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New azaphilones from *Aspergillus neoglaber*

Thomas Isbrandt, Jens C. Frisvad, Anja Madsen, Thomas O. Larsen*

Department of Biotechnology and Biomedicine, Technical University of Denmark, Kongens Lyngby, Denmark

*Corresponding author (TOL). Phone: +45 45252632; email: tol@bio.dtu.dk

S1. UV-VIS spectra for sassafrin E, sassafrin F, and sassafrinamine A.

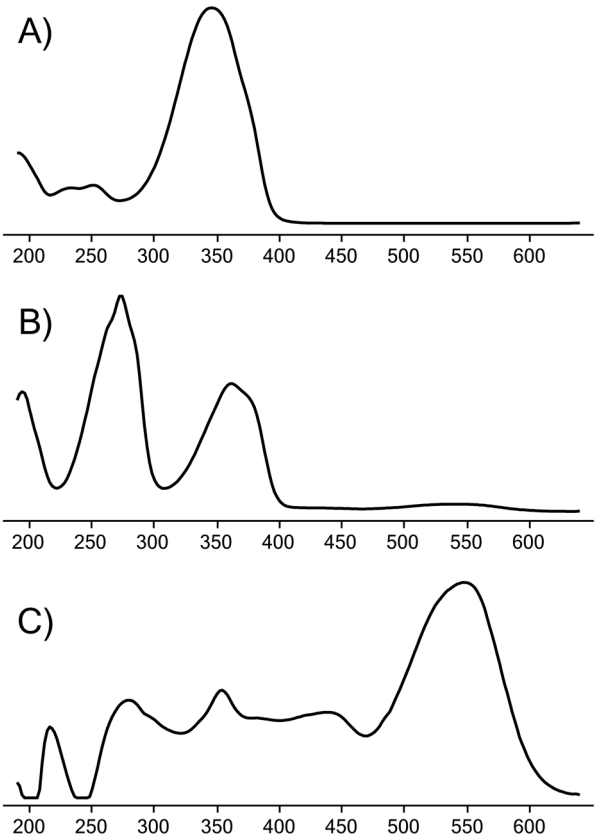
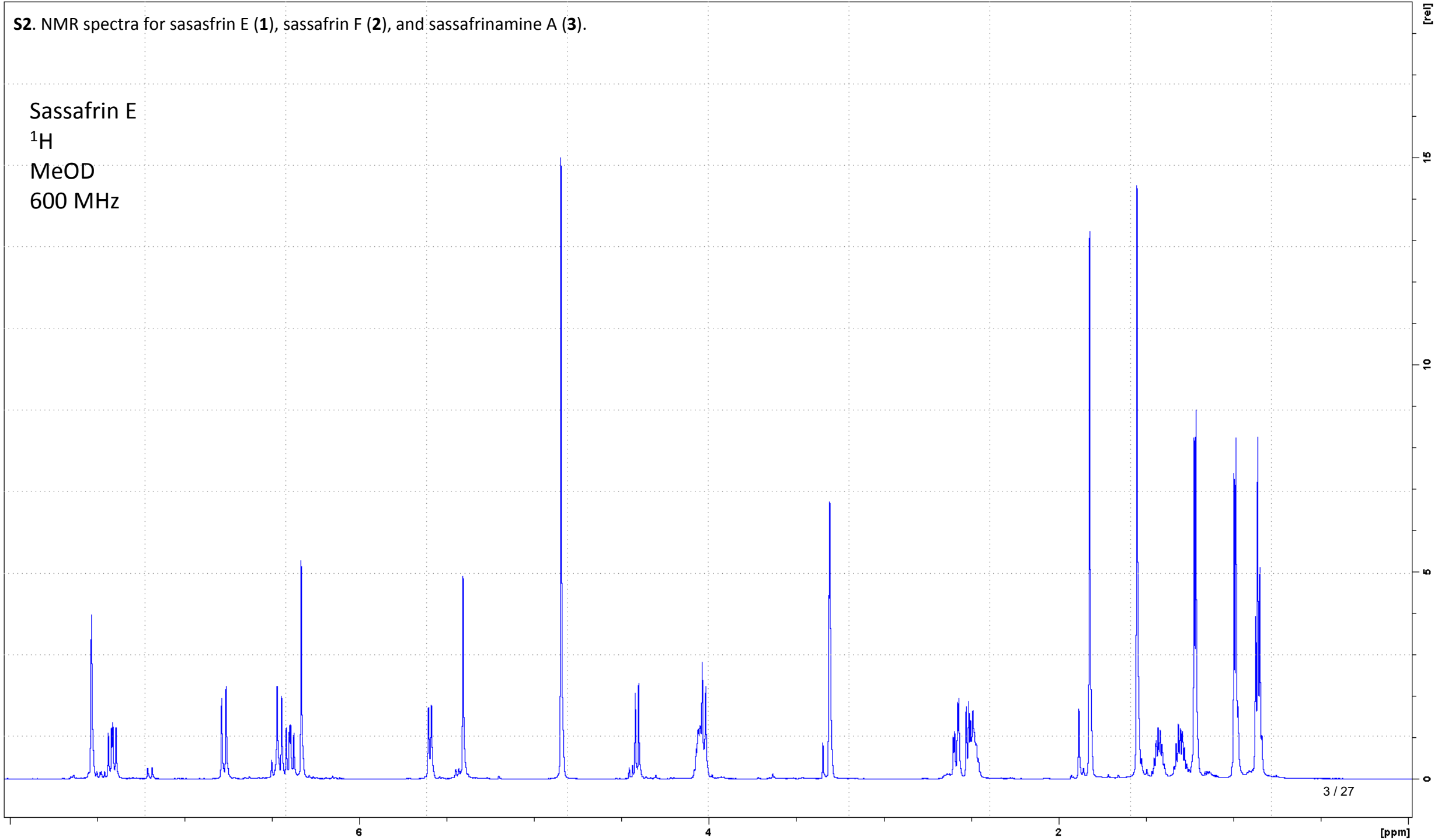
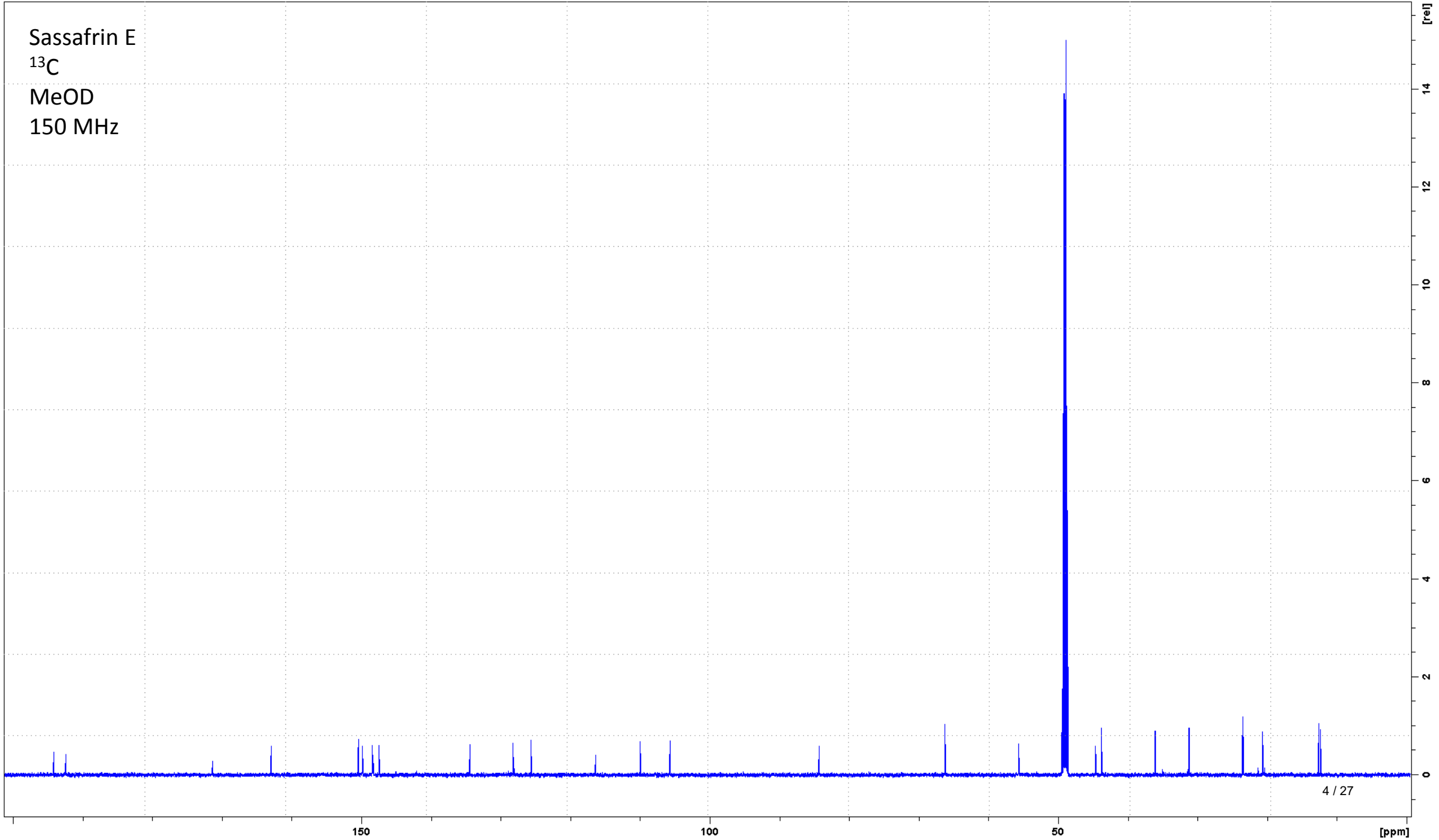


Figure S1. UV-VIS spectra for A) Sassafrin E, B) Sassafrin F, C) Sassafrinamine A. All spectra were recorded during UHPLC analysis in acetonitrile and H_2O, acidified with 20mM formic acid.

S2. NMR spectra for sasasfrin E (**1**), sassafrin F (**2**), and sassafrinamine A (**3**).

