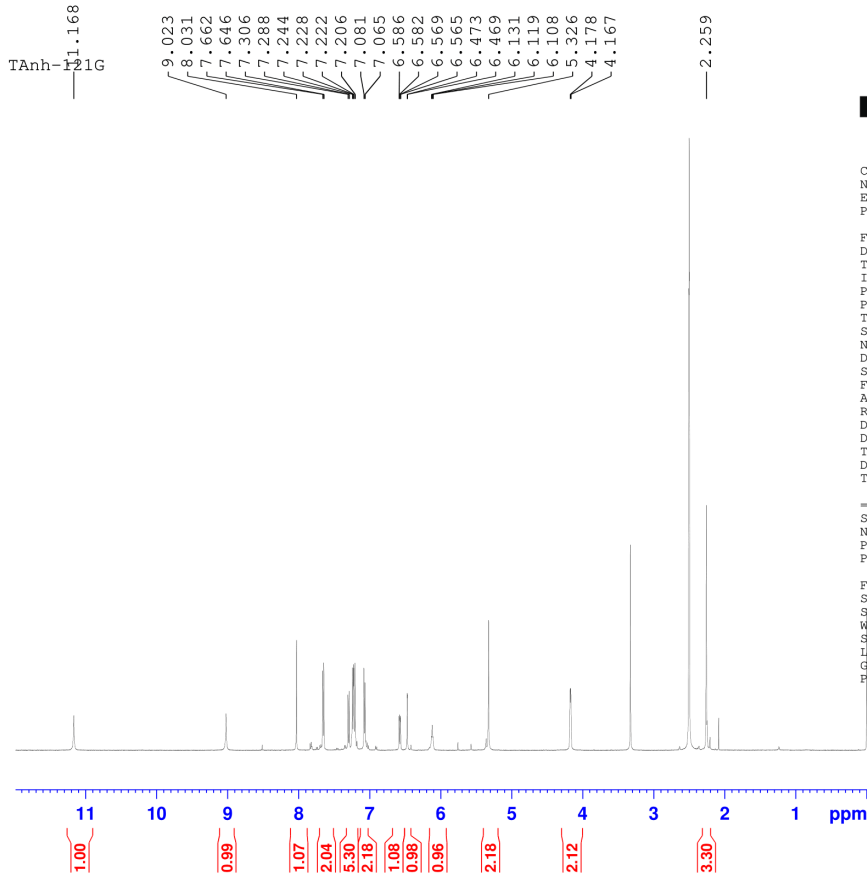
F2 - Acquisition Parameters
Date_    20220105
Time     12.43
INSTRUM spect
PROBHD   5 mm PABBO BB/
PULPROG zgpg30
TD       65536
SOLVENT  DMSO
NS       1926
DS       4
SWH      31250.000 Hz
FIDRES   0.476837 Hz
AQ       1.0485760 sec
RG       191.38
DW       16.000 usec
DE       6.50 usec
TE       297.8 K
D1       2.00000000 sec
D11      0.03000000 sec
TD0      1

===== CHANNEL f1 =====
SFO1    125.7703637 MHz
NUC1    13C
P1      10.20 usec
PLW1    90.00000000 W

===== CHANNEL f2 =====
SFO2    500.1320005 MHz
NUC2    1H
CPDPRG[2] waltz16
PCPD2   80.00 usec
PLW2    24.00000000 W
PLW12   0.36015001 W
PLW13   0.23050000 W

F2 - Processing parameters
SI      65536
SF      125.7577885 MHz
WDW     EM
SSB     0
LB      1.00 Hz
GB      0
PC      1.40
    
```

¹H NMR of compound 22g



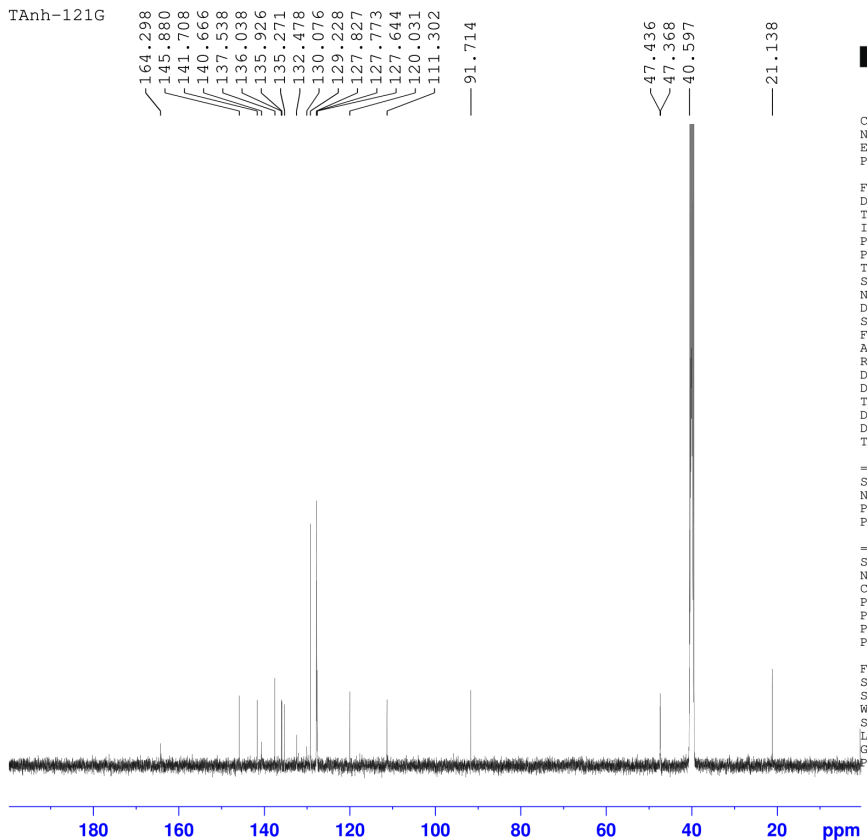
Current Data Parameters
NAME TAnh-121G
EXPNO 30
PROCNO 1

F2 - Acquisition Parameters
Date_ 20211218
Time 13.19
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.1 K
D1 1.00000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300052 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
HC 1.00

¹³C NMR of compound 22g



Current Data Parameters
NAME TAnh-121G
EXPNO 32
PROCNO 1

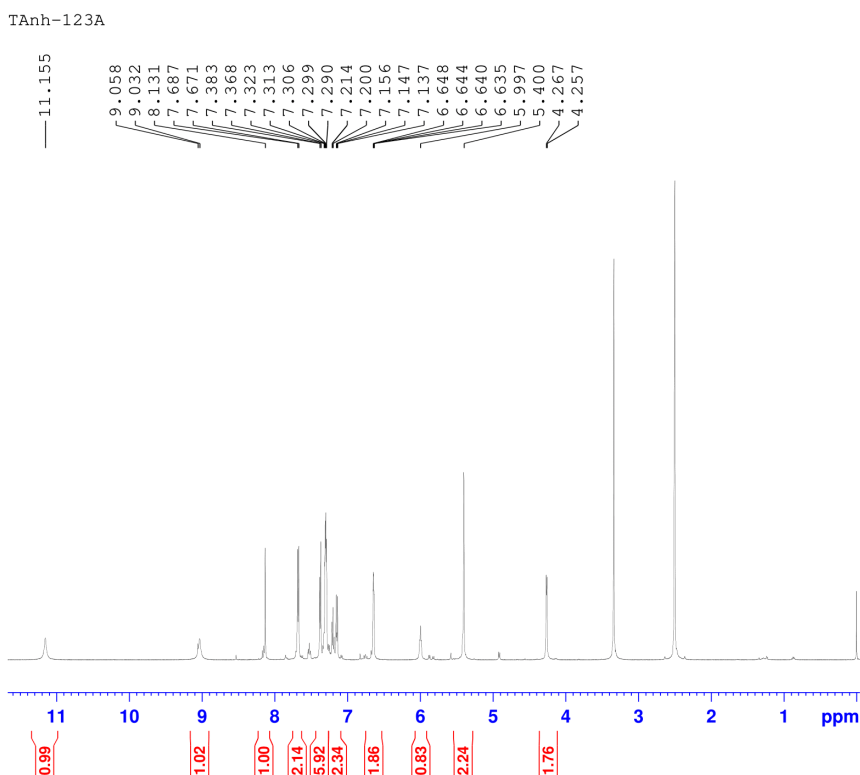
F2 - Acquisition Parameters
Date_ 20211218
Time 15.07
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 2048
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

----- CHANNEL f2 -----
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 25a



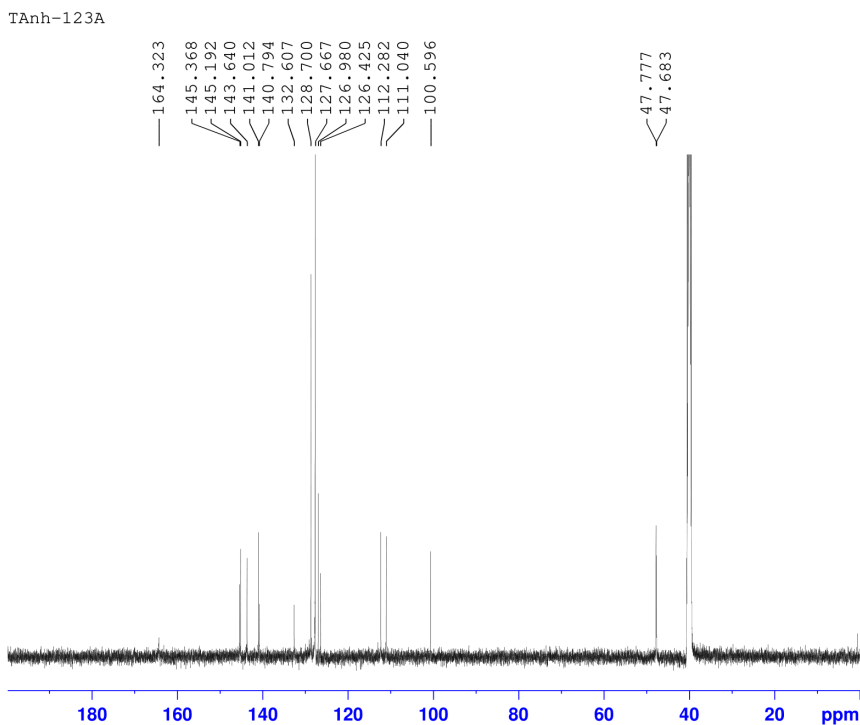
Current Data Parameters
NAME TAnh-123A
EXPNO 50
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220106
Time 9.12
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.8 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300049 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 25a



Current Data Parameters
NAME TAnh-123A
EXPNO 52
PROCNO 1

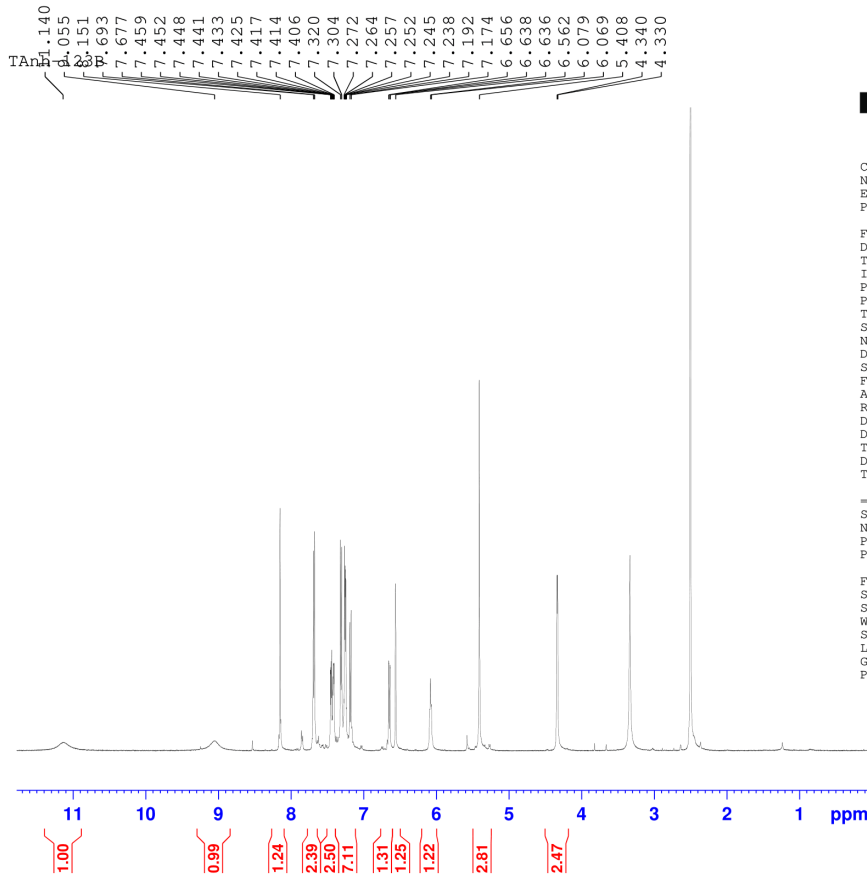
F2 - Acquisition Parameters
Date_ 20220107
Time 12.35
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 1689
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.5 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 25b



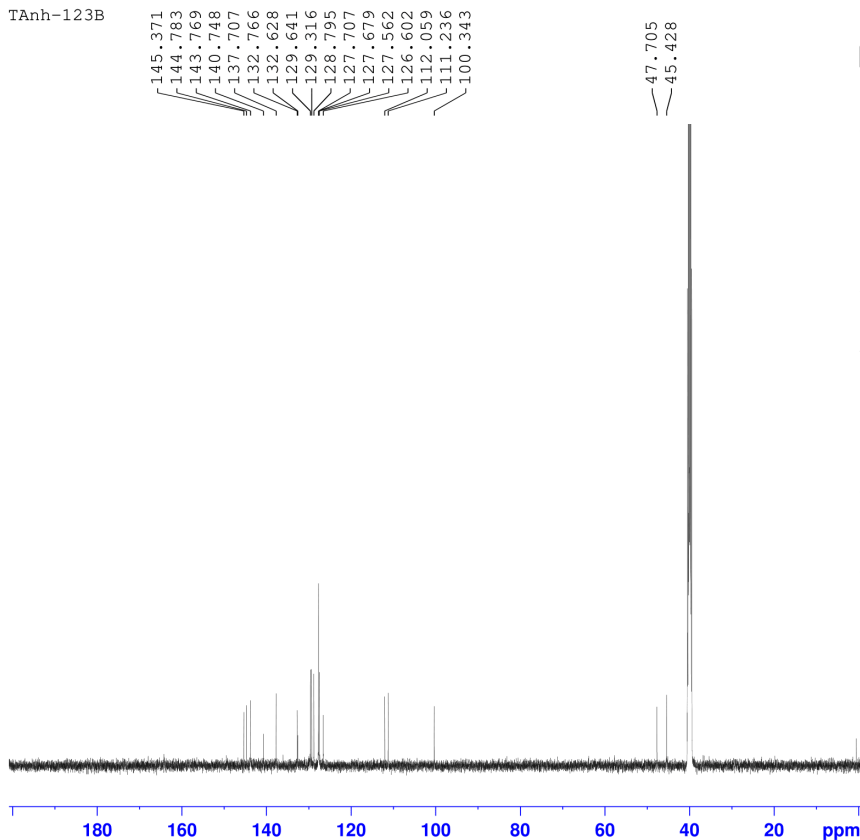
Current Data Parameters
 NAME Tanh-123B
