

Discovery of novel EGFR inhibitor targeting wild-type and mutant forms of EGFR: *in silico* and *in vitro* study

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General Information

¹H NMR Spectra of compounds **PD1-PD14**

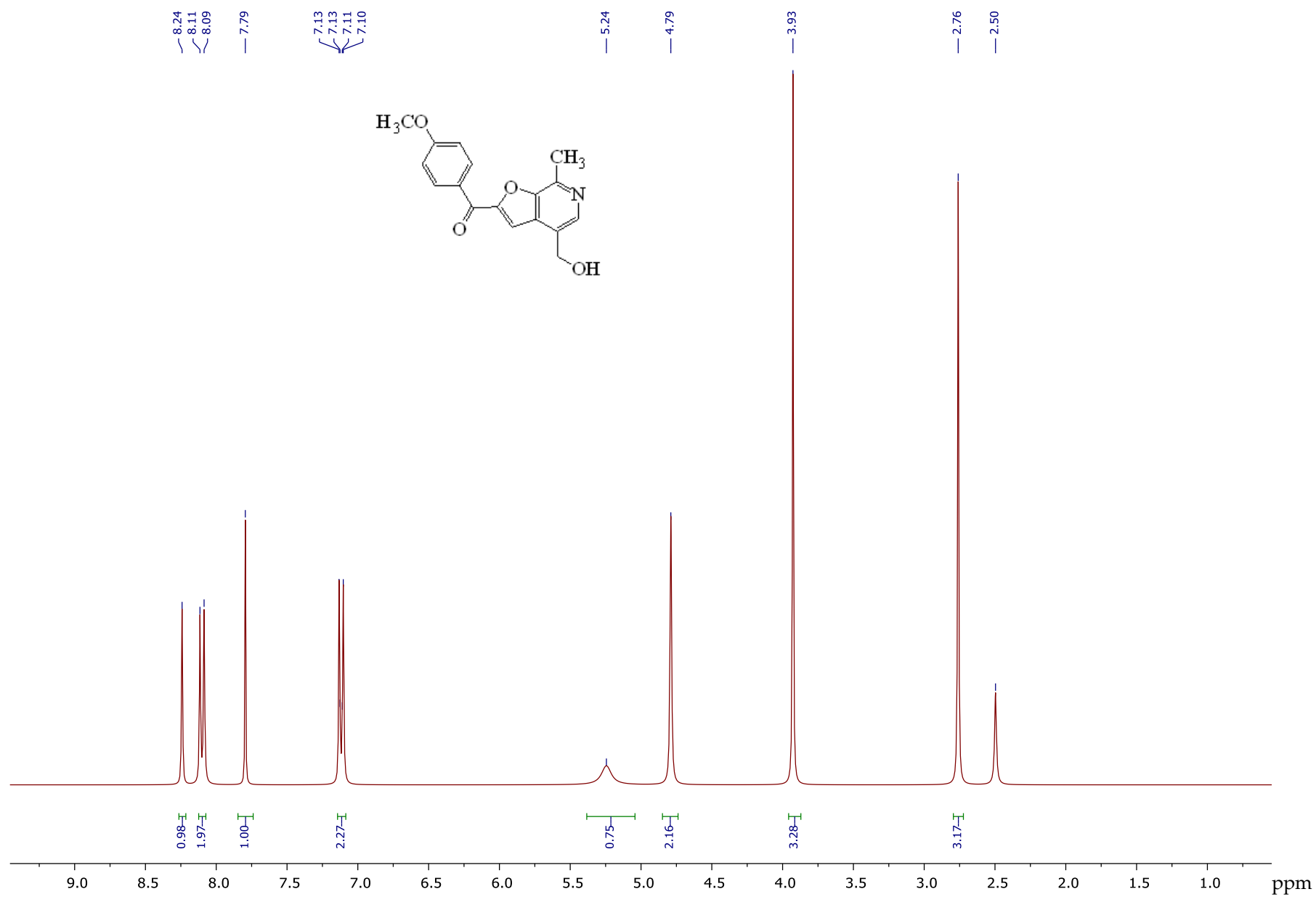
¹³C NMR Spectra of compounds **PD1-PD14**

General Information

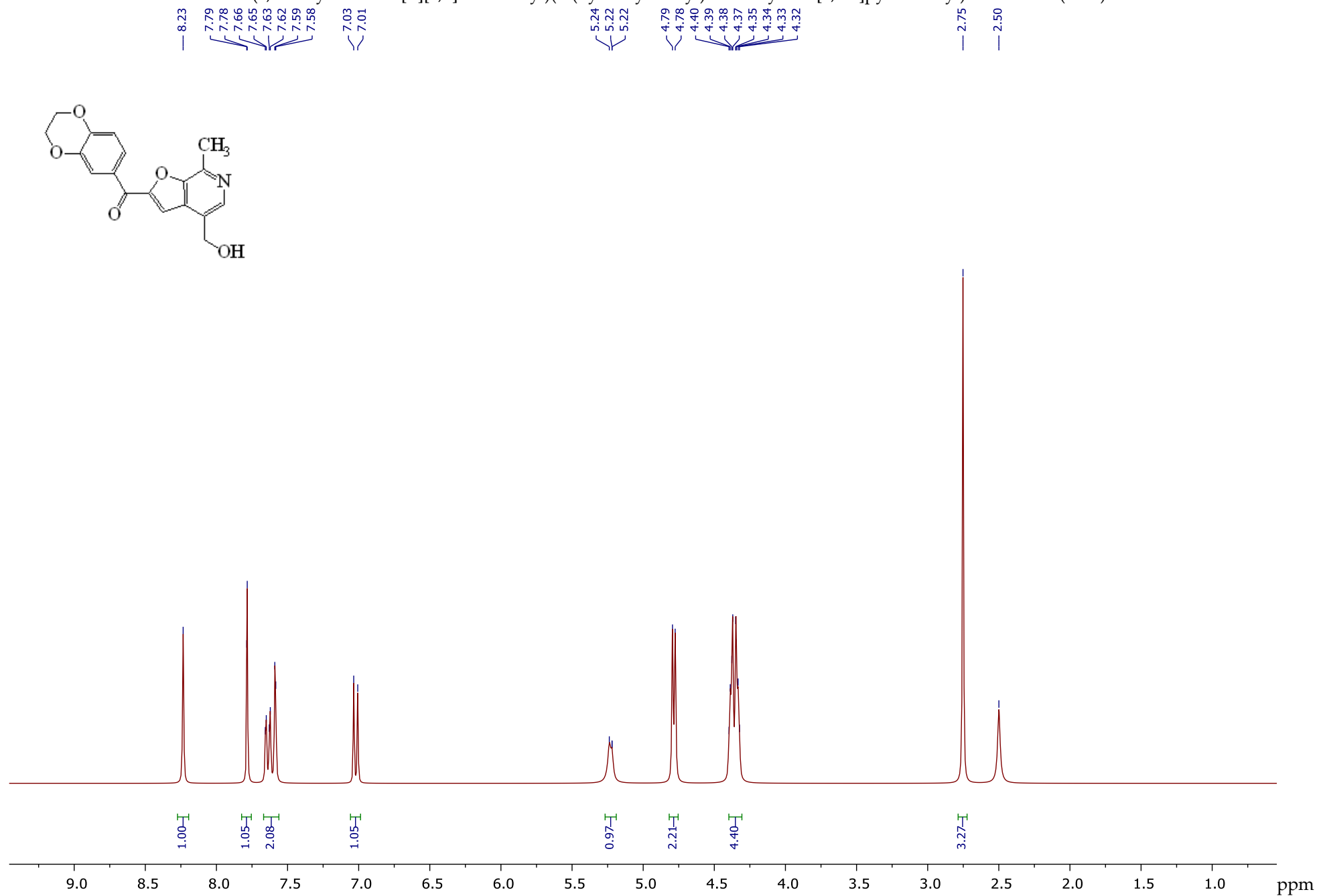
NMR ¹H of new compounds were recorded on a spectrometer Bruker AC 300 (300 MHz) in DMSO-*d*₆. Chemical shifts of nuclei ¹H and ¹³C were measured relatively the residual signals of deuterated solvent (δ =2.50 ppm for protons and 39.5 ppm for carbon nuclei). Coupling constants (*J*) are reported in Hz.

¹H NMR Spectra of compounds PD1-PD14.

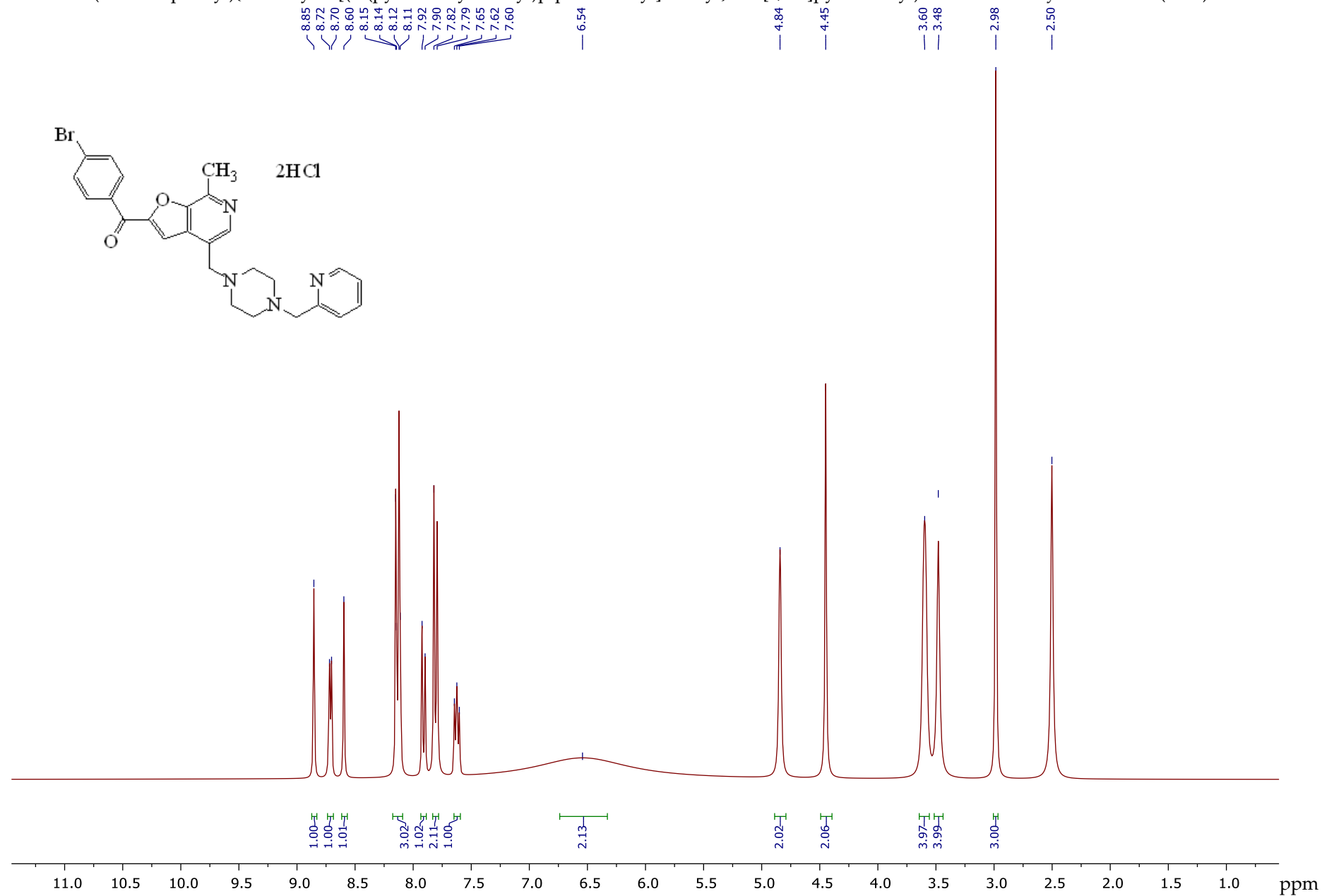
[4-(Hydroxymethyl)-7-methylfuro[2,3-c]pyridin-2-yl](4-methoxyphenyl)methanone (PD1).