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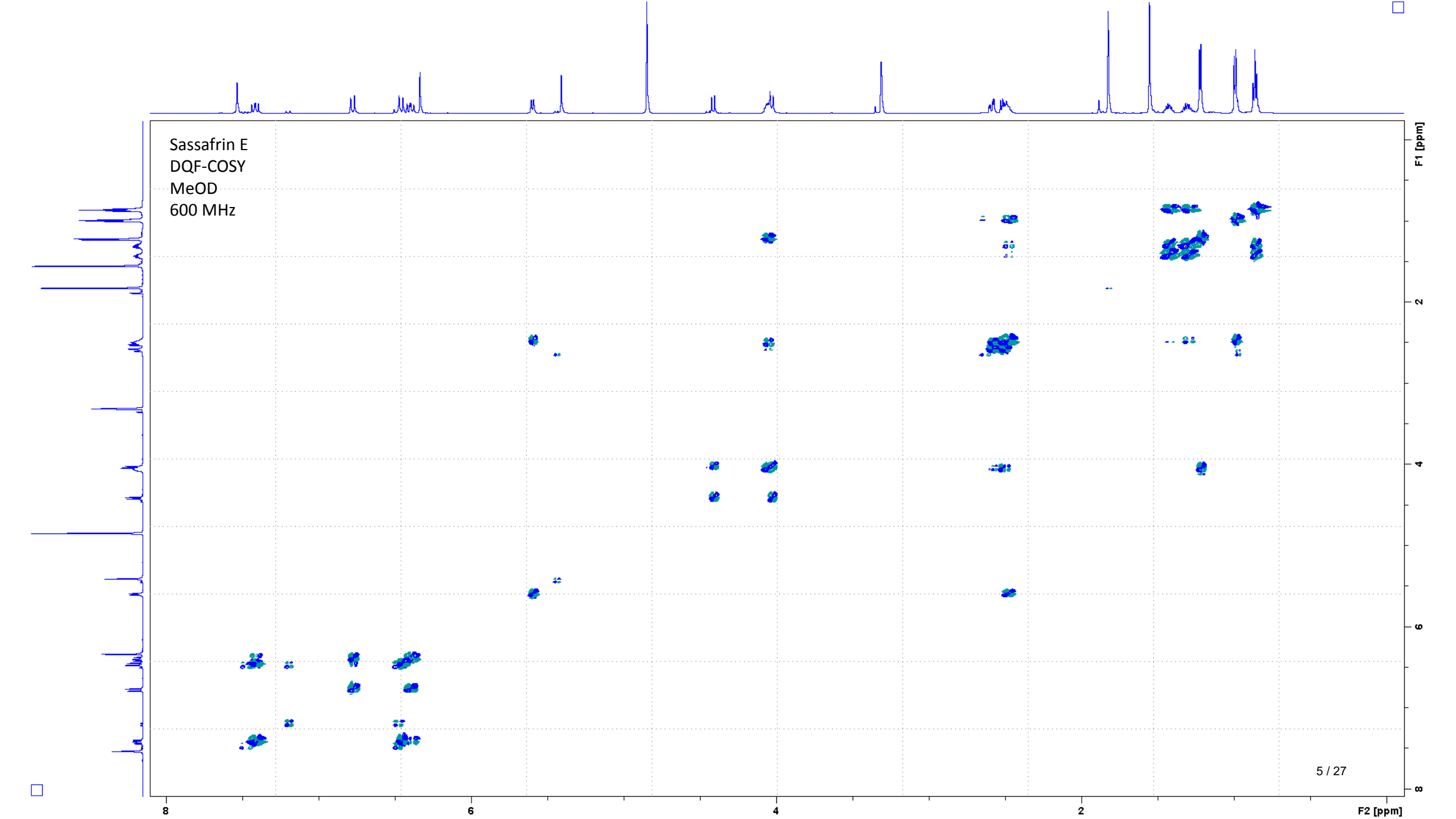
4 / 27
150
100
50
[ppm]
[rel]
0
2
4
6
8
10
12
14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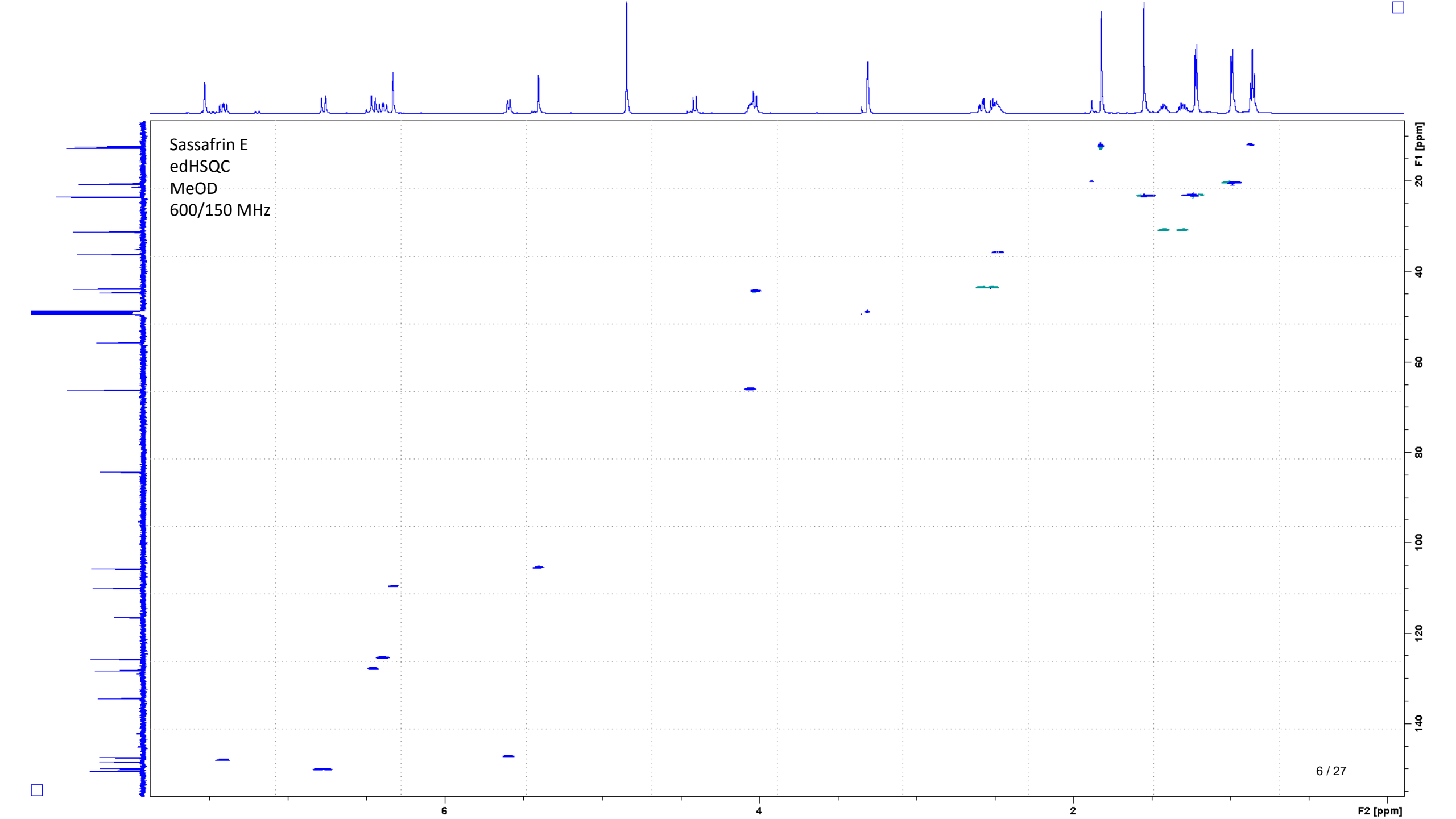
MeOD
600 MHz
5 / 27
F1 [ppm]
F2 [ppm]
2
4
6
8