 EXPNO 20
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20211214
 Time 15.23
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 8
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.0 K
 D1 1.0000000 sec
 TD0 1

----- CHANNEL f1 -----
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300043 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 25b



Current Data Parameters
 NAME Tanh-123B
 EXPNO 21
 PROCNO 1

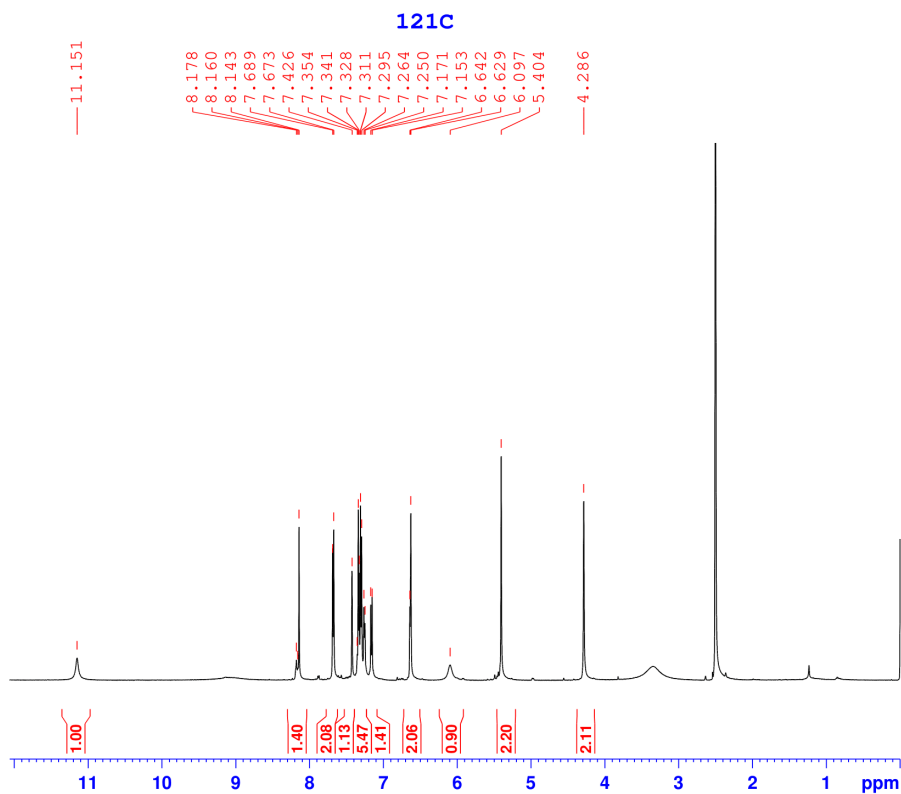
F2 - Acquisition Parameters
 Date_ 20211215
 Time 10.31
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 1180
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

----- CHANNEL f1 -----
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

----- CHANNEL f2 -----
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 25c



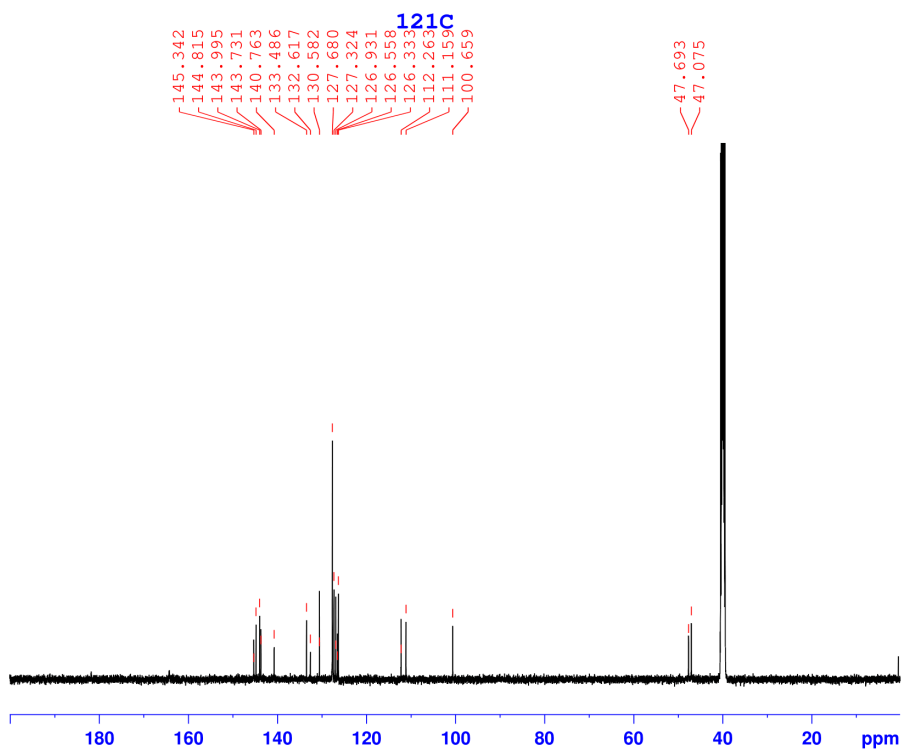
Current Data Parameters
 NAME Tanh-121C
 EXPNO 20
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20211210
 Time 17.15
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.9 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.130044 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 25c



Current Data Parameters
 NAME Tanh-121C
 EXPNO 21
 PROCNO 1

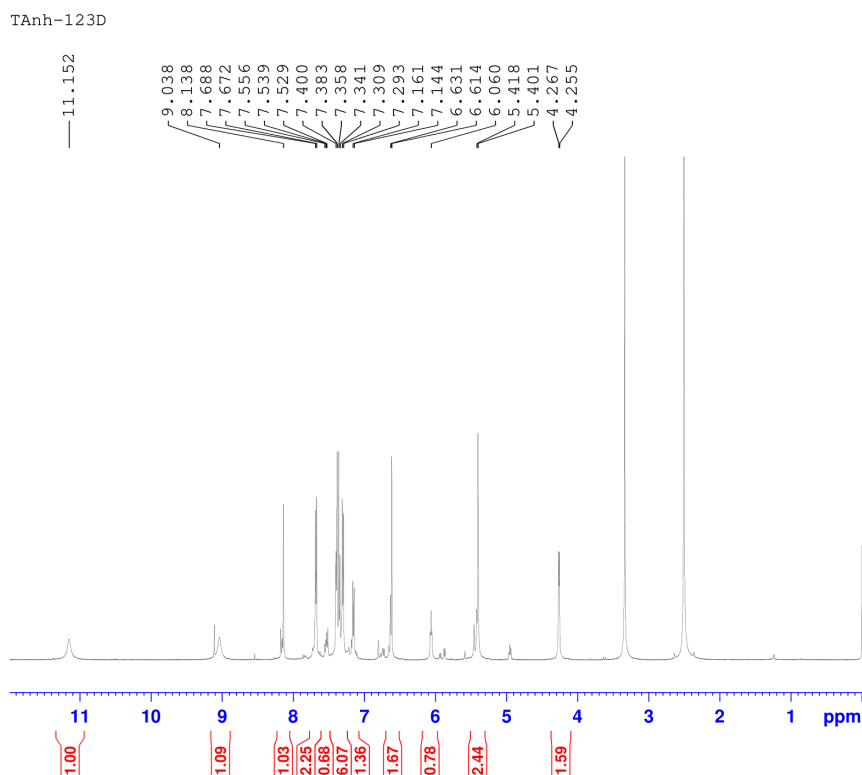
F2 - Acquisition Parameters
 Date_ 20211211
 Time 13.38
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 2048
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 298.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 25d



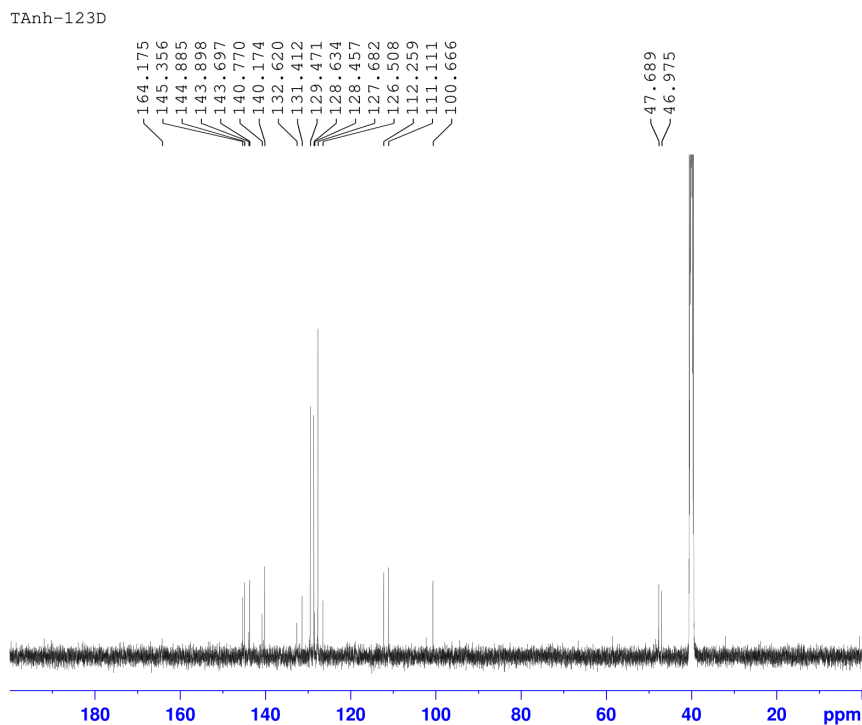
Current Data Parameters
 NAME TAnh-123D
 EXPNO 30
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220106
 Time 9.05
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.8 K
 D1 1.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300046 MHz
 WF EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 25d



Current Data Parameters
 NAME TAnh-123D
 EXPNO 31
 PROCNO 1

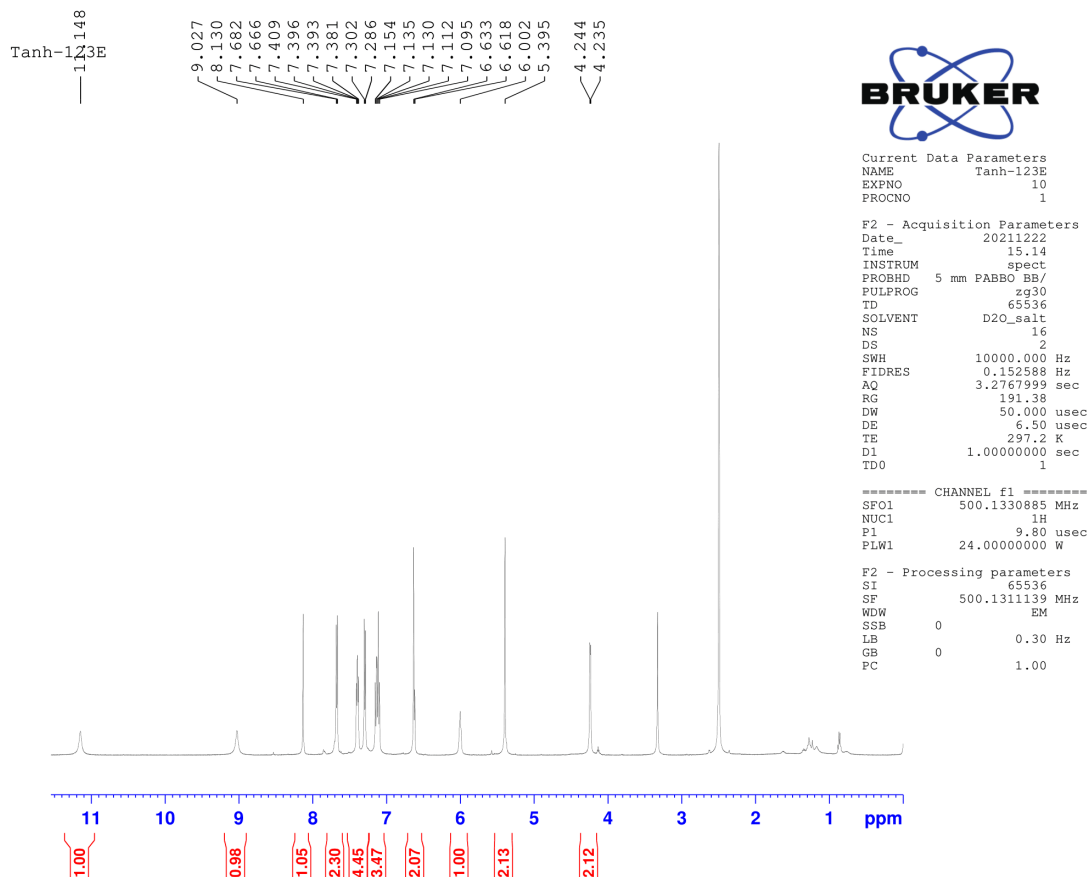
F2 - Acquisition Parameters
 Date_ 20220106
 Time 13.08
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 1024
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.8 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

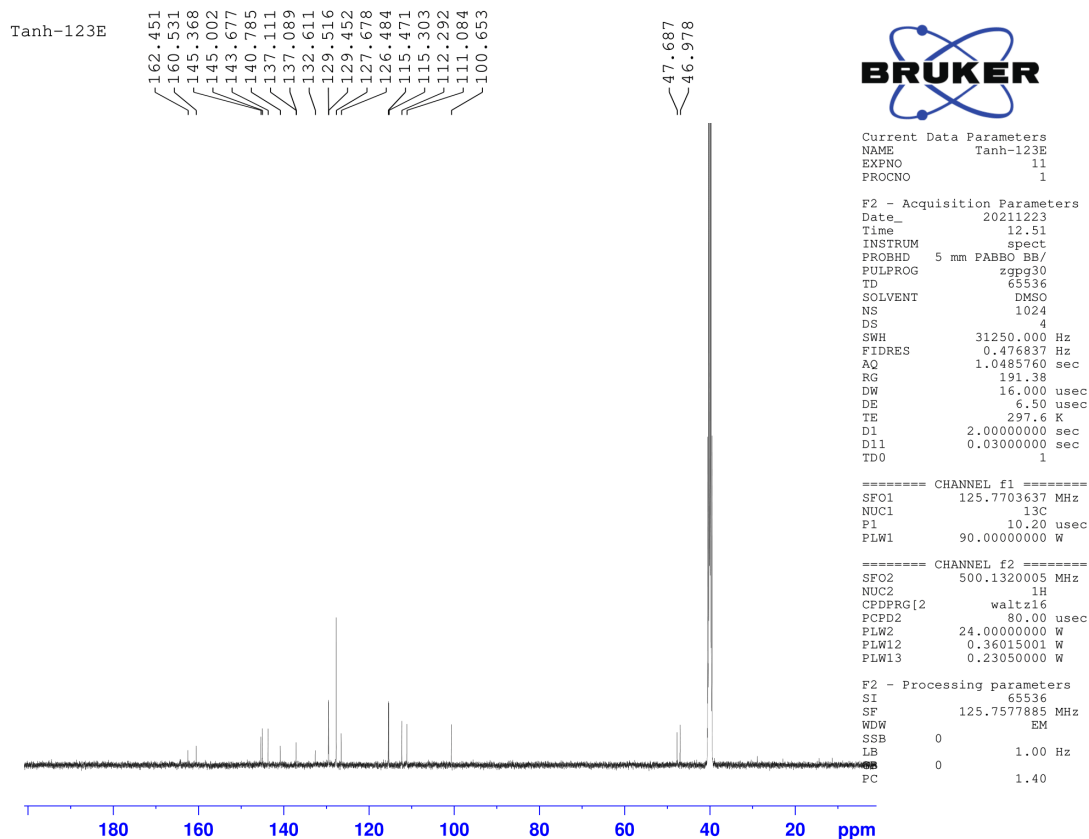
===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WF EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