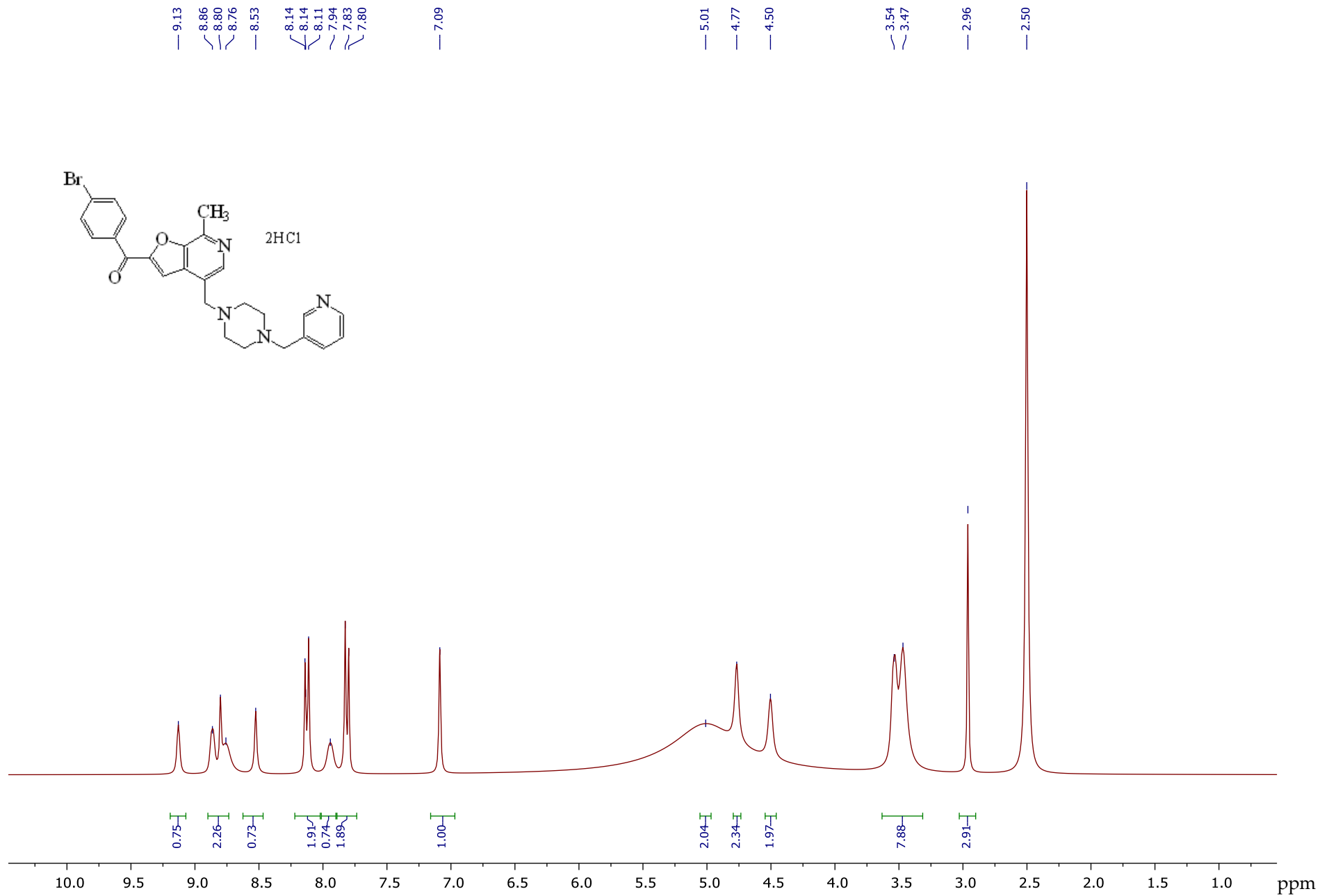
(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(4-(hydroxymethyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD2)



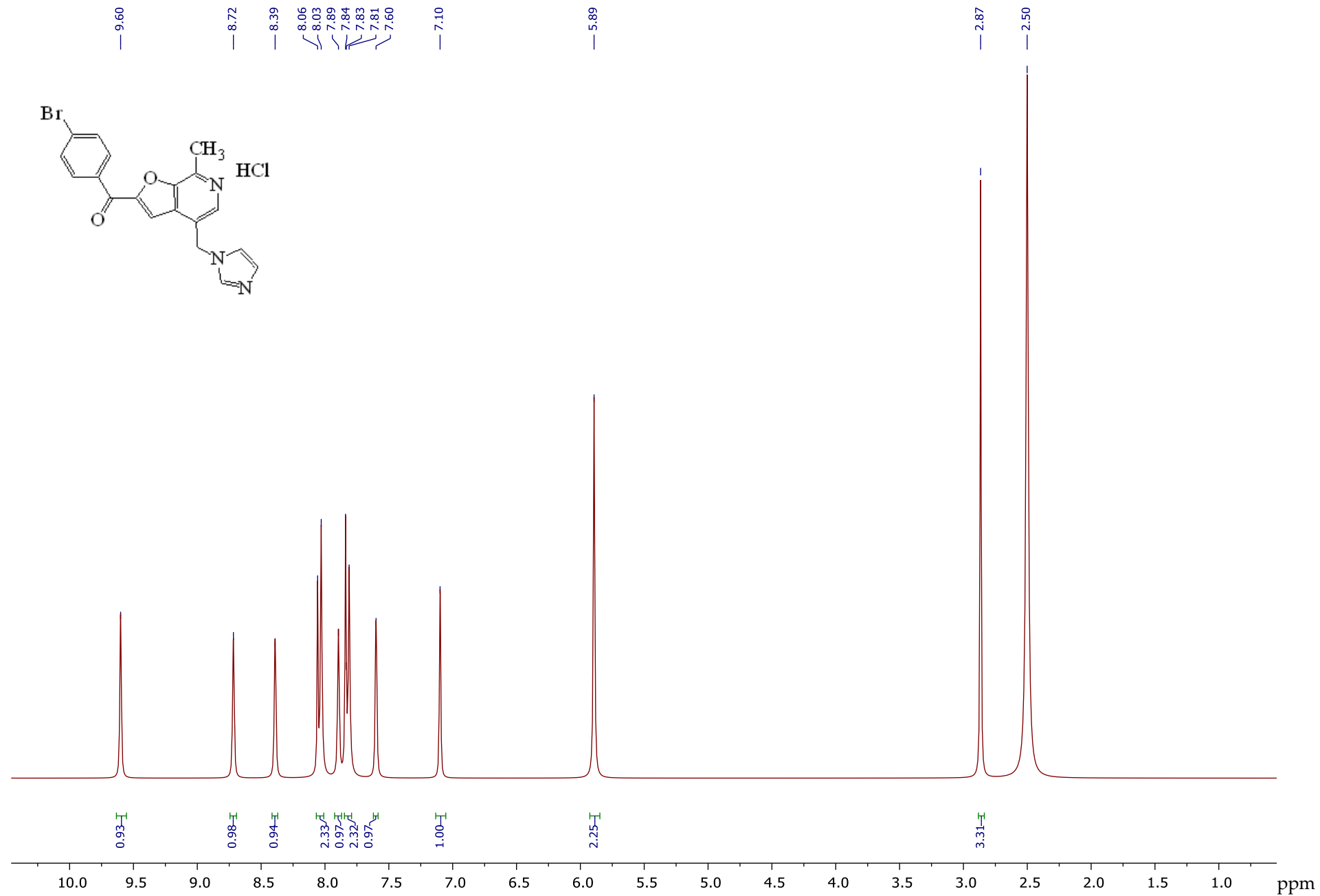
(4-Bromophenyl){7-methyl-4-[(4-(pyridin-2-ylmethyl)piperazin-1-yl)methyl]furo[2,3-c]pyridin-2-yl)methanone dihydrochloride (**PD3**).



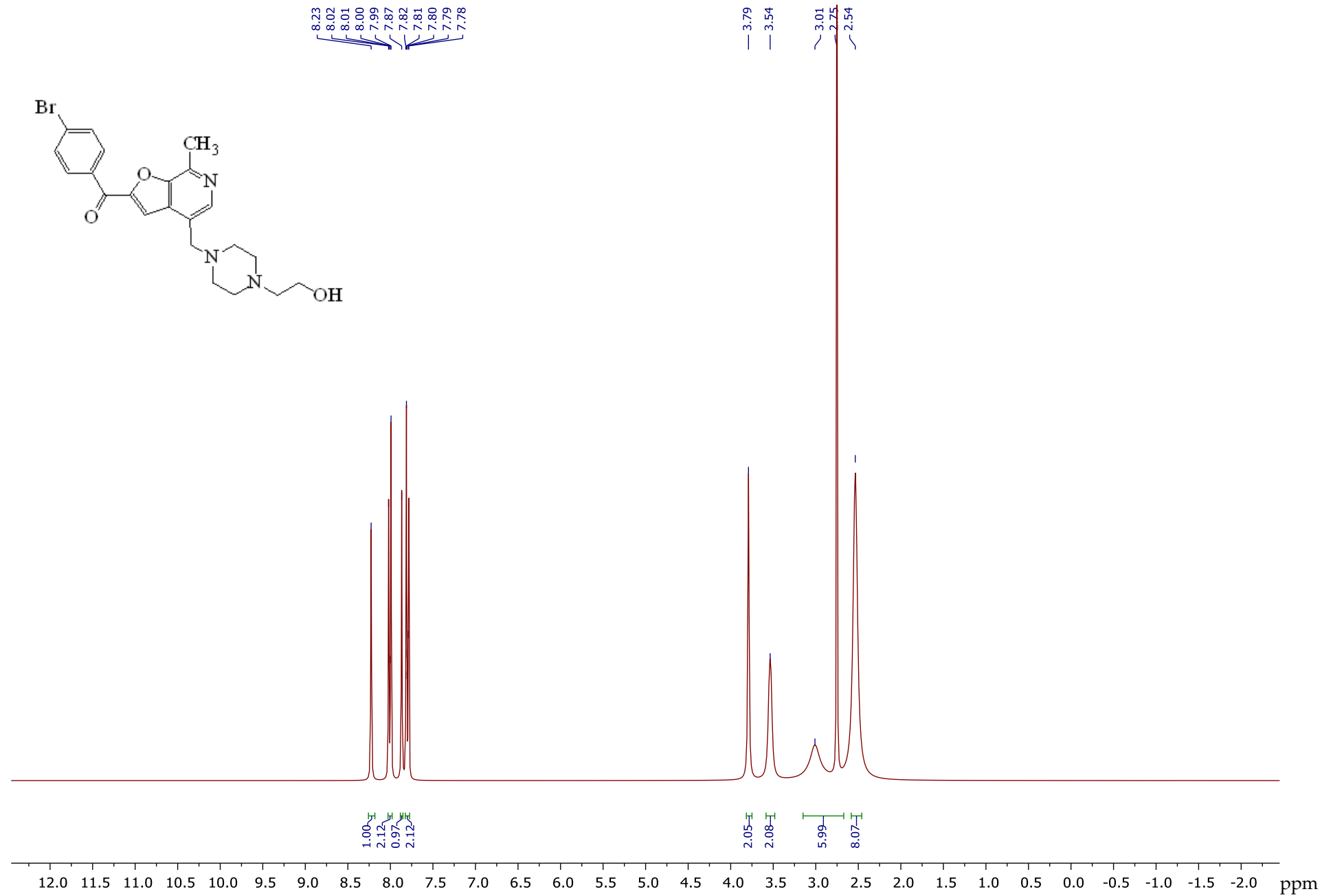
(4-Bromophenyl)(7-methyl-4-((4-(pyridin-3-ylmethyl)piperazin-1-yl)methyl)furo[2,3-c]pyridin-2-yl)methanone (PD4).



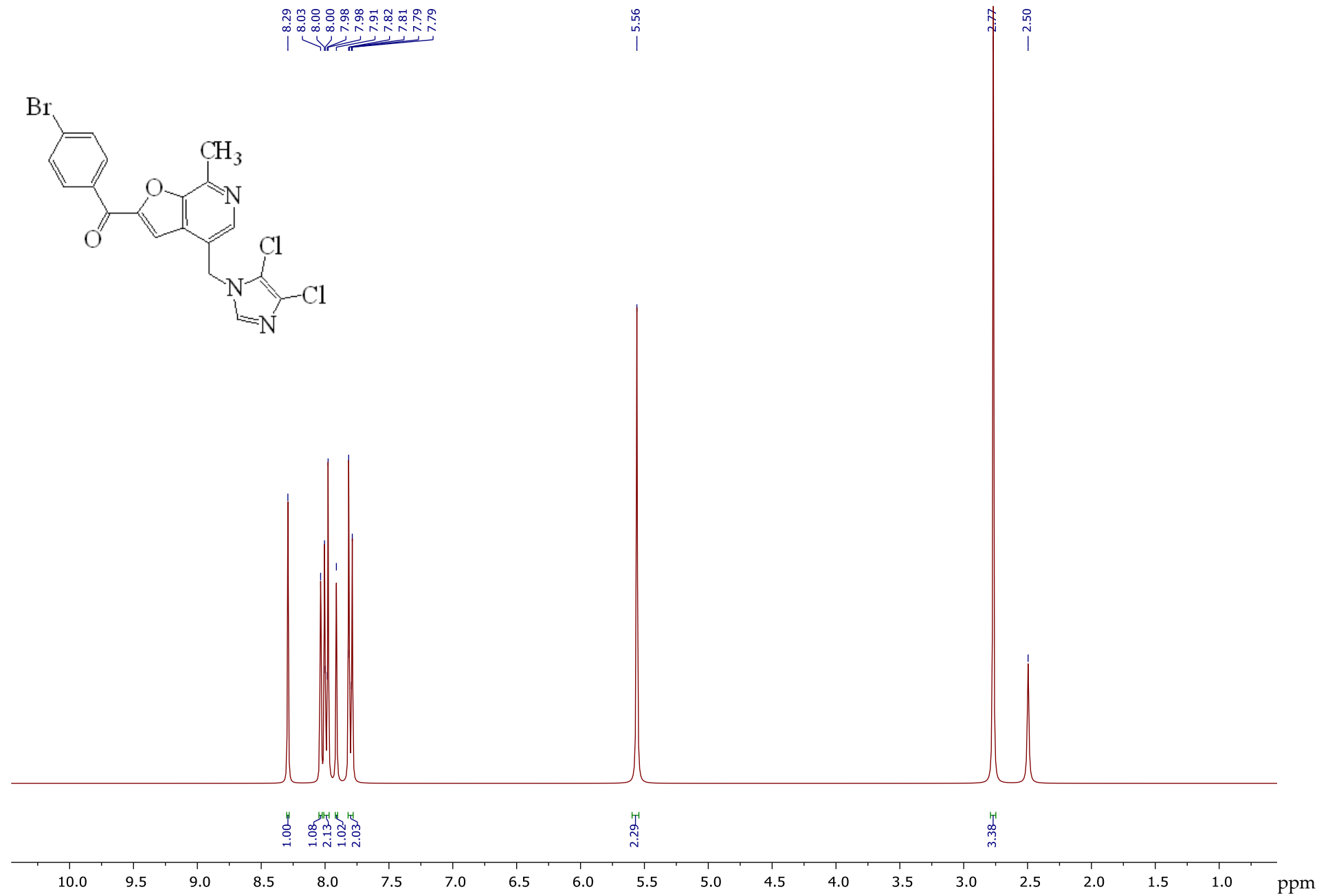
(4-((1H-Imidazol-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)(4-bromophenyl)methanone hydrochloride (**PD5**).