Sassafrin E
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MeOD
600/150 MHz
6 / 27
F1 [ppm]
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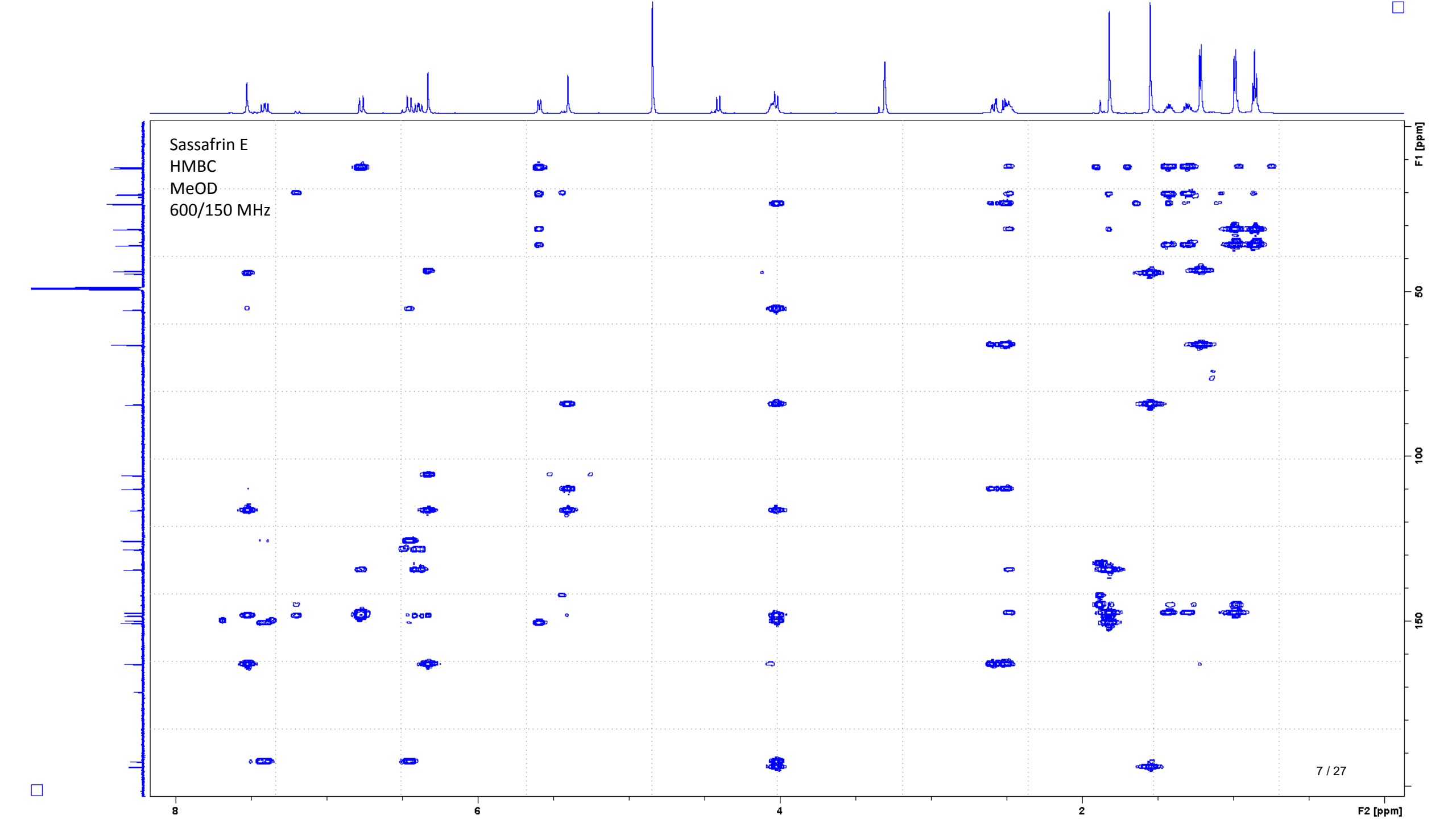
40
60
80
100
120
140
6
4
2
F2 [ppm]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MeOD
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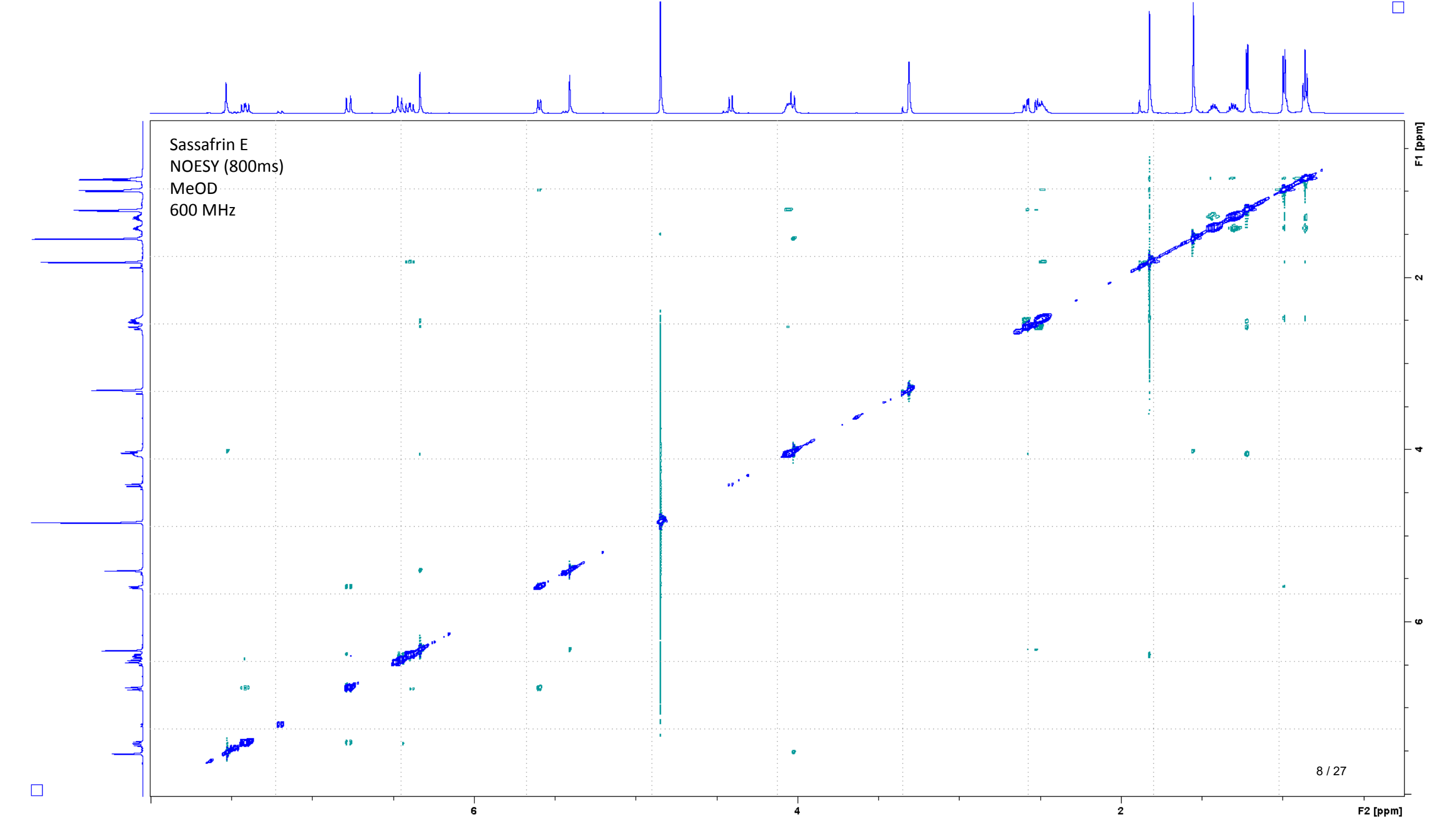
100
150
8
6
4
2
F2 [ppm]
7 / 27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NOESY (800ms)
MeOD
600 MHz
8 / 27
F1 [ppm]
F2 [ppm]
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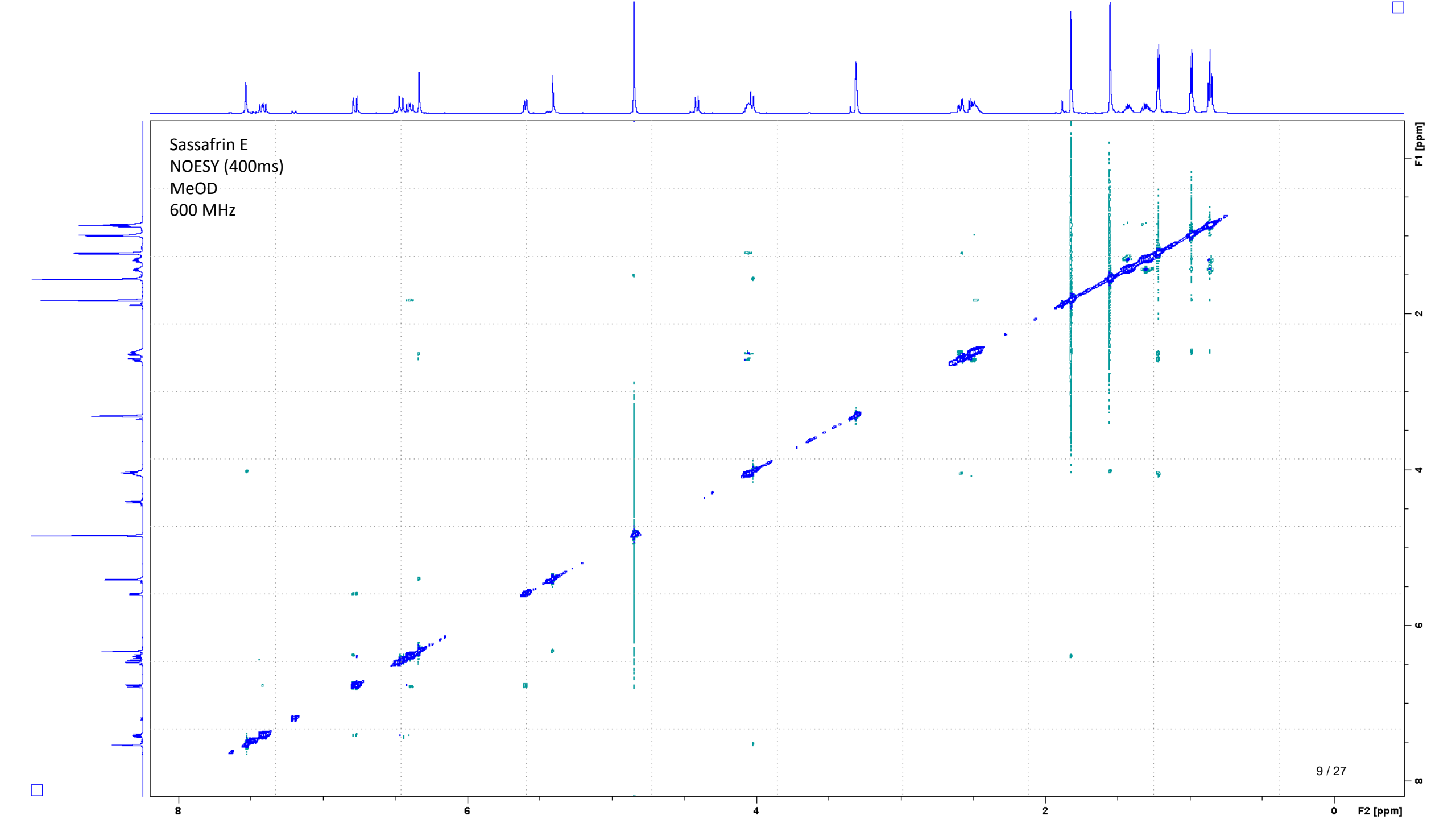
4
6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9 / 27
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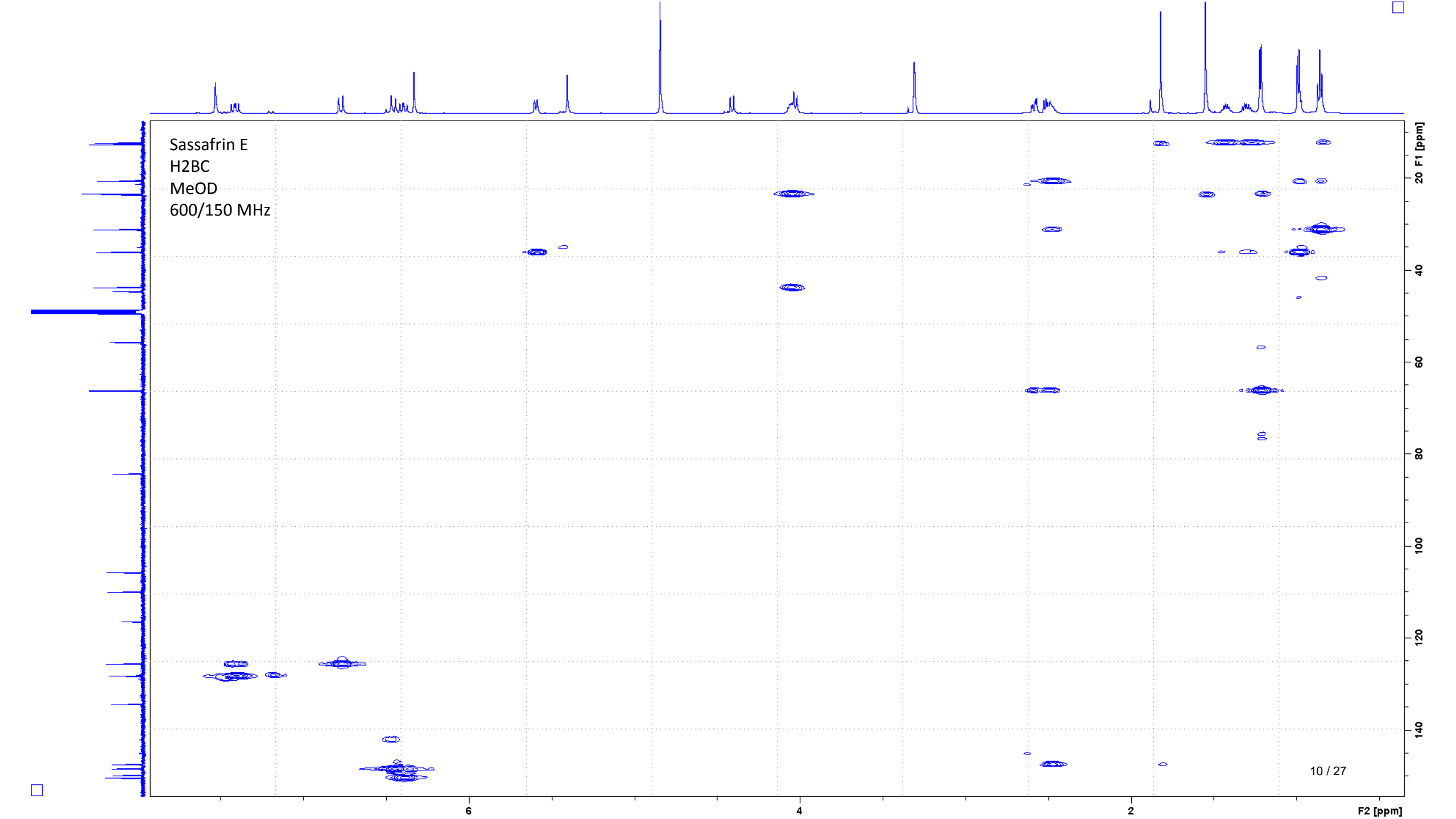
F2 [ppm]
8
6
4
2
0
2
4
6
8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MeOD
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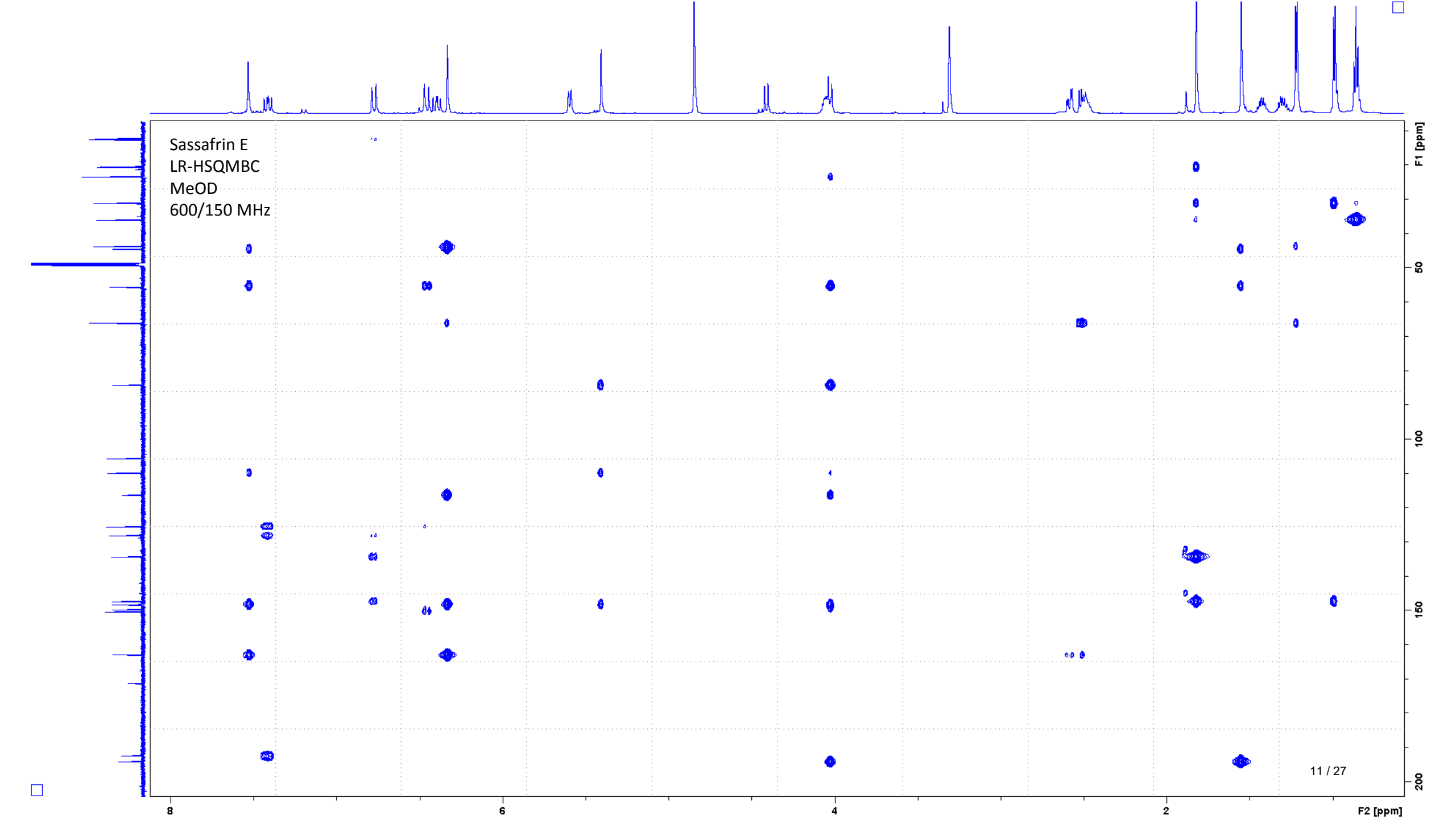
4
2
F2 [ppm]
10 / 27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600/150 MHz