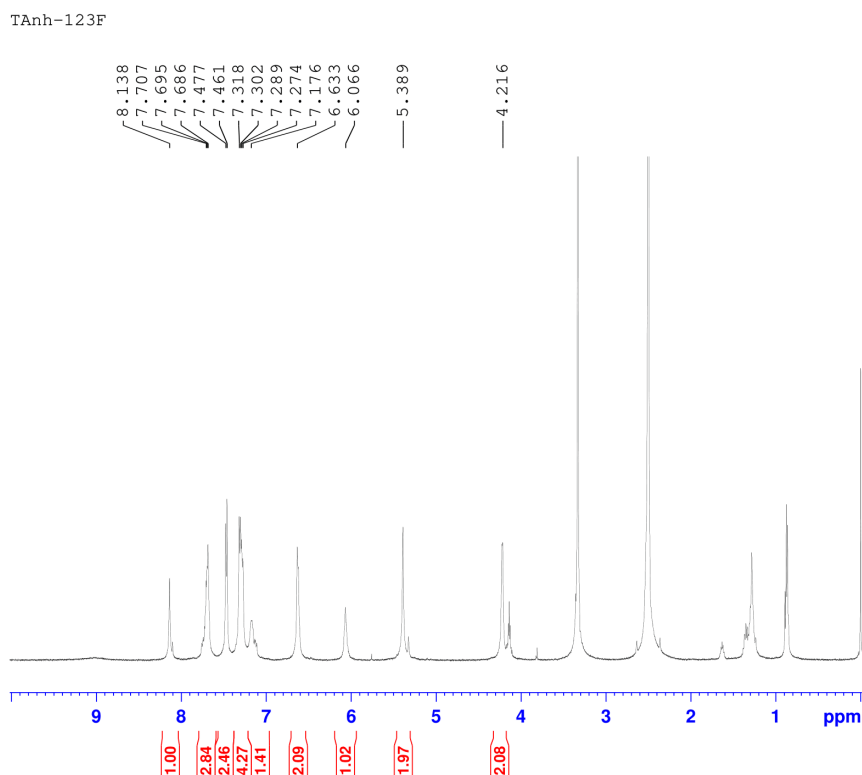
¹H NMR of compound 25e



¹³C NMR of compound 25e



¹H NMR of compound 25f



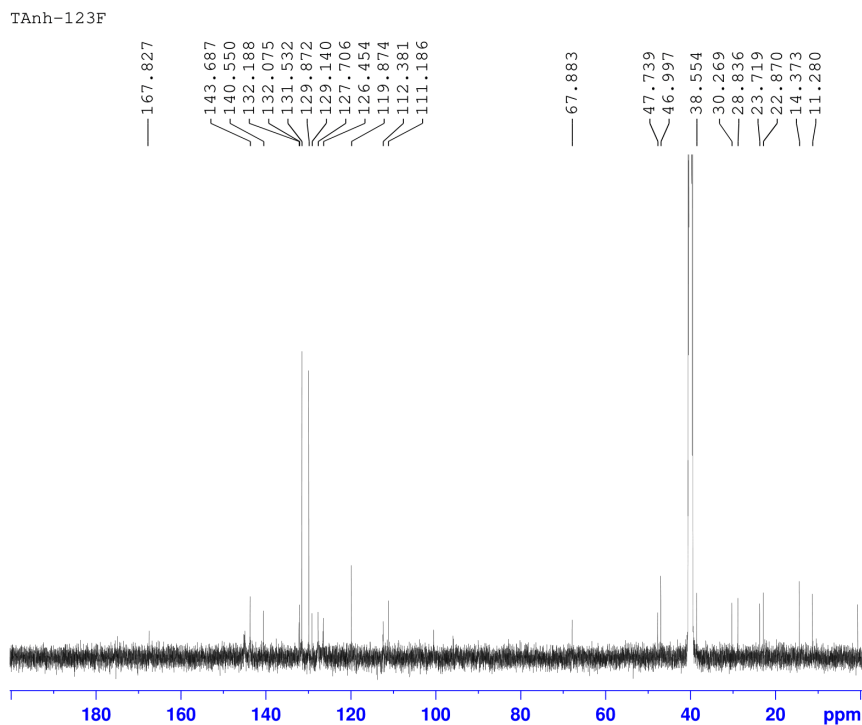
Current Data Parameters
NAME TAnh-123F
EXPNO 40
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220106
Time 9.08
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.9 K
D1 1.0000000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300047 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 25f



Current Data Parameters
NAME TAnh-123F
EXPNO 42
PROCNO 1

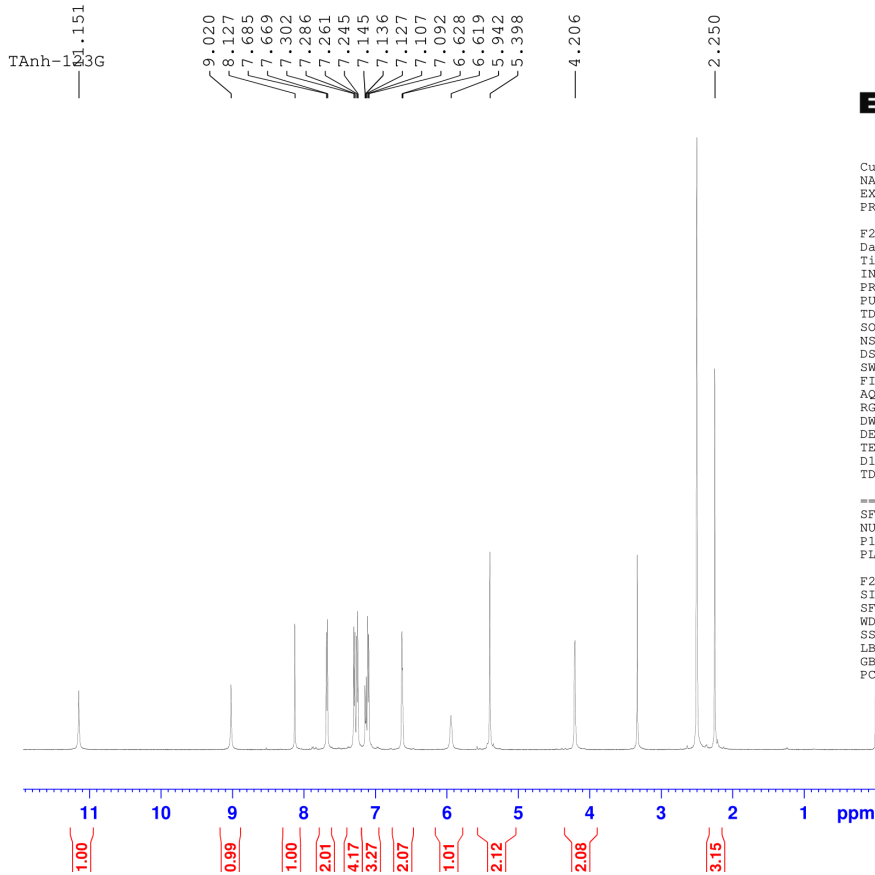
F2 - Acquisition Parameters
Date_ 20220107
Time 15.42
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.7 K
D1 2.0000000 sec
D11 0.0300000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 25g



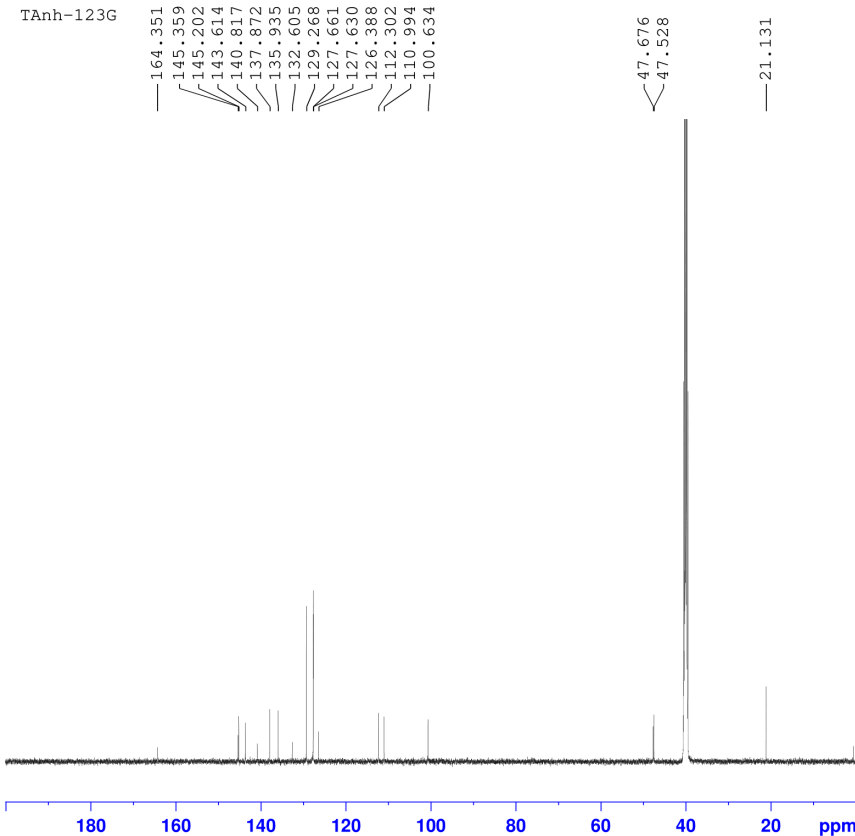
Current Data Parameters
 NAME TAnh-123G
 EXPNO 40
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20211222
 Time 8.44
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.8 K
 D1 1.0000000 sec
 TD0 1

----- CHANNEL f1 -----
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300058 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 25g



Current Data Parameters
 NAME TAnh-123G
 EXPNO 41
 PROCNO 1

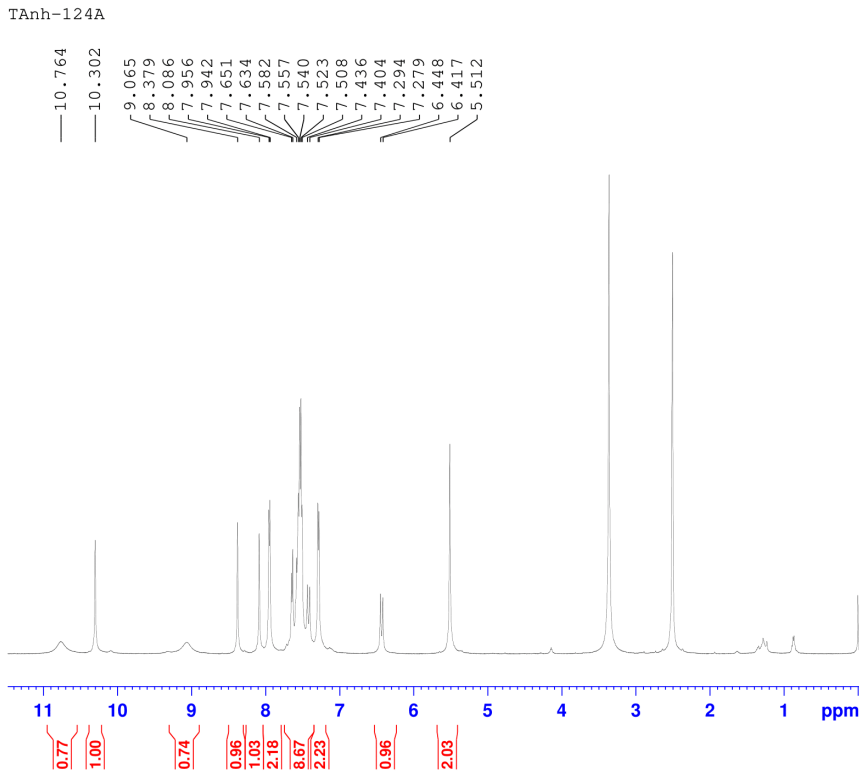
F2 - Acquisition Parameters
 Date_ 20211222
 Time 9.56
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 2048
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.5 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

----- CHANNEL f1 -----
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

----- CHANNEL f2 -----
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 27a



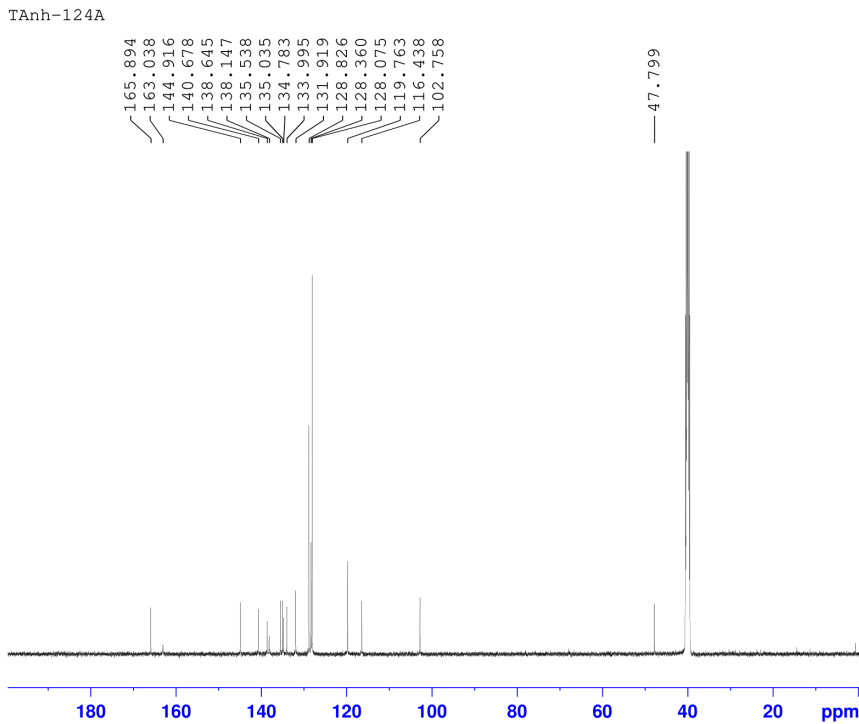
Current Data Parameters
NAME TAnh-124A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220117
Time 18.08
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.8 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300038 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 27a



Current Data Parameters
NAME TAnh-124A
EXPNO 11
PROCNO 1

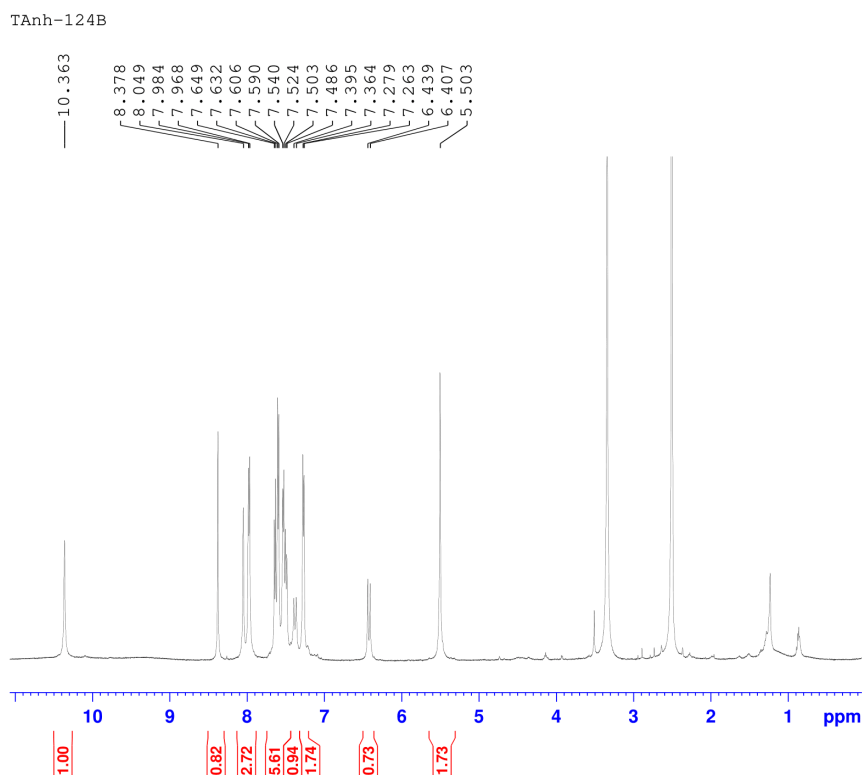
F2 - Acquisition Parameters
Date_ 20220117
Time 20.49
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.6 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 27b



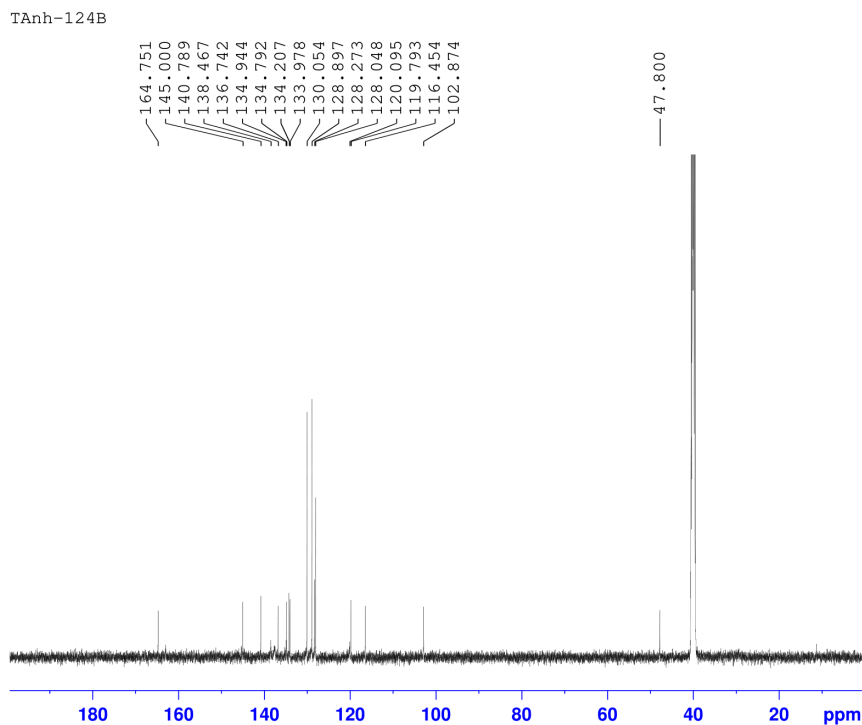