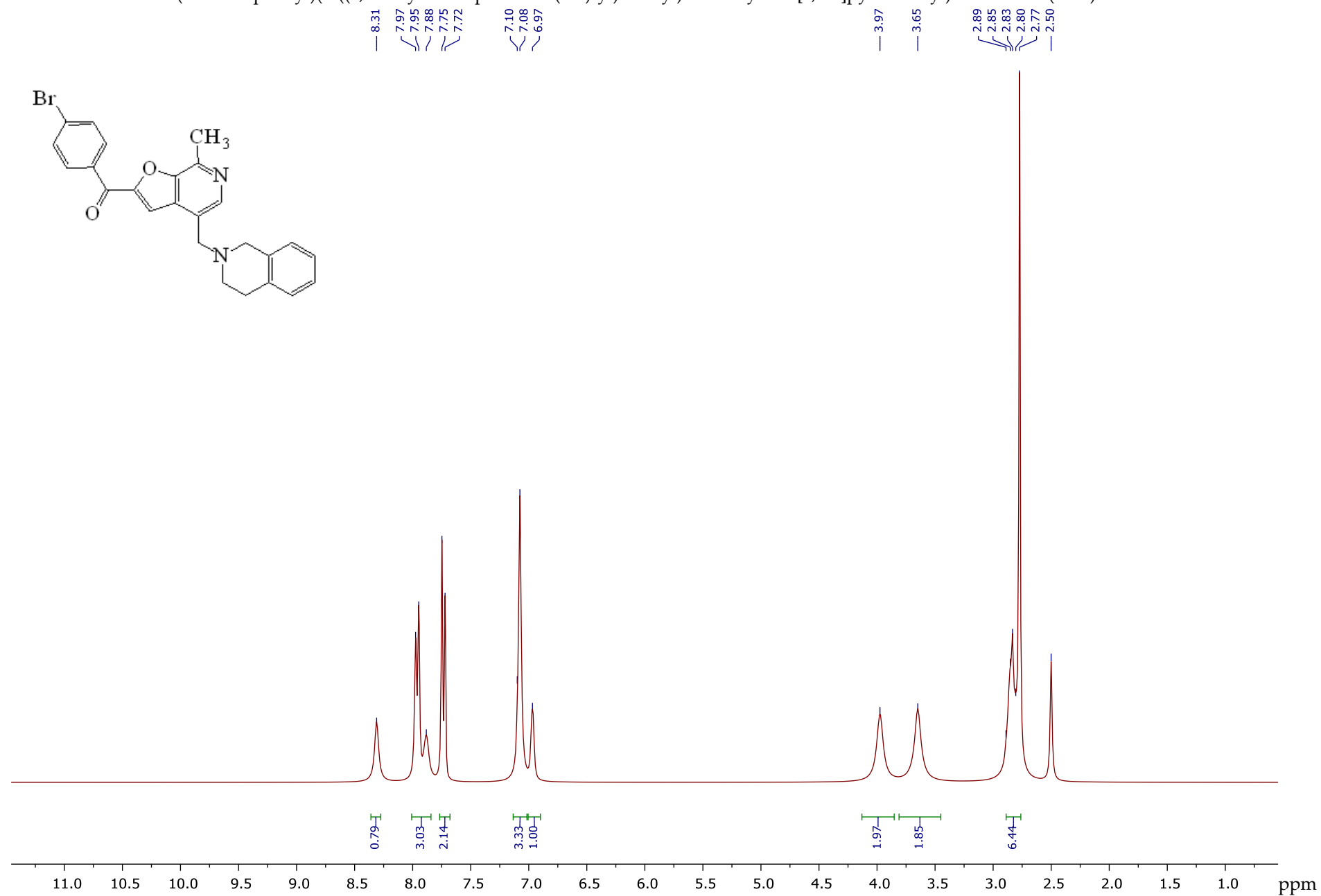
(4-Bromophenyl)(4-((4-(2-hydroxyethyl)piperazin-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD6).



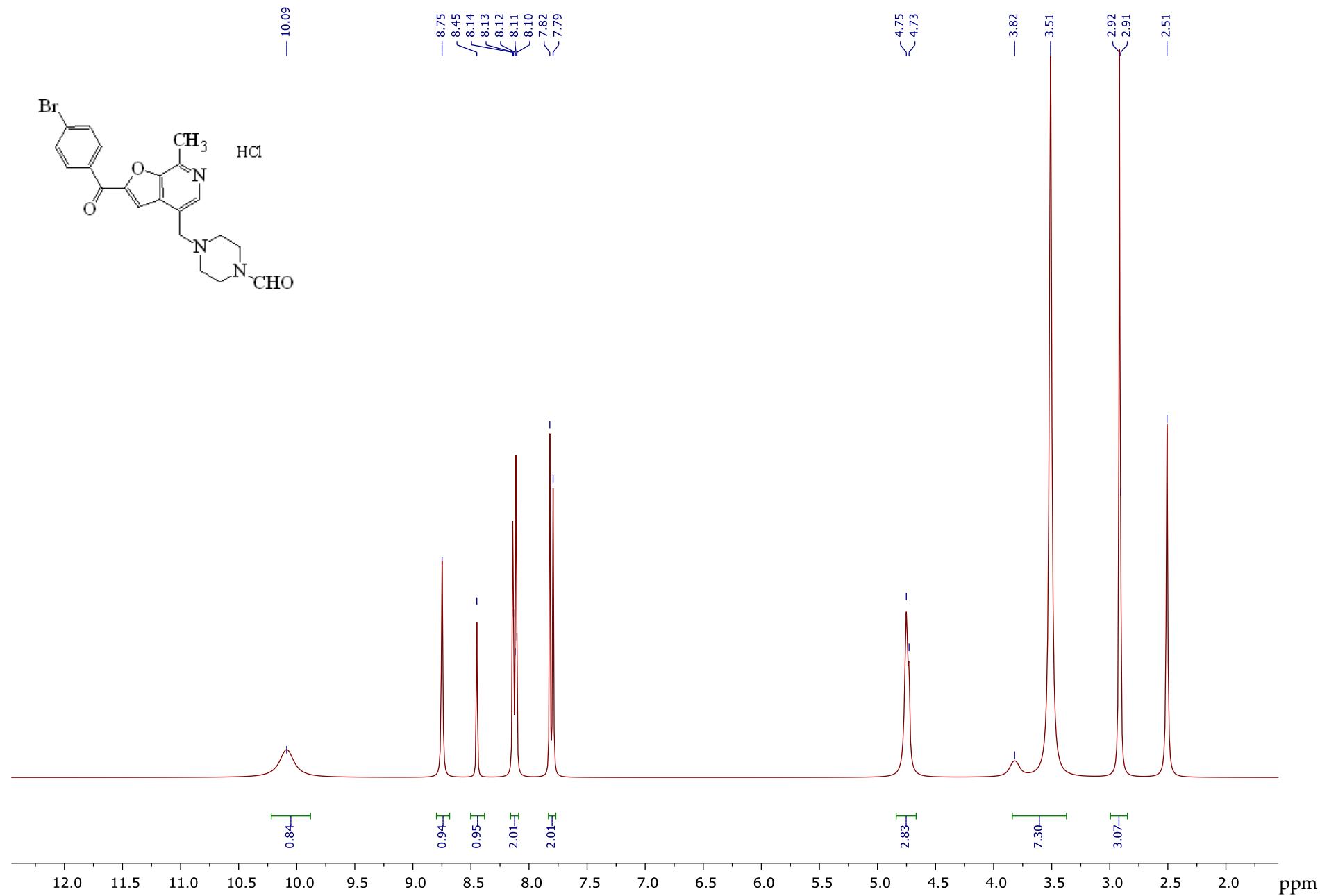
(4-Bromophenyl)(4-((4,5-dichloro-1H-imidazol-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (**PD7**).



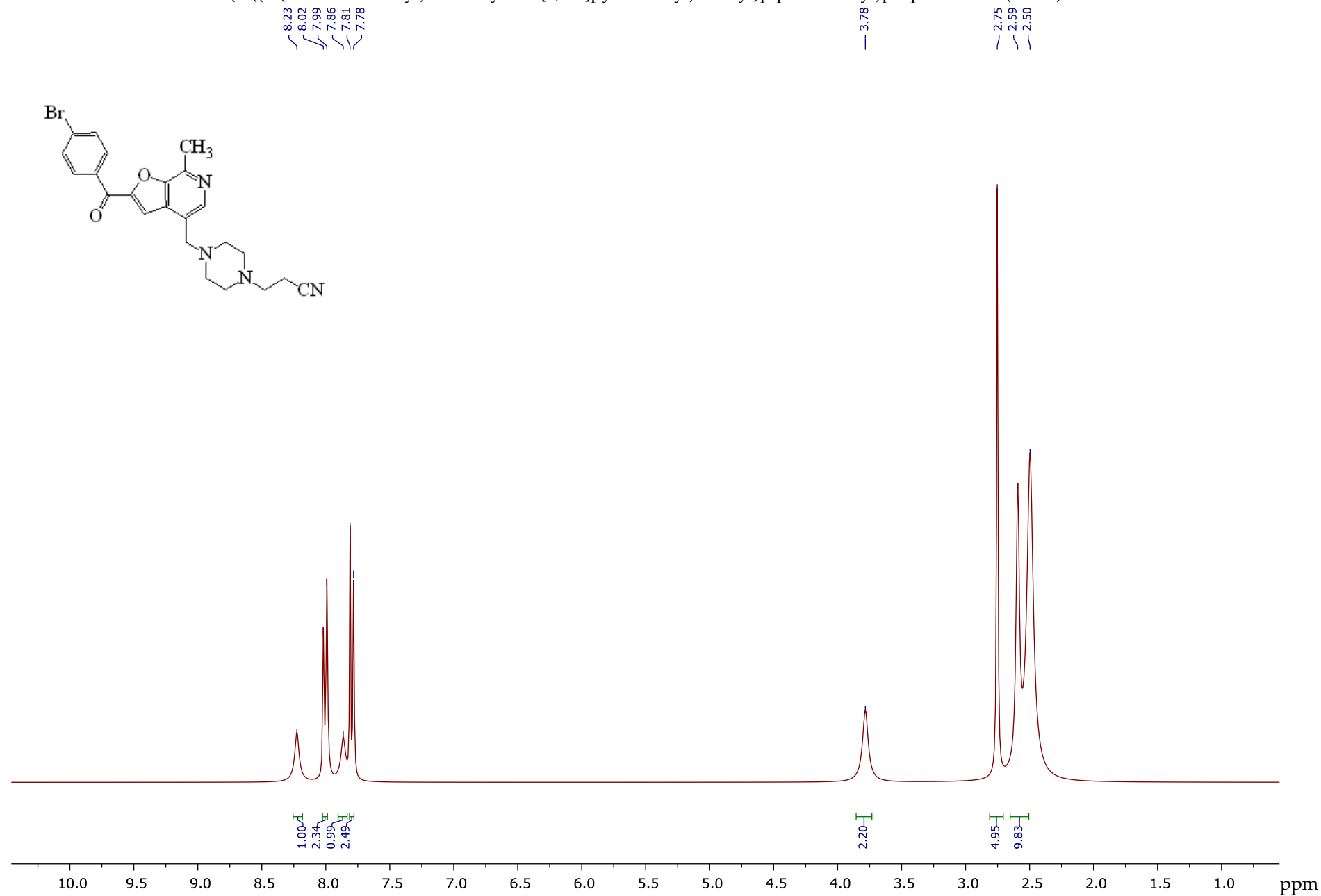
(4-Bromophenyl)(4-((3,4-dihydroisoquinolin-2(1H)-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD8).