11 / 27
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F2 [ppm]
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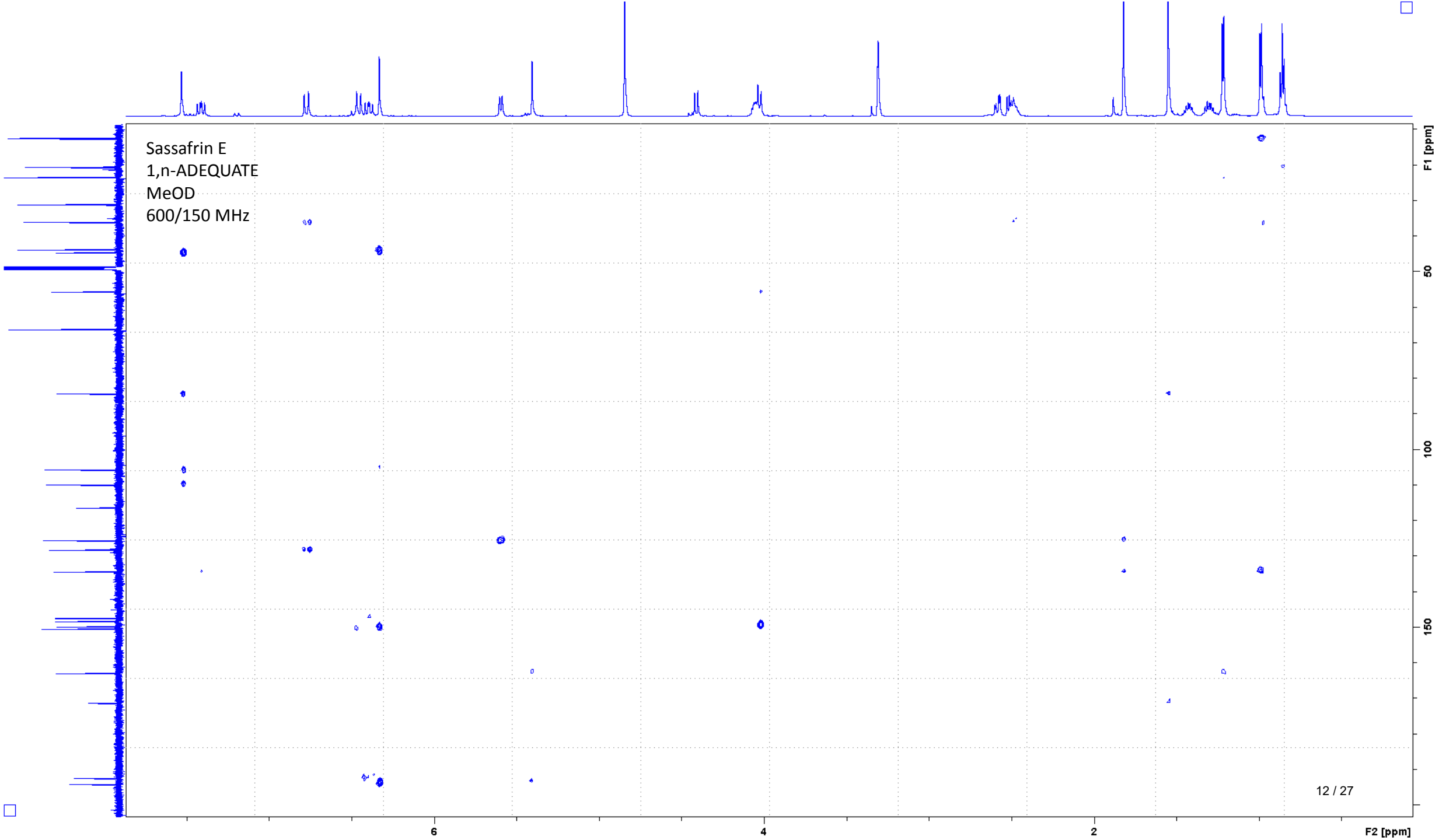
6
4
2
50
100
150
200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600/150 MHz
12 / 27
F1 [ppm]
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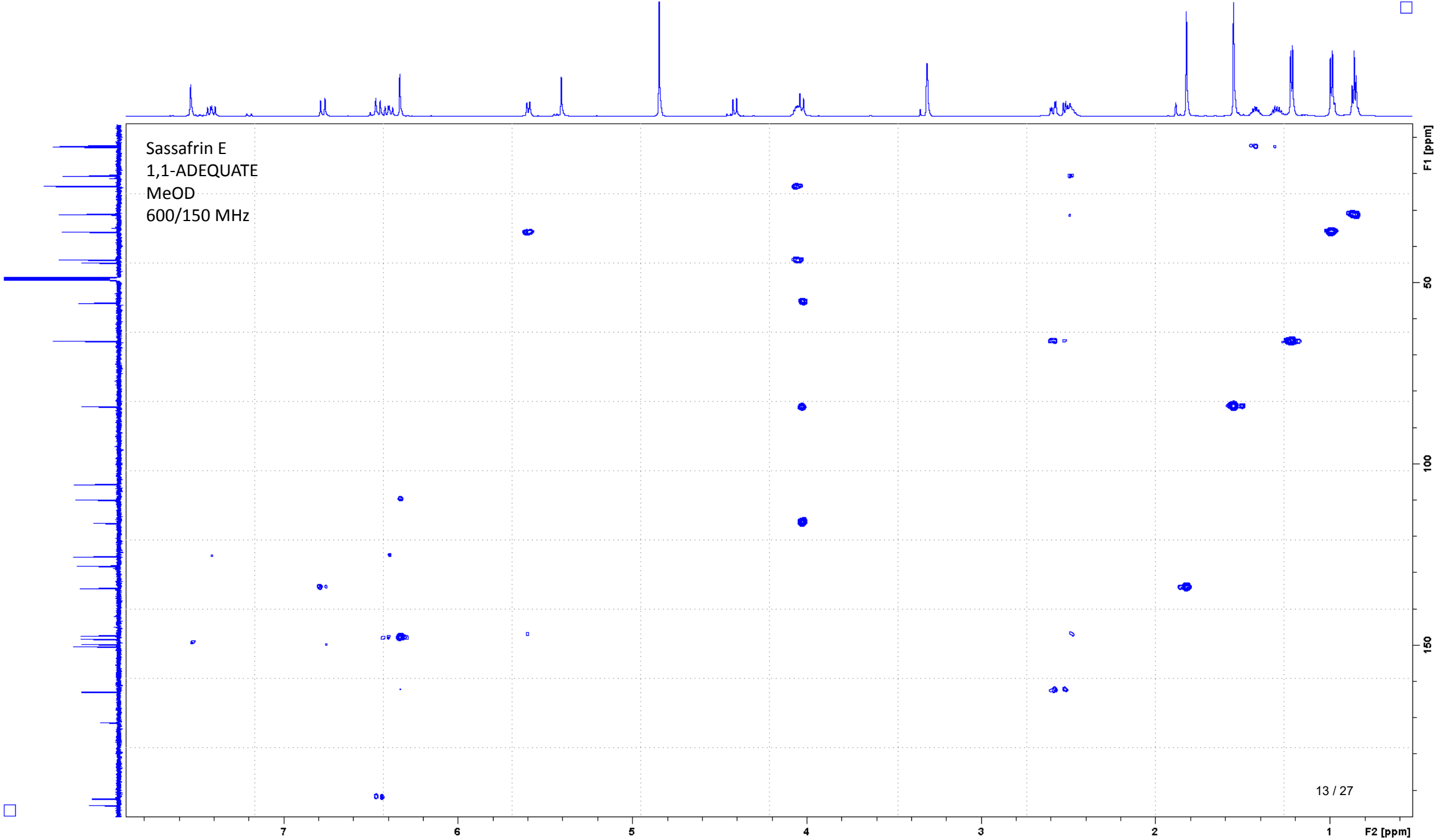
100
150
6
4
2
F2 [ppm]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MeOD
600/150 MHz
13 / 27
F1 [ppm]
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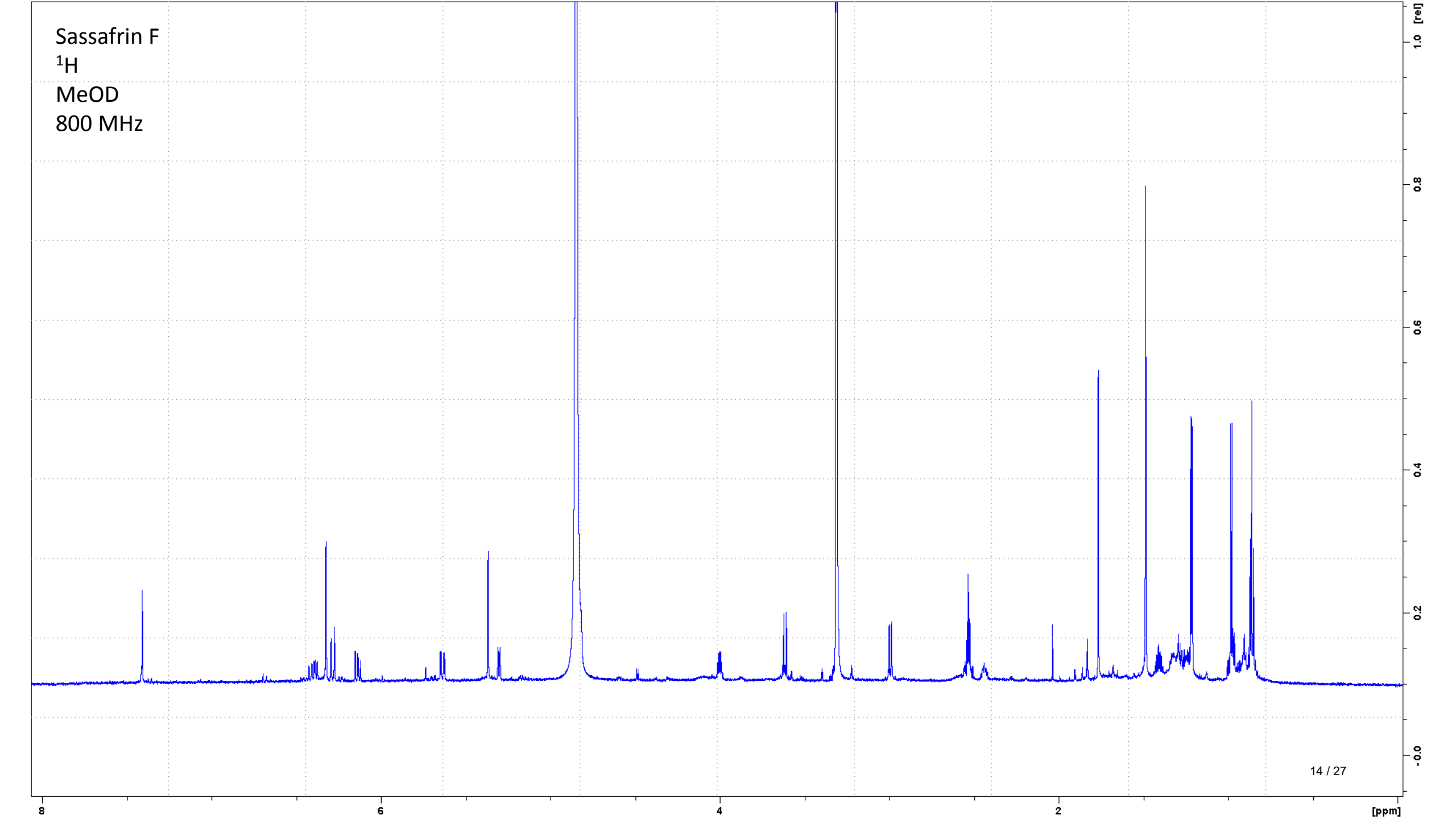
100
150
7
6
5
4
3
2
1
F2 [ppm]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MeOD
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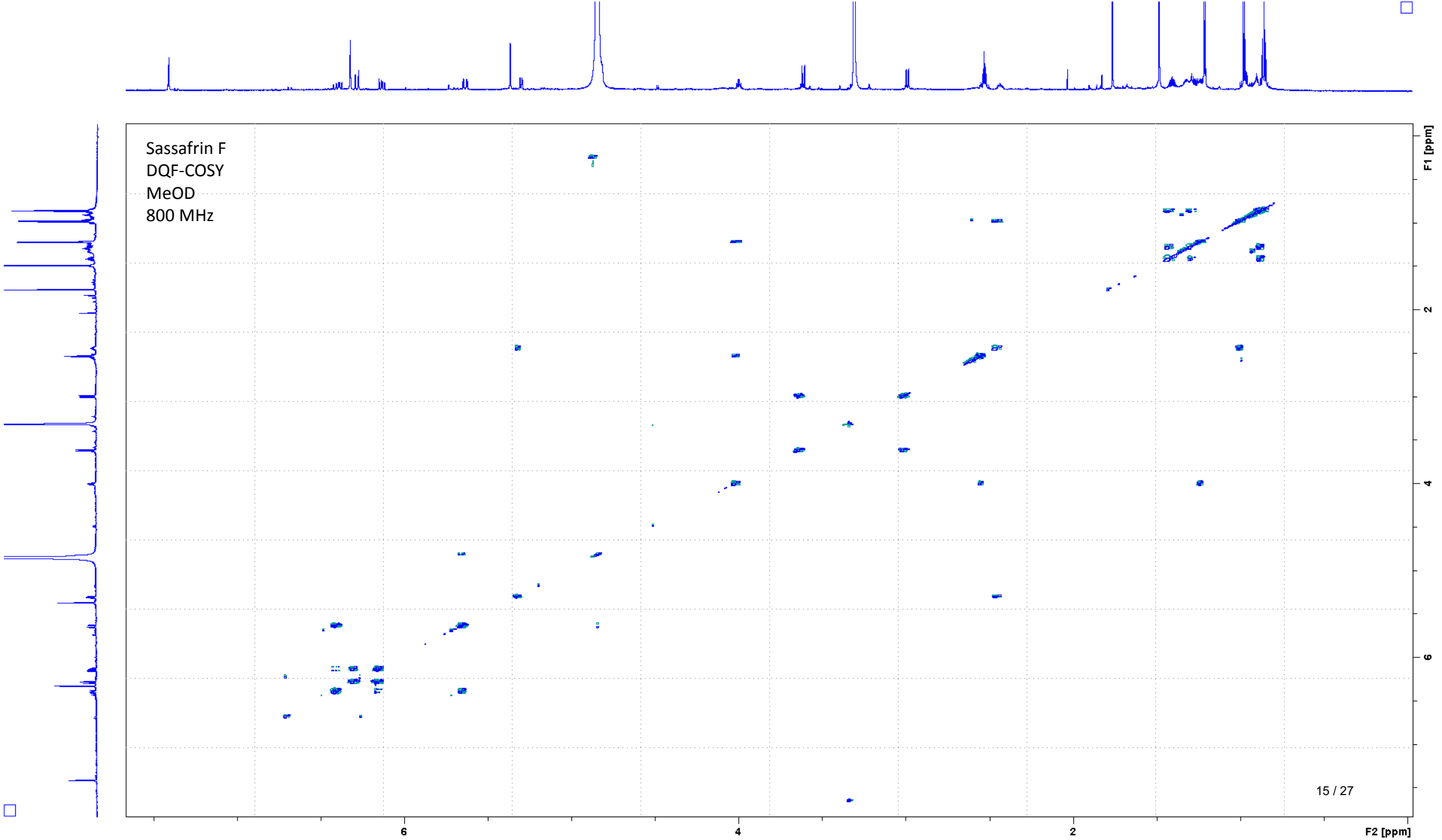
-0.0
[rel]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MeOD
800 MHz
15 / 27
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F2 [ppm]
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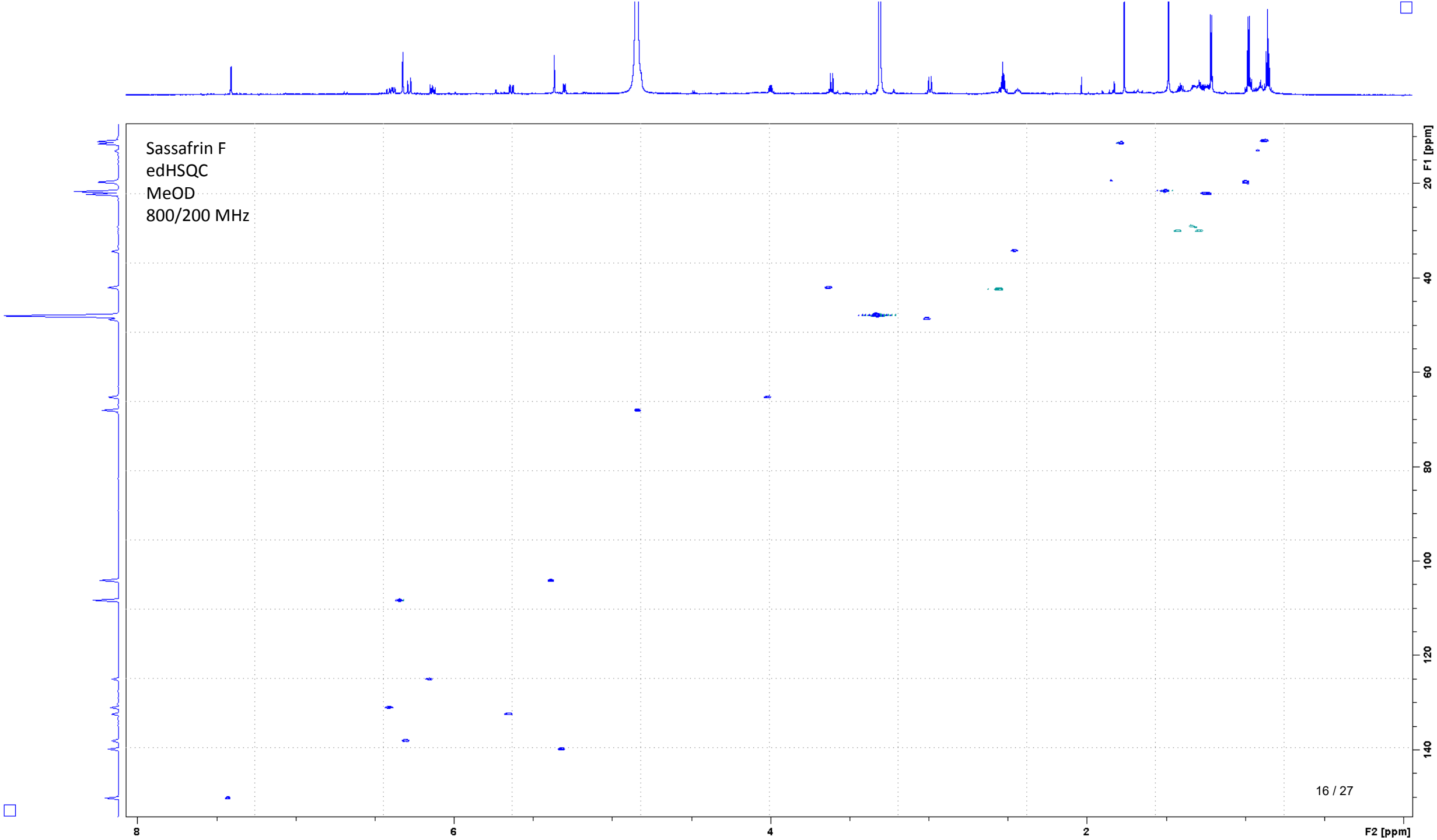
4
6
6
4
2