Current Data Parameters
NAME TAnh-124B
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20220114
Time 8.09
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 296.6 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.0000000 W

F2 - Processing parameters
SI 65536
SF 500.1300041 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 27b



Current Data Parameters
NAME TAnh-124B
EXPNO 11
PROCNO 1

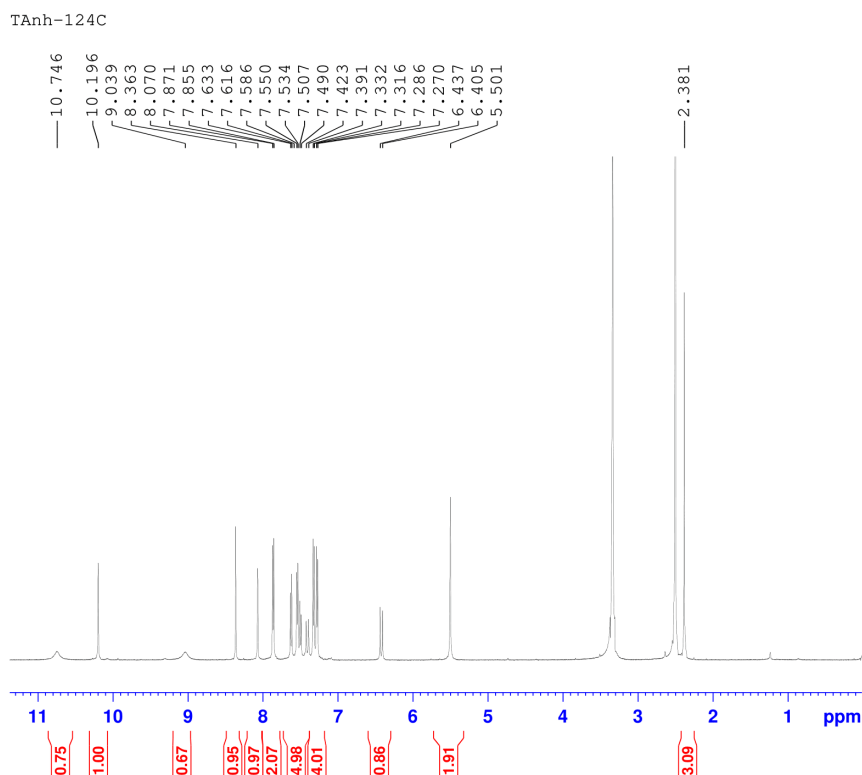
F2 - Acquisition Parameters
Date_ 20220114
Time 9.05
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 2048
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 297.3 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.0000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.0000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 27c



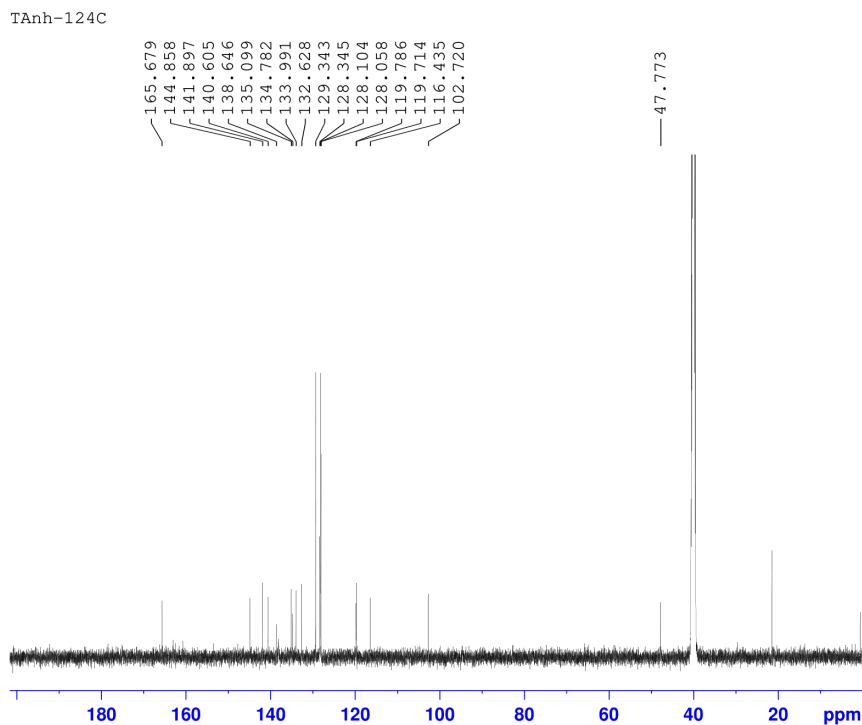
Current Data Parameters
 NAME TAnh-124C
 EXPNO 20
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220117
 Time 20.53
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.2 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300043 MHz
 WF EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 27c



Current Data Parameters
 NAME TAnh-124C
 EXPNO 22
 PROCNO 1

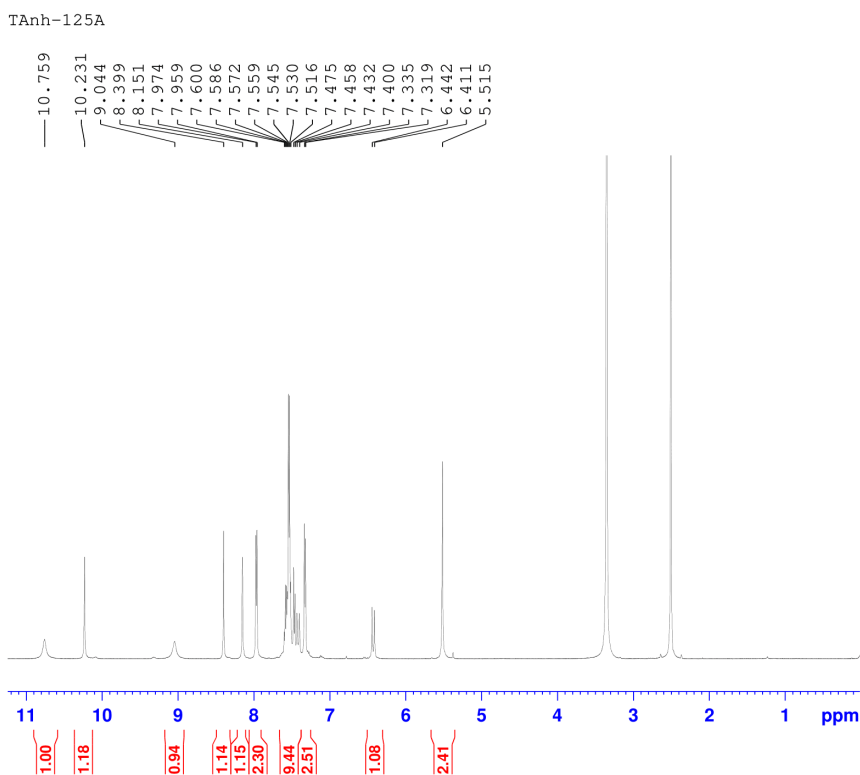
F2 - Acquisition Parameters
 Date_ 20220117
 Time 23.33
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.7 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WF EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 29a



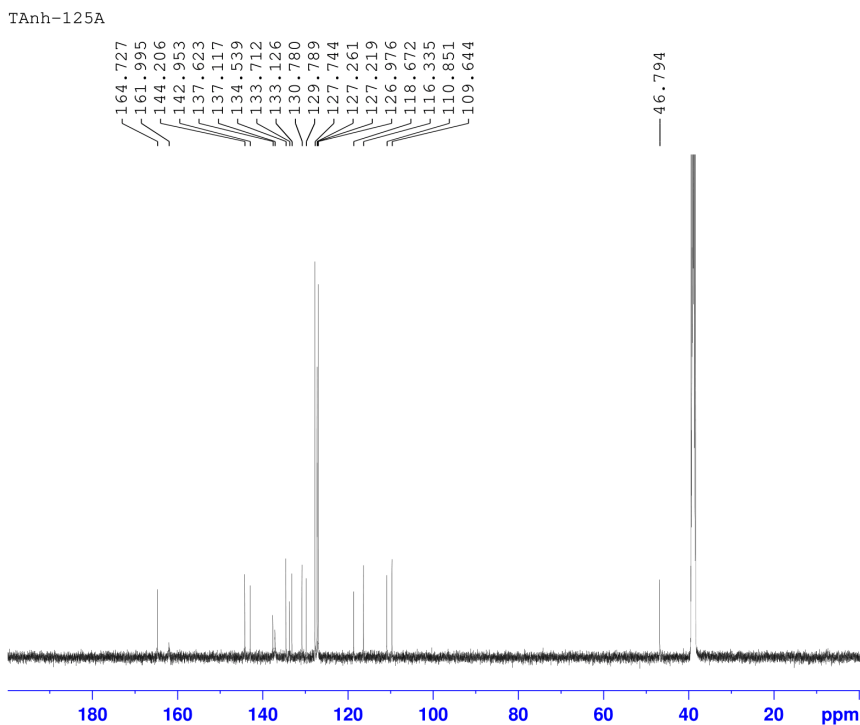
Current Data Parameters
 NAME TAnh-125A
 EXPNO 30
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220117
 Time 23.37
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.2 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300045 MHz
 WF EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 29a



Current Data Parameters
 NAME TAnh-125A
 EXPNO 32
 PROCNO 1

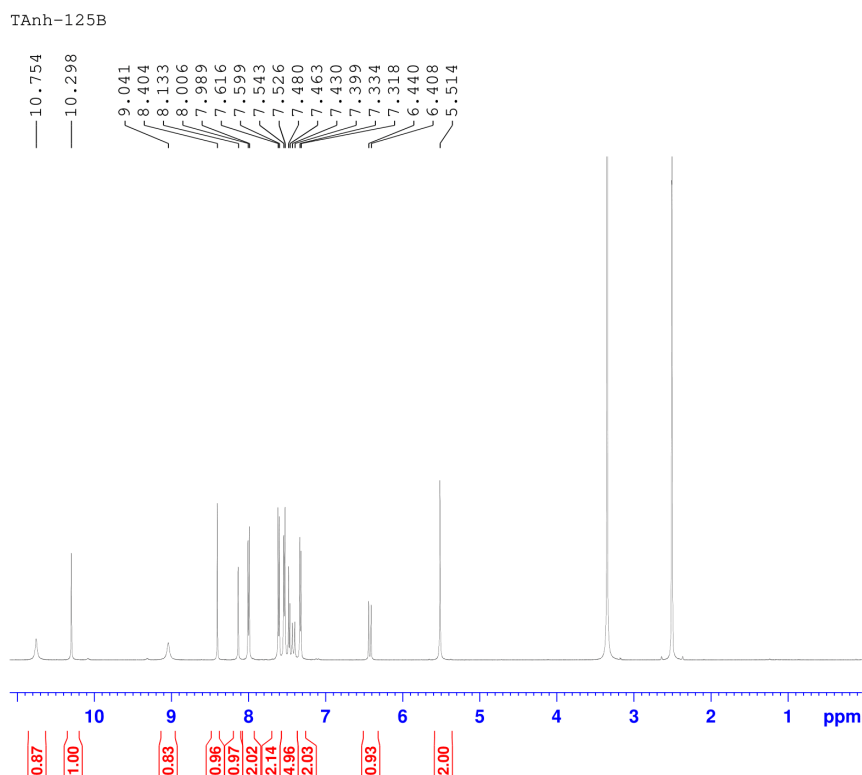
F2 - Acquisition Parameters
 Date_ 20220118
 Time 2.18
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.6 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7579255 MHz
 WF EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 29b



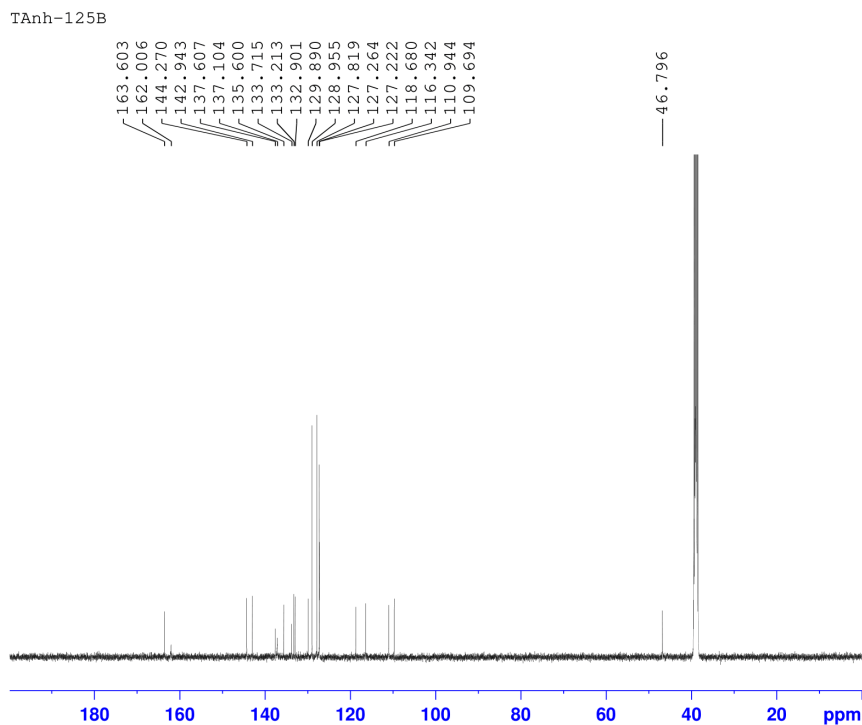
Current Data Parameters
 NAME TAnh-125B
 EXPNO 40