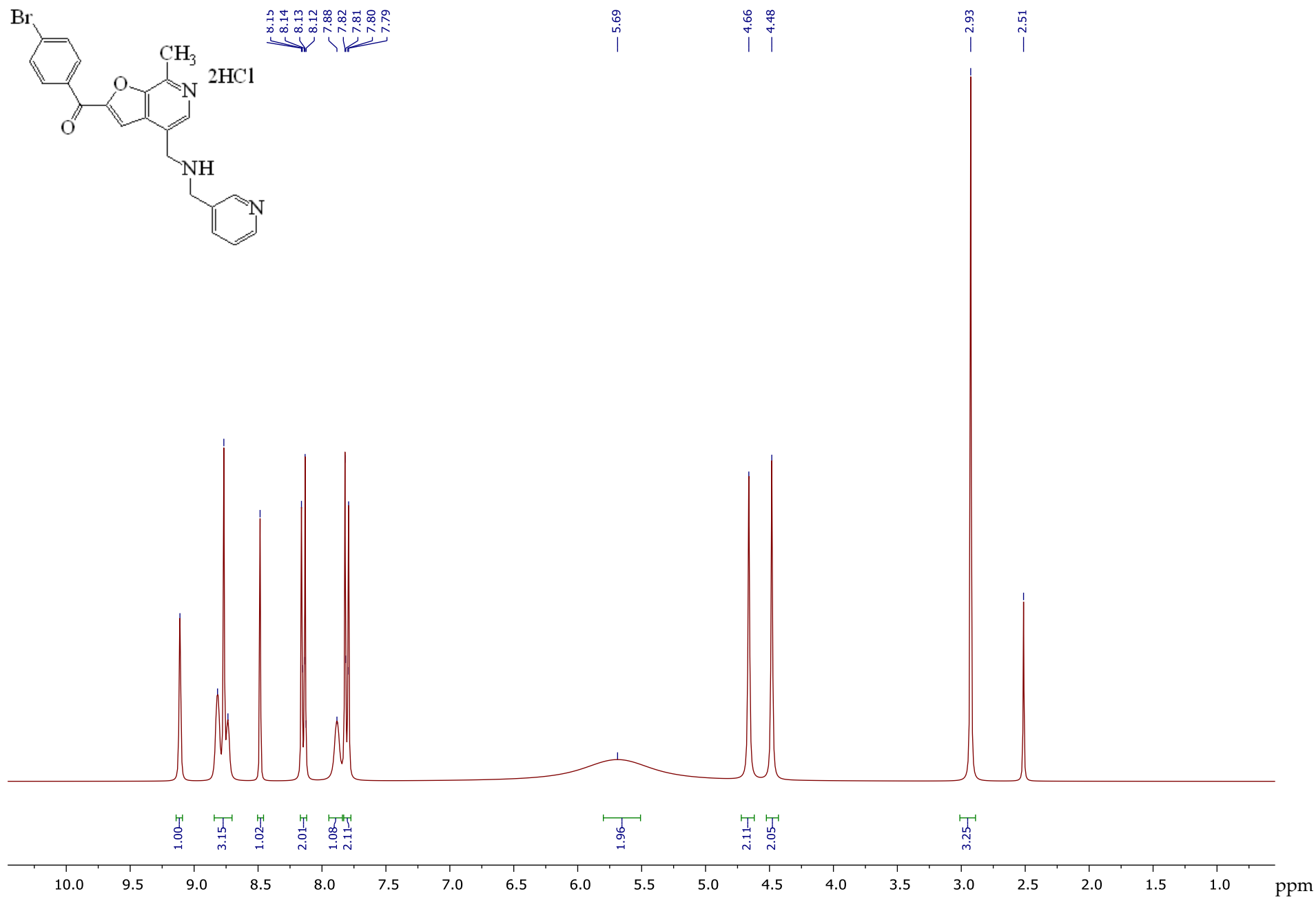
4-((2-(4-Bromobenzoyl)-7-methylfuro[2,3-c]pyridin-4-yl)methyl)piperazine-1-carbaldehyde hydrochloride (**PD9**).



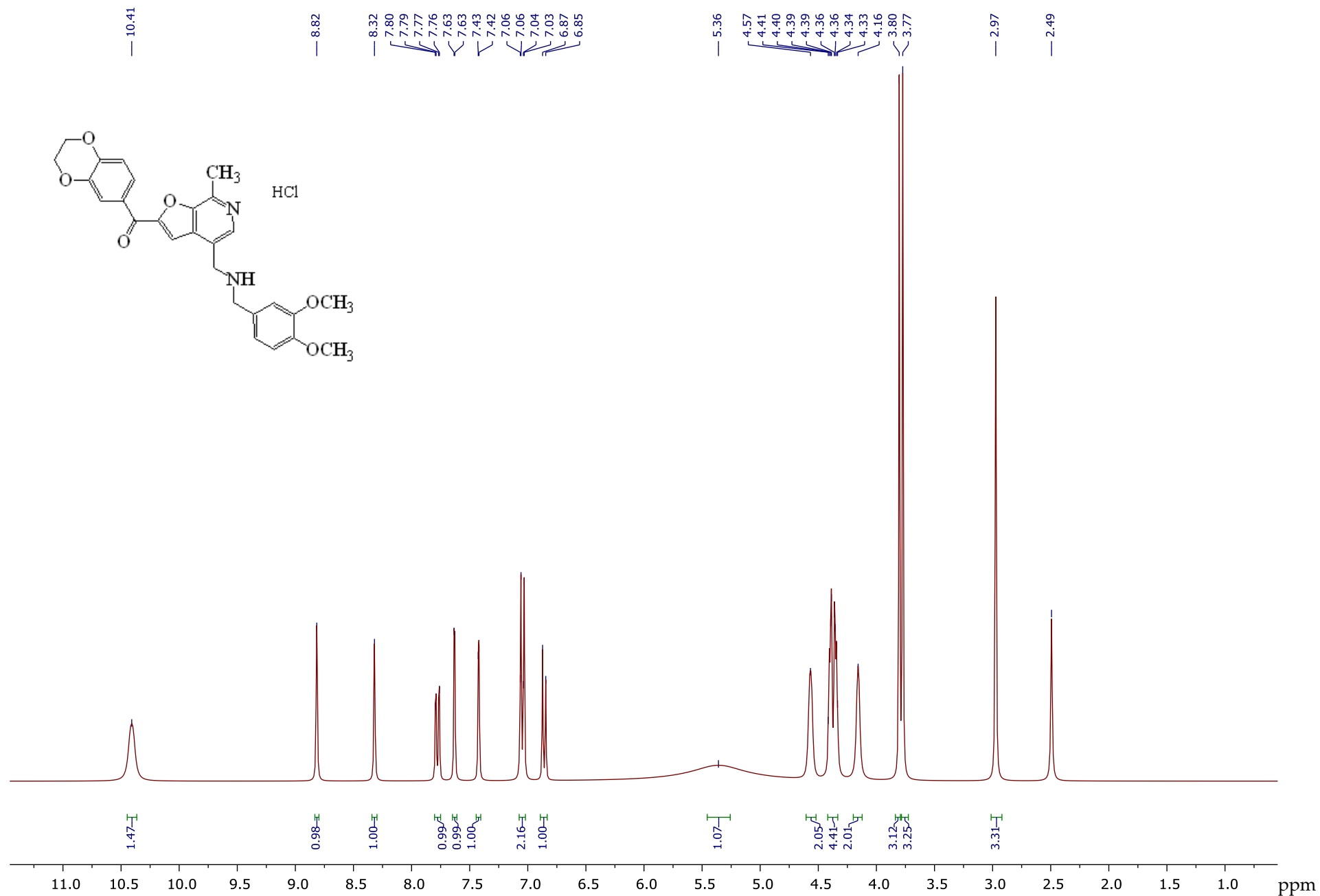
3-(4-((2-(4-Bromobenzoyl)-7-methylfuro[2,3-c]pyridin-4-yl)methyl)piperazin-1-yl)propanenitrile (**PD10**).



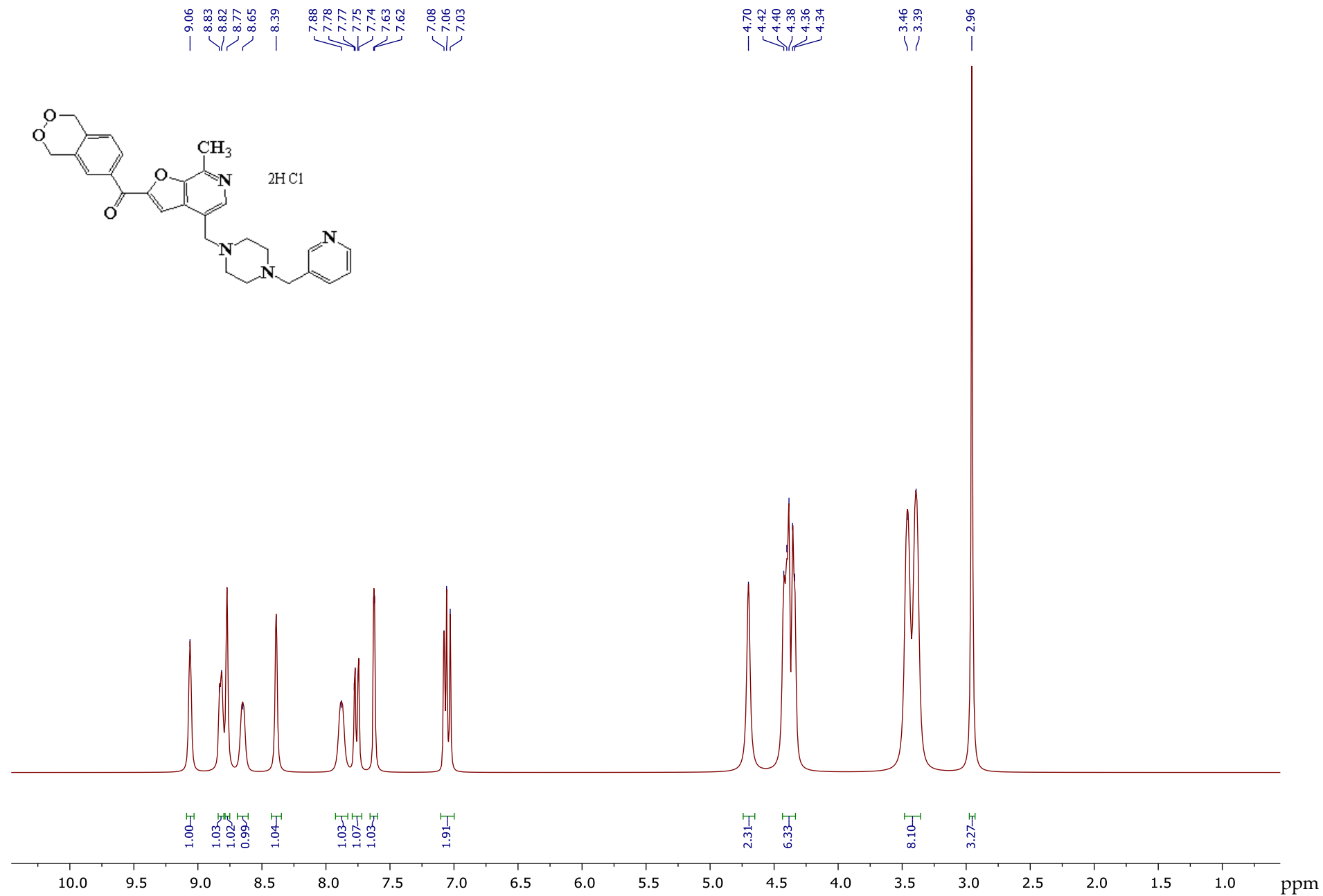
(4-Bromophenyl)(7-methyl-4-(((pyridin-3-ylmethyl)amino)methyl)furo[2,3-c]pyridin-2-yl)methanone dihydrochloride (**PD11**).



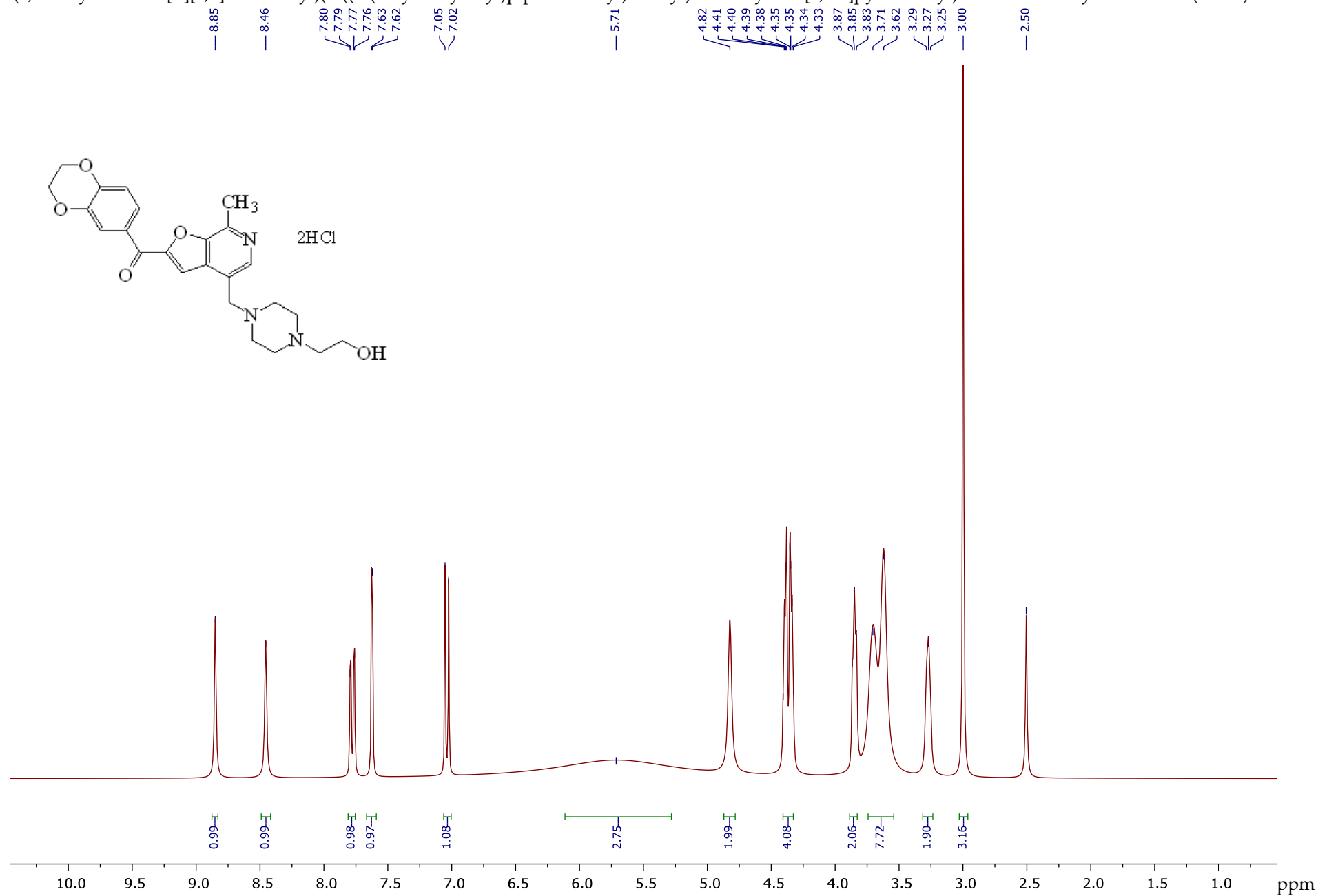
(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(4-(((3,4-dimethoxybenzyl)amino)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone hydrochloride (**PD12**).