Sassafrin F
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MeOD
800/200 MHz
16 / 27
F1 [ppm]
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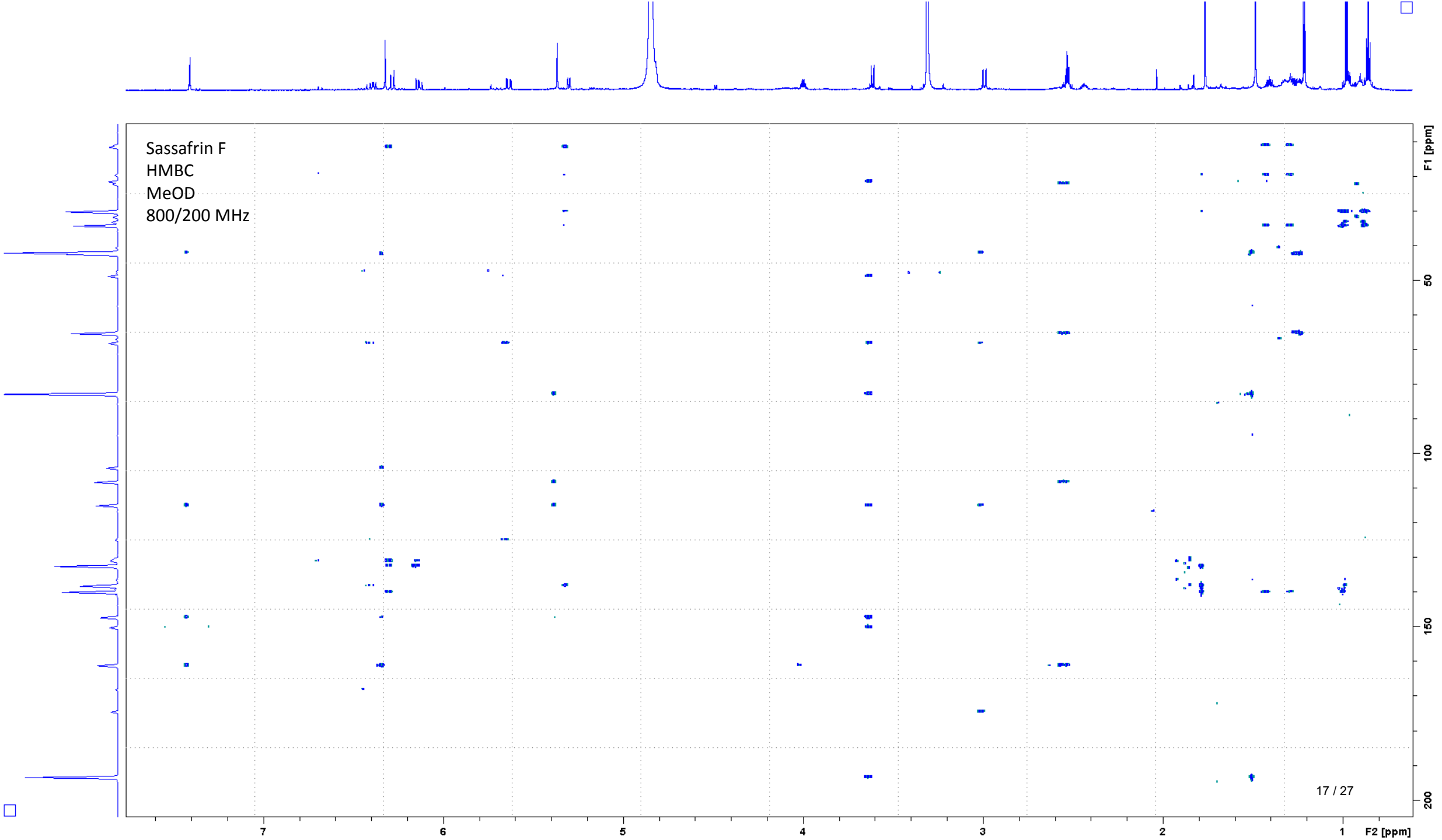
80
100
120
140
8
6
4
2
F2 [ppm]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MeOD
800/200 MHz
17 / 27
F1 [ppm]
F2 [ppm]
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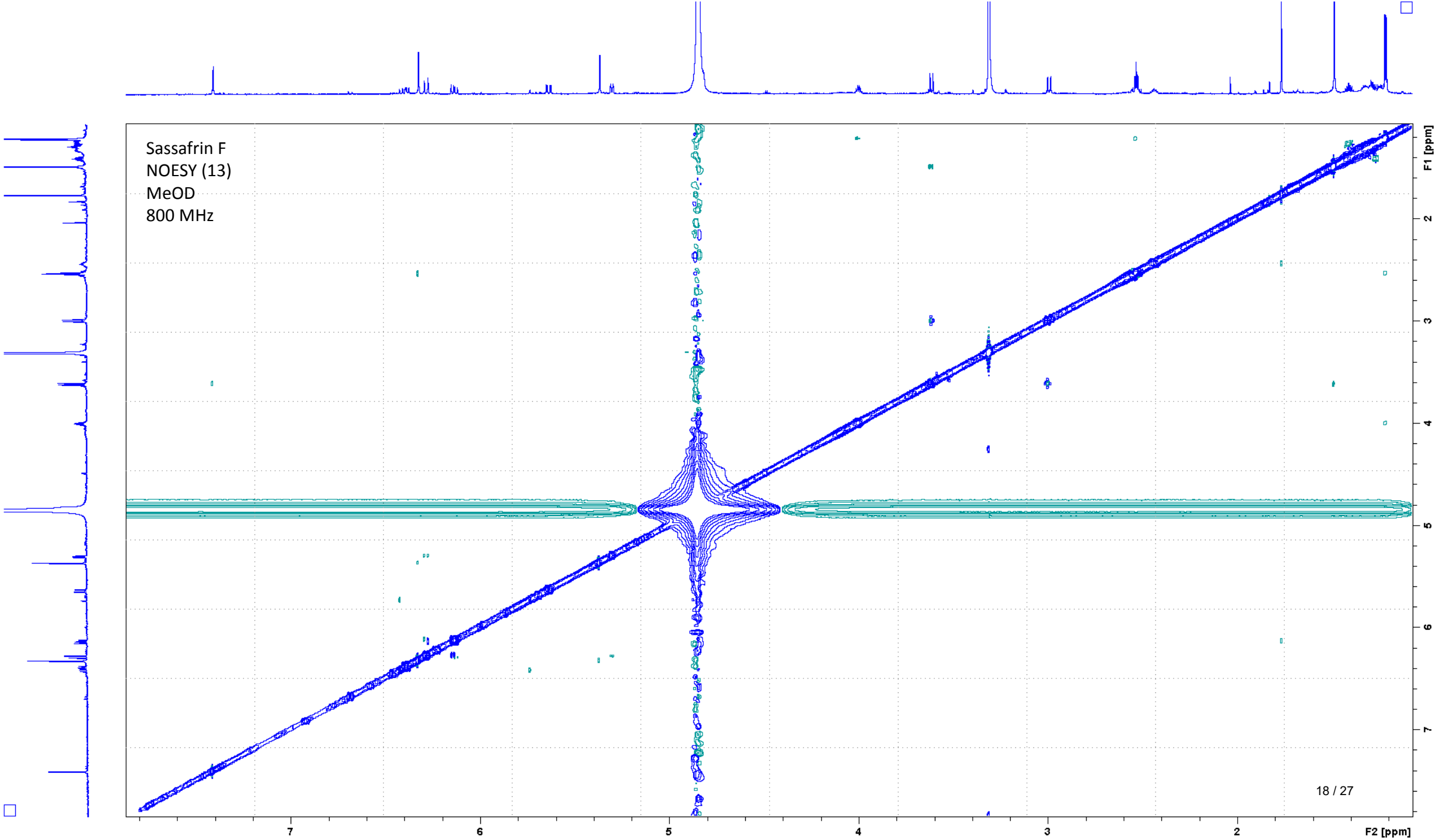
100
150
200
7
6
5
4
3
2
1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MeOD
800 MHz
18 / 27
F1 [ppm]
F2 [ppm]
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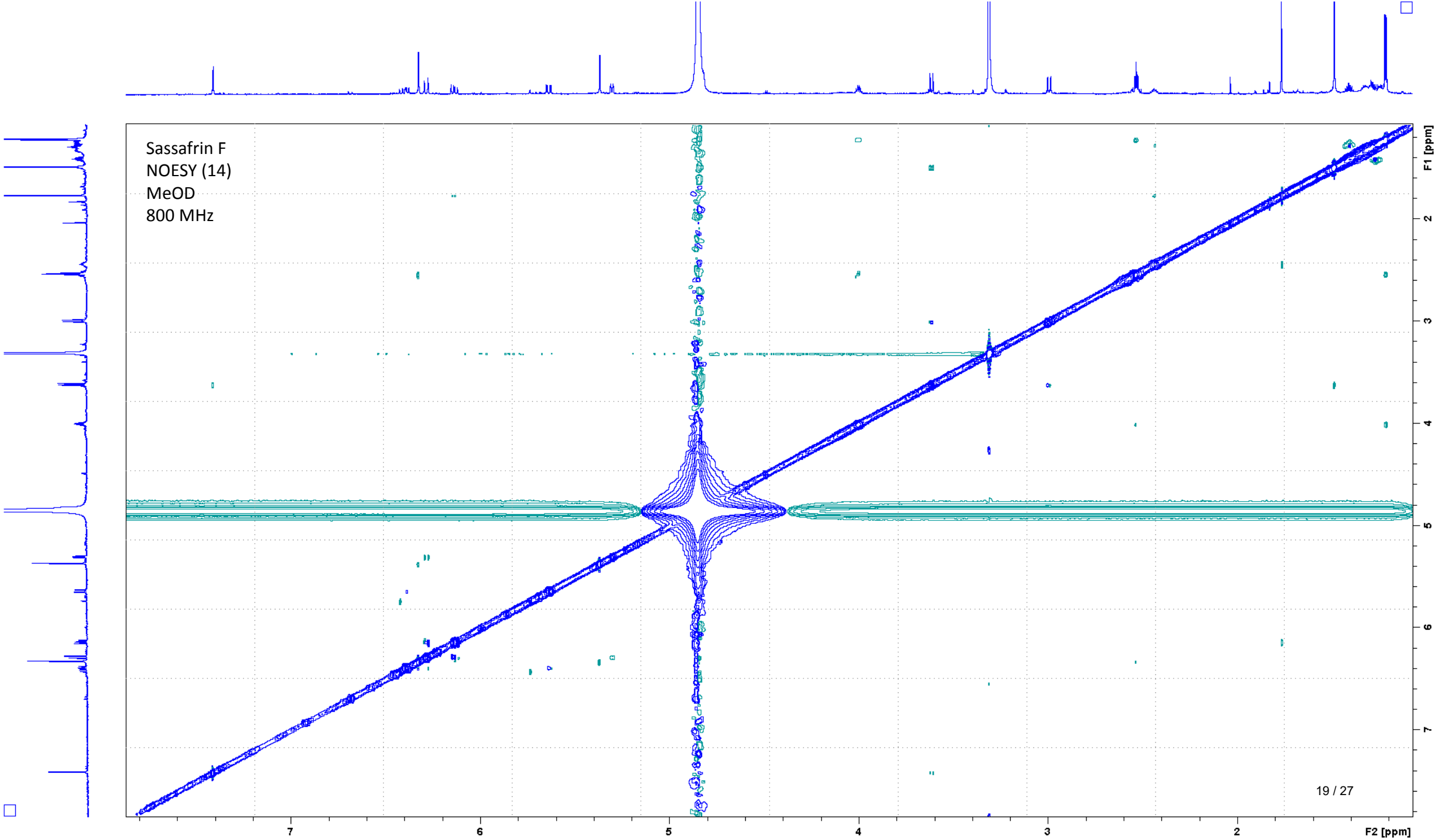
3
4
5
6
7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MeOD
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19 / 27
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F2 [ppm]
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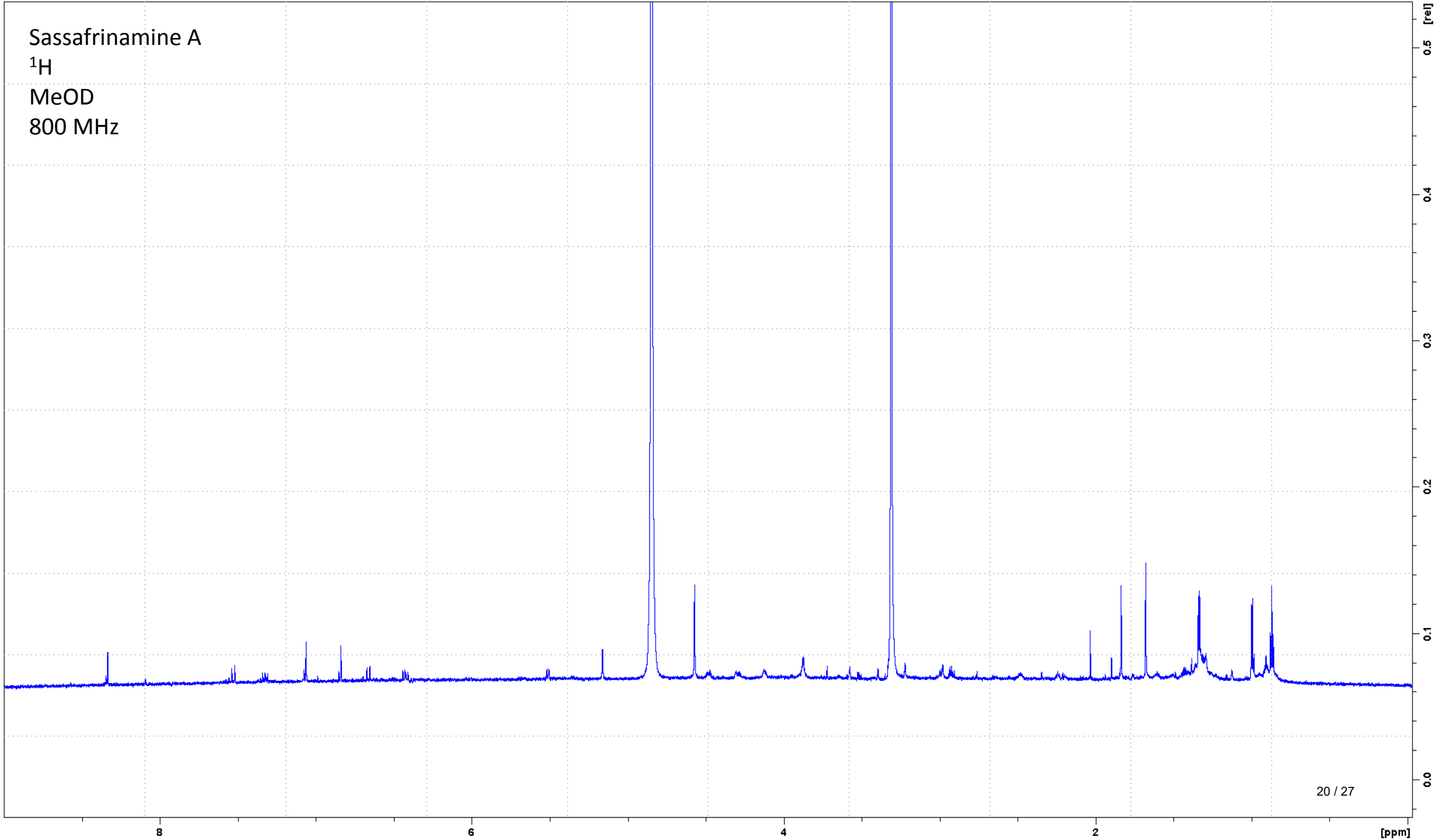
3
4
5
6