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220118
 Time 2.21
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.2 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300032 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 29b



Current Data Parameters
 NAME TAnh-125B
 EXPNO 42
 PROCNO 1

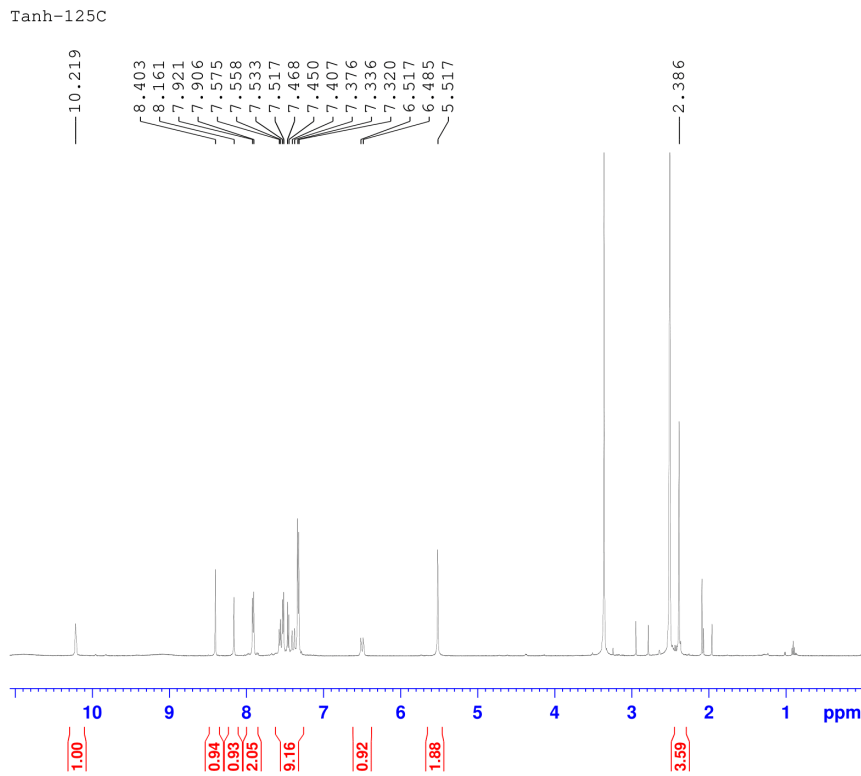
F2 - Acquisition Parameters
 Date_ 20220118
 Time 5.02
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 297.7 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7579249 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 29c



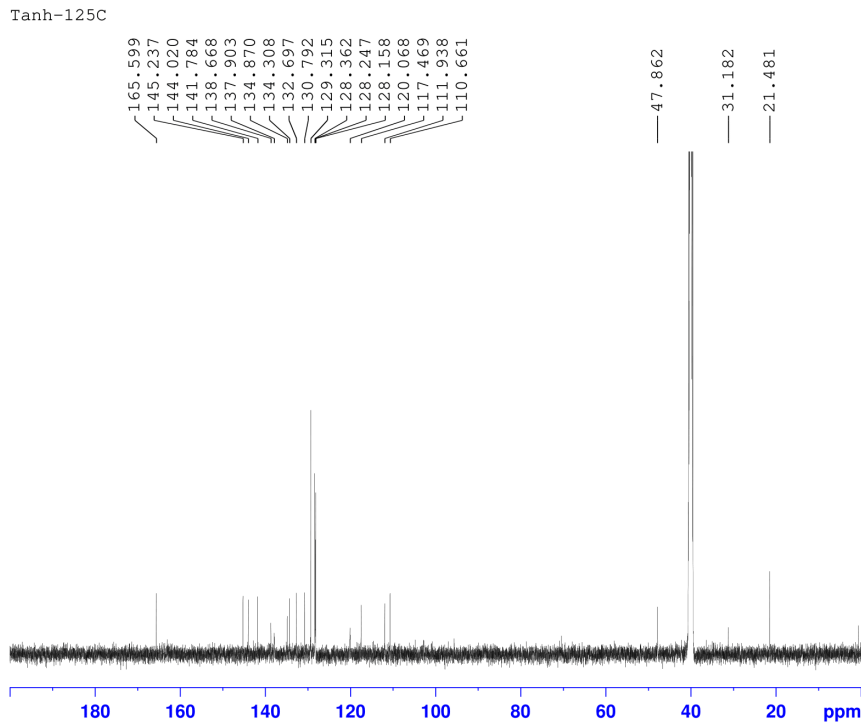
Current Data Parameters
 NAME Tanh-125C
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220118
 Time 9.27
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 296.5 K
 D1 1.0000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300025 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 29c



Current Data Parameters
 NAME Tanh-125C
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20220119
 Time 9.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 296.3 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

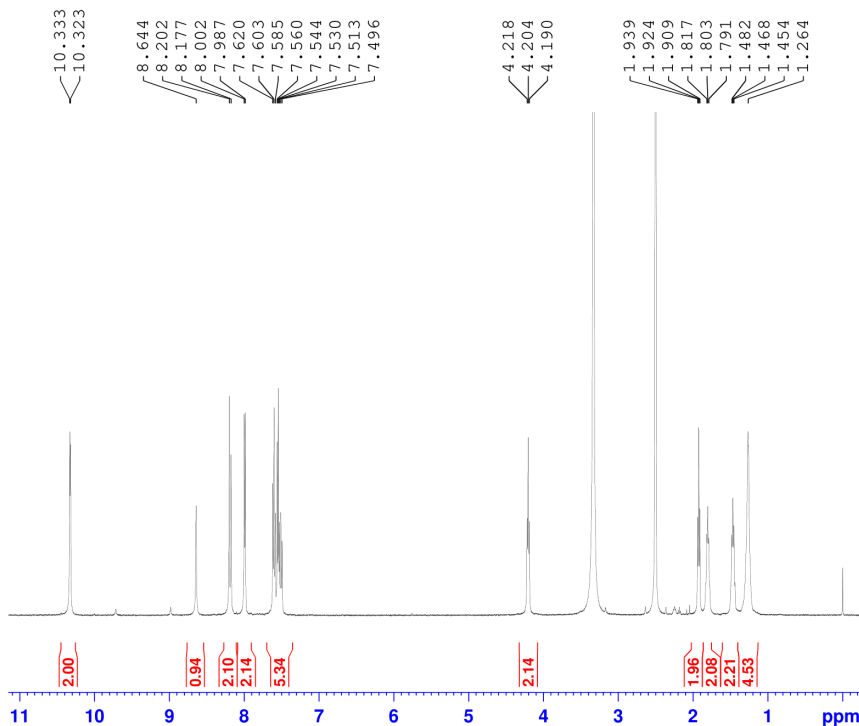
===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 31a

TAnh-128A



Current Data Parameters
 NAME TAnh-128A
 EXPNO 10
 PROCNO 1

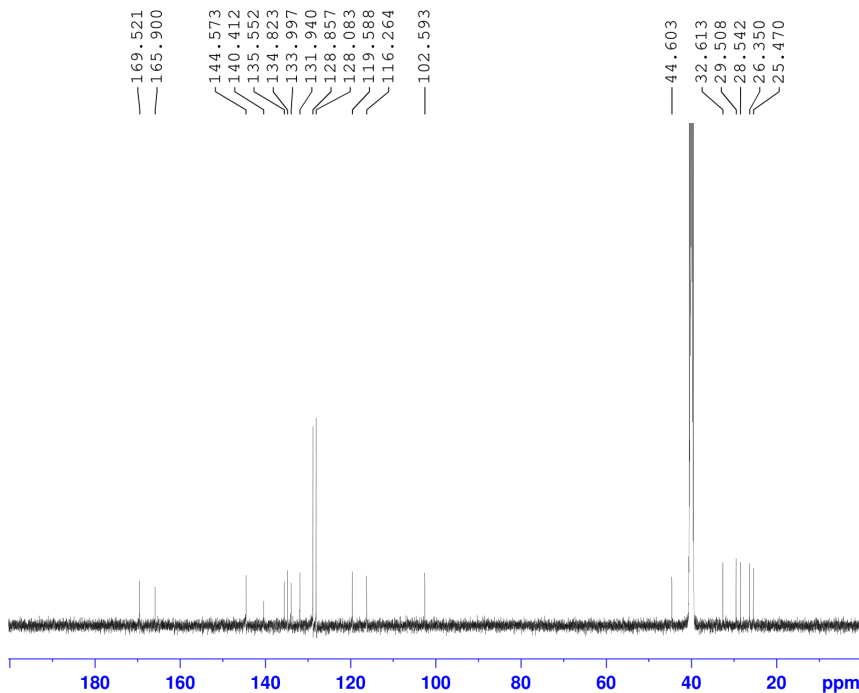
F2 - Acquisition Parameters
 Date_ 20230215
 Time 10.45
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.9 K
 D1 1.00000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300047 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 31a

TAnh-128A



Current Data Parameters
 NAME TAnh-128A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20230216
 Time 3.19
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 300.1 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

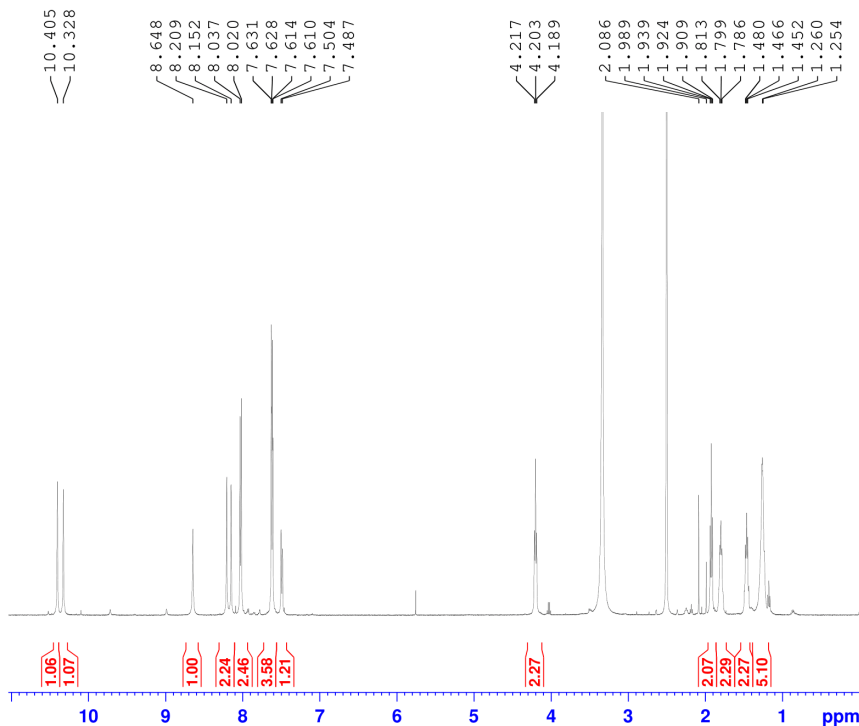
===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 31b

TAnh-128B



Current Data Parameters
NAME TAnh-128B
EXPNO 20
PROCNO 1

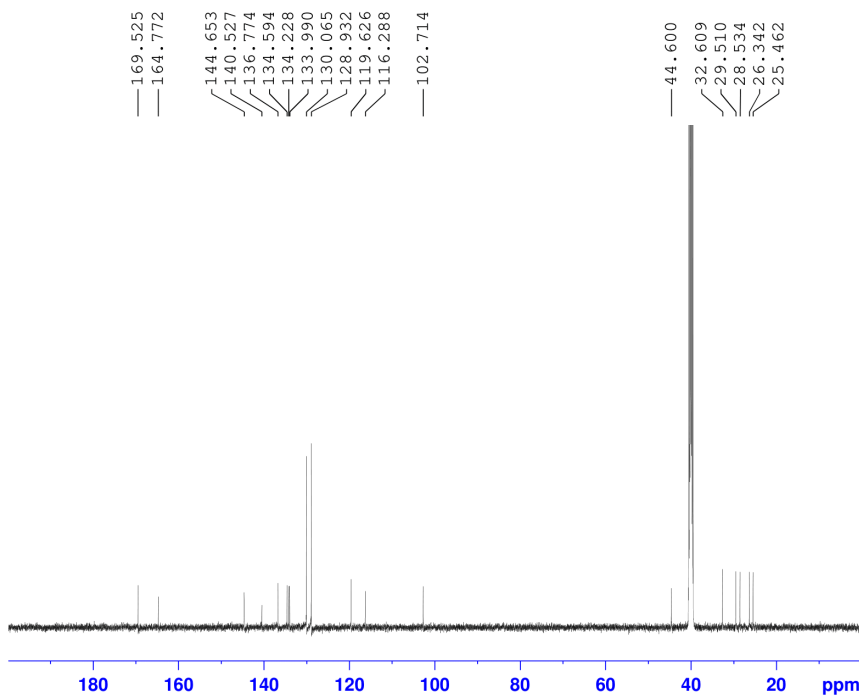
F2 - Acquisition Parameters
Date_ 20230215
Time 10.49
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 297.9 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300037 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 31b

TAnh-128B