(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(7-methyl-4-((4-(pyridin-3-ylmethyl)piperazin-1-yl)methyl)furo[2,3-c]pyridin-2-yl)methanone dihydrochloride (**PD13**).



(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(4-((4-(2-hydroxyethyl)piperazin-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone dihydrochloride (**PD14**).



¹³C NMR Spectra of compounds PD1-PD14.
[4-(Hydroxymethyl)-7-methylfuro[2,3-c]pyridin-2-yl](4-methoxyphenyl)methanone (PD1).

PD1

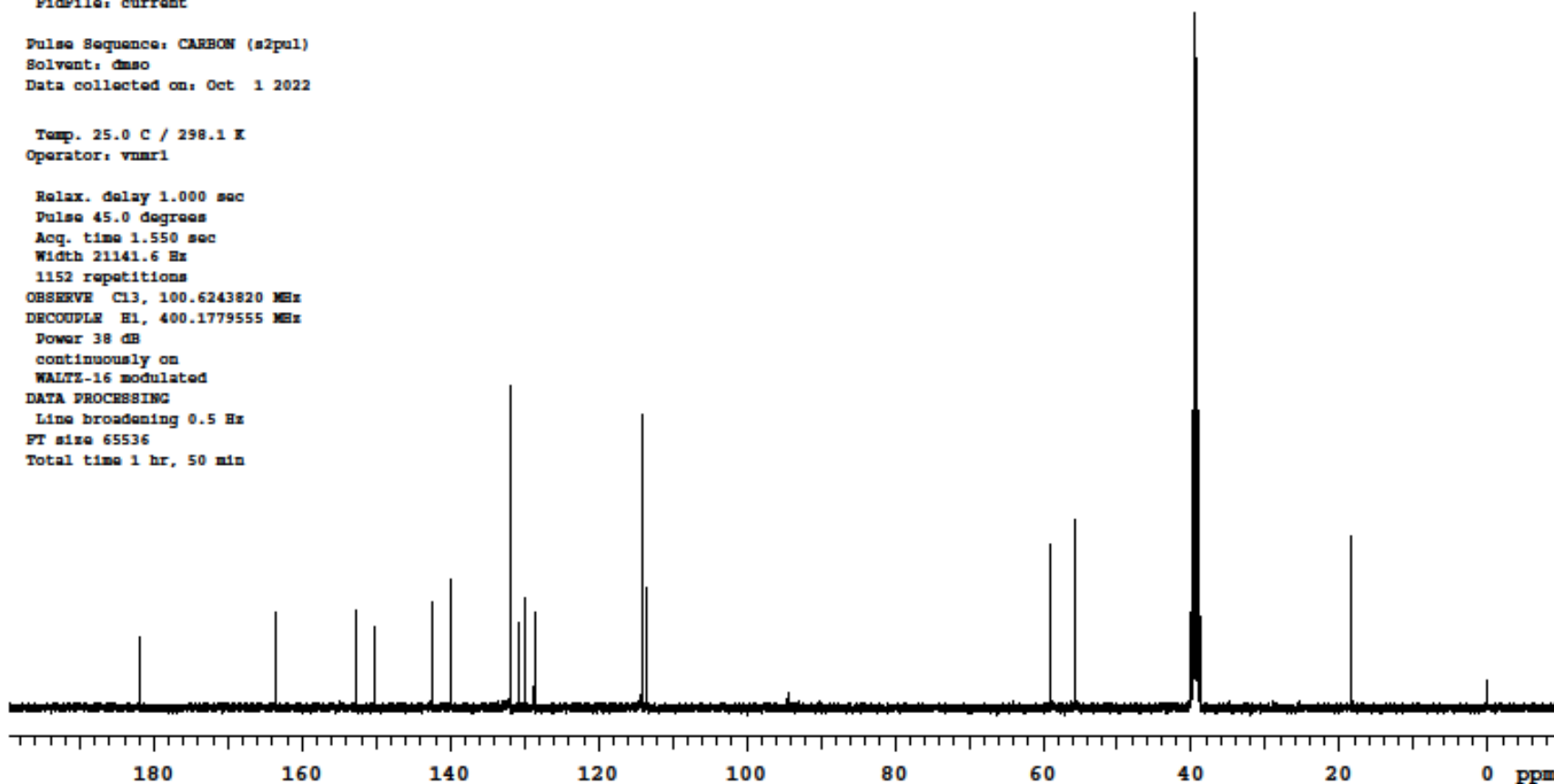
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Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
PD1_20221001_01
FidFile: current



Pulse Sequence: CARBON (s2pul)
Solvent: dmsd
Data collected on: Oct 1 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.550 sec
Width 21141.6 Hz
1152 repetitions
OBSERVE C13, 100.6243820 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr, 50 min



(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(4-(hydroxymethyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD2)

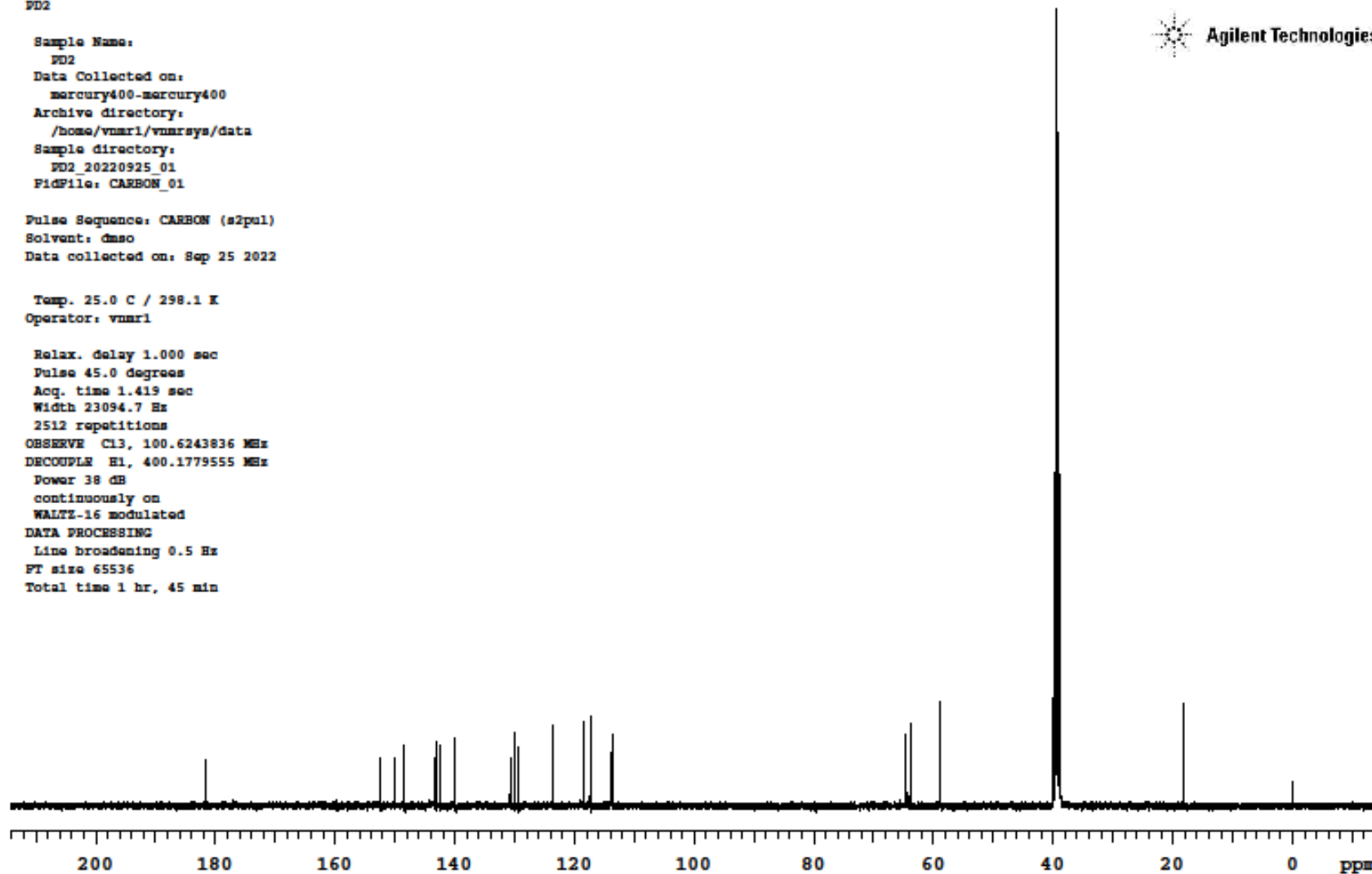
PD2

Sample Name:
PD2
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
PD2_20220925_01
FidFile: CARBON_01

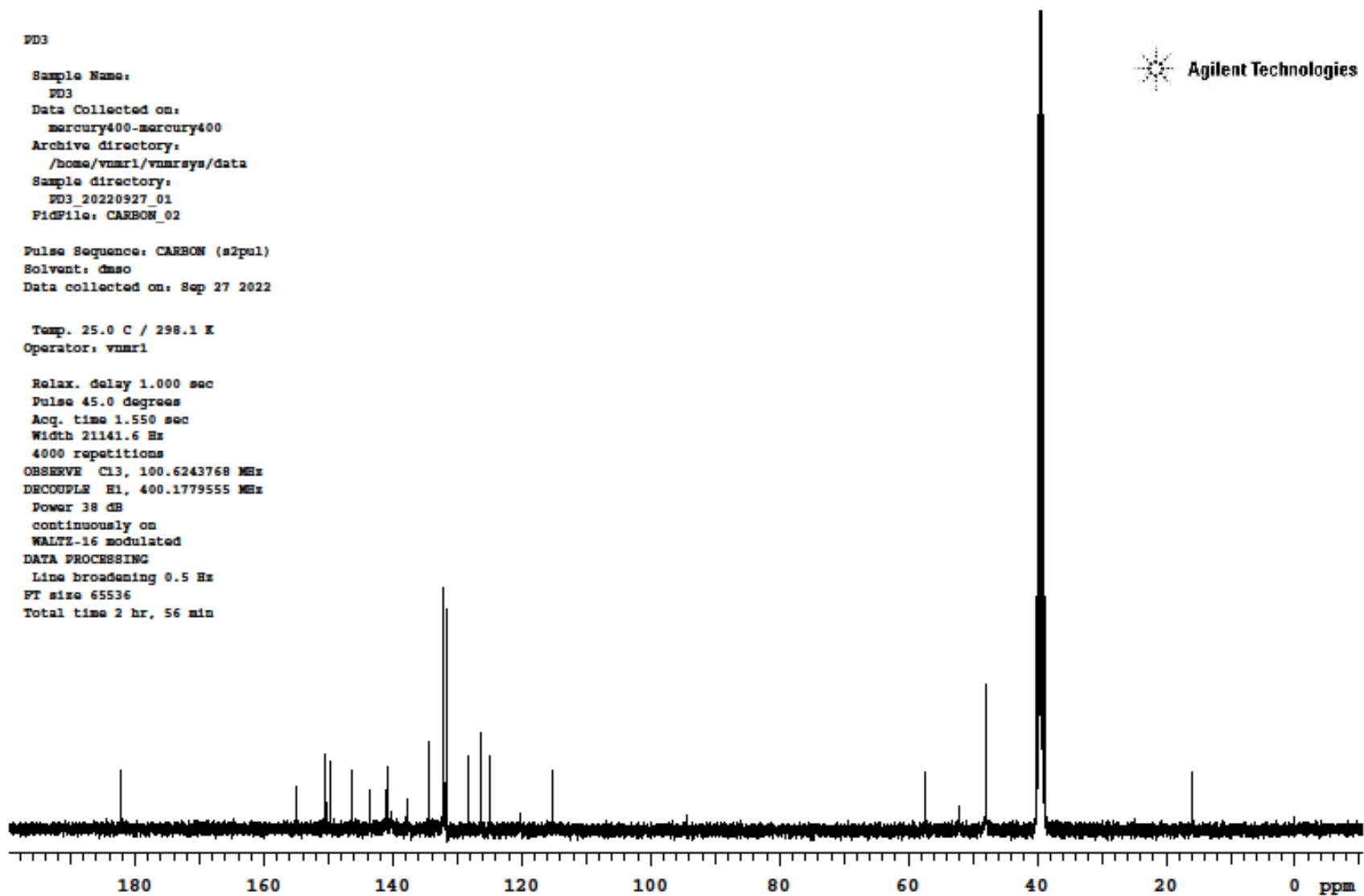
Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Sep 25 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