7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1H
MeOD
800 MHz
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6
4
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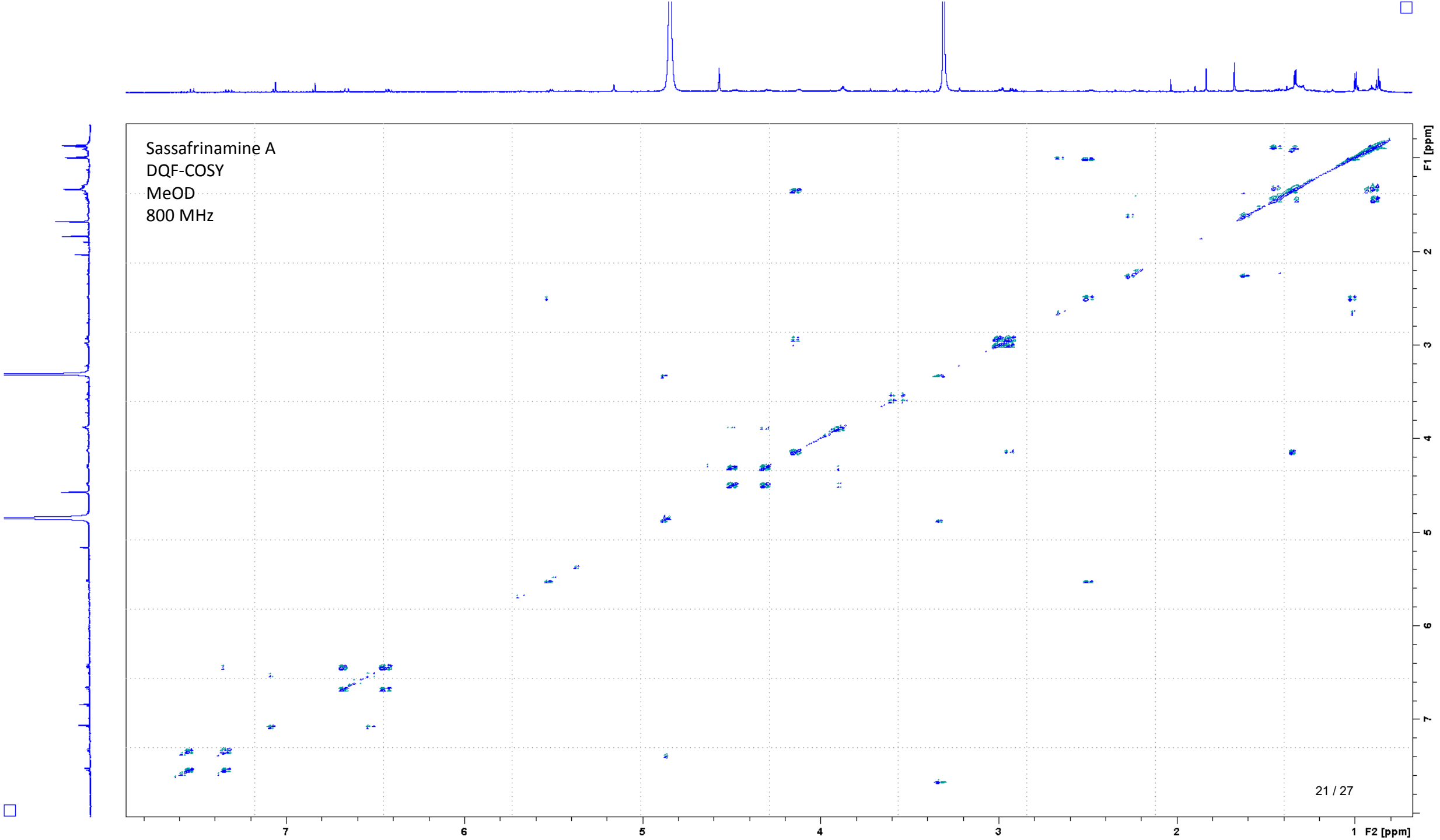
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MeOD
800 MHz
21 / 27
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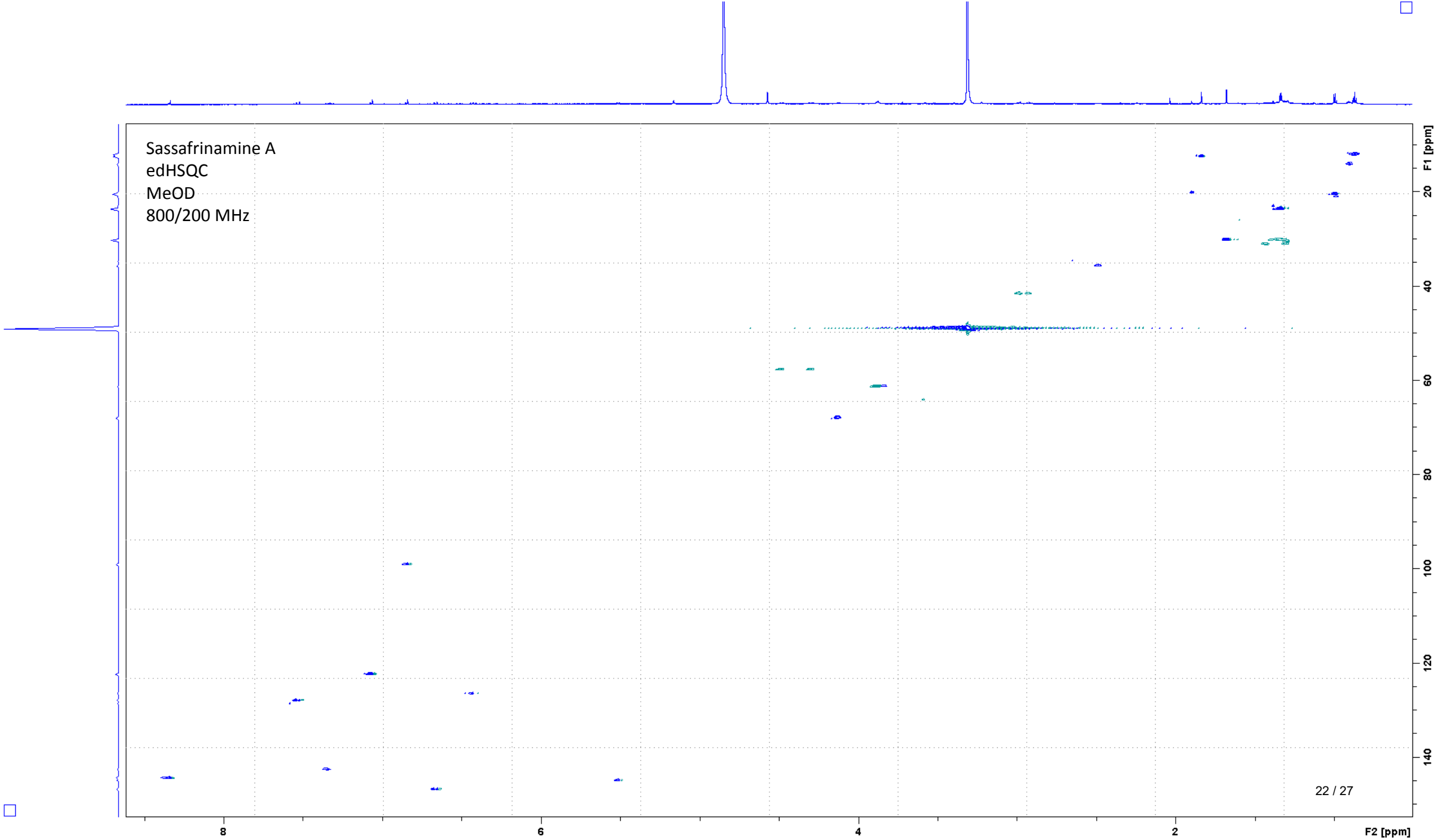
F2 [ppm]
1
2
3
4
5
6
7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edHSQC
MeOD
800/200 MHz
22 / 27
F1 [ppm]
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40
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80
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120
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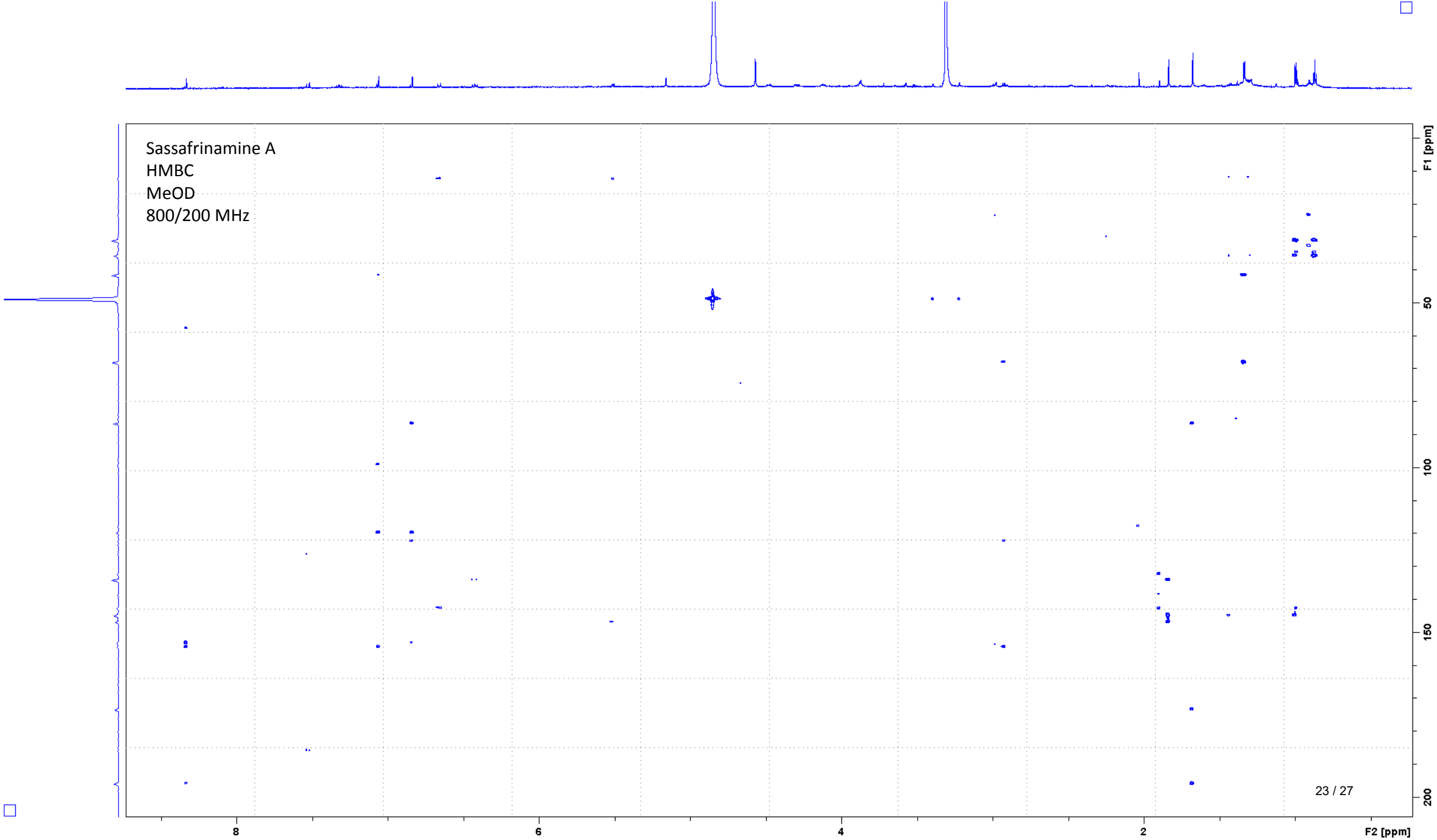
8
6
4
2
F2 [ppm]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HMBC
MeOD
800/200 MHz
23 / 27
F1 [ppm]
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100
150
200
8
6
4
2
F2 [ppm]