Current Data Parameters
NAME TAnh-128B
EXPNO 21
PROCNO 1

F2 - Acquisition Parameters
Date_ 20230216
Time 5.01
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 299.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

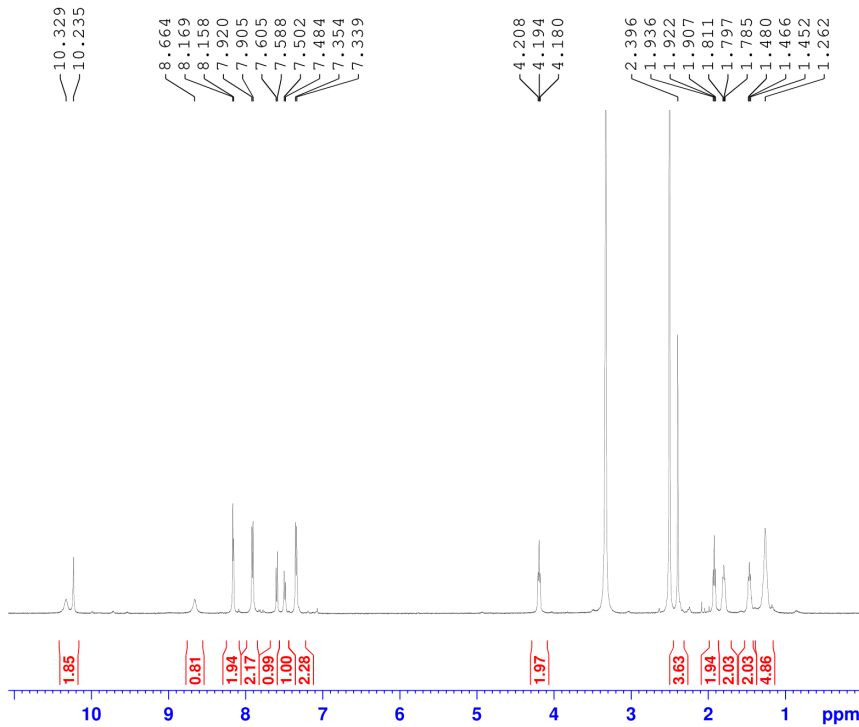
===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 31c

TAnh-128C



Current Data Parameters
 NAME TAnh-128C
 EXPNO 30
 PROCNO 1

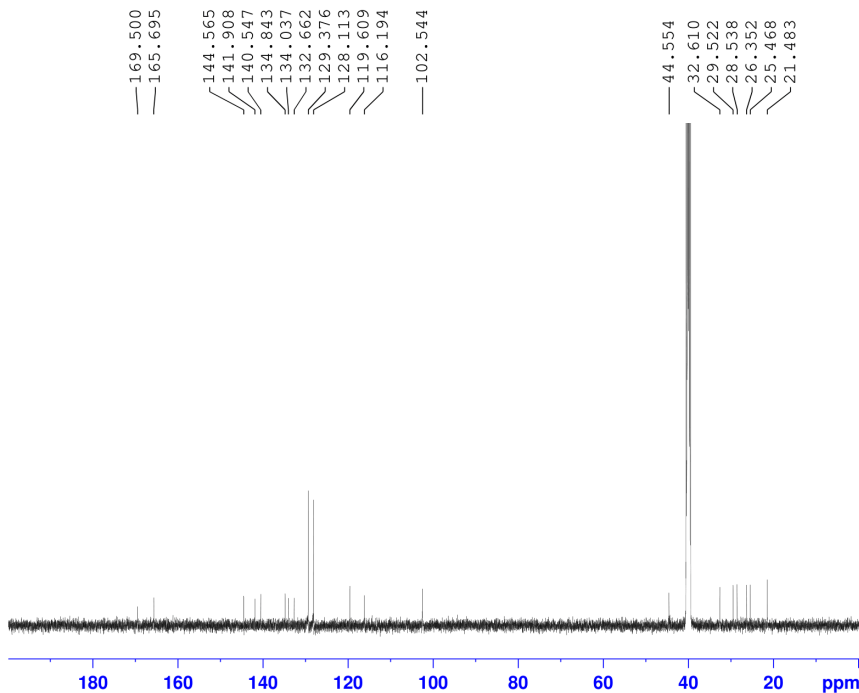
F2 - Acquisition Parameters
 Date_ 20230215
 Time 10.52
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 191.38
 DW 50.000 usec
 DE 6.50 usec
 TE 297.7 K
 D1 1.00000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 9.80 usec
 PLW1 24.0000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300045 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR of compound 31c

TAnh-128C



Current Data Parameters
 NAME TAnh-128C
 EXPNO 31
 PROCNO 1

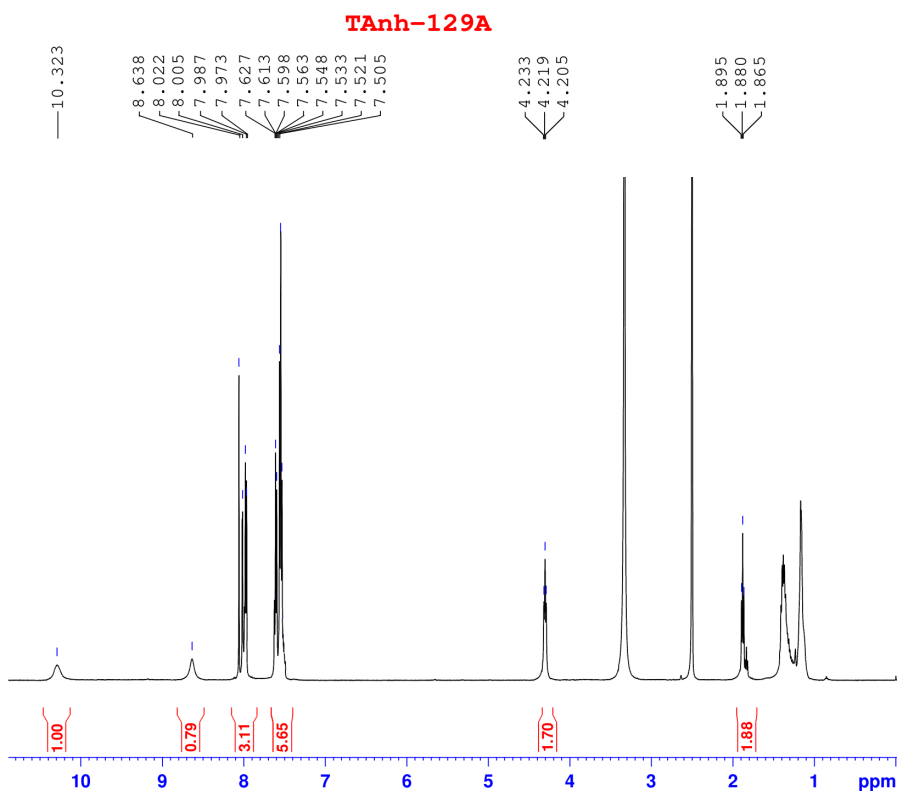
F2 - Acquisition Parameters
 Date_ 20230216
 Time 7.26
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 3072
 DS 4
 SWH 31250.000 Hz
 FIDRES 0.476837 Hz
 AQ 1.0485760 sec
 RG 191.38
 DW 16.000 usec
 DE 6.50 usec
 TE 300.1 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 125.7703637 MHz
 NUC1 13C
 P1 10.20 usec
 PLW1 90.0000000 W

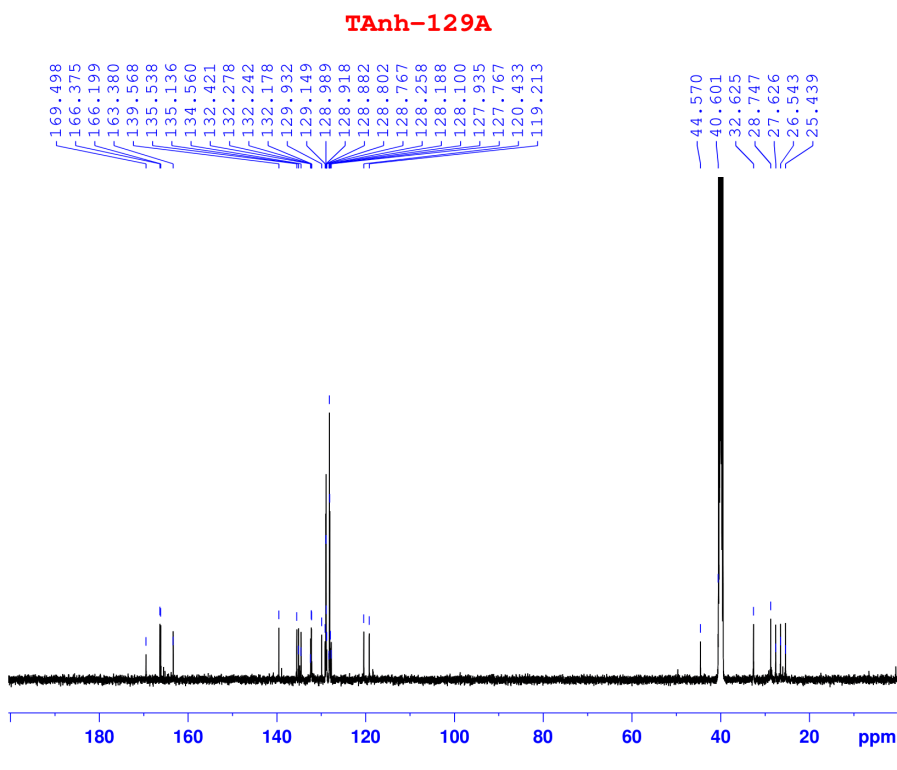
===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz16
 PCPD2 80.00 usec
 PLW2 24.0000000 W
 PLW12 0.36015001 W
 PLW13 0.23050000 W

F2 - Processing parameters
 SI 65536
 SF 125.7577885 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

¹H NMR of compound 33a

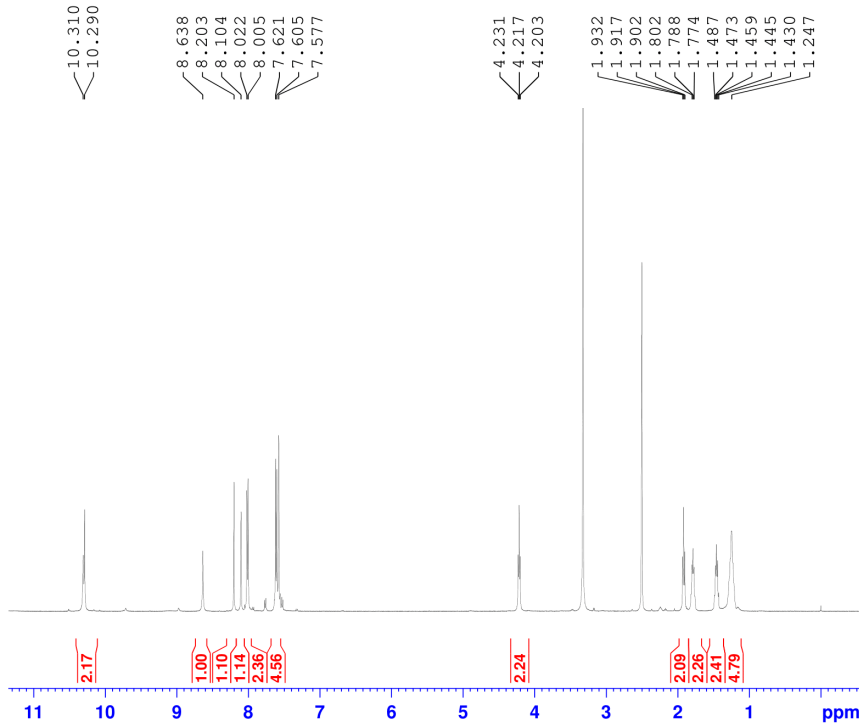


¹³C NMR of compound 33a



¹H NMR of compound 33b

TAnh-129B



Current Data Parameters
NAME TAnh-129B
EXPNO 10
PROCNO 1

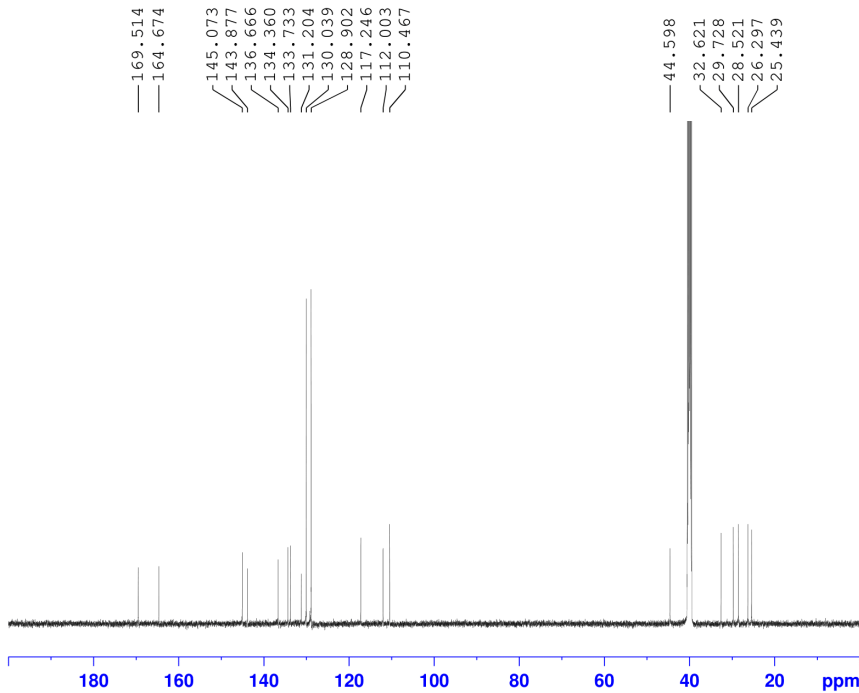
F2 - Acquisition Parameters
Date_ 20230222
Time 9.39
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 299.8 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300039 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 33b

TAnh-129B



Current Data Parameters
NAME TAnh-129B
EXPNO 11
PROCNO 1

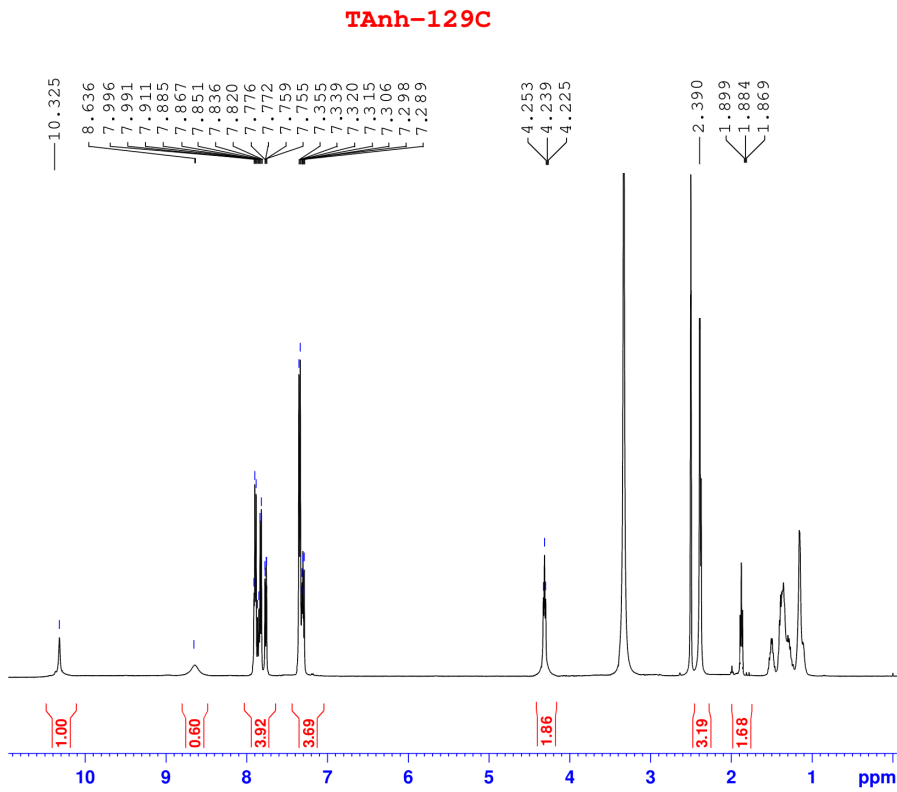
F2 - Acquisition Parameters
Date_ 20230222
Time 21.46
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 6144