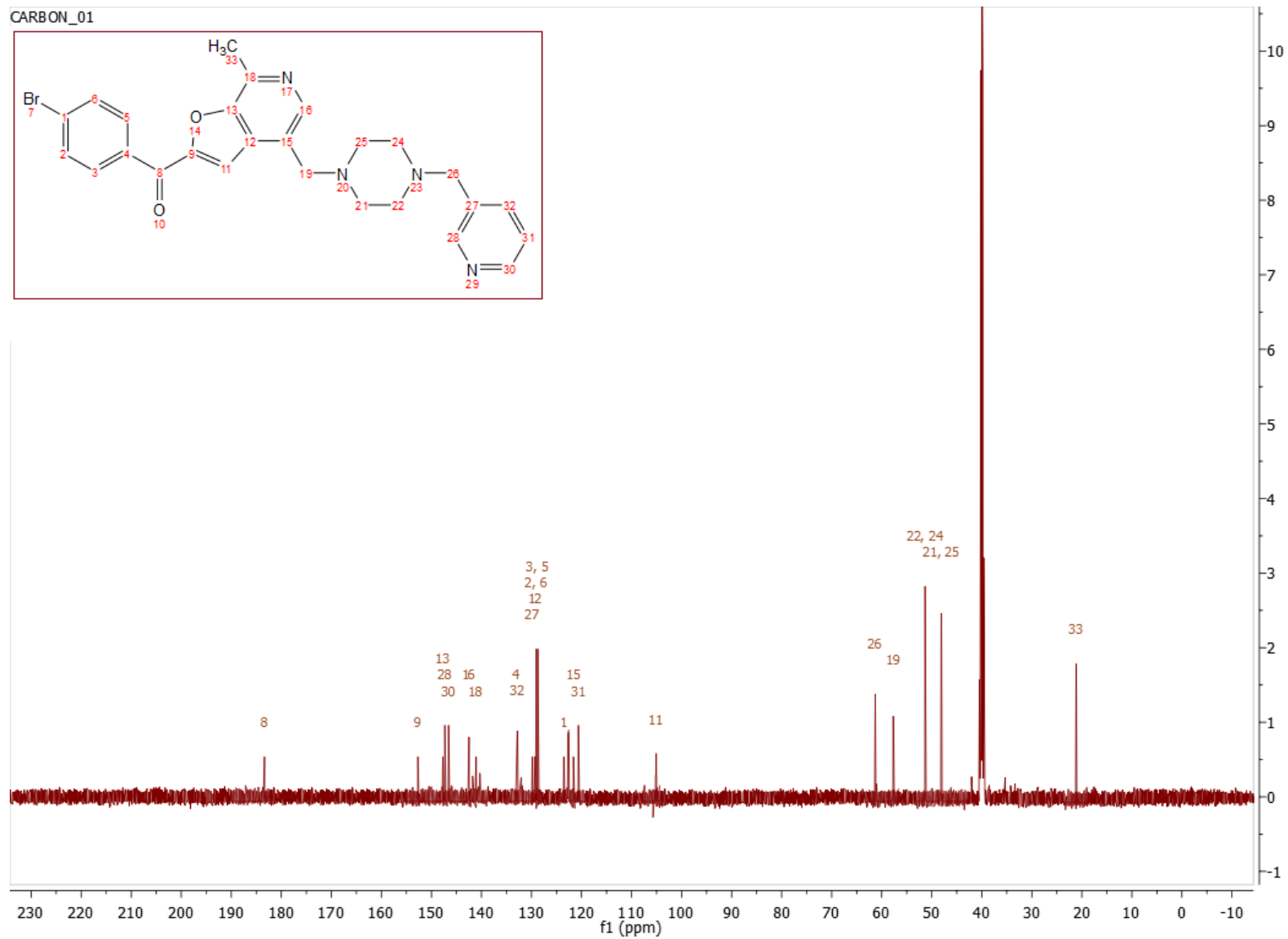
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Pulse 45.0 degrees
Acq. time 1.419 sec
Width 23094.7 Hz
2512 repetitions
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Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr, 45 min



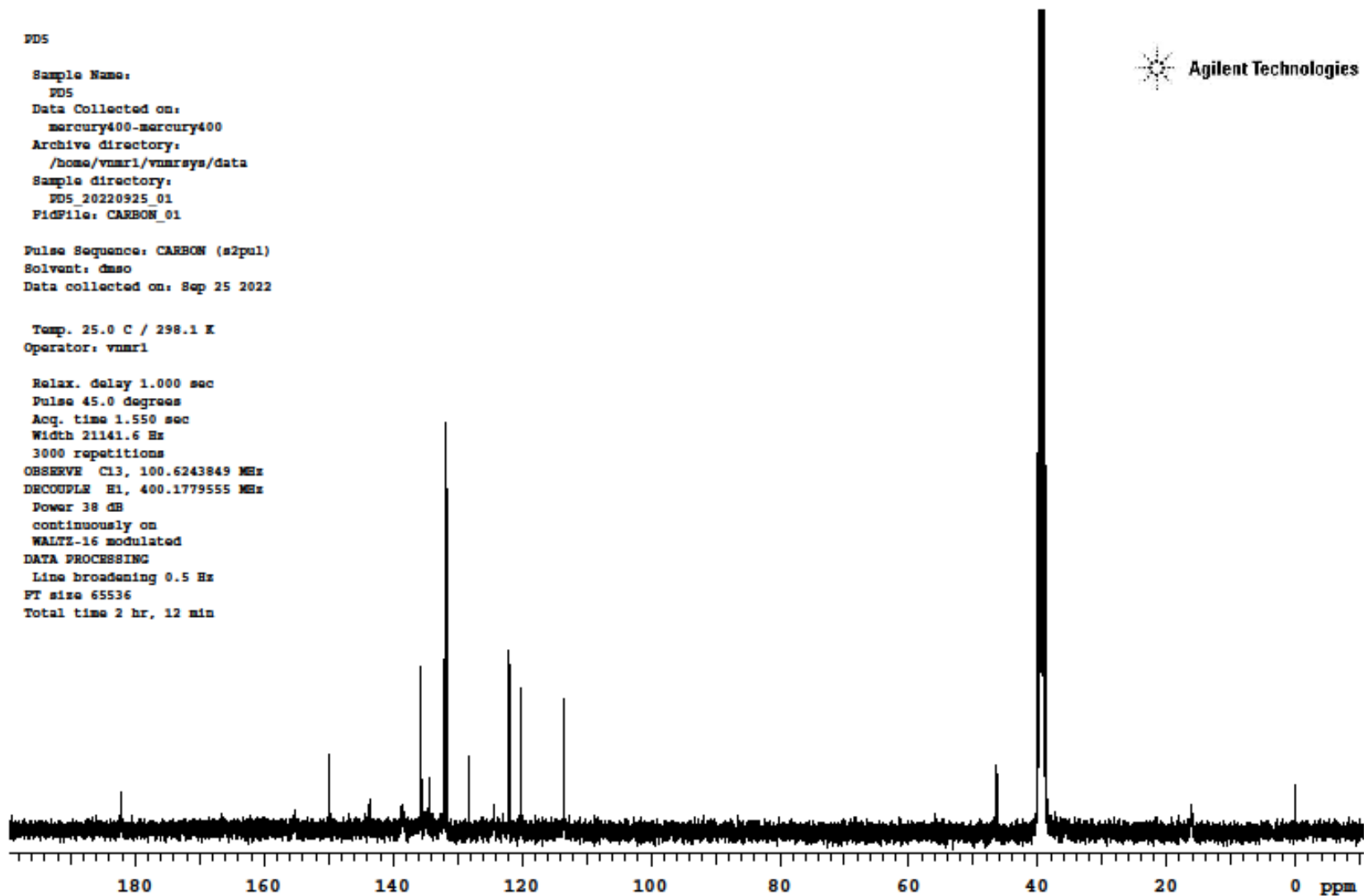
(4-Bromophenyl){7-methyl-4-[(4-(pyridin-2-ylmethyl)piperazin-1-yl)methyl]furo[2,3-c]pyridin-2-yl)methanone dihydrochloride (PD3).



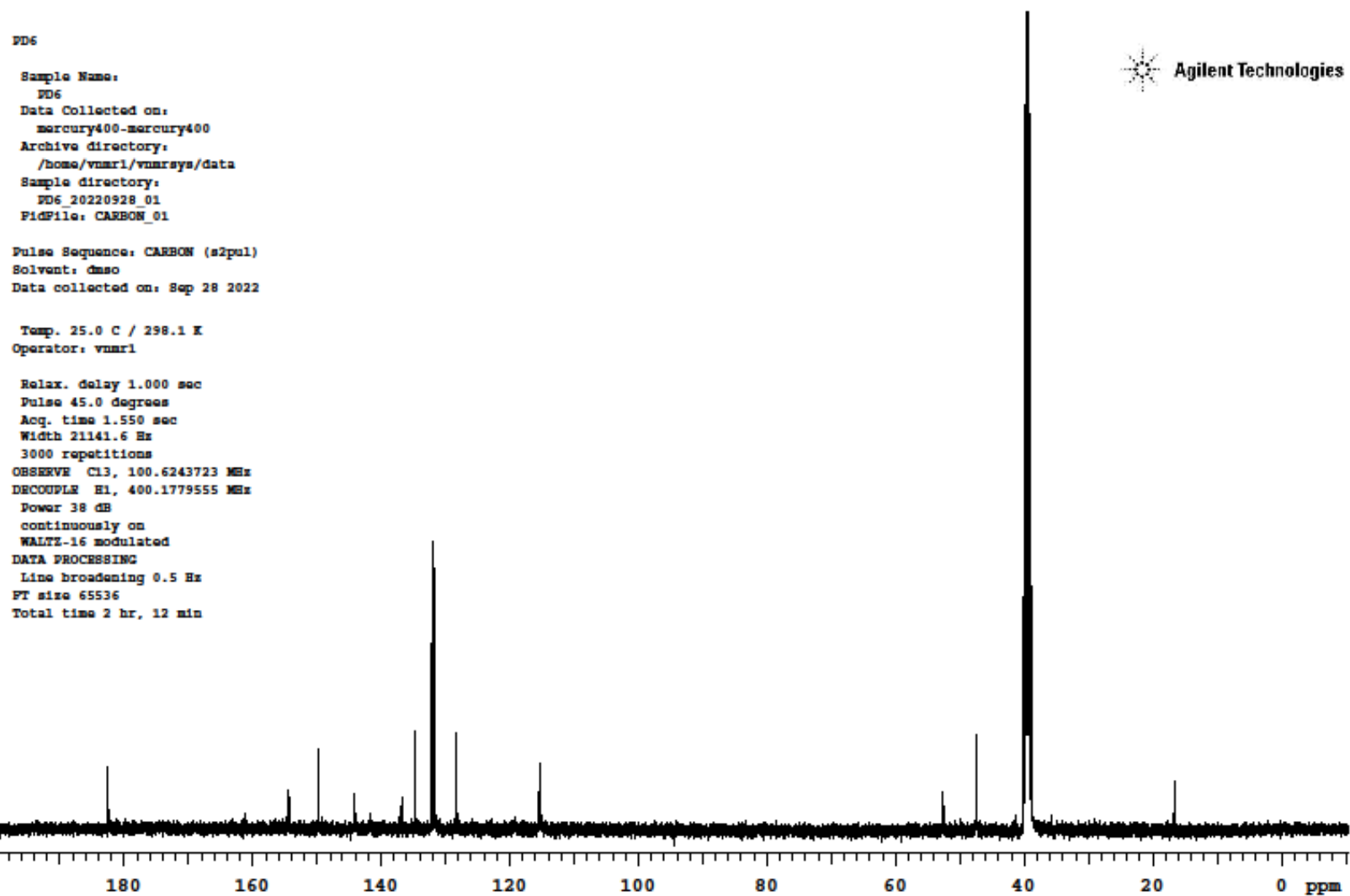
4-Bromophenyl(7-methyl-4-((4-(pyridin-3-ylmethyl)piperazin-1-yl)methyl)furo[2,3-c]pyridin-2-yl)methanone (**PD4**).



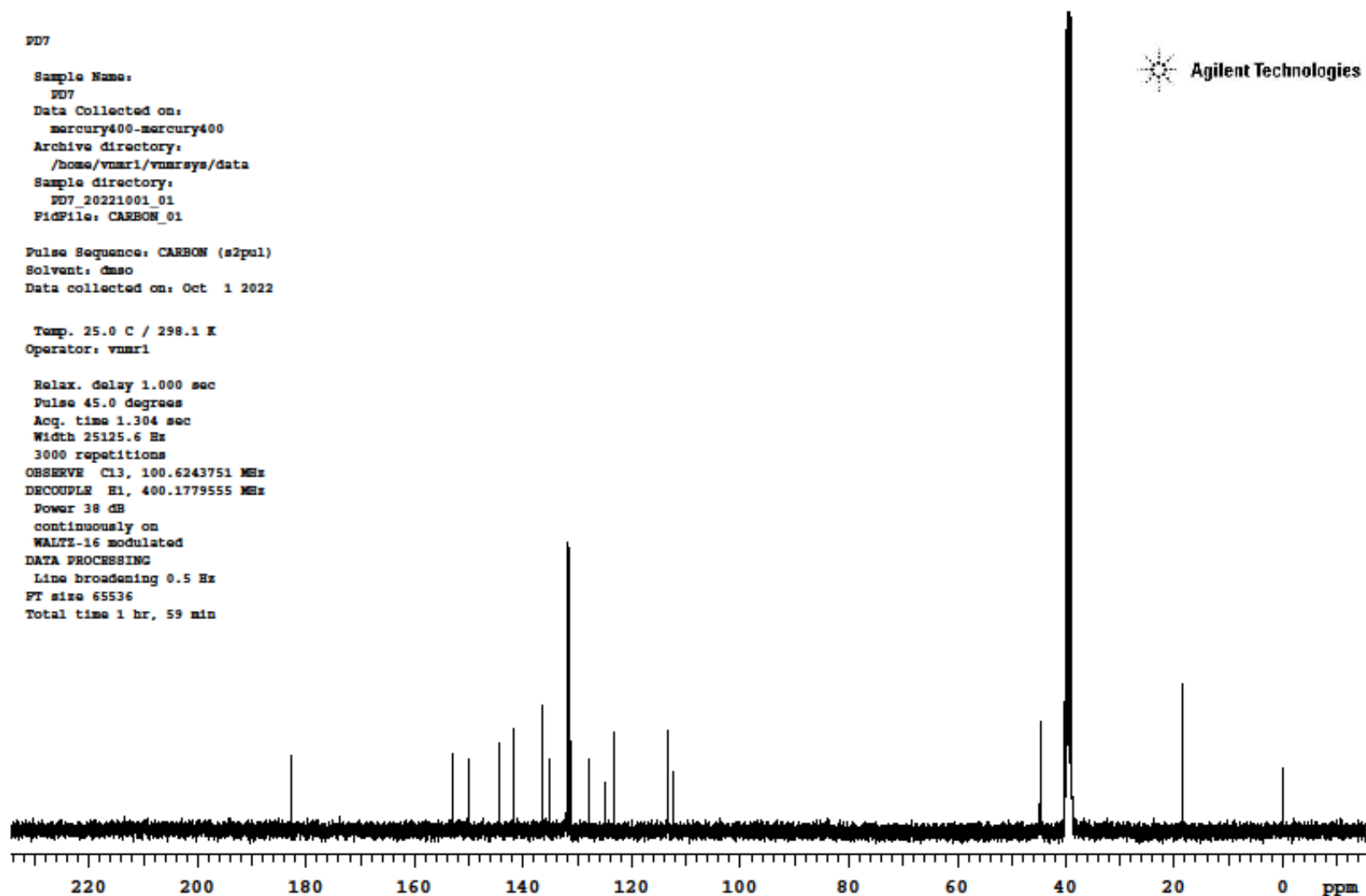
(4-((1H-Imidazol-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)(4-bromophenyl)methanone hydrochloride (PD5).