S3. Tandem mass spectra and proposed fragmentation pathway for deuterated sassafrin E.

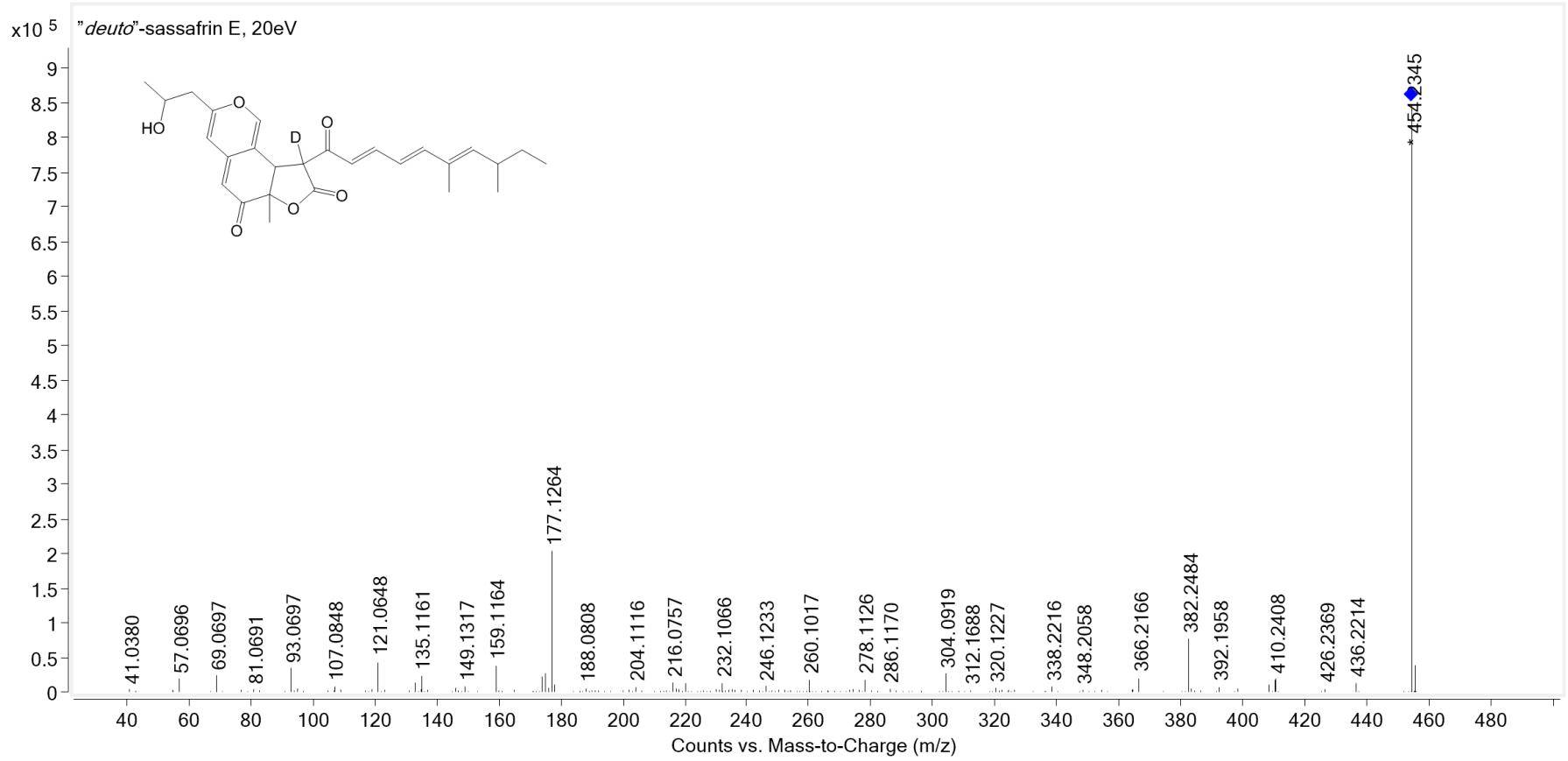

Figure S2. Tandem mass spectrum for deuterated sassafrin E at 20 eV colission energy.