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 301.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

¹H NMR of compound 33c



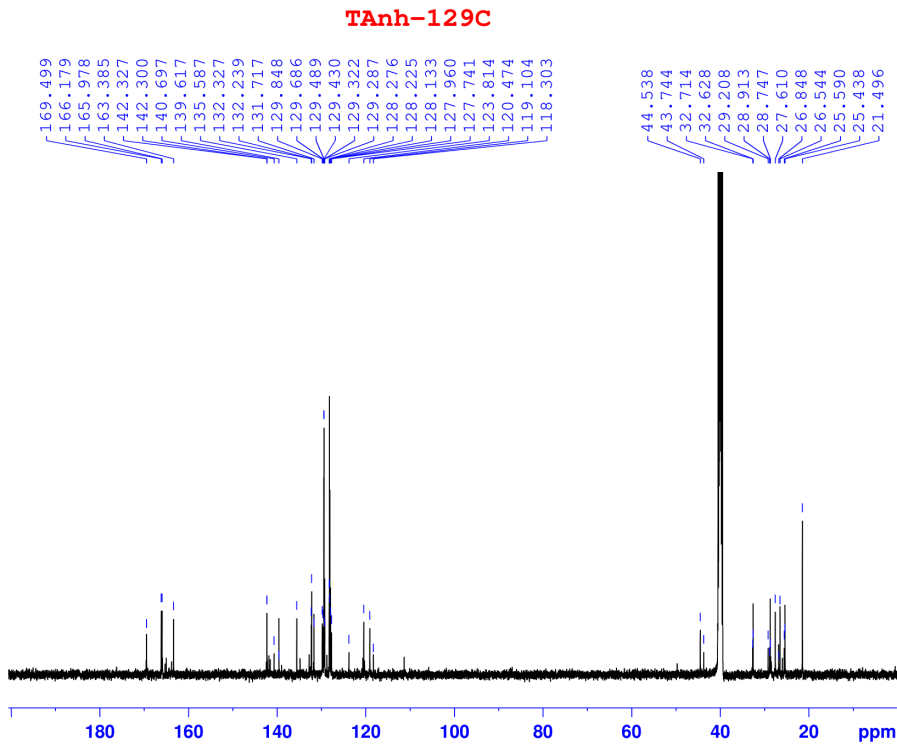
Current Data Parameters
NAME TAnh-129C
EXPNO 20
PROCNO 1

F2 - Acquisition Parameters
Date_ 20230301
Time 19.43
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 191.38
DW 50.000 usec
DE 6.50 usec
TE 299.9 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330885 MHz
NUC1 1H
P1 9.80 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300047 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

¹³C NMR of compound 33c



Current Data Parameters
NAME TAnh-129C
EXPNO 22
PROCNO 1

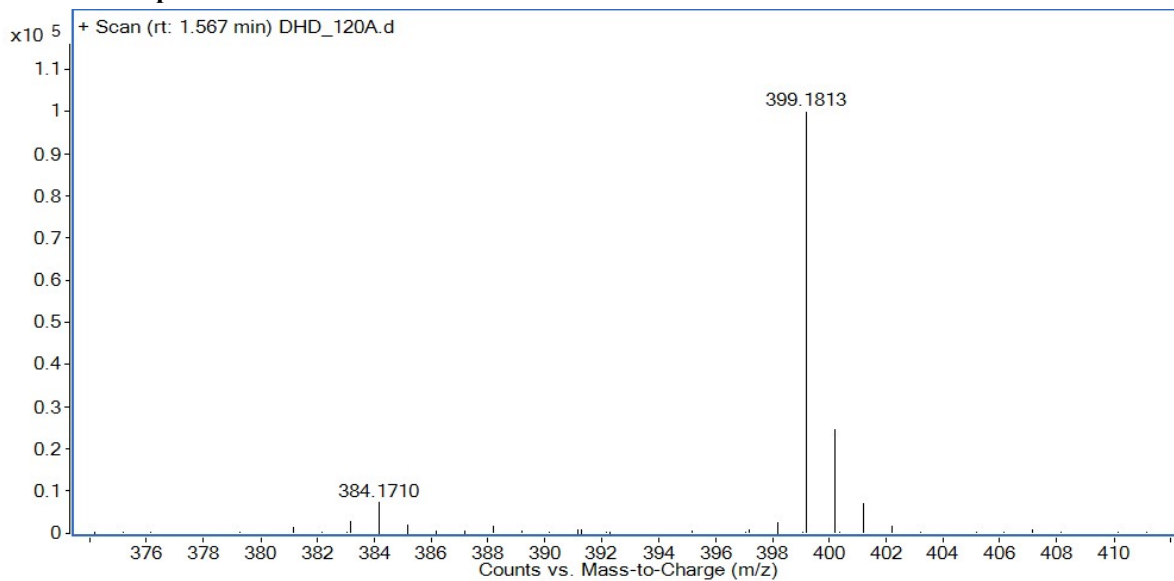
F2 - Acquisition Parameters
Date_ 20230301
Time 22.24
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3072
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 191.38
DW 16.000 usec
DE 6.50 usec
TE 300.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7703637 MHz
NUC1 13C
P1 10.20 usec
PLW1 90.00000000 W

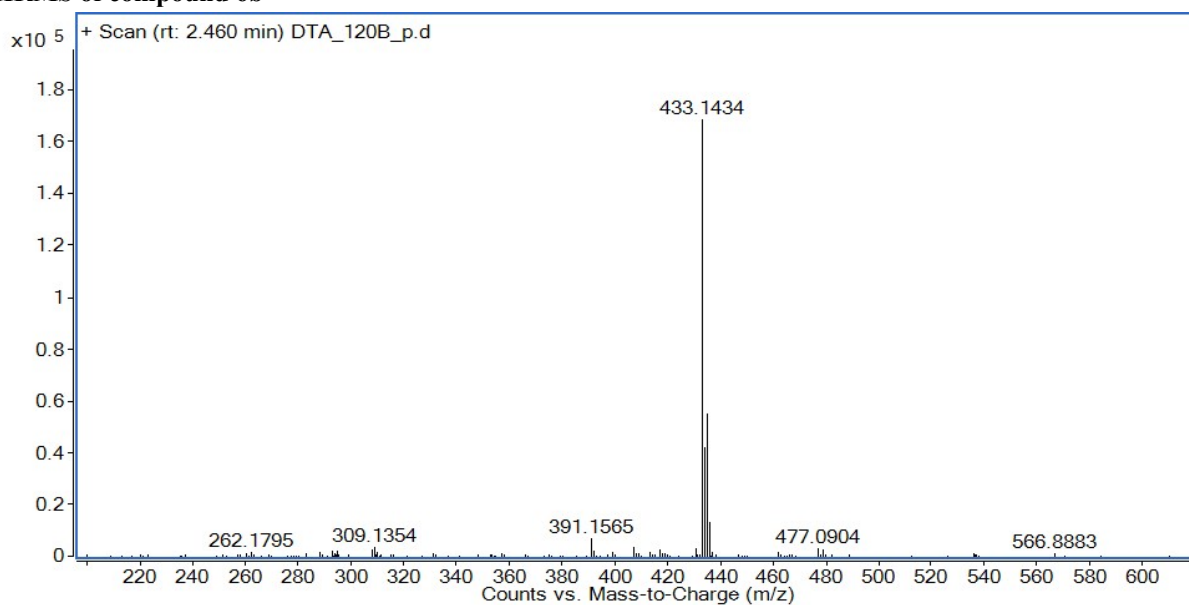
===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.36015001 W
PLW13 0.23050000 W

F2 - Processing parameters
SI 65536
SF 125.7577885 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

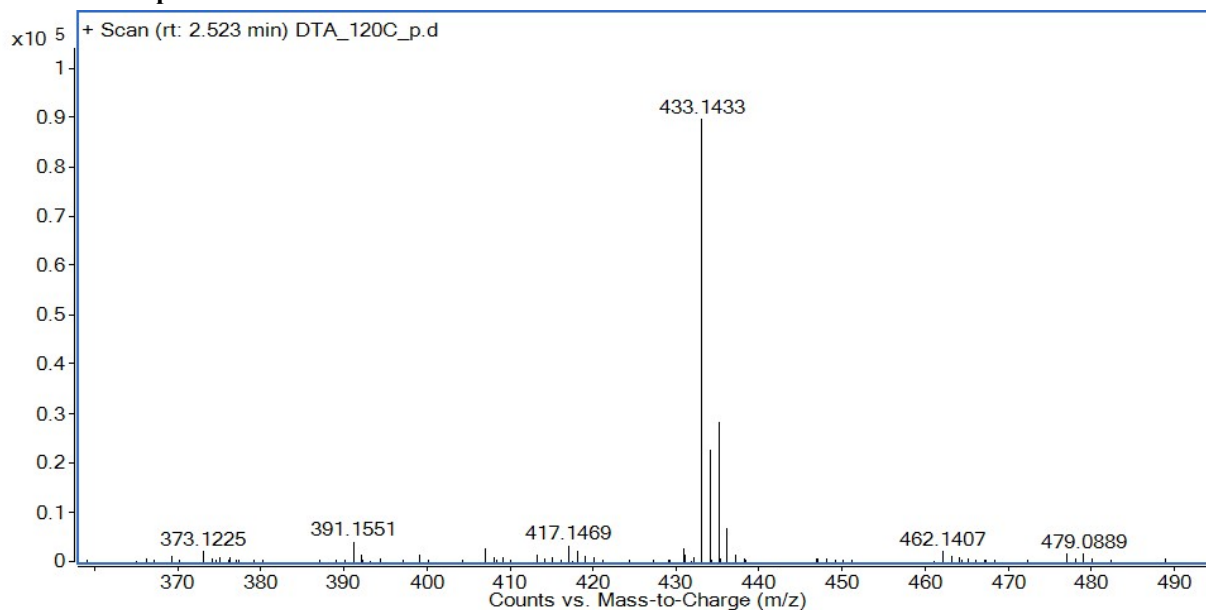
HRMS of compound 6a



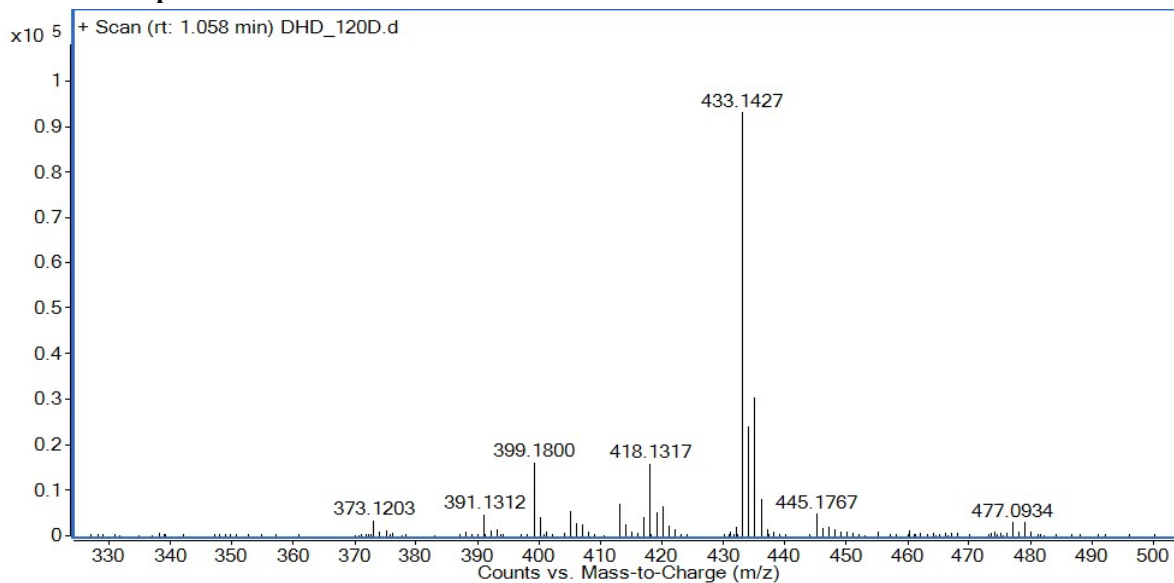
HRMS of compound 6b



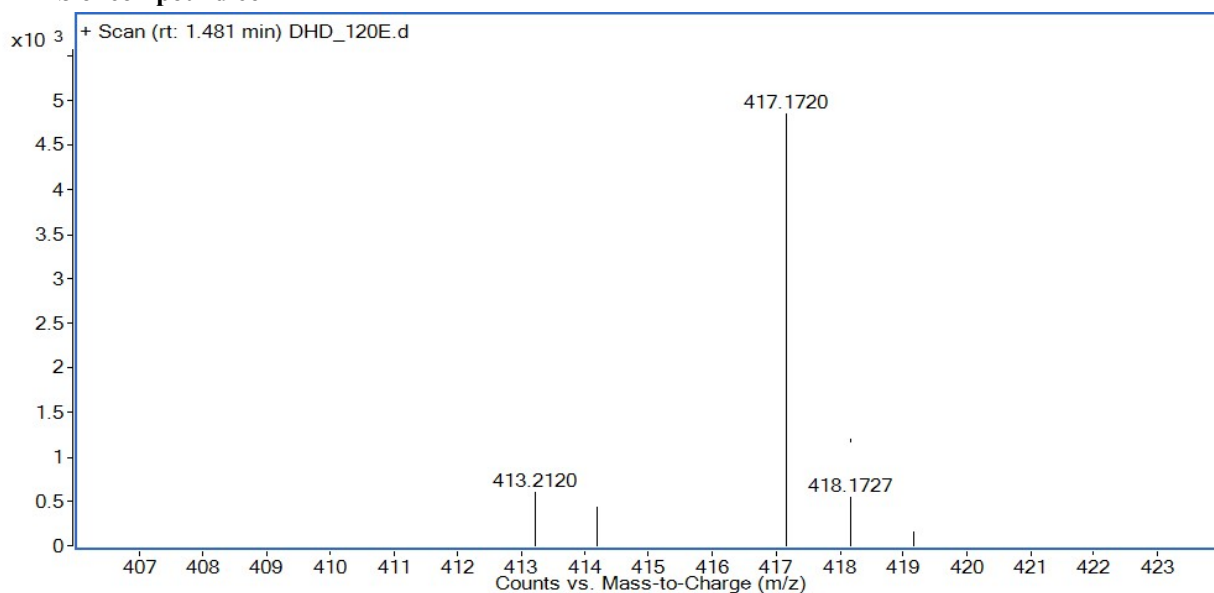
HRMS of compound 6c



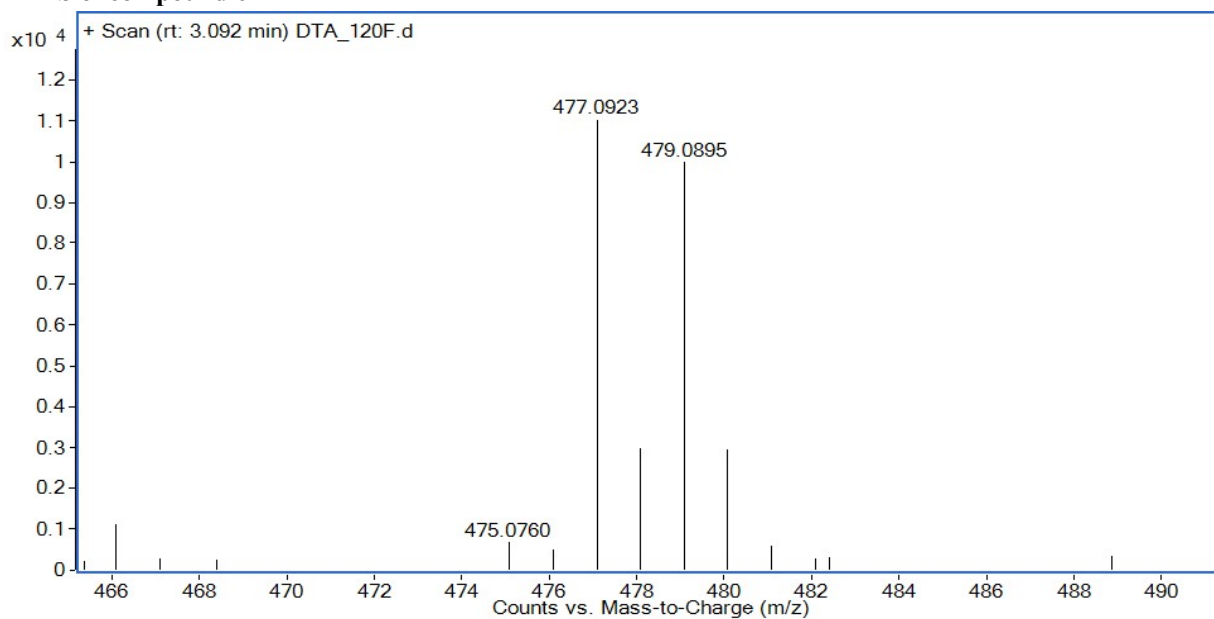
HRMS of compound 6d



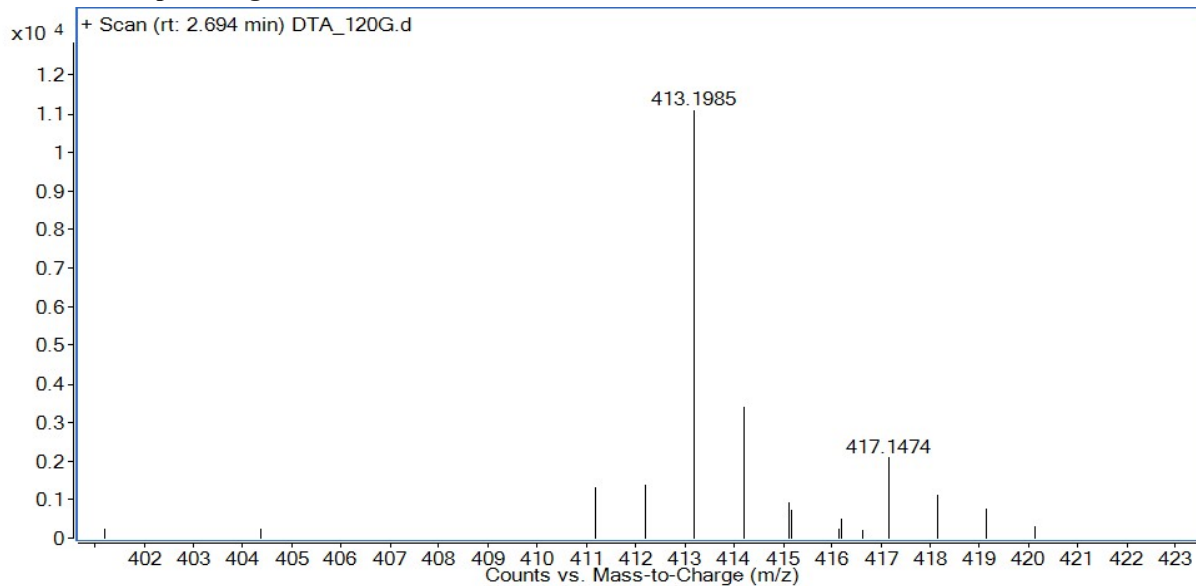
HRMS of compound 6e



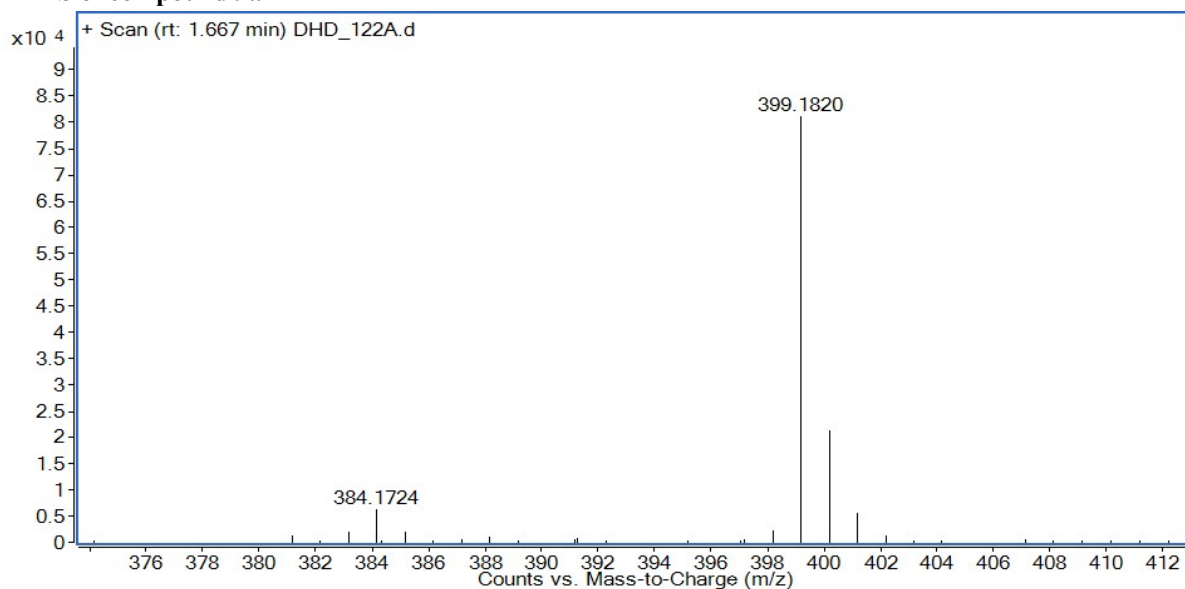
HRMS of compound 6f



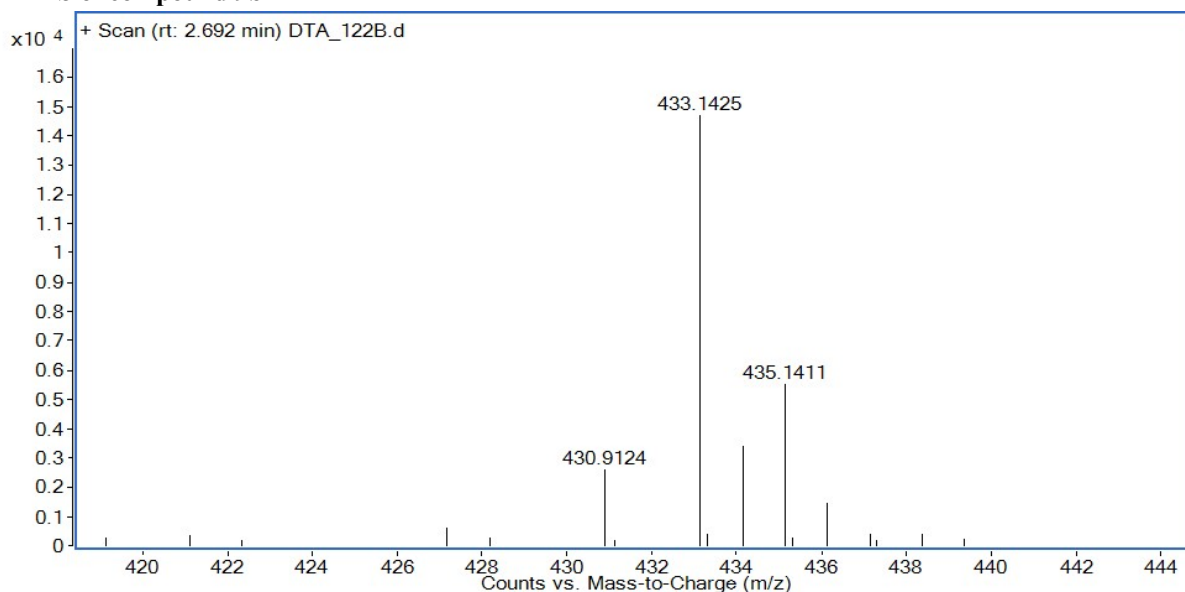
HRMS of compound 6g



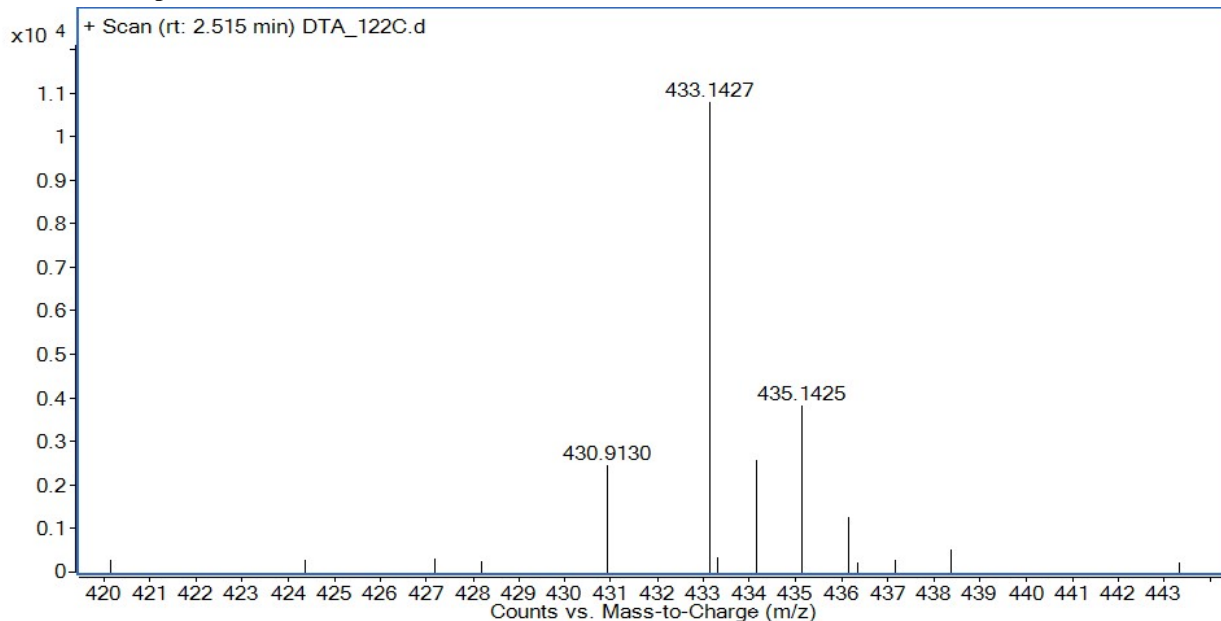
HRMS of compound 9a



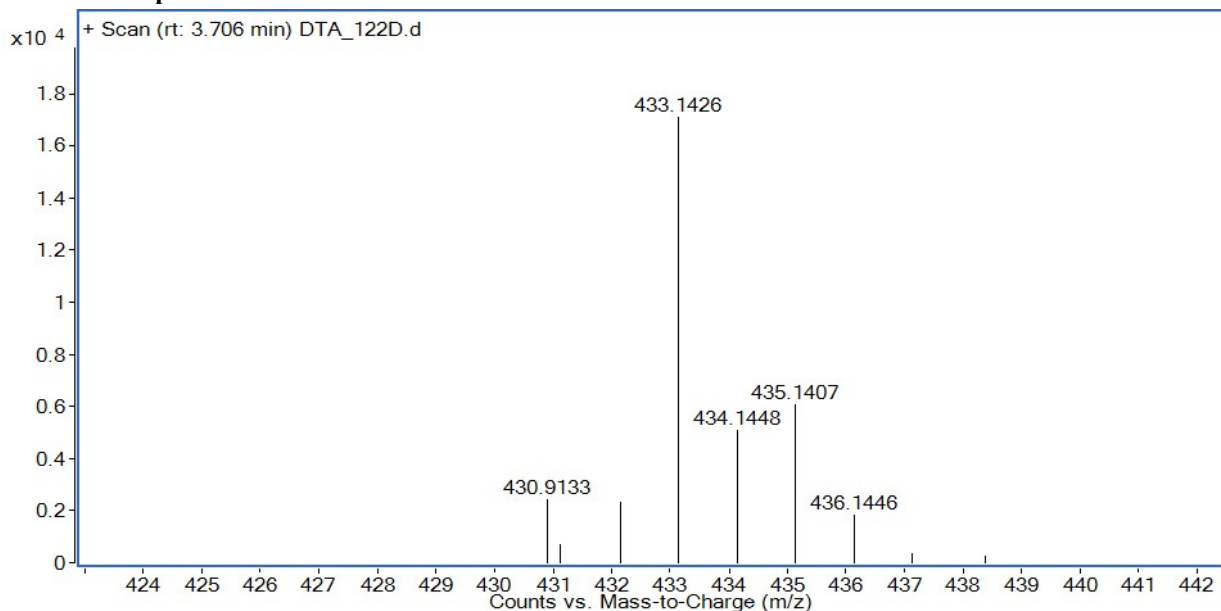
HRMS of compound 9b



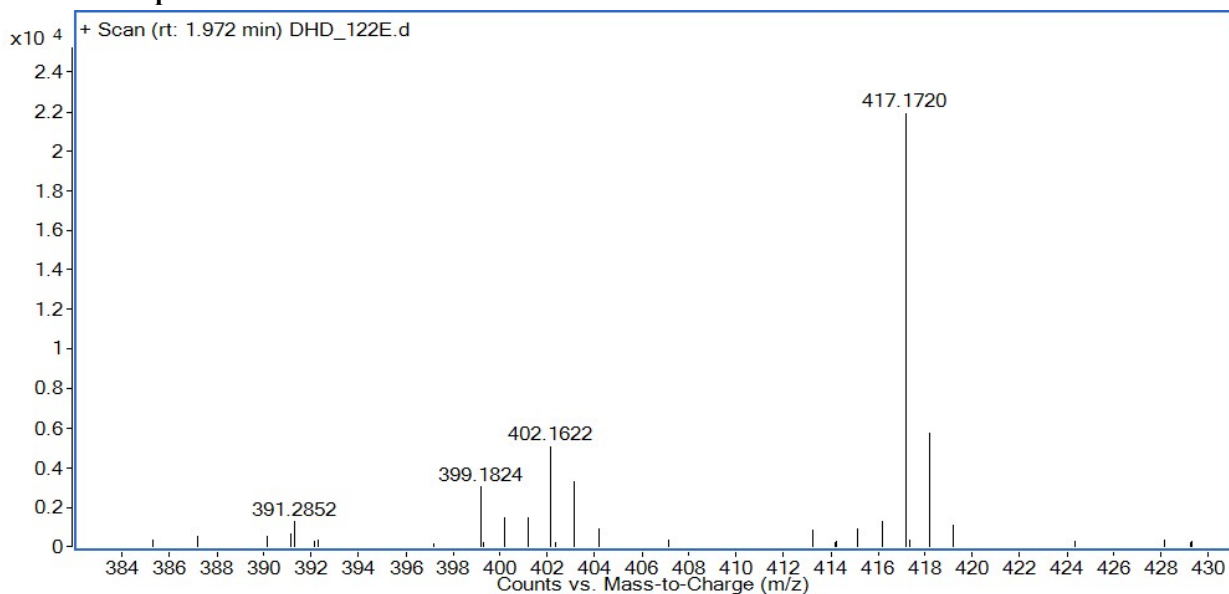
HRMS of compound 9c



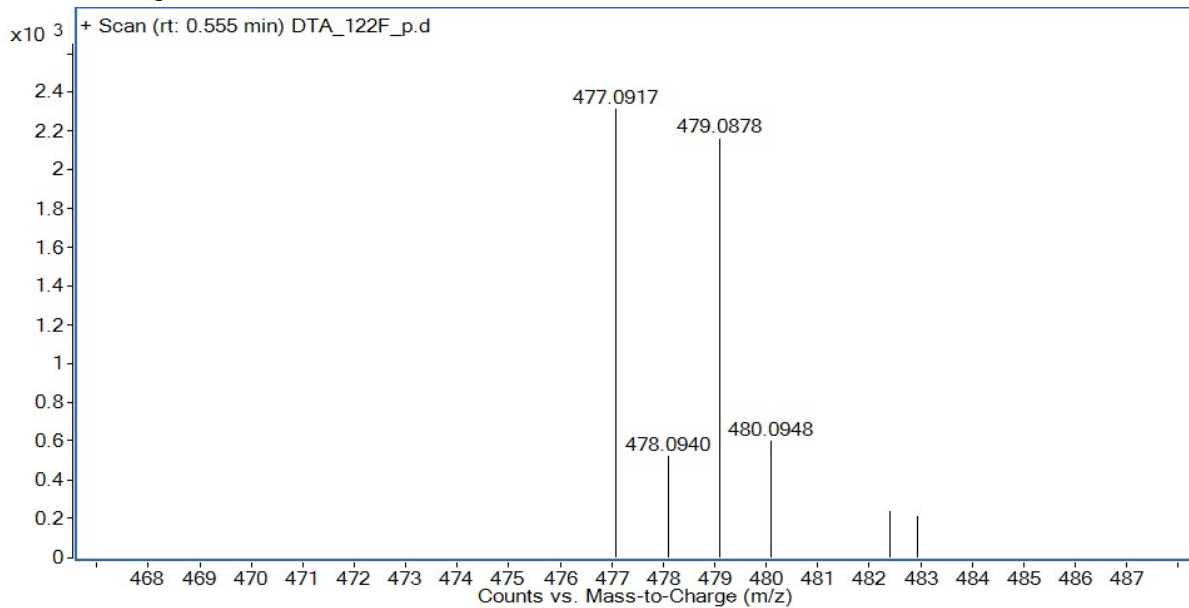
HRMS of compound 9d



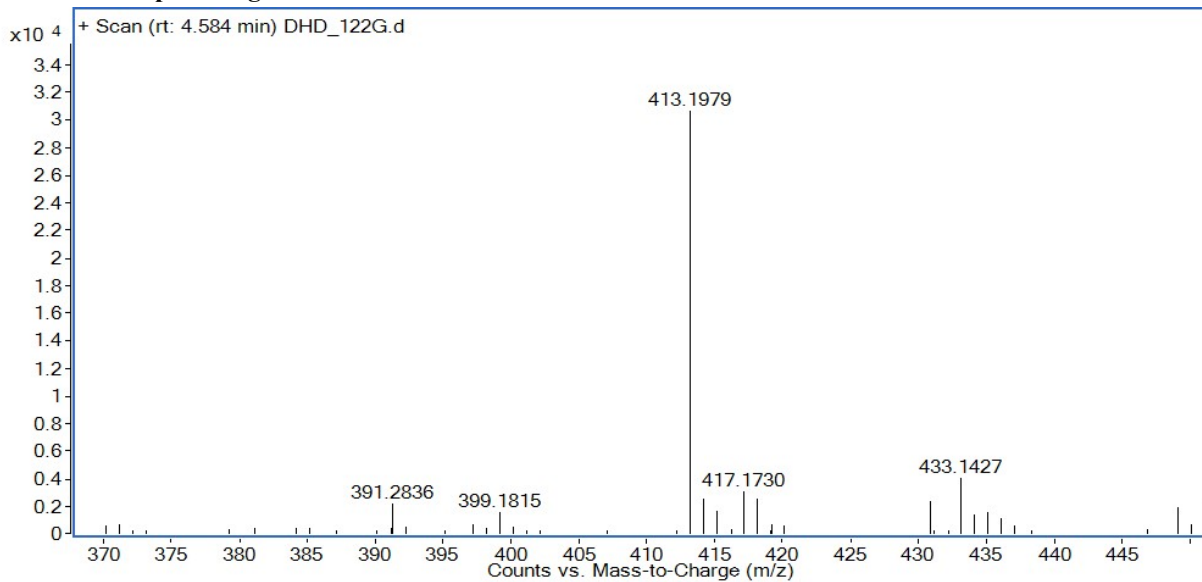
HRMS of compound 9e



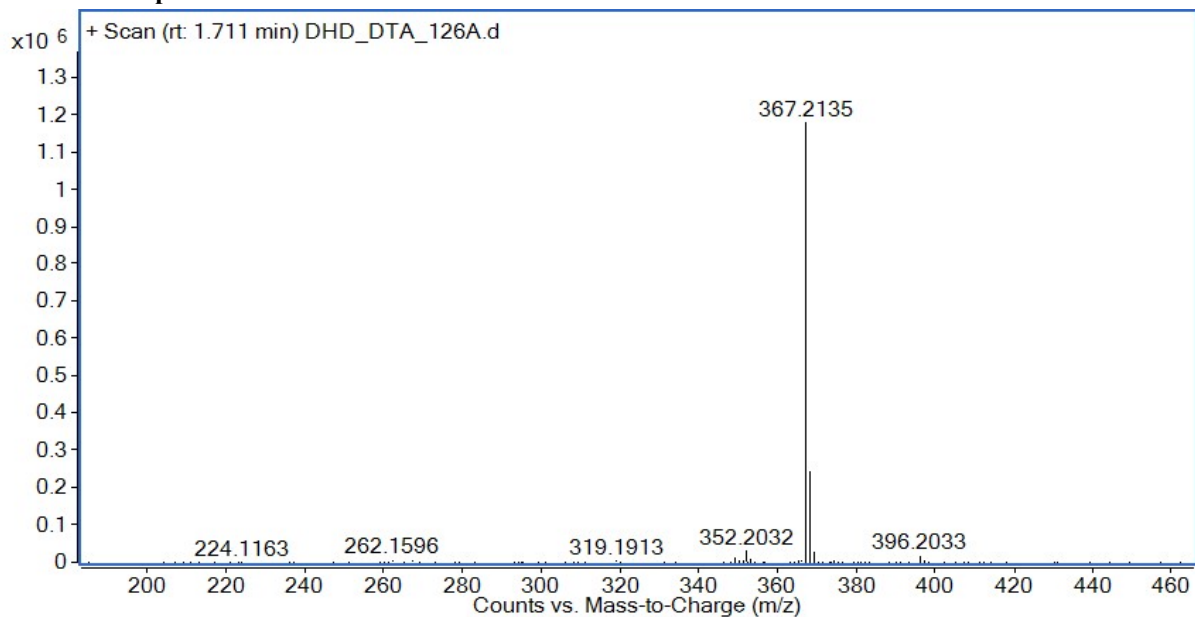
HRMS of compound 9f



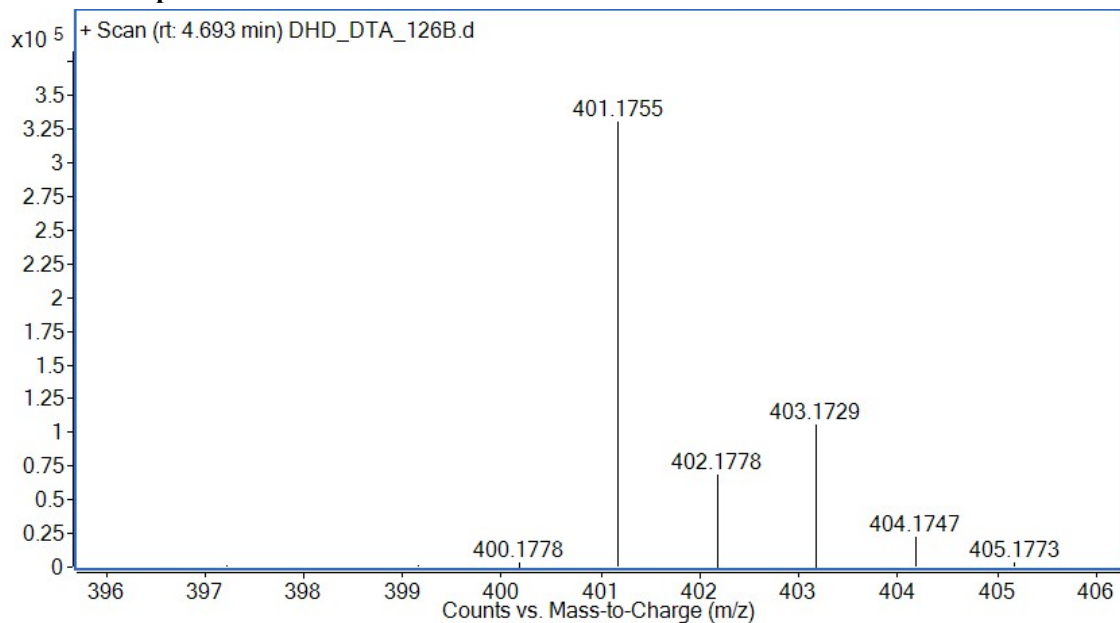
HRMS of compound 9g



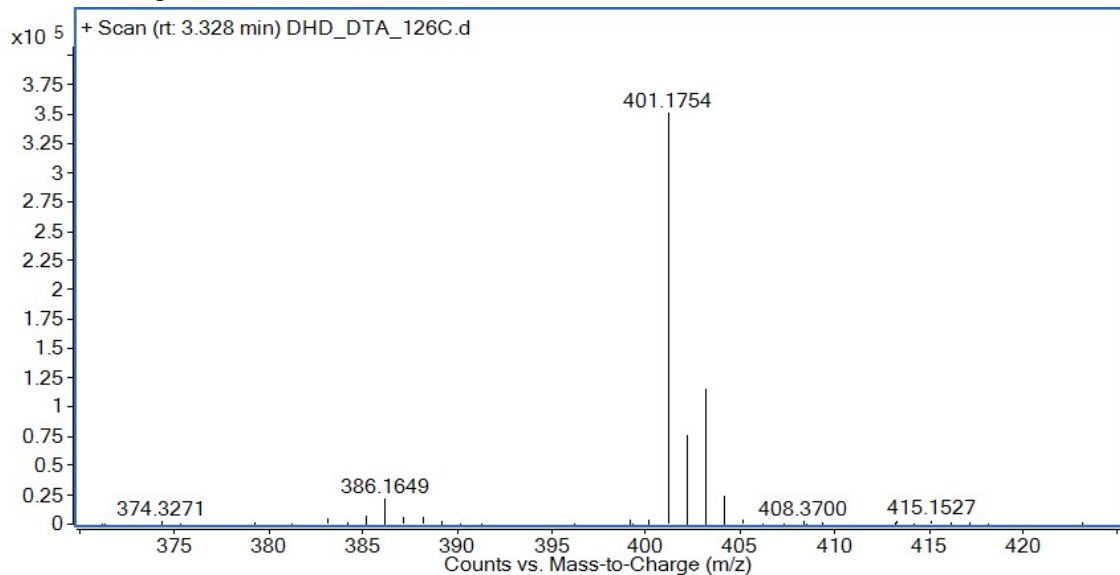
HRMS of compound 14a



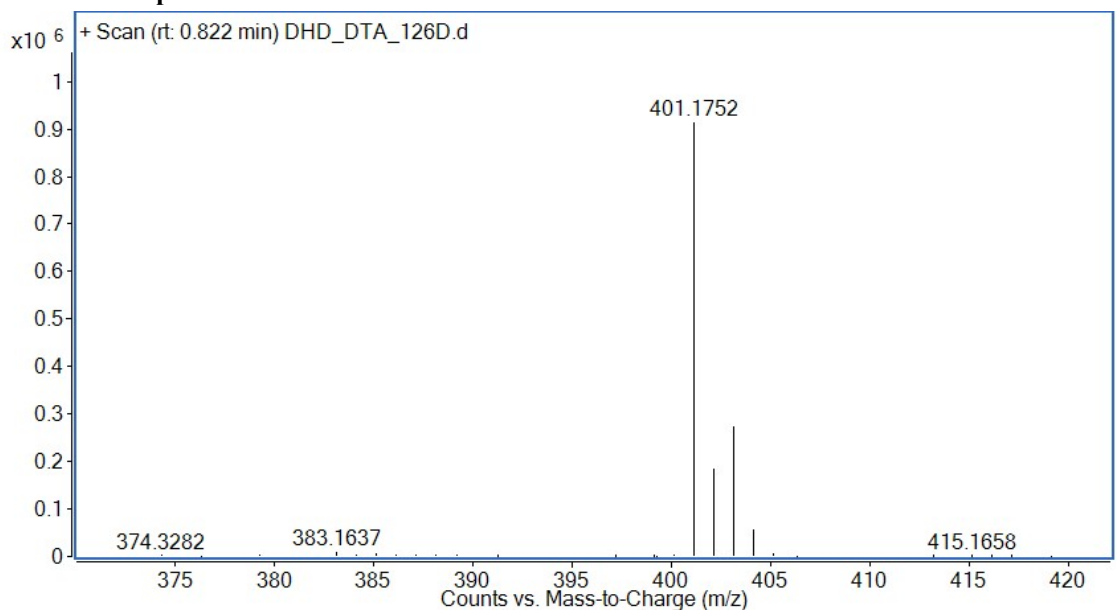
HRMS of compound 14b



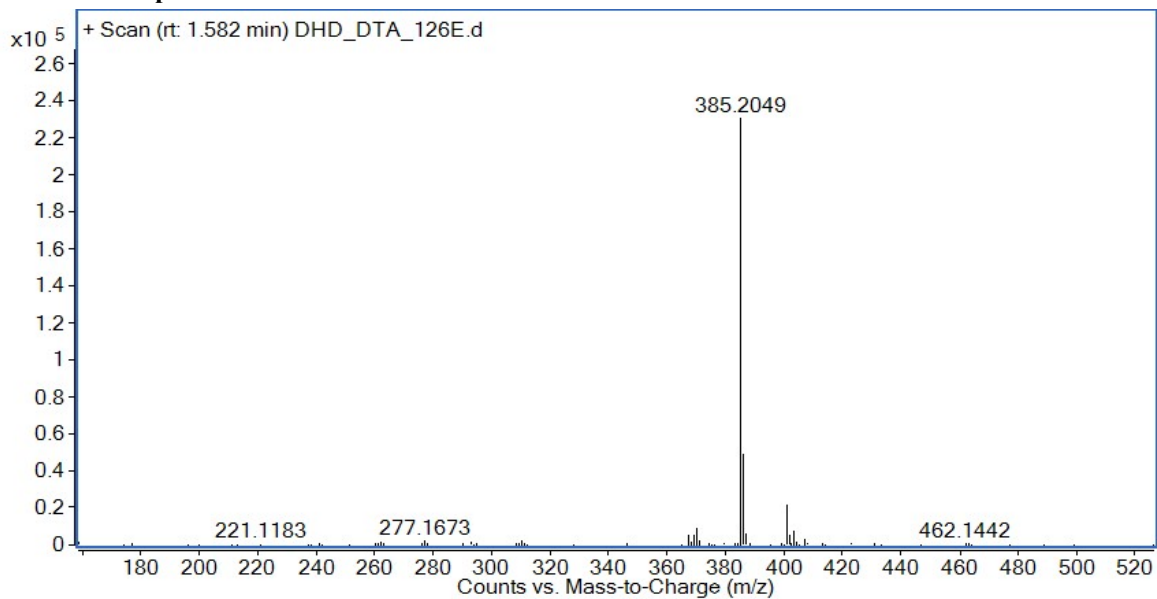