4-Bromophenyl)(4-((4-(2-hydroxyethyl)piperazin-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD6).



(4-Bromophenyl)(4-((4,5-dichloro-1H-imidazol-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD7).



(4-Bromophenyl)(4-((3,4-dihydroisoquinolin-2(1H)-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone (PD8).

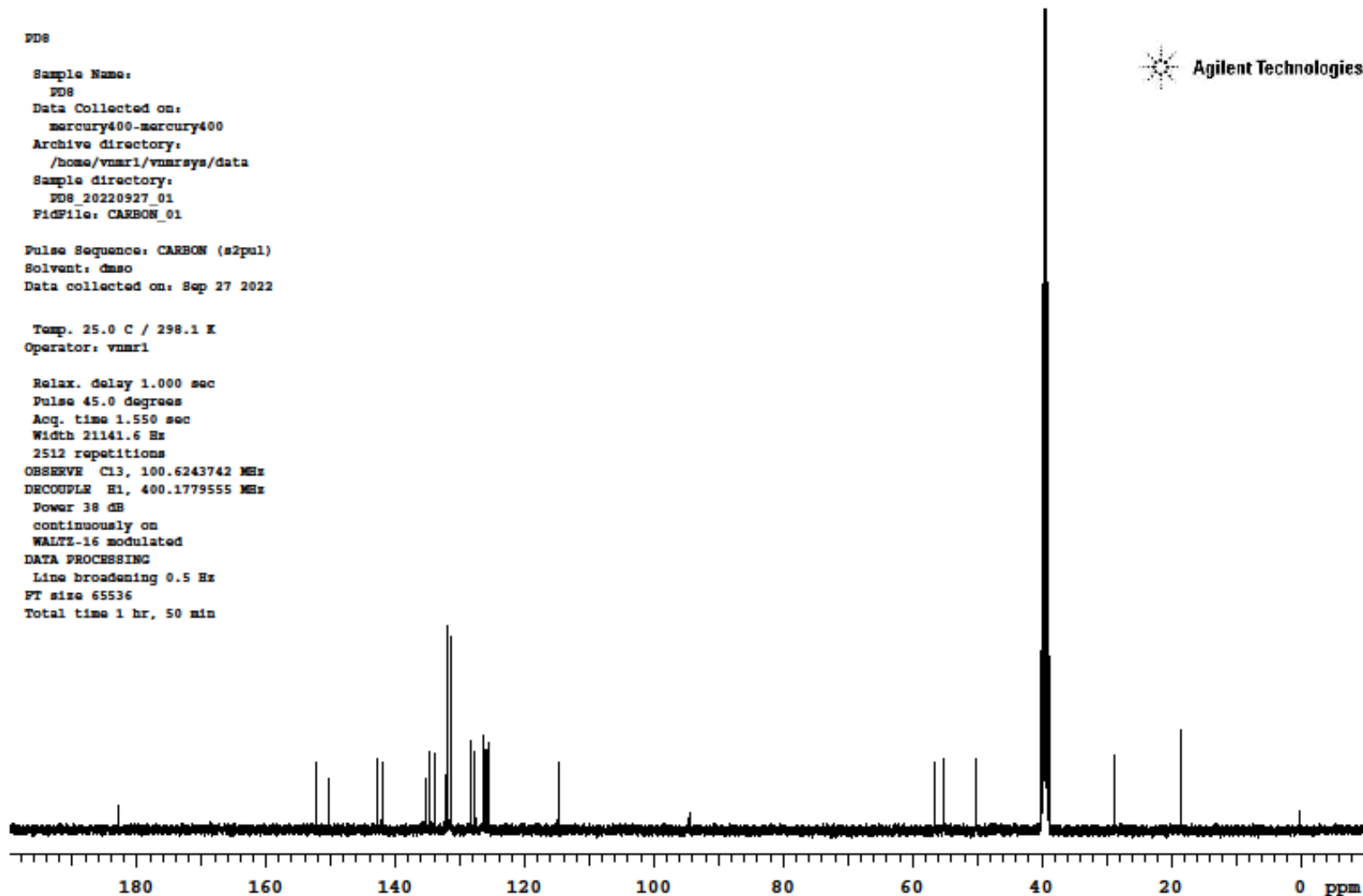
PD8

Sample Name:
PD8
Data Collected on:
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Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
PD8_20220927_01
FidFile: CARBON_01

Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Sep 27 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.550 sec
Width 21141.6 Hz
2512 repetitions
OBSERVE C13, 100.6243742 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr, 50 min



3-((2-(4-Bromobenzoyl)-7-methylfuro[2,3-c]pyridin-4-yl)methyl)piperazine-1-carbaldehyde hydrochloride (PD9).

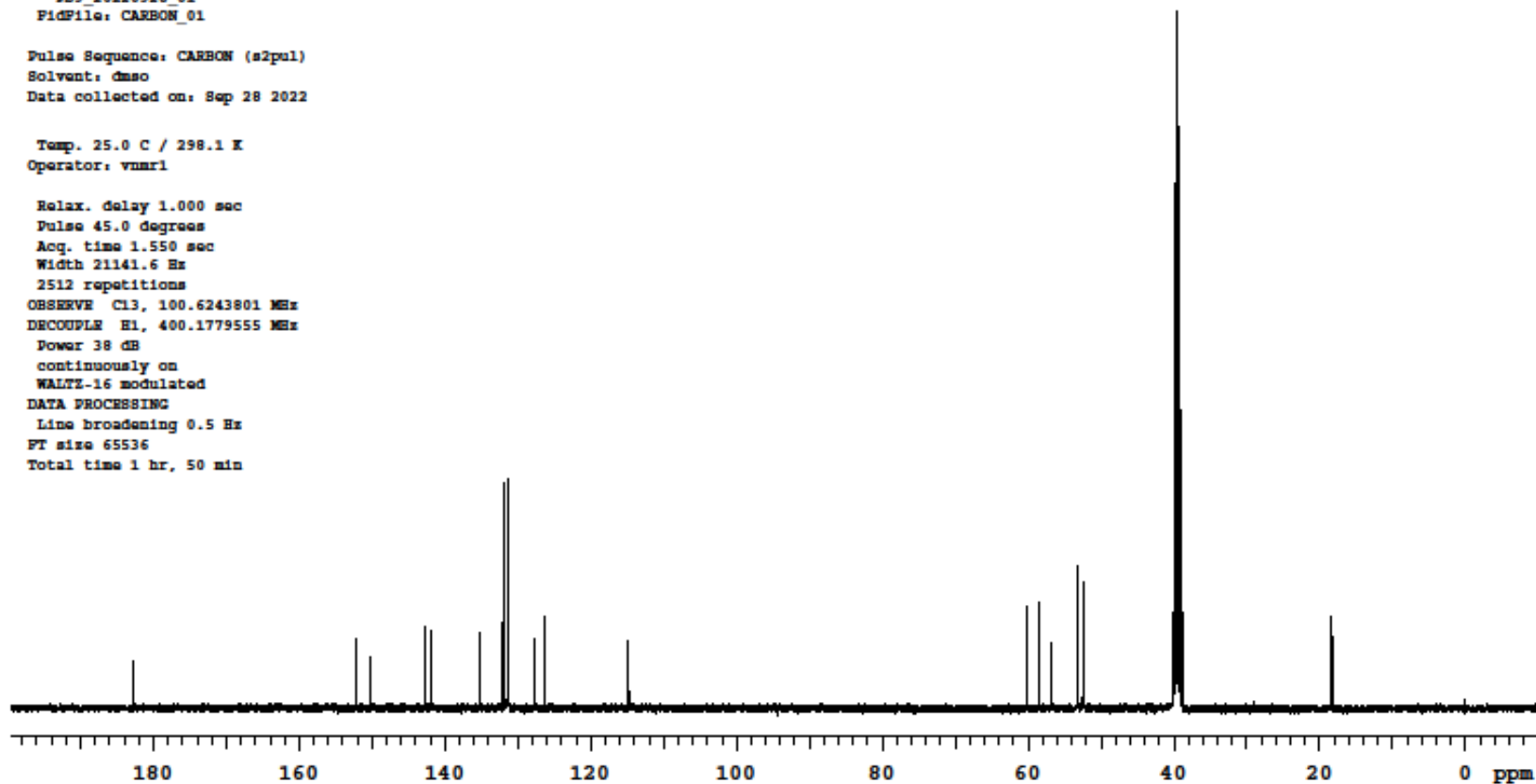
PD9

Sample Name:
PD9
Data Collected on:
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Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
PD9_20220928_01
FidFile: CARBON_01

Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Sep 28 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.550 sec
Width 21141.6 Hz
2512 repetitions
OBSERVE C13, 100.6243801 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr, 50 min



3-(4-((2-(4-Bromobenzoyl)-7-methylfuro[2,3-c]pyridin-4-yl)methyl)piperazin-1-yl)propanenitrile (PD10).

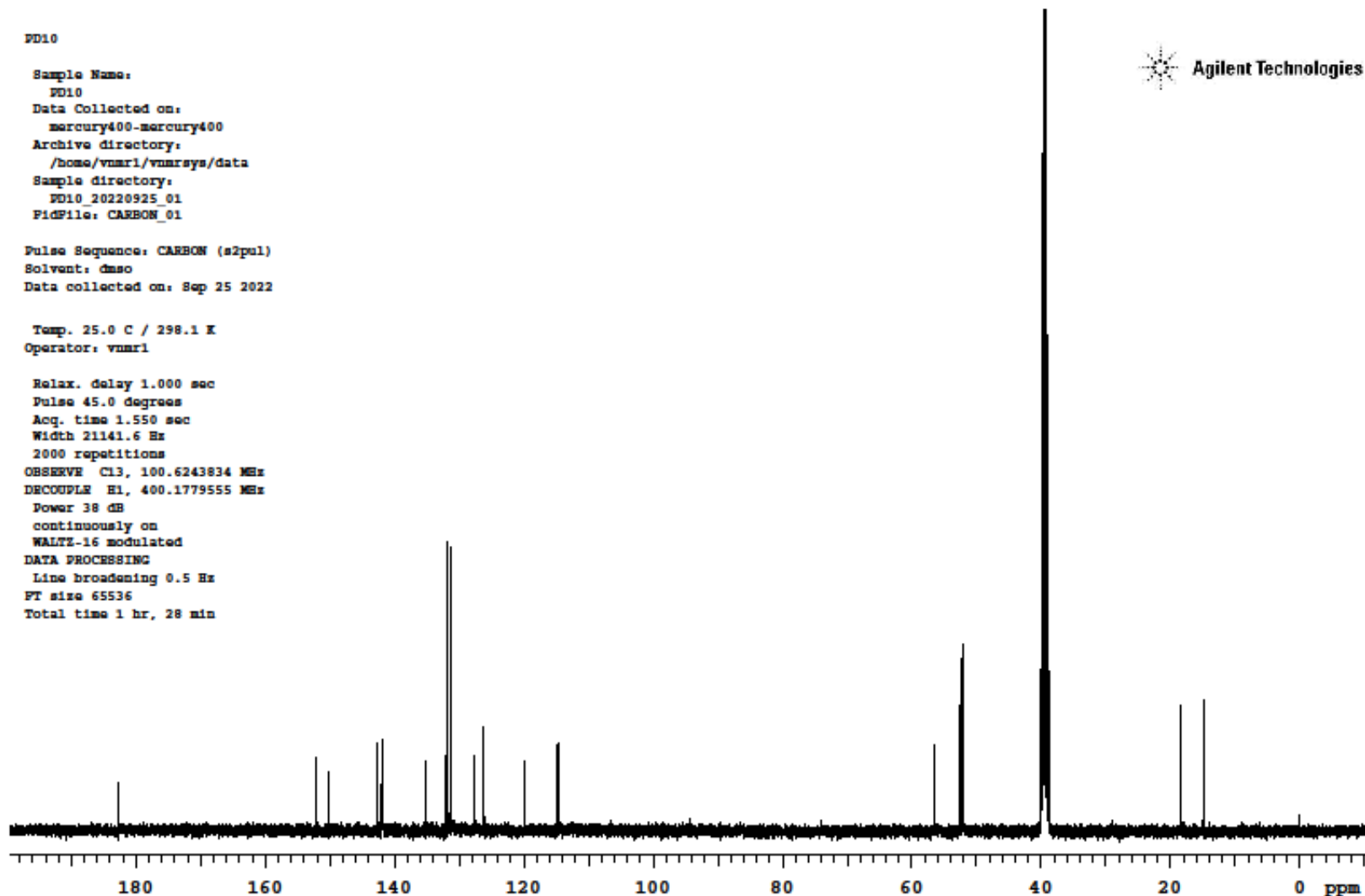
PD10

Sample Name:
PD10
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
PD10_20220925_01
FidFile: CARBON_01