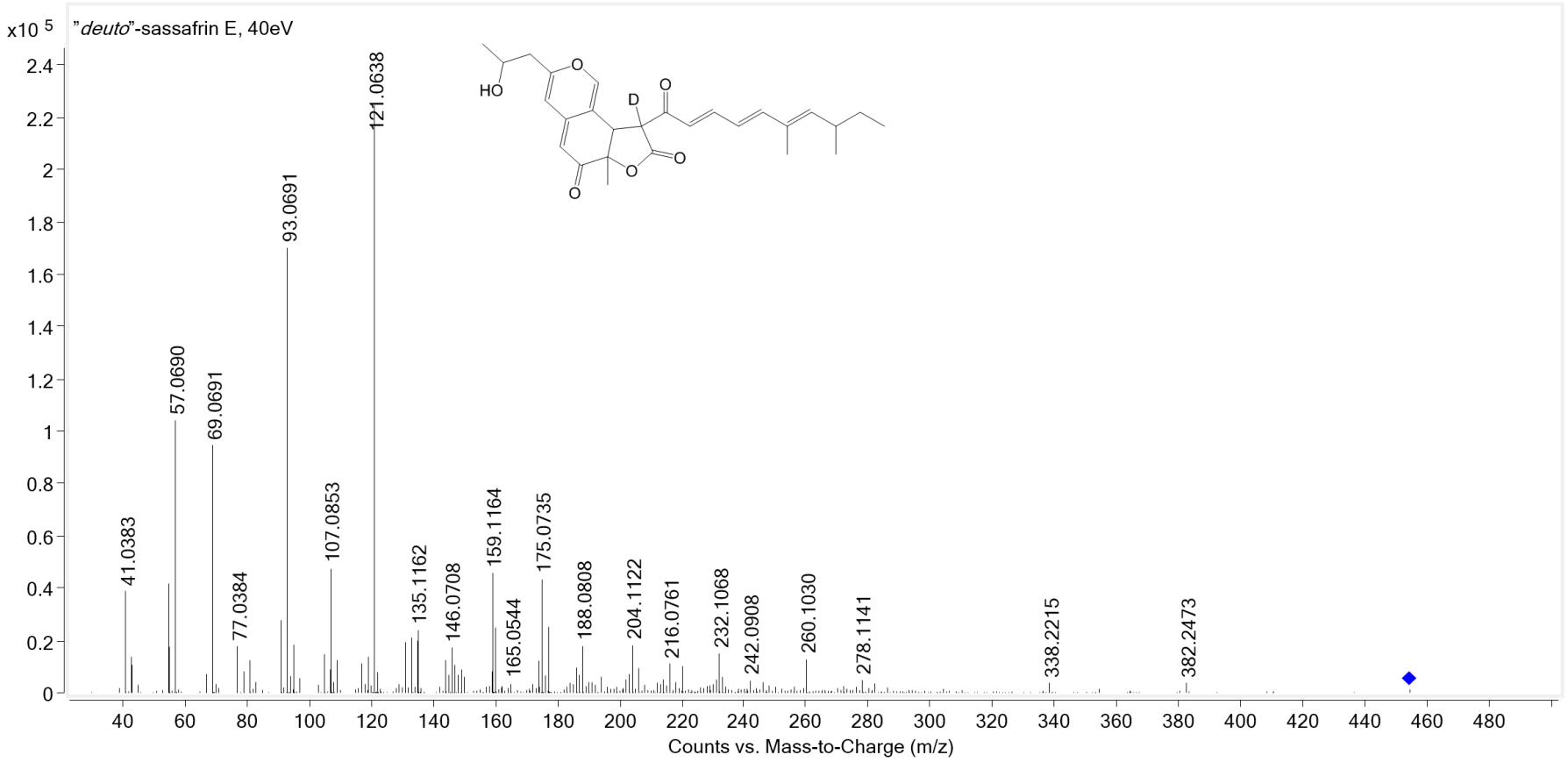

Figure S3. Tandem mass spectrum for deuterated sassafrin E at 40 eV colission energy

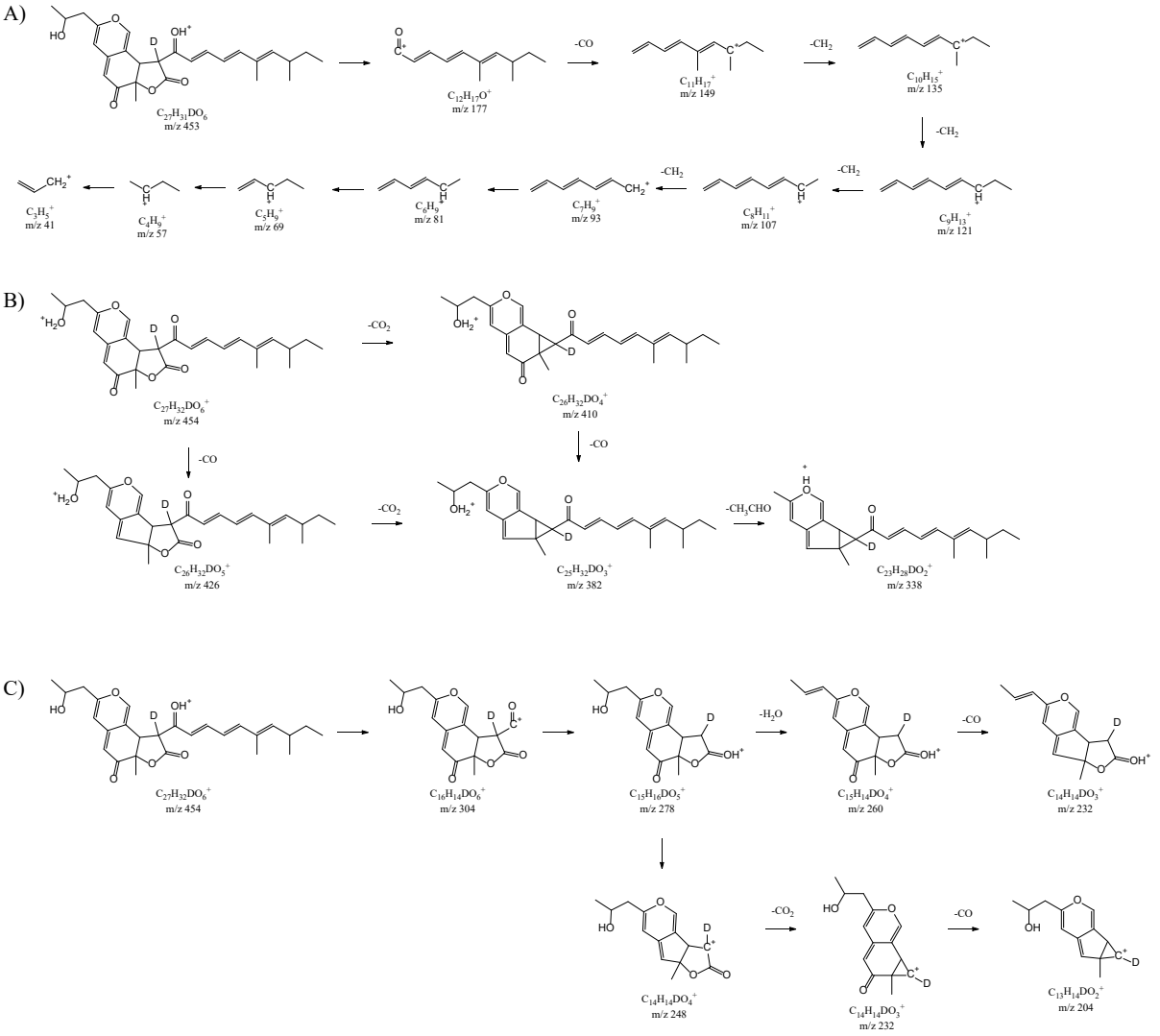

Figure S4. Proposed MS/MS fragmentation pathways for sassafrin E (1), based on deuteration in position H-23.

S4. Dereplication of mz453 compound in *Aspergillus neoglaber* compared to *Penicillium echinulatum*.

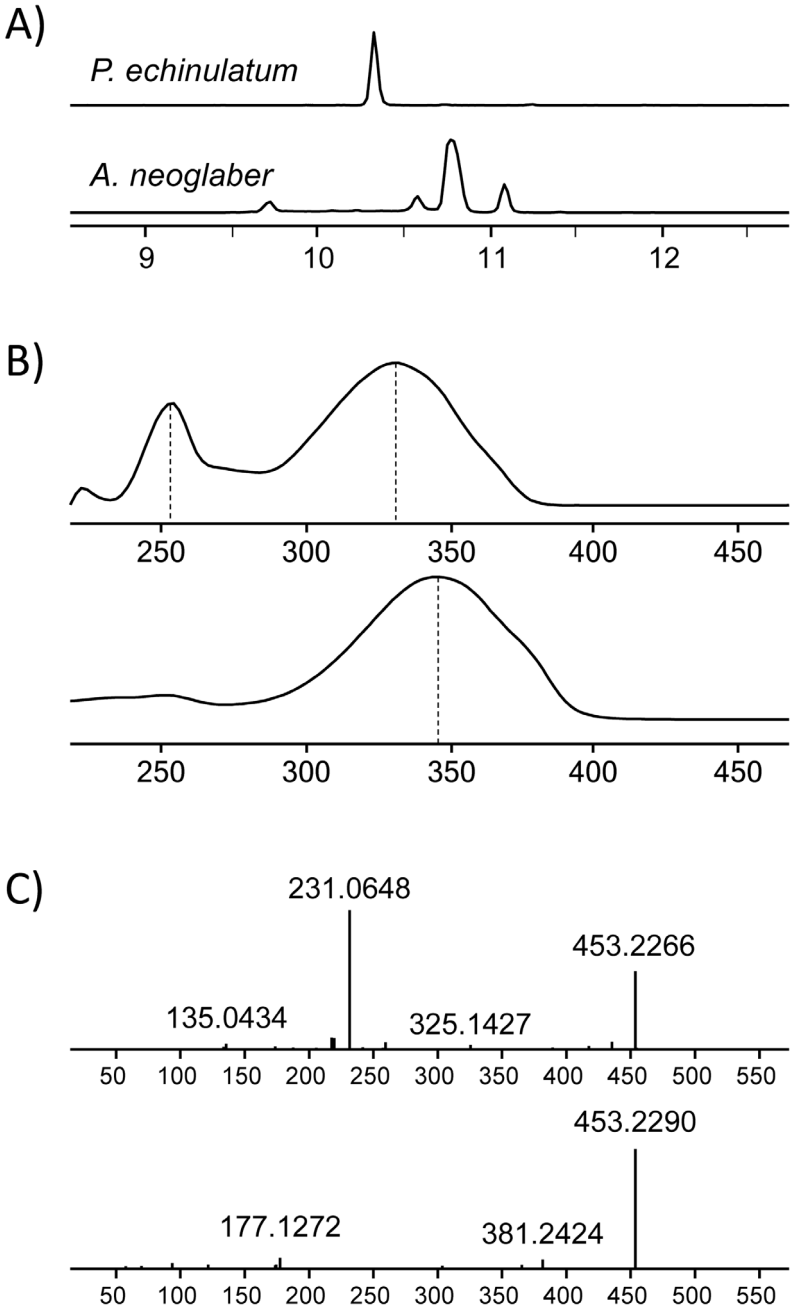

Figure S5. A) Extracted ion chromatogram (m/z 453.2277) for extracts from *P. echinulatum* and *A. neoglaber*. B) UV-VIS spectra for the mz453 compounds in *P. echinulatum* (top) and *A. neoglaber* (bottom). C) Tandem mass spectra (20 eV) for the mz453 compounds in *P. echinulatum* (top) and *A. neoglaber* (bottom).