HRMS of compound 14c



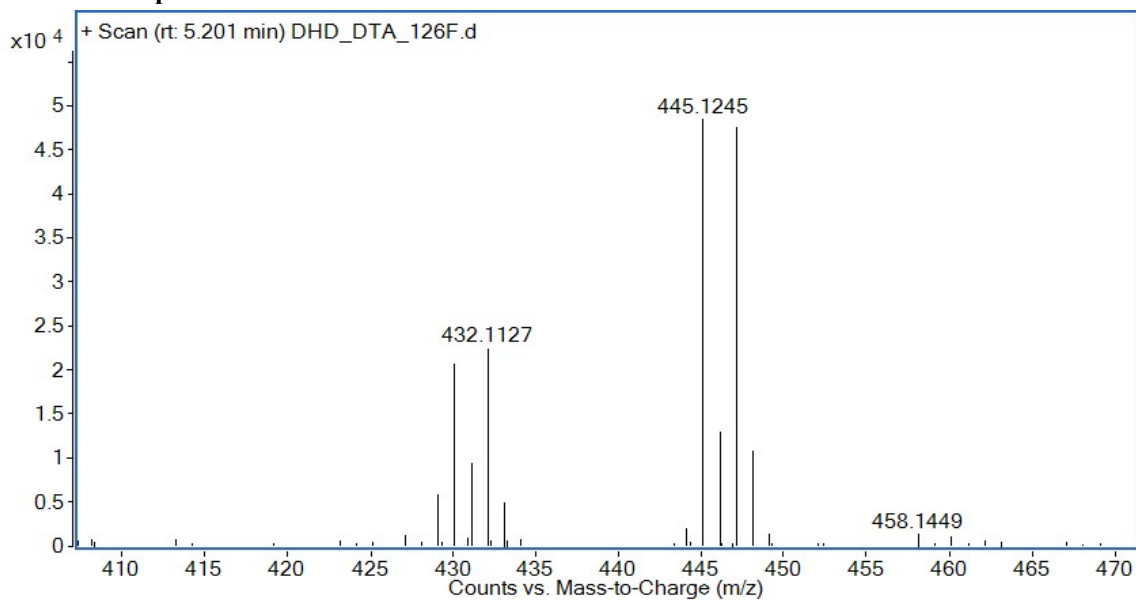
HRMS of compound 14d



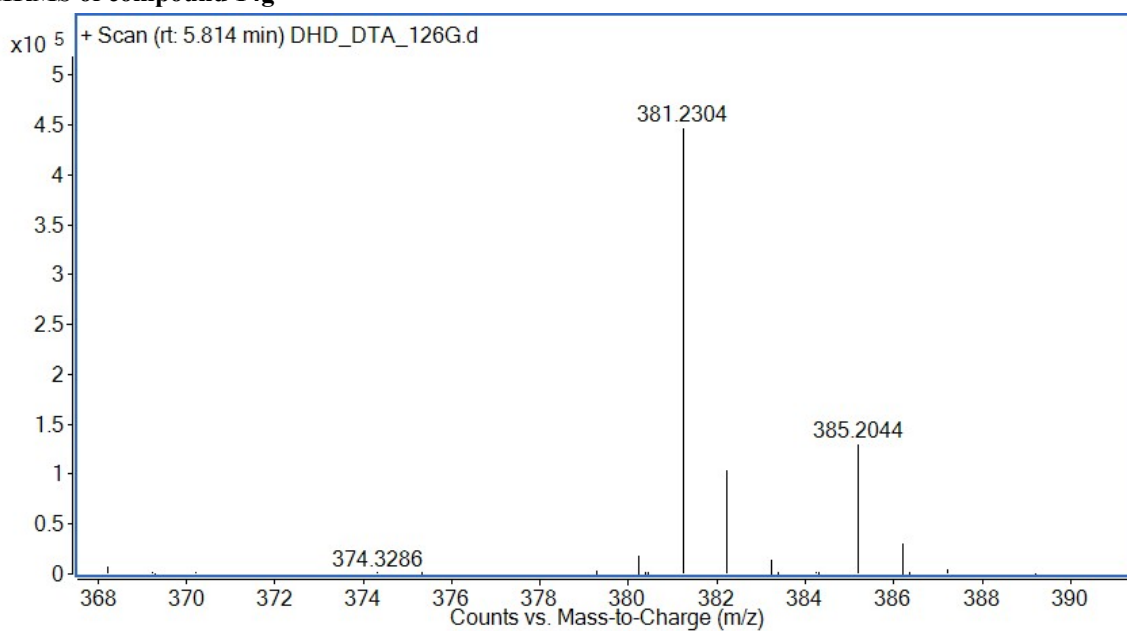
HRMS of compound 14e



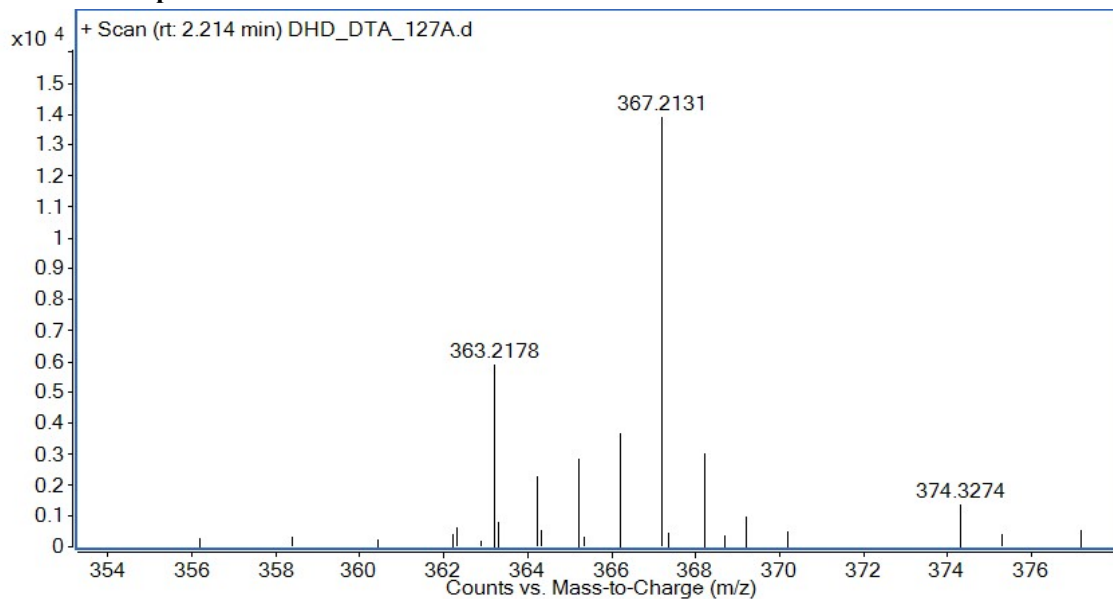
HRMS of compound 14f



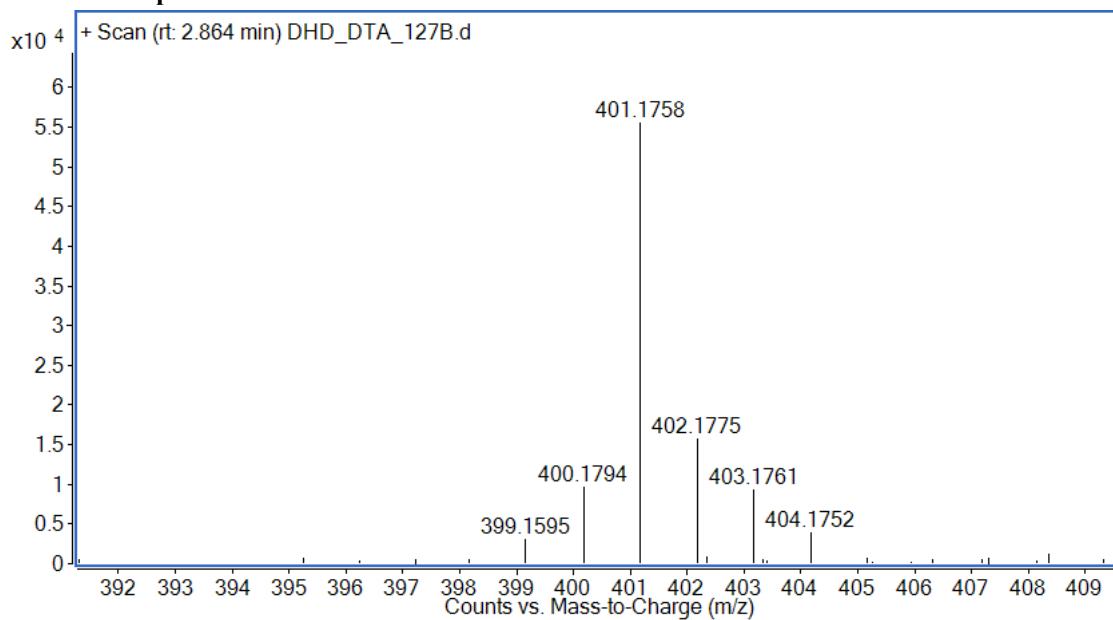
HRMS of compound 14g



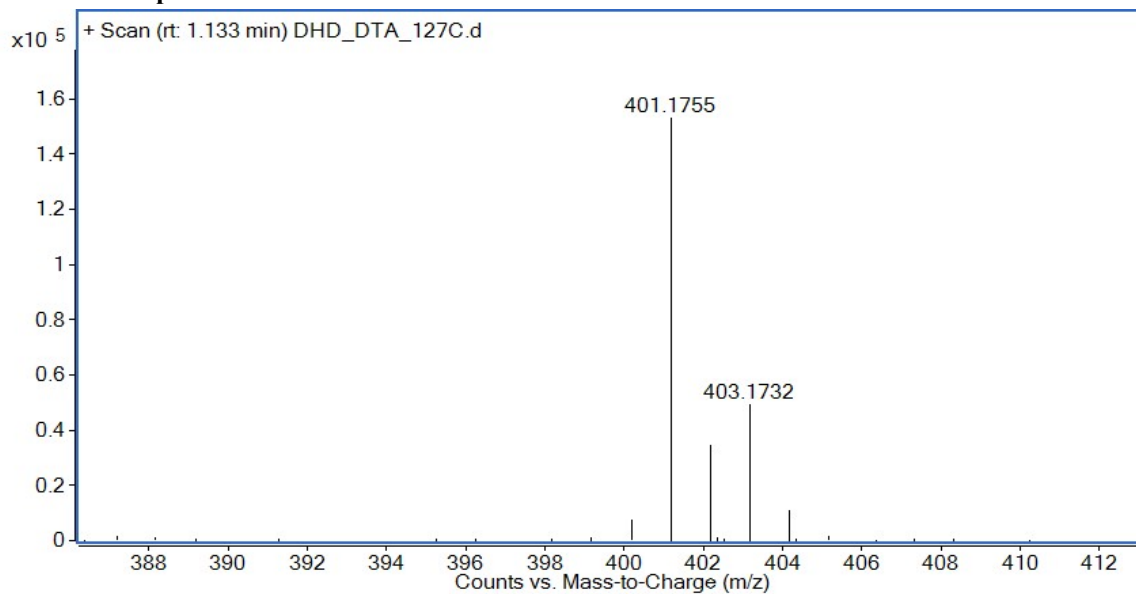
HRMS of compound 17a



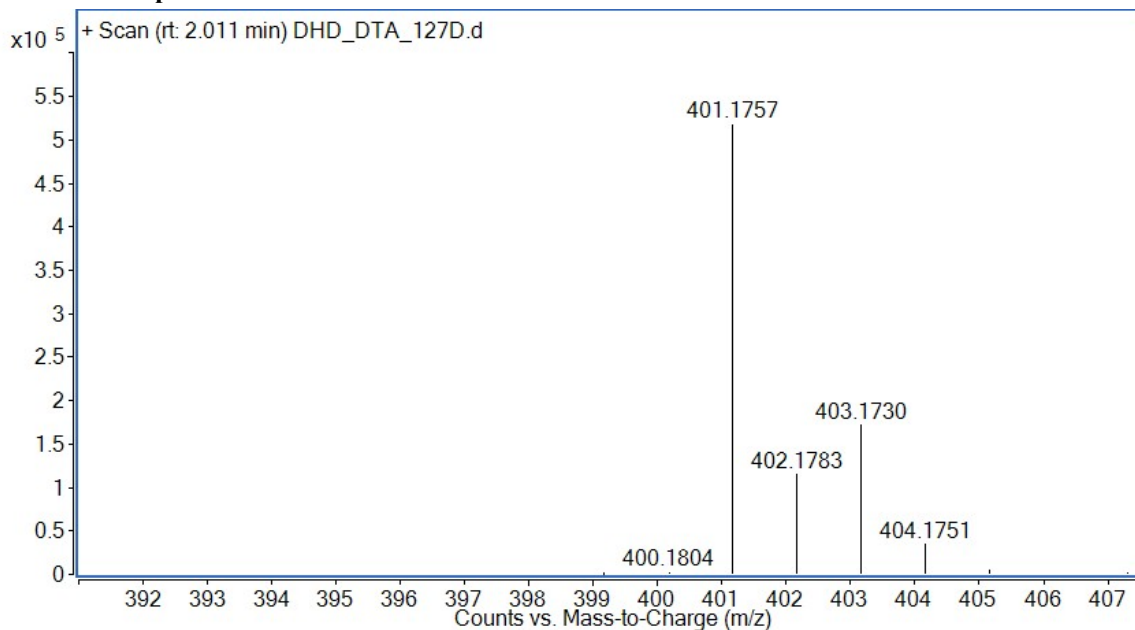
HRMS of compound 17b



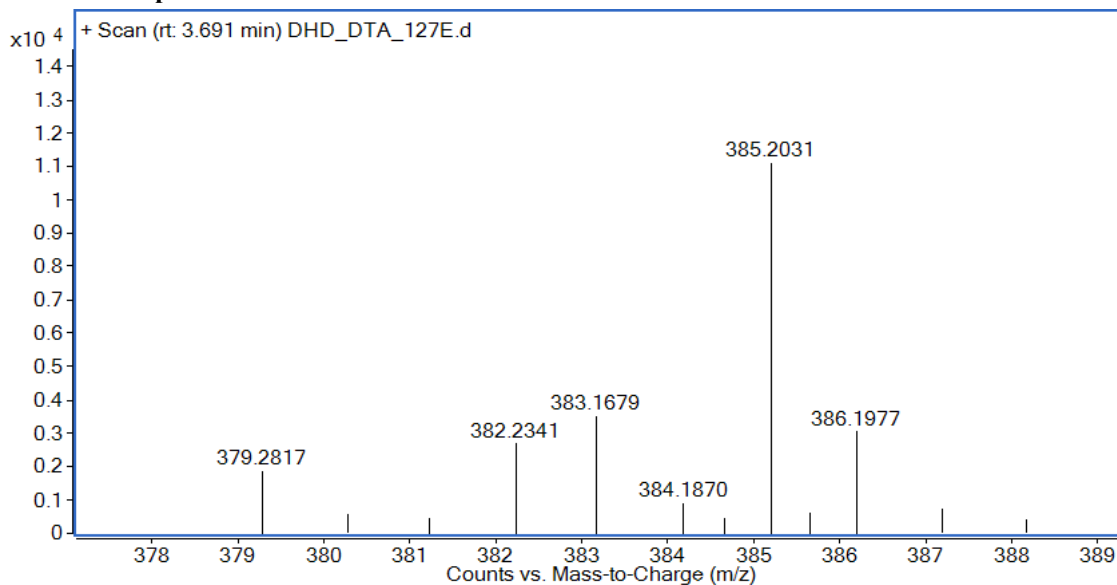
HRMS of compound 17c



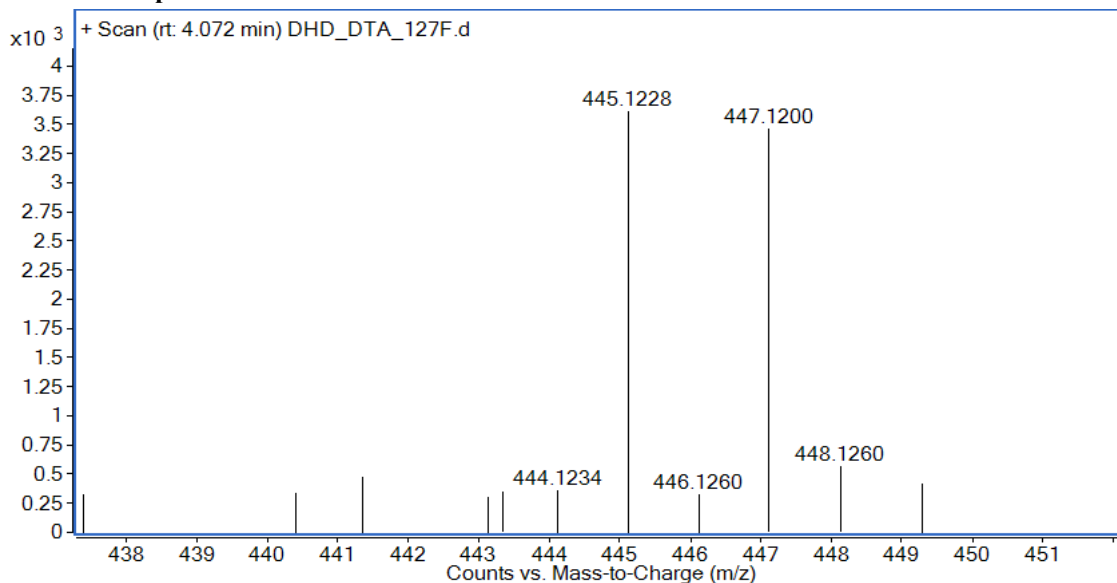
HRMS of compound 17d



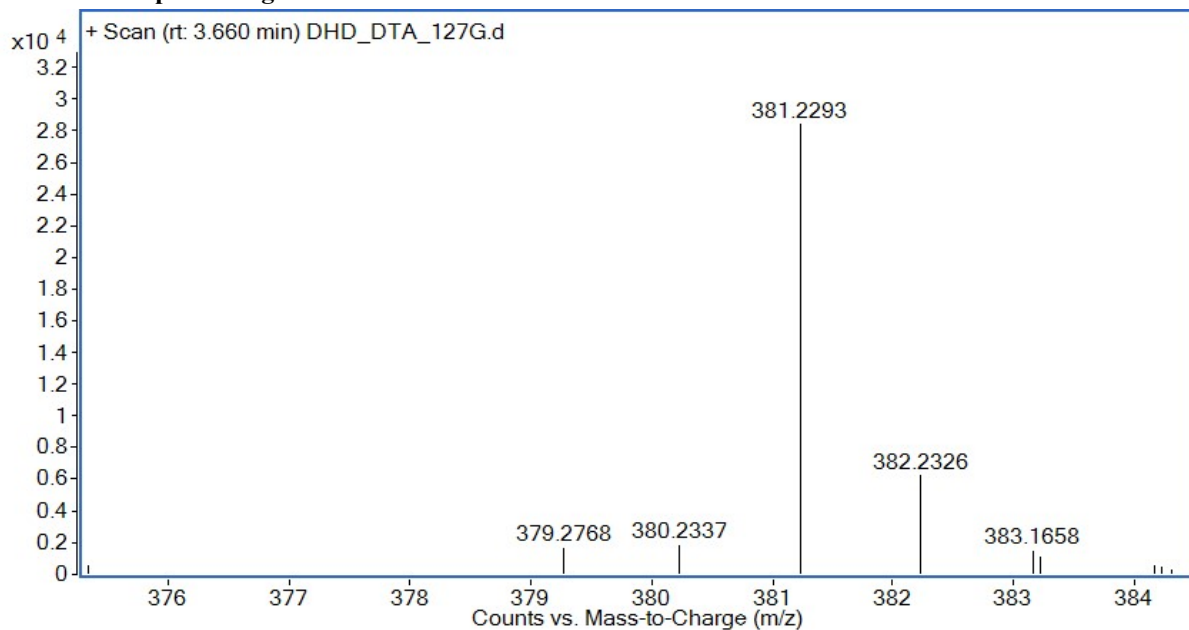
HRMS of compound 17e



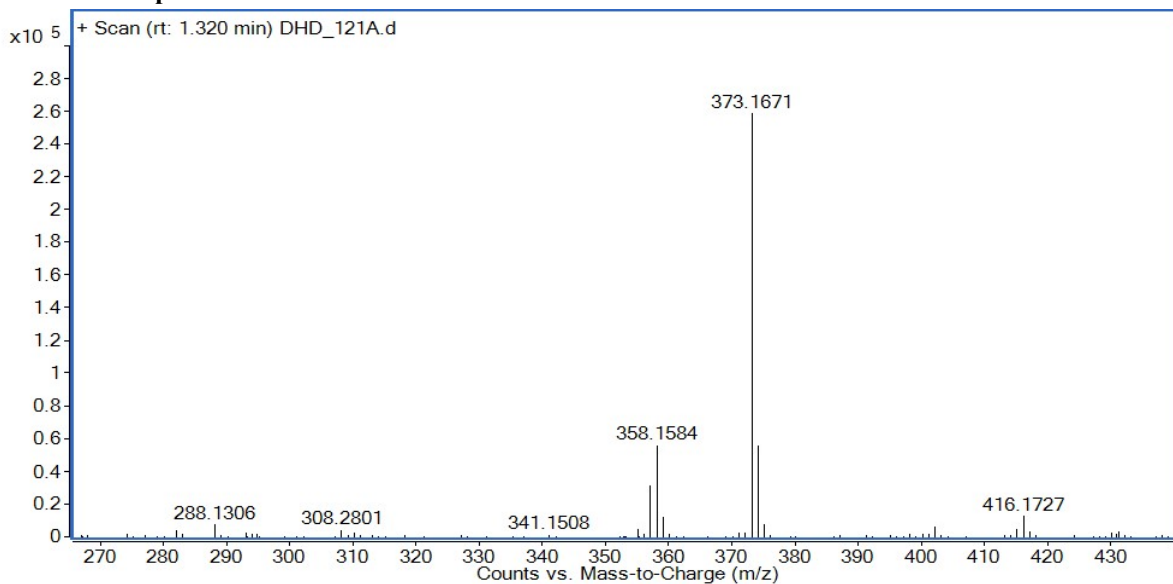
HRMS of compound 17f



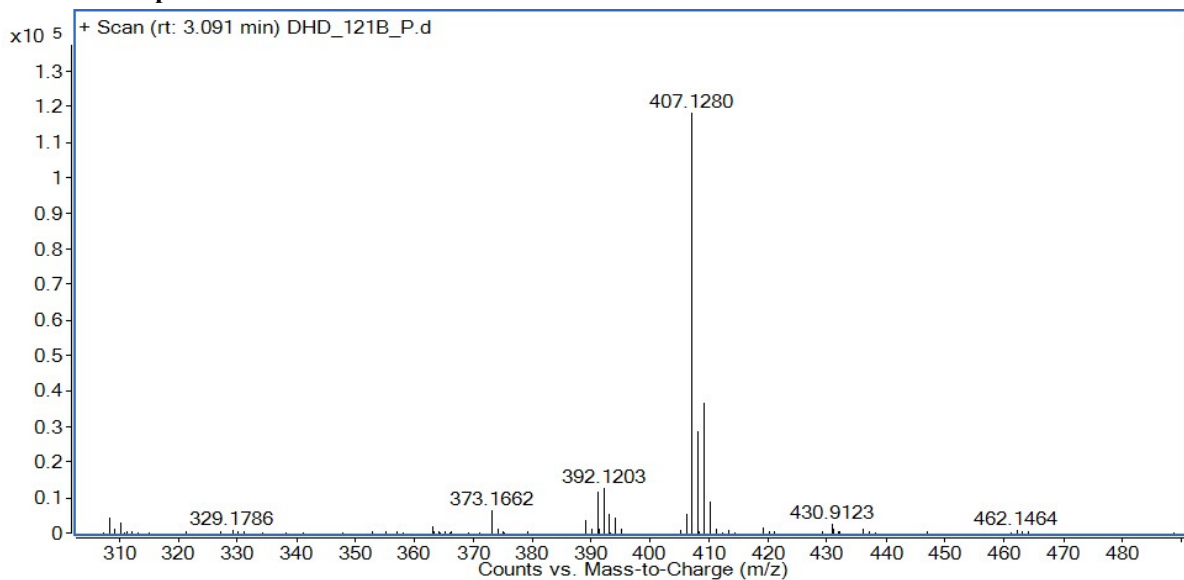
HRMS of compound 17g



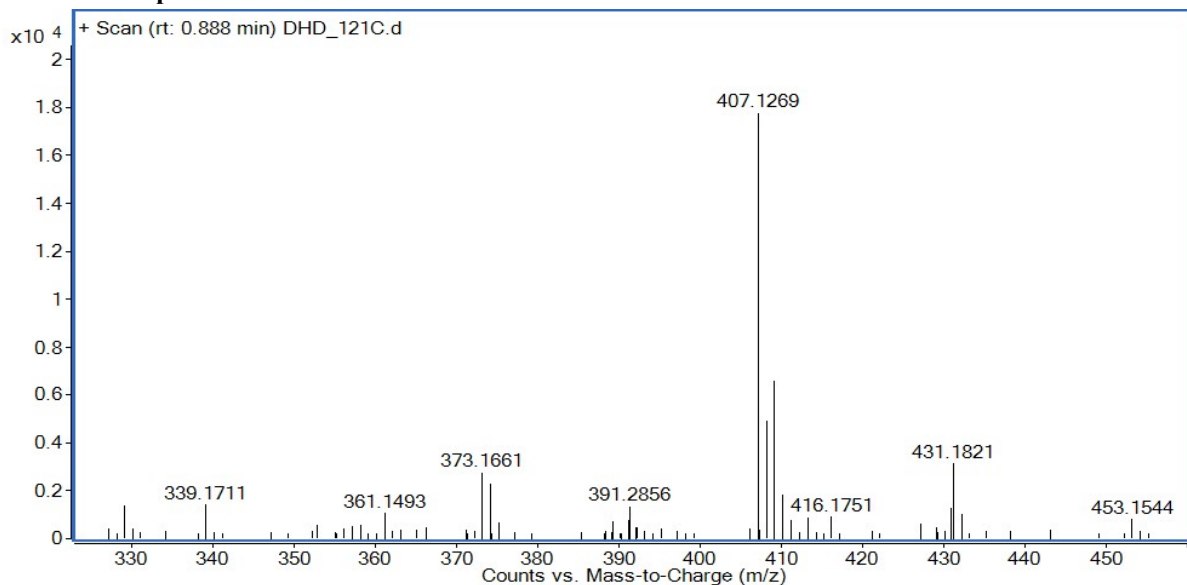
HRMS of compound 22a



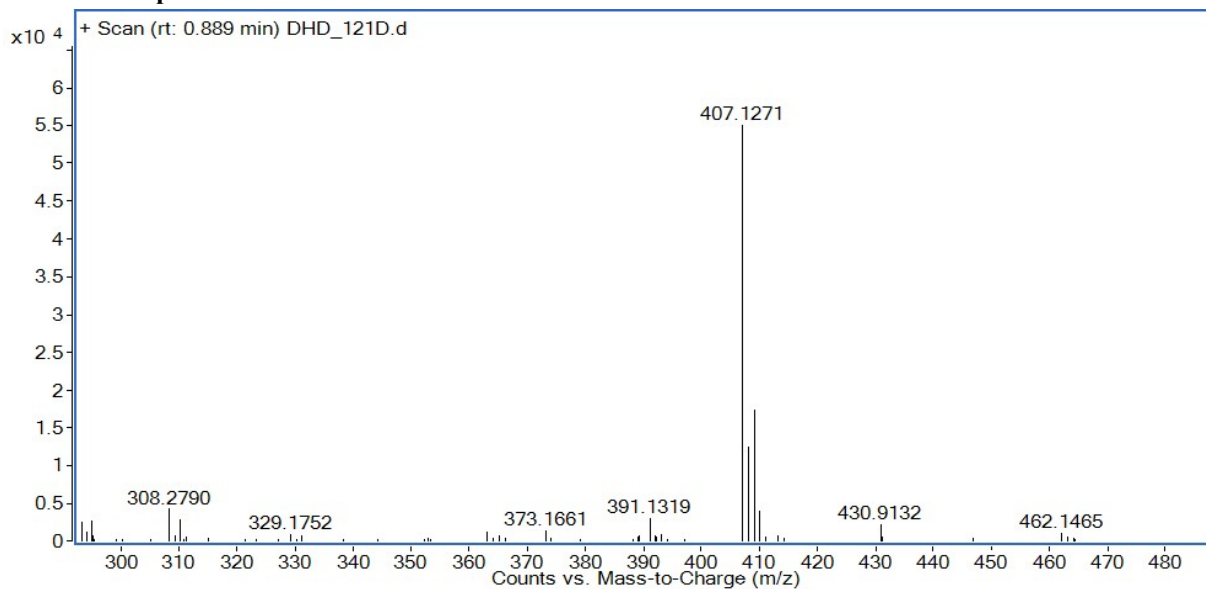
HRMS of compound 22b



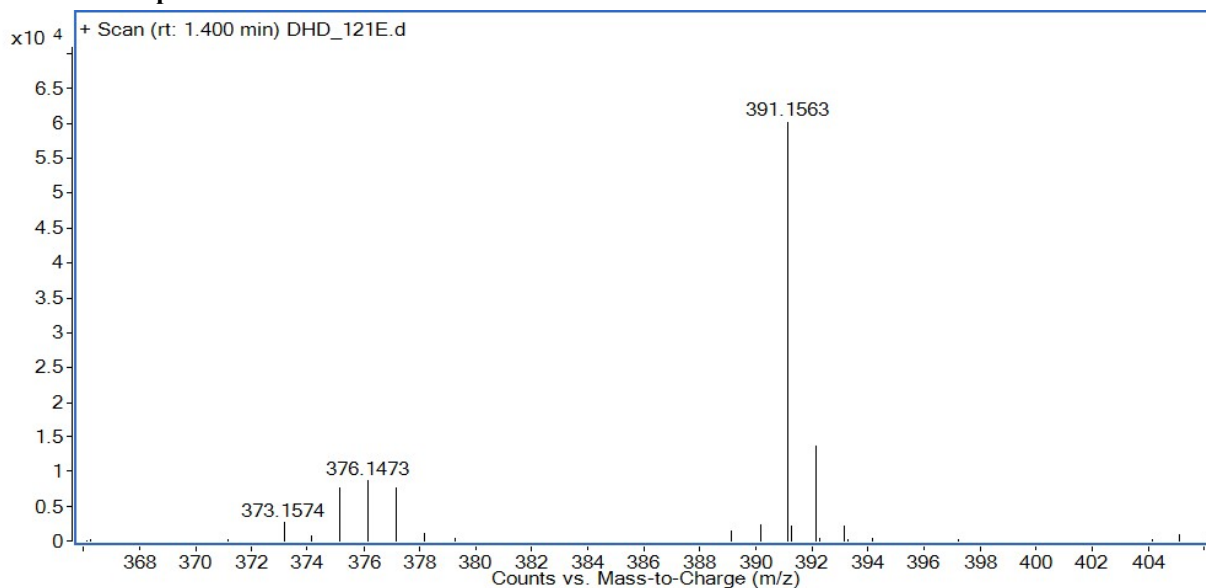
HRMS of compound 22c



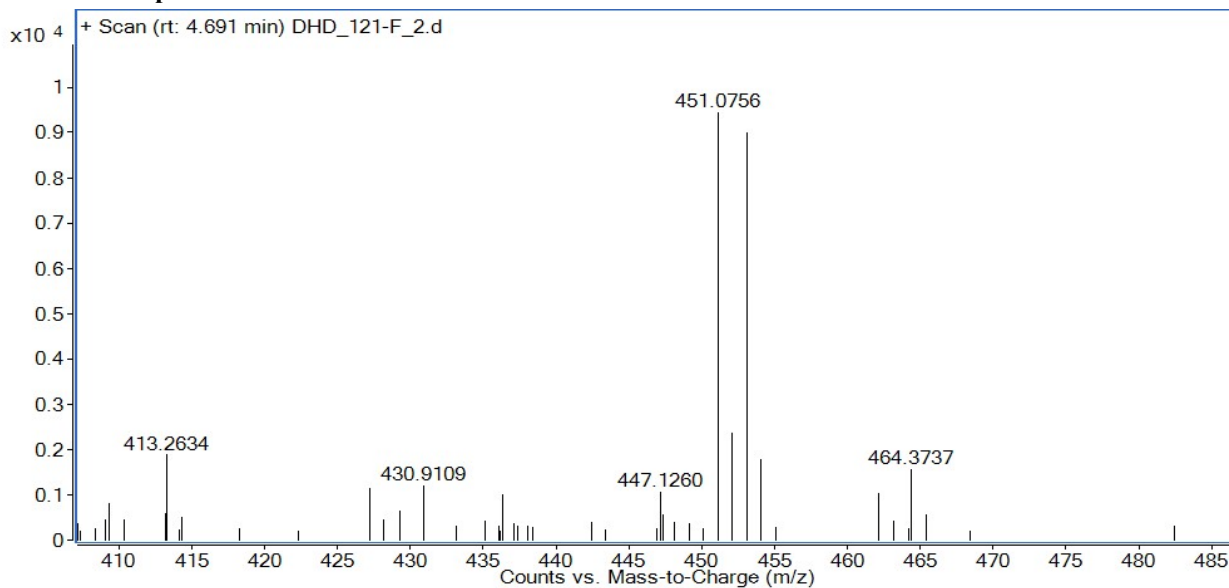
HRMS of compound 22d



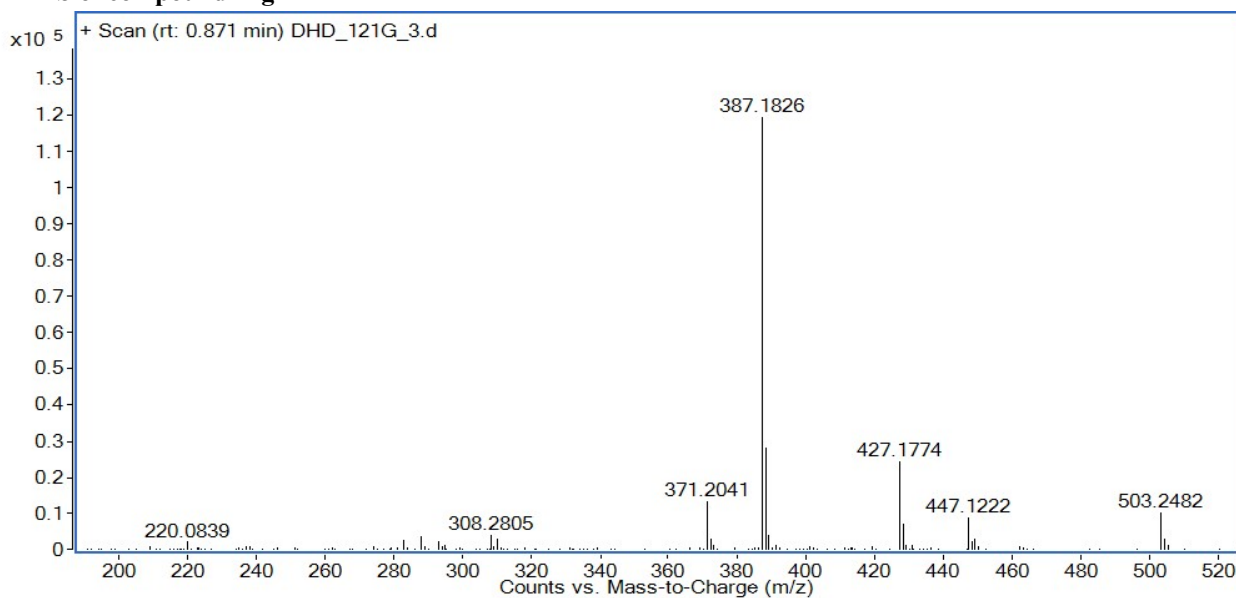
HRMS of compound 22e



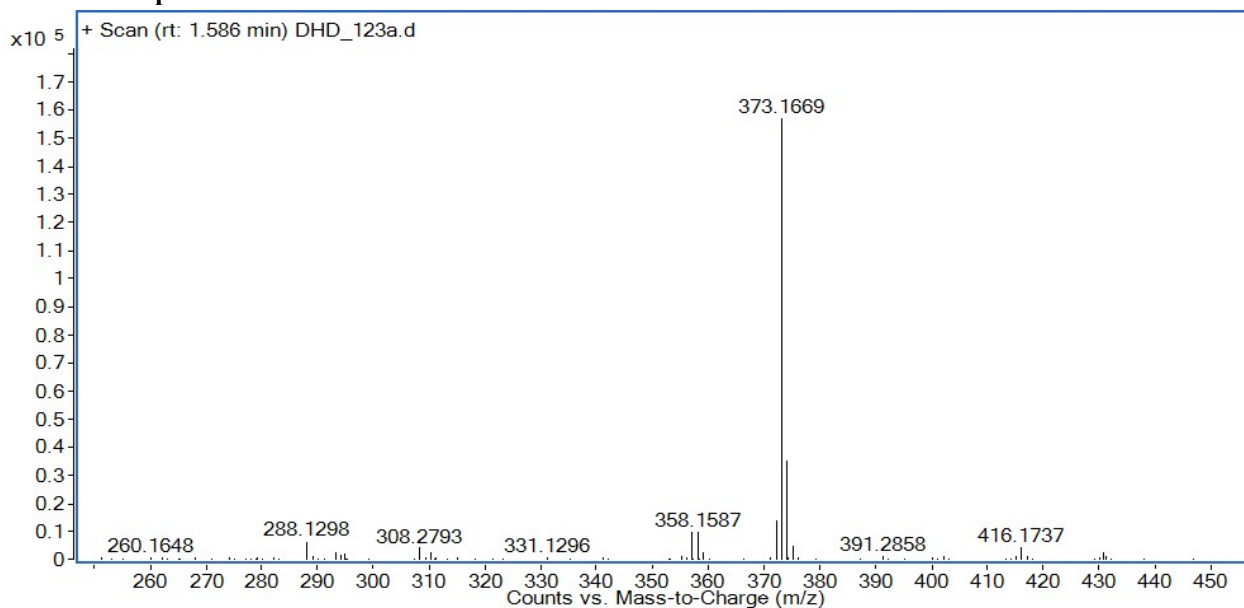
HRMS of compound 22f



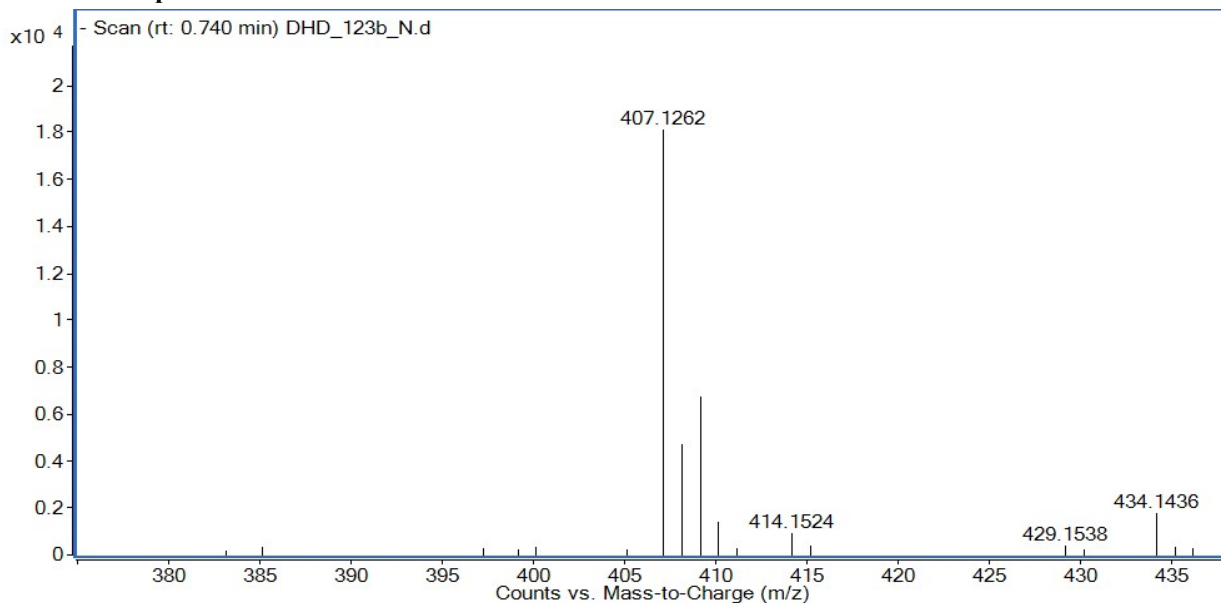
HRMS of compound 22g



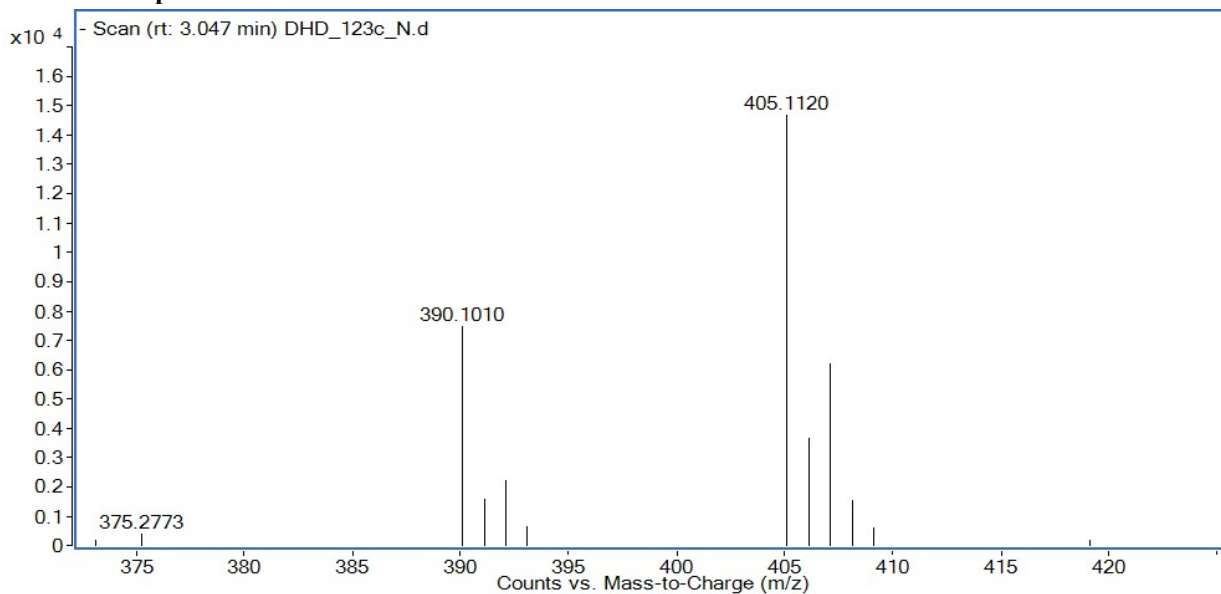
HRMS of compound 25a



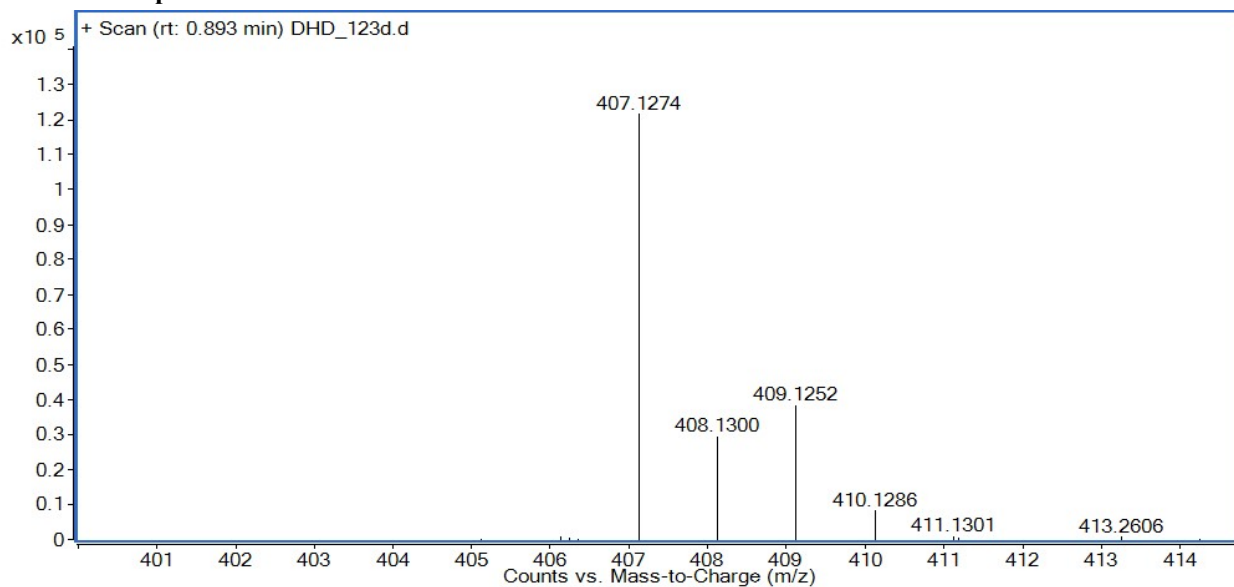
HRMS of compound 25b



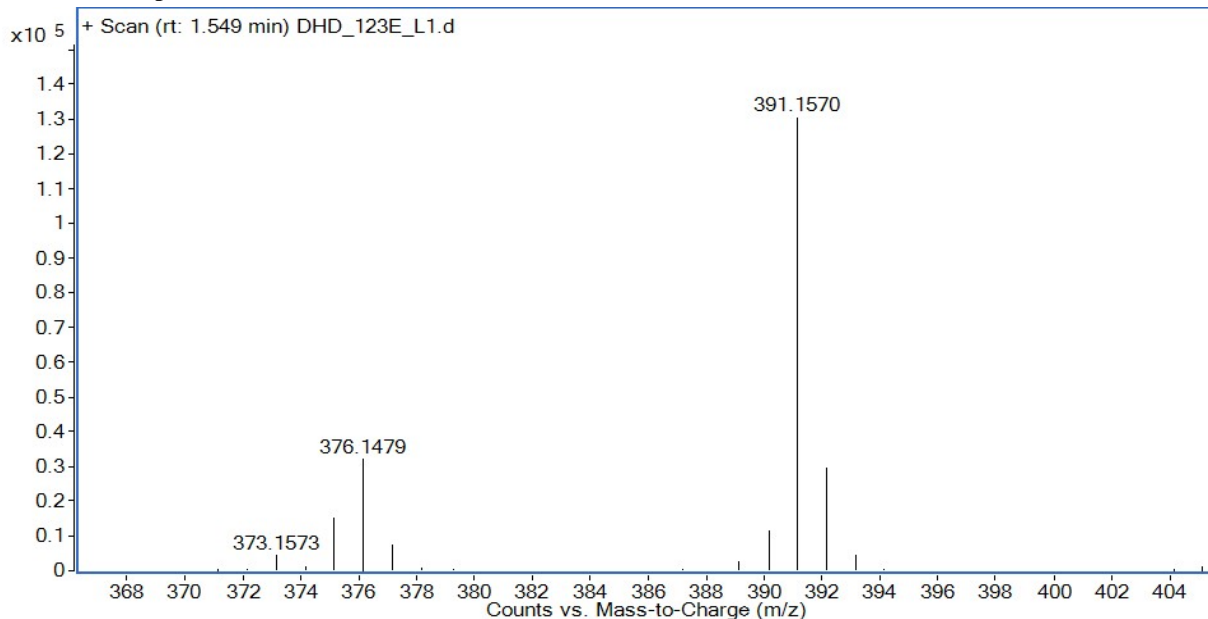
HRMS of compound 25c



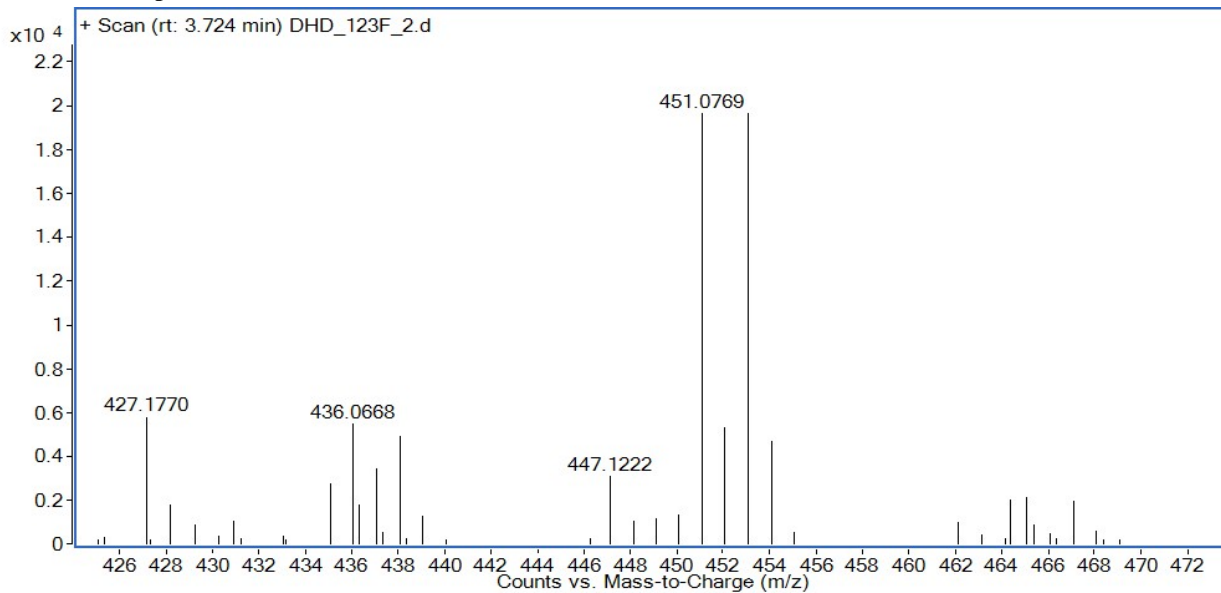
HRMS of compound 25d



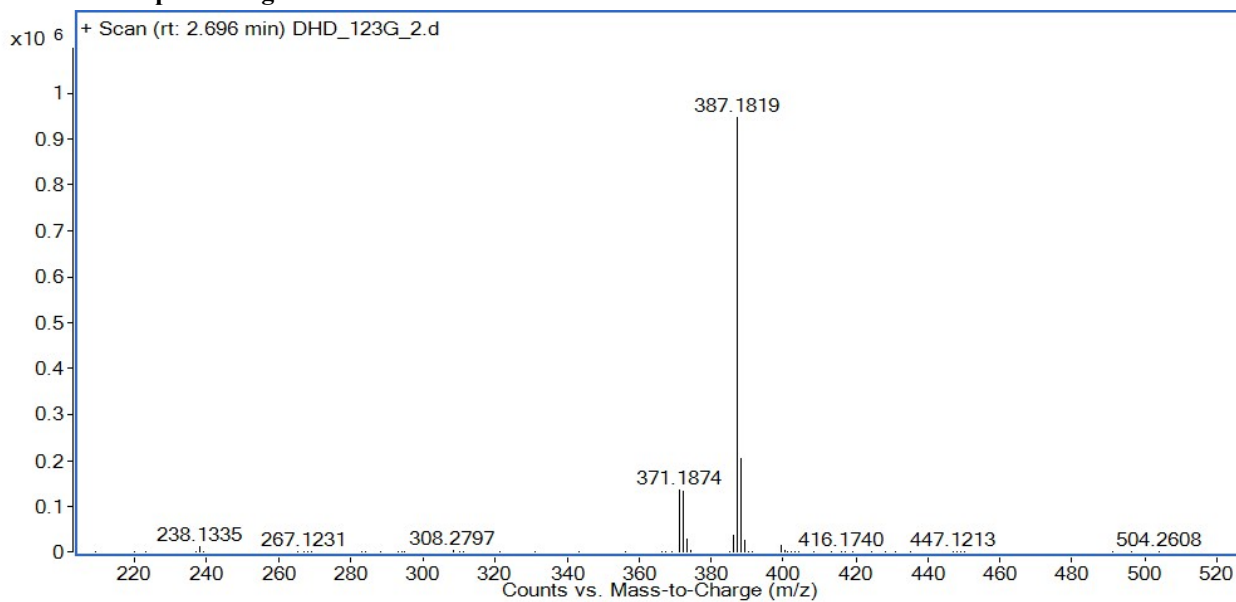
HRMS of compound 25e



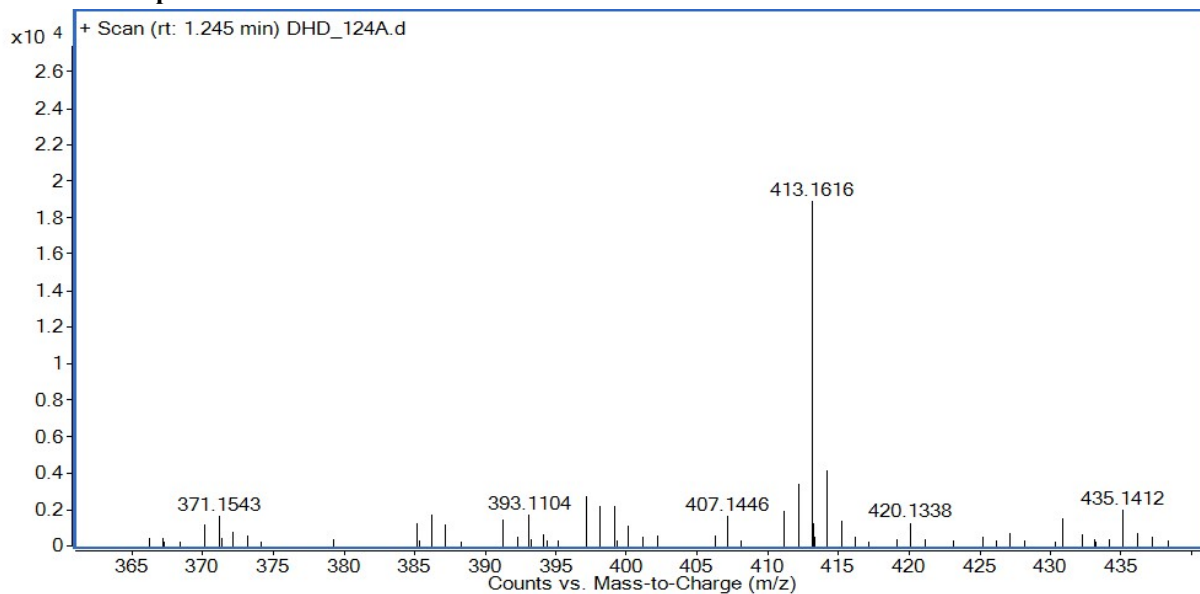
HRMS of compound 25f



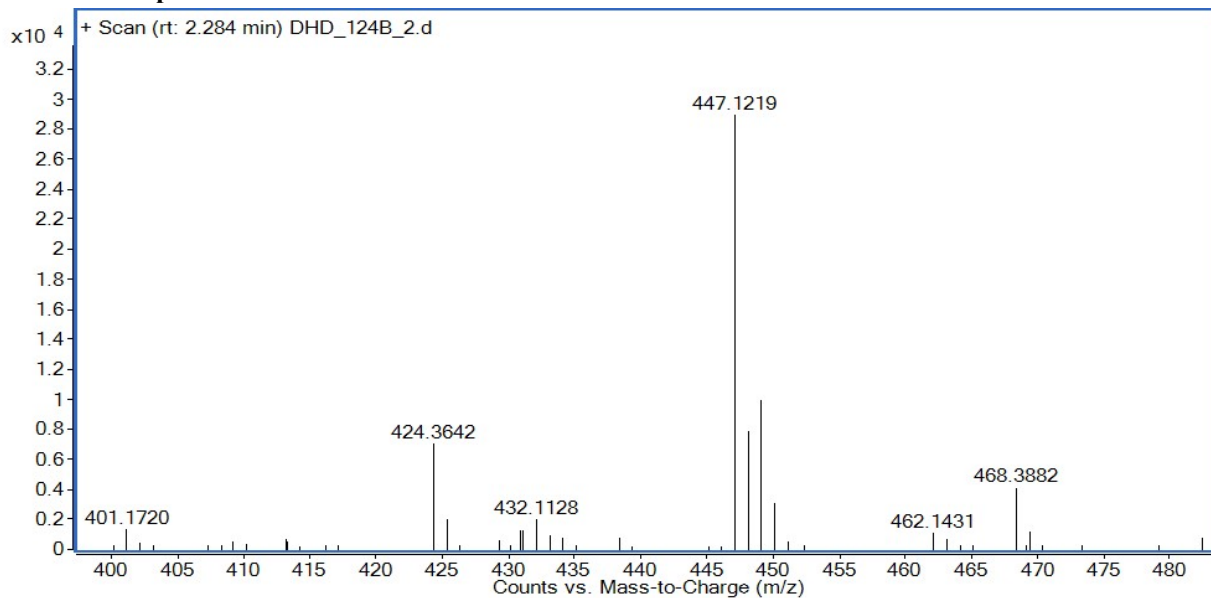
HRMS of compound 25g



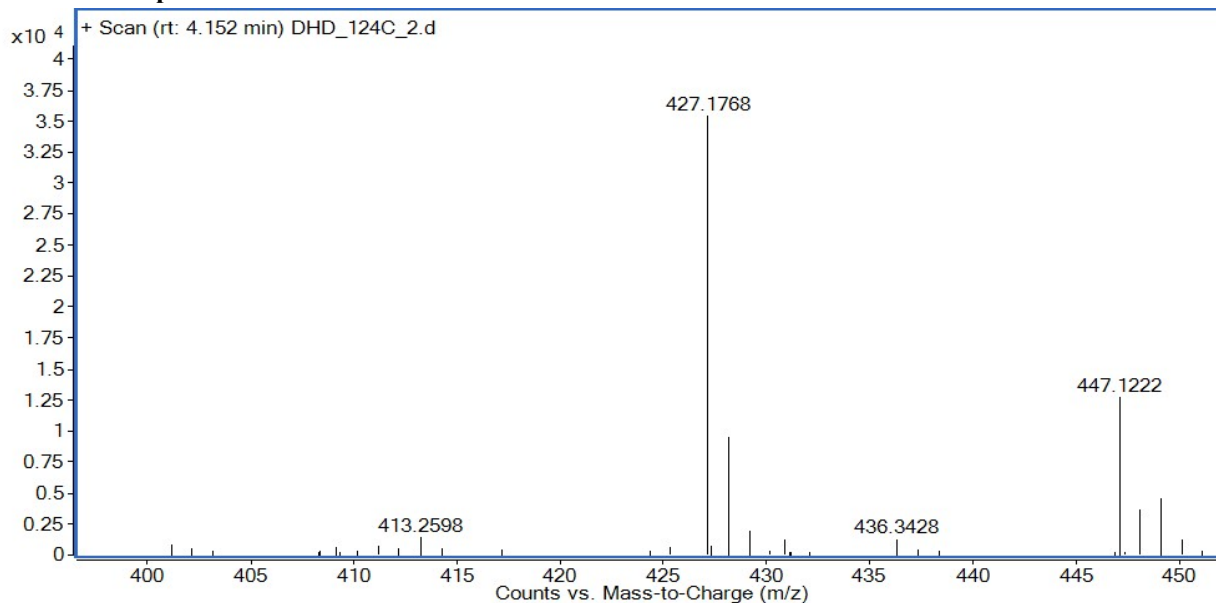
HRMS of compound 27a



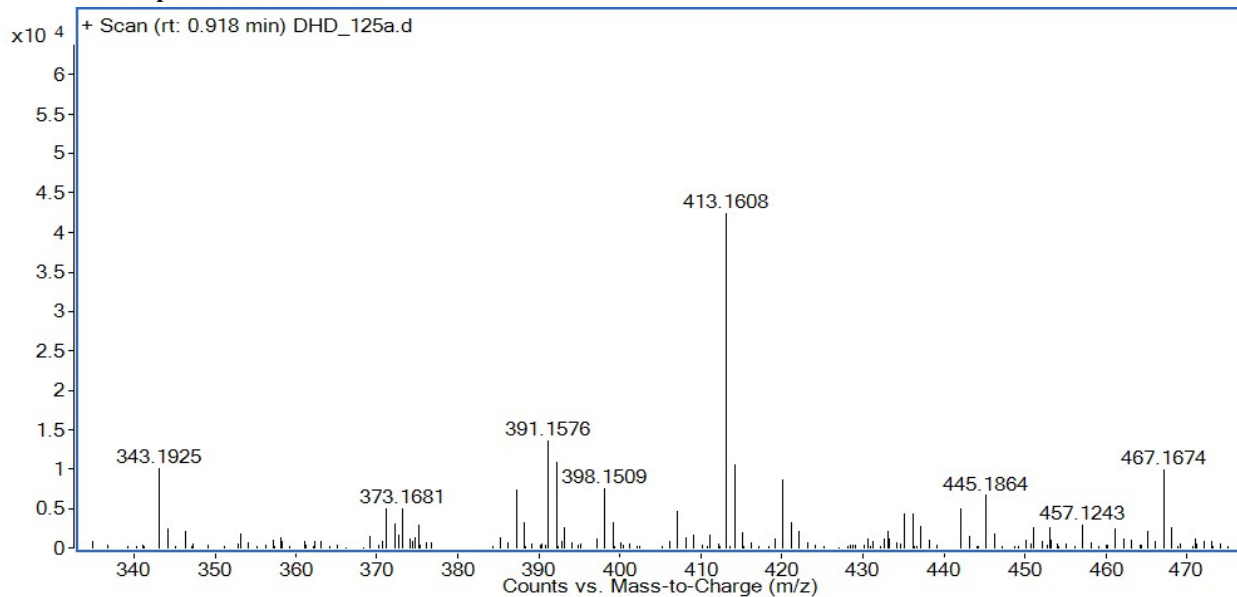
HRMS of compound 27b



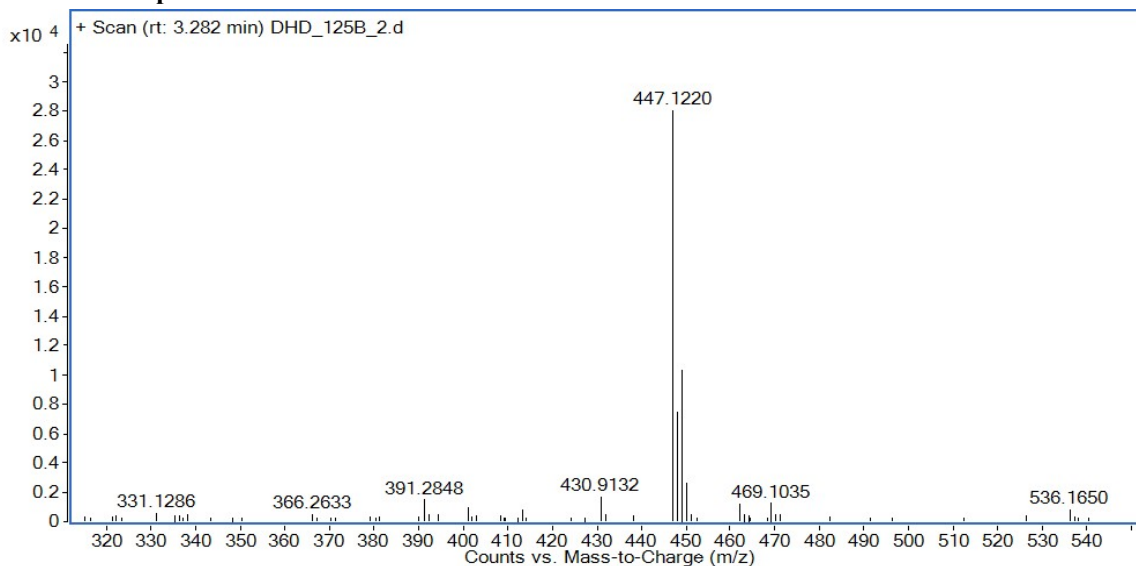
HRMS of compound 27c



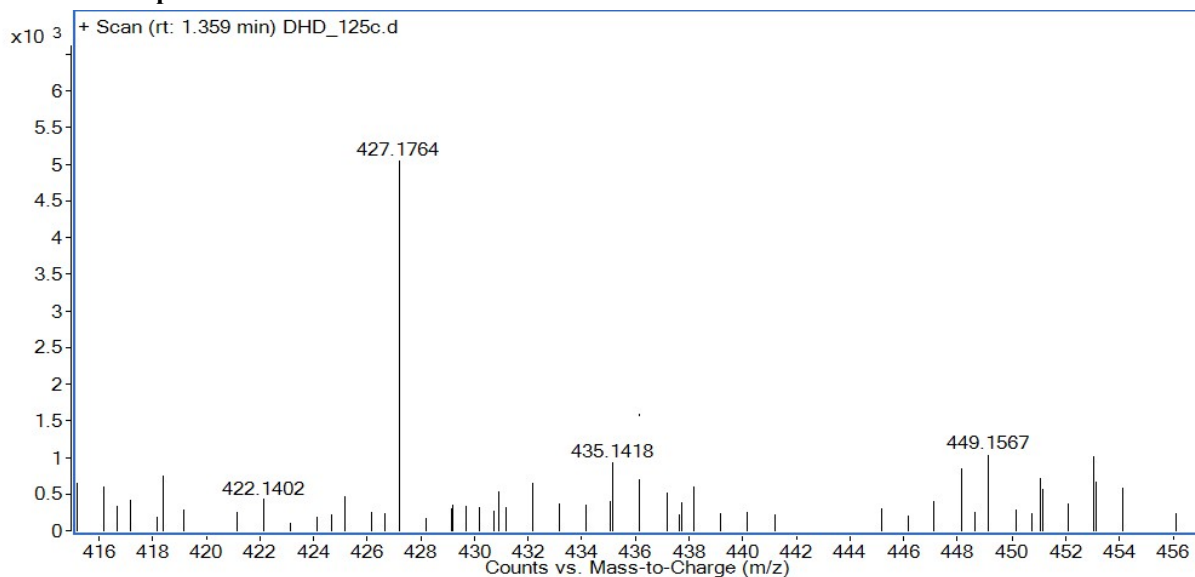
HRMS of compound 29a



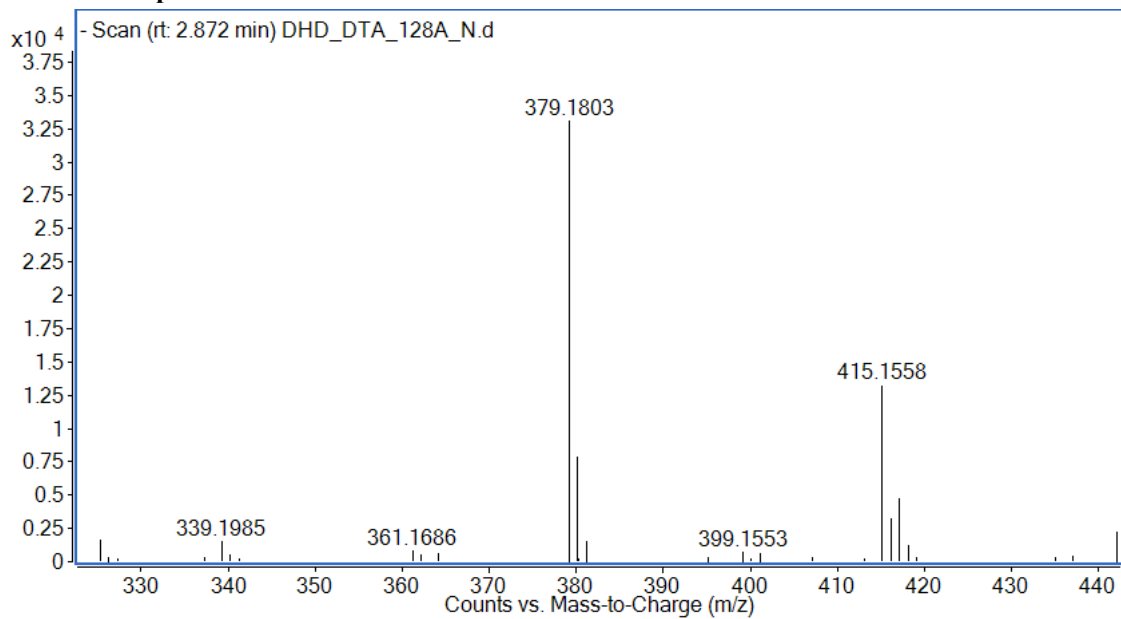
HRMS of compound 29b



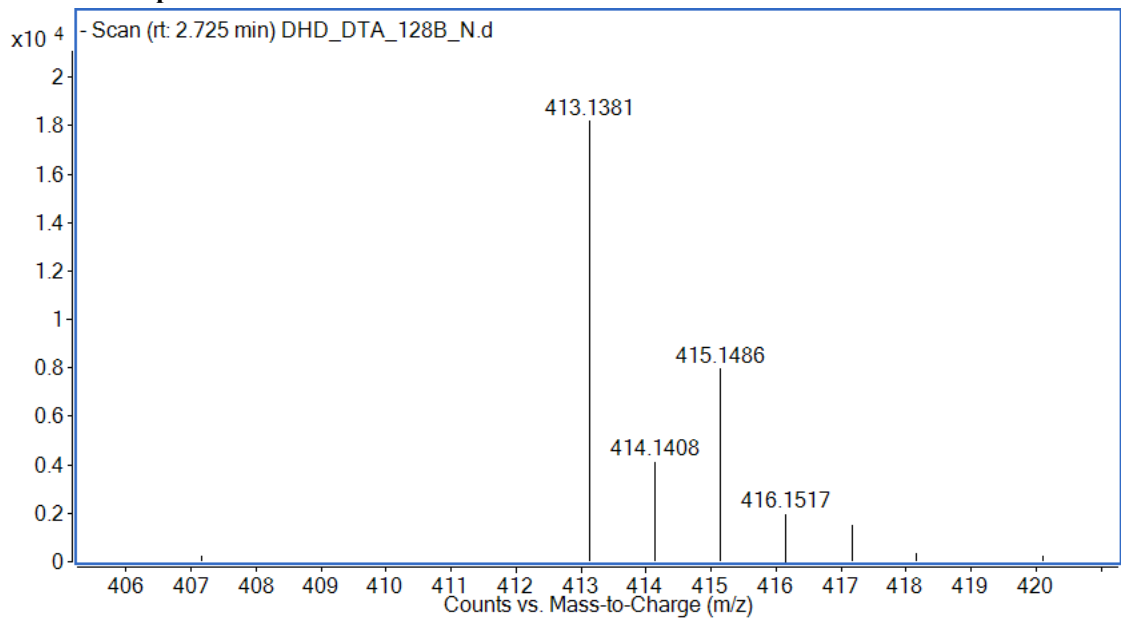
HRMS of compound 29c



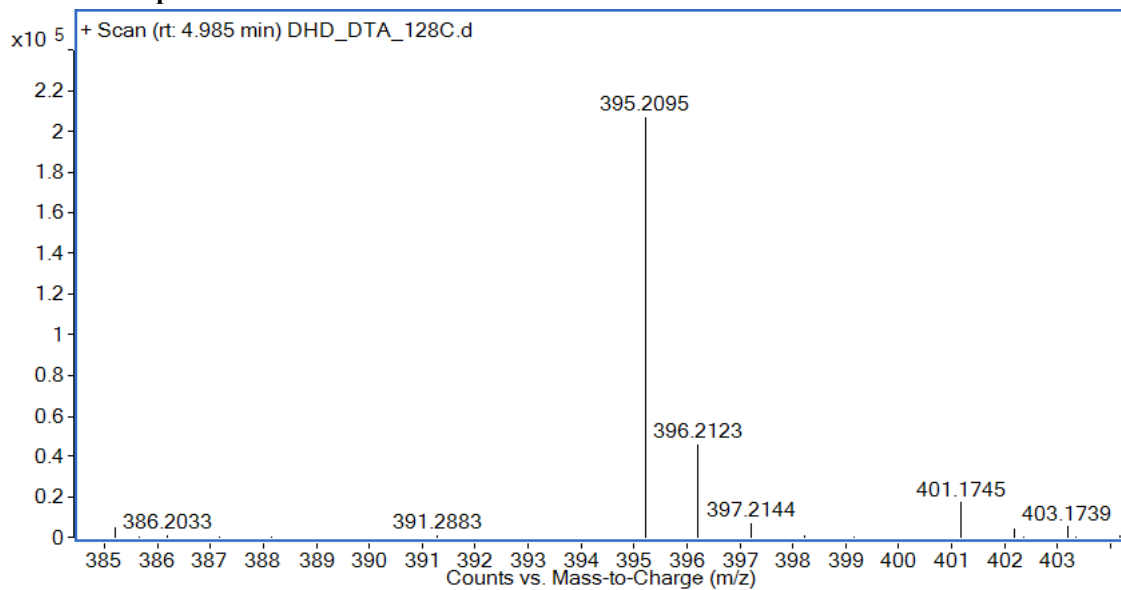
HRMS of compound 31a



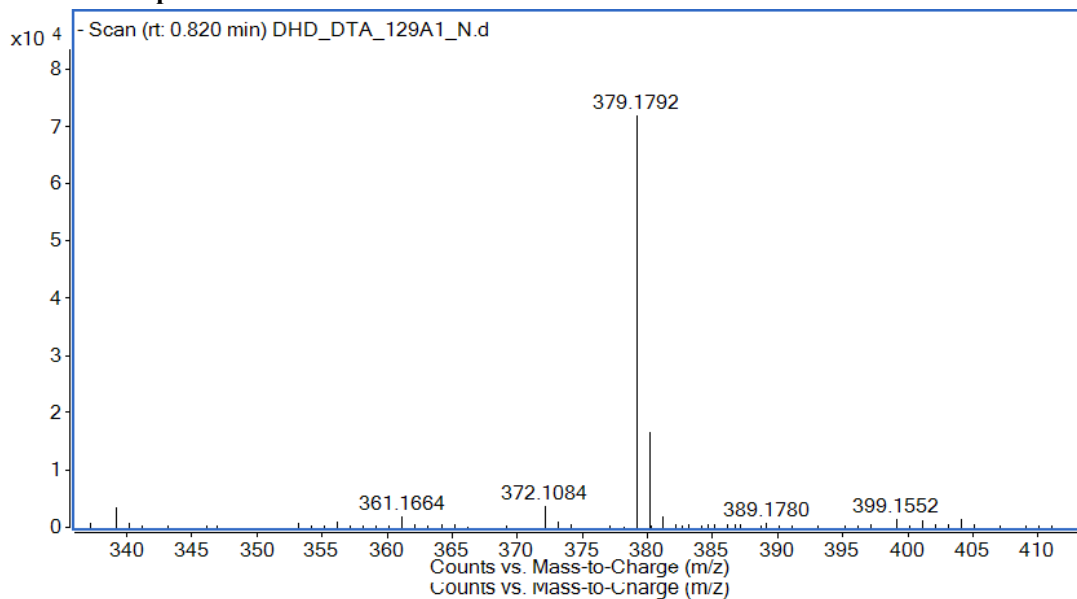
HRMS of compound 31b



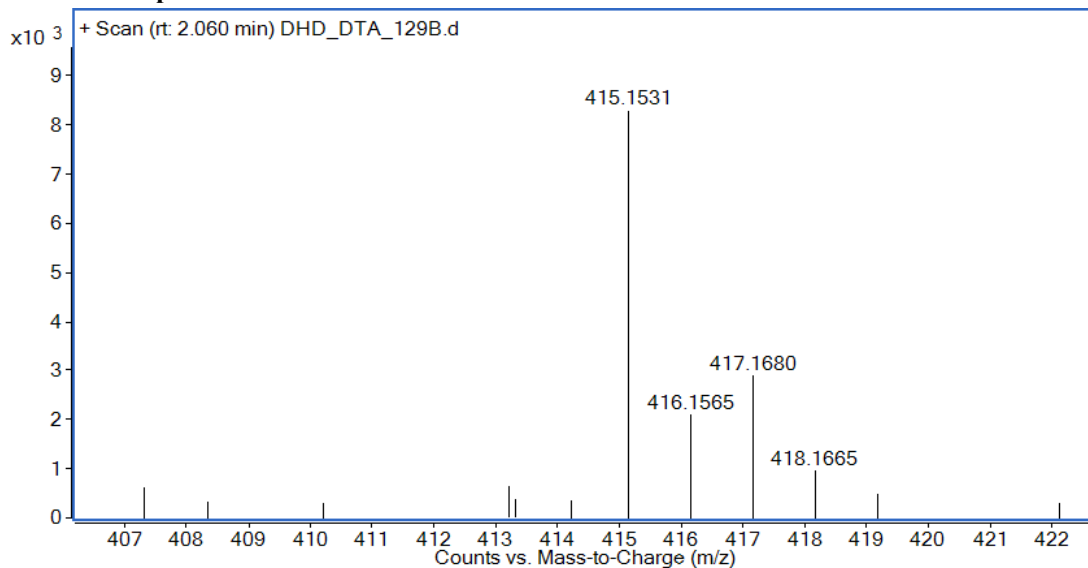
HRMS of compound 31c



HRMS of compound 33a



HRMS of compound 33b



HRMS of compound 33c