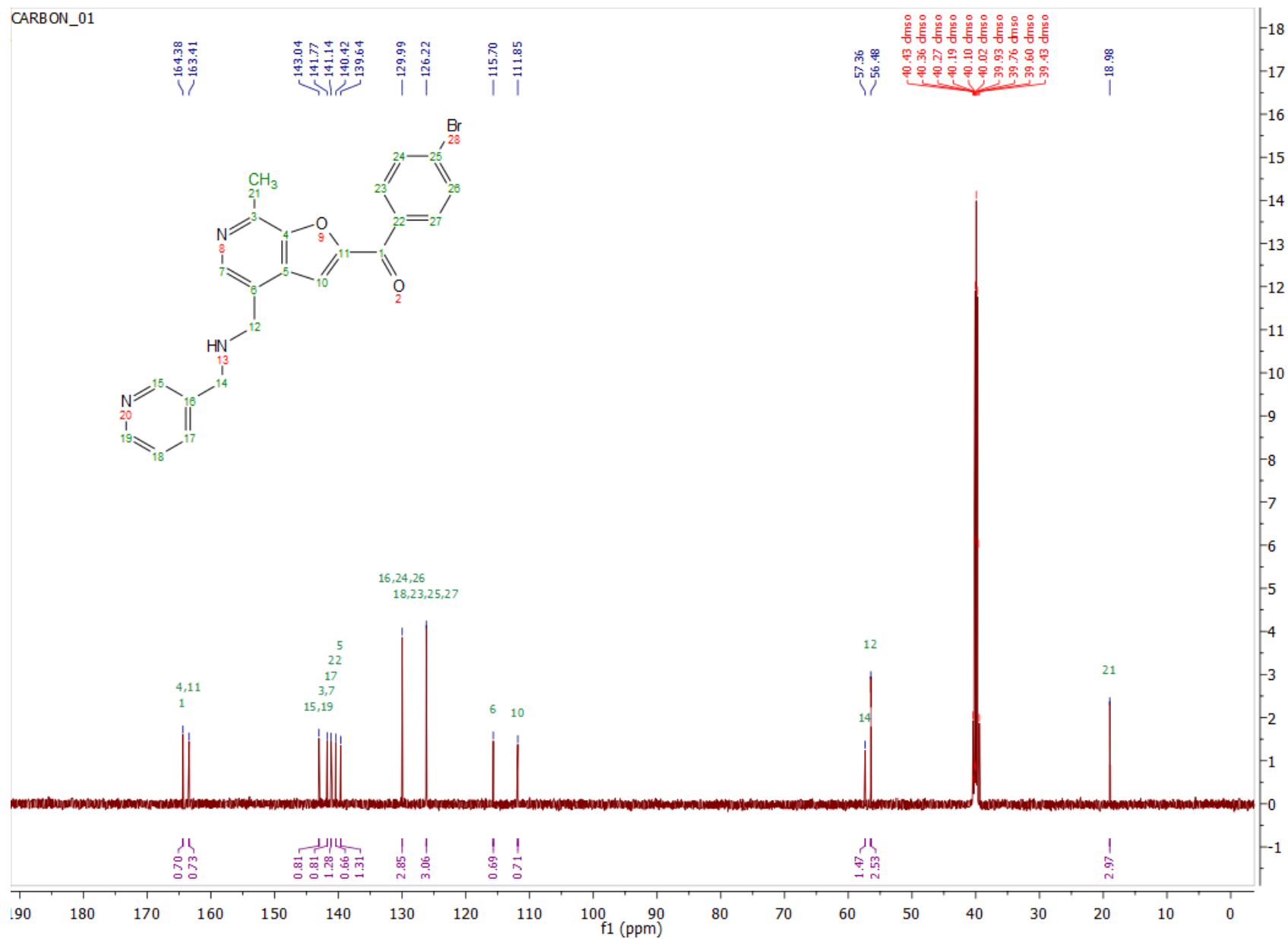
Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Sep 25 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

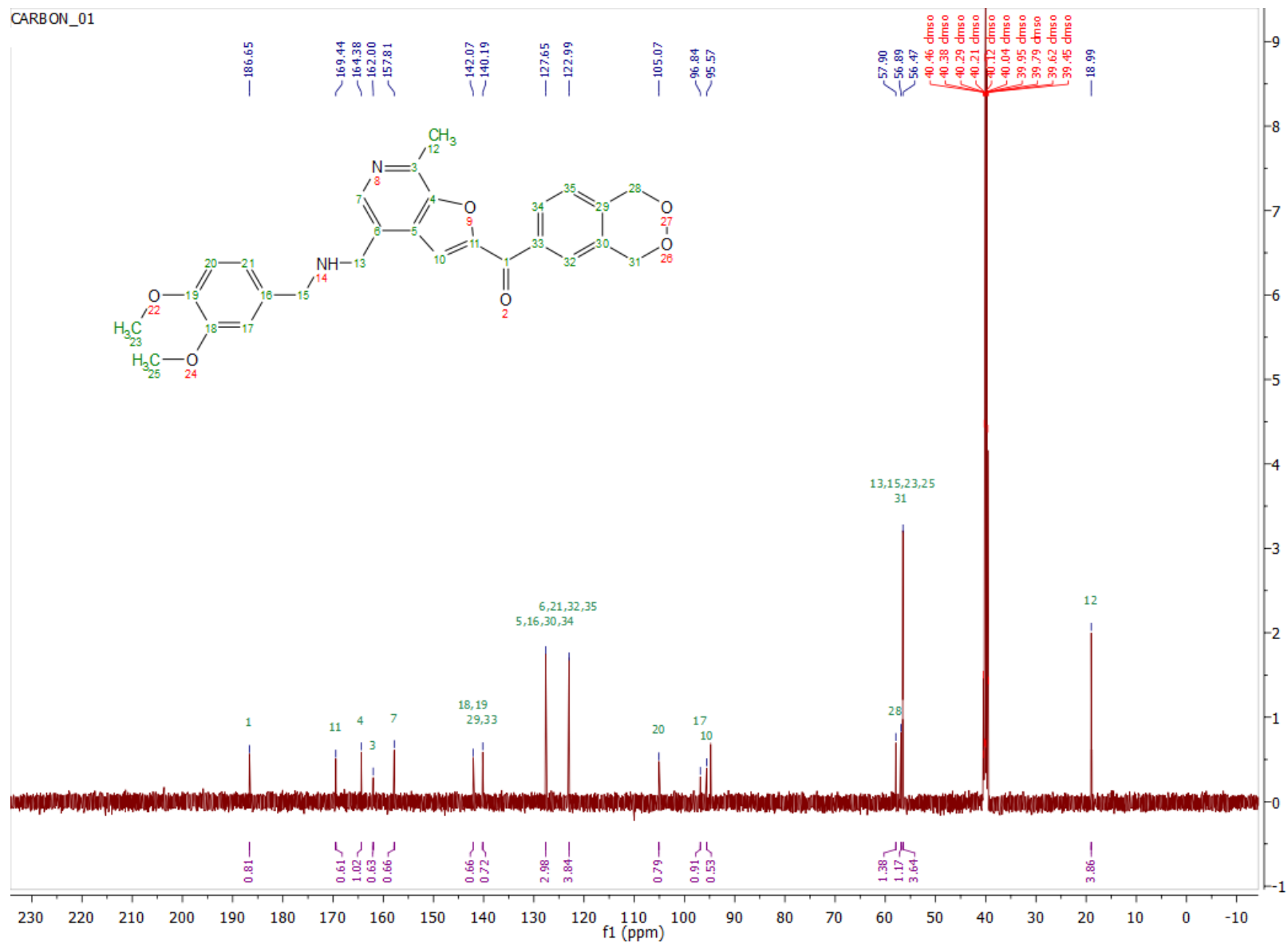
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Pulse 45.0 degrees
Acq. time 1.550 sec
Width 21141.6 Hz
2000 repetitions
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DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr, 28 min



(4-Bromophenyl)(7-methyl-4-(((pyridin-3-ylmethyl)amino)methyl)furo[2,3-c]pyridin-2-yl)methanone dihydrochloride (**PD11**).



(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(4-(((3,4-dimethoxybenzyl)amino)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone hydrochloride (**PD12**).



1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(7-methyl-4-((4-(pyridin-3-ylmethyl)piperazin-1-yl)methyl)furo[2,3-c]pyridin-2-yl)methanone dihydrochloride (PD13).

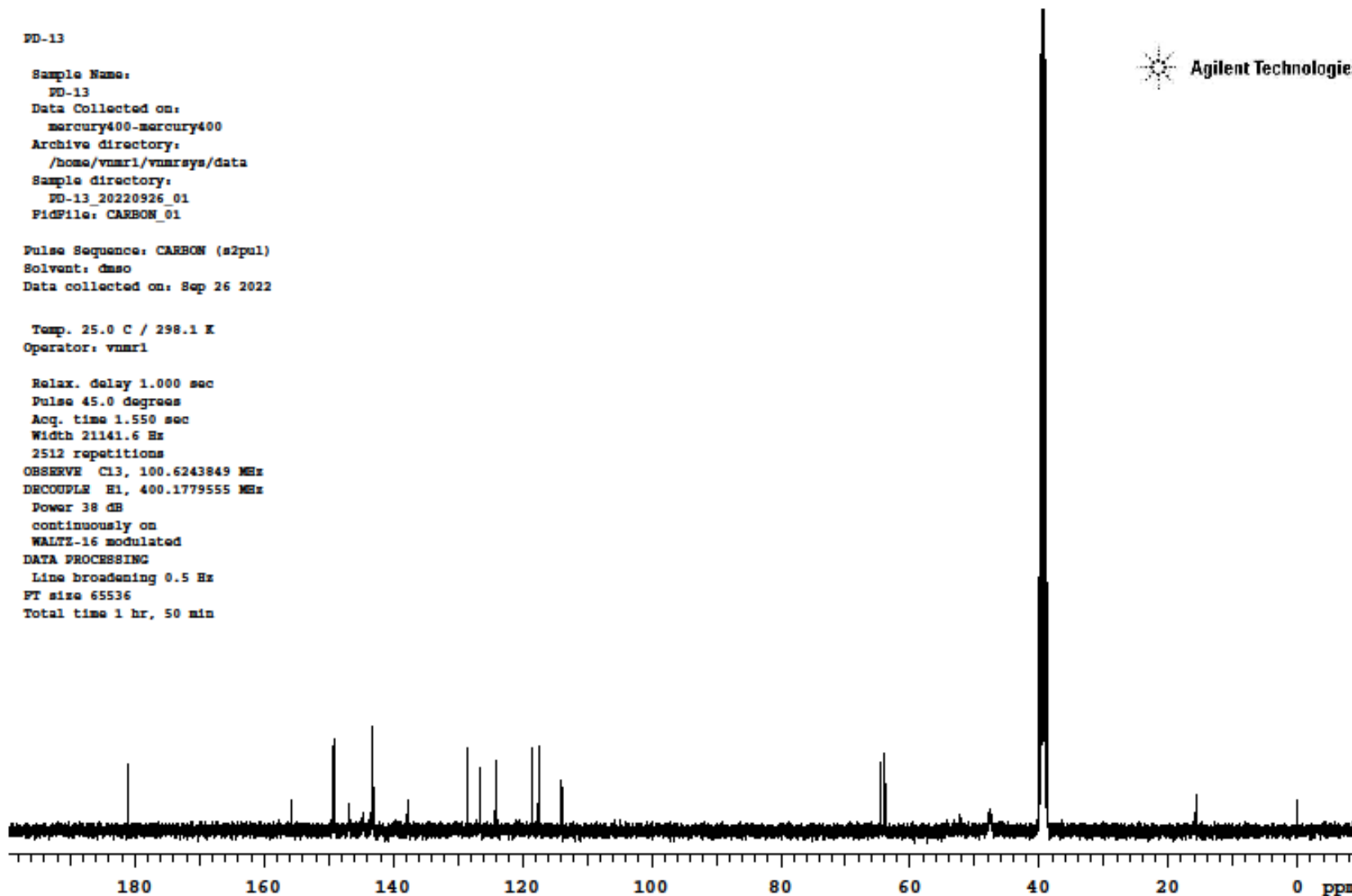
PD-13

Sample Name:
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Data Collected on:
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Archive directory:
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Sample directory:
PD-13_20220926_01
FidFile: CARBON_01

Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Sep 26 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.550 sec
Width 21141.6 Hz
2512 repetitions
OBSERVE C13, 100.6243849 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 1 hr, 50 min



(1,4-Dihydrobenzo[d][1,2]dioxin-6-yl)(4-((2-hydroxyethyl)piperazin-1-yl)methyl)-7-methylfuro[2,3-c]pyridin-2-yl)methanone dihydrochloride (PD14).

PD14

Sample Name:
PD14
Data Collected on:
mercury400-mercury400
Archive directory:
/home/vnmr1/vnmrsys/data
Sample directory:
PD14_20221001_01
FidFile: CARBON_01

Pulse Sequence: CARBON (s2pul)
Solvent: dmsc
Data collected on: Oct 1 2022

Temp. 25.0 C / 298.1 K
Operator: vnmr1

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.550 sec
Width 21141.6 Hz
4000 repetitions
OBSERVE C13, 100.6243849 MHz
DECOUPLE H1, 400.1779555 MHz
Power 38 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 0.5 Hz
FT size 65536
Total time 2 hr, 56 min

