

Supporting informations
for
**Synthesis Study of the Structure–Activity Relationship of
Antiproliferative *N*-Substituted Isosteviol-Based
1,3-Aminoalcohols**

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Antiproliferative effects of the investigated compounds

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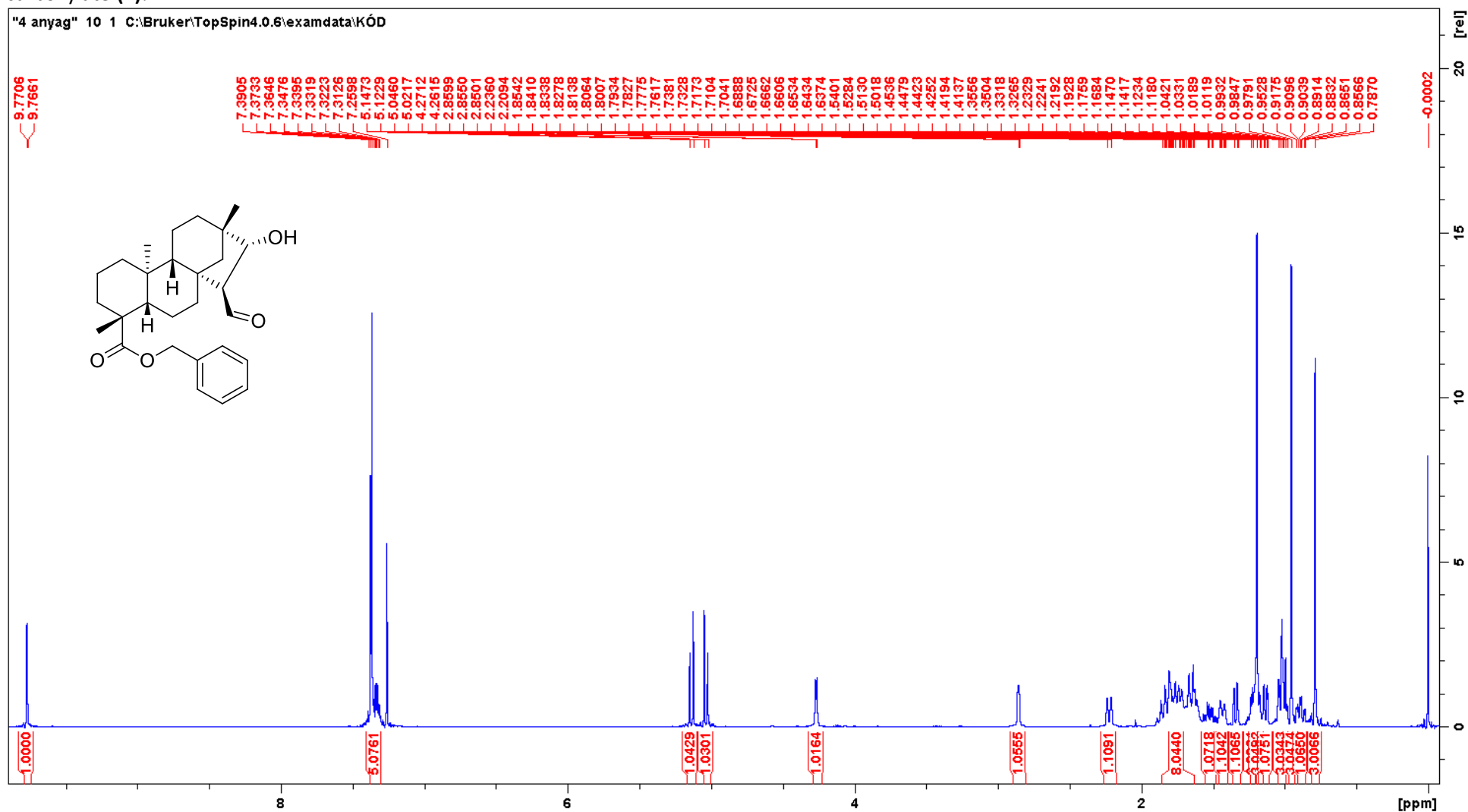
Table S1. Calculated IC₅₀ values and 95% confidence intervals (CI) of the investigated molecules against four cancer cell lines and non-malignant fibroblasts (NIH/3T3)

| Compound | HeLa | | A2780 | | MDA-MB-231 | | MCF-7 | | NIH/3T3 | |
|-----------|------------------|------------|------------------|-----------|------------------|------------|------------------|-----------|------------------|-----------|
| | IC ₅₀ | CI (95%) | IC ₅₀ | CI (95%) | IC ₅₀ | CI (95%) | IC ₅₀ | CI (95%) | IC ₅₀ | CI (95%) |
| 4 | > 10 | * | > 10 | | > 10 | | > 10 | | > 10 | |
| 5 | 4.17 | 3.79–4.60 | 4.57 | 3.59–5.81 | 5.98 | 4.84–7.37 | 4.29 | 3.77–4.89 | 4.27 | 3.67–4.95 |
| 6 | > 10 | | > 10 | | > 10 | | > 10 | | > 10 | |
| 7 | > 10 | | > 10 | | > 10 | | > 10 | | > 10 | |
| 8 | > 10 | | > 10 | | > 10 | | > 10 | | > 10 | |
| 11 | > 10 | | > 10 | | > 10 | | > 10 | | > 10 | |
| 12 | > 10 | | 4.78 | 3.68–6.21 | > 10 | | > 10 | | > 10 | |
| 14 | 2.70 | 2.48–2.94 | 1.36 | 1.19–1.57 | 2.23 | 1.32–3.76 | 1.54 | 1.33–1.78 | 5.92 | 4.03–8.68 |
| 15 | 4.18 | 2.65–6.59 | 3.91 | 2.38–6.44 | 4.28 | 3.43–5.35 | 4.20 | 3.38–5.23 | 4.80 | 3.76–6.12 |
| 16 | 3.86 | 3.37–4.42 | 4.00 | 3.67–4.36 | 4.79 | 4.19–5.48 | 3.48 | 3.09–3.90 | 1.37 | 1.27–1.48 |
| 17 | 4.45 | 3.38–5.85 | 3.78 | 2.16–6.61 | 4.04 | 2.19–7.42 | 4.74 | 2.38–9.41 | 1.95 | 1.78–2.14 |
| 18 | 3.05 | 2.46–3.79 | 2.89 | 2.67–3.18 | 4.63 | 3.82–5.62 | 4.85 | 3.80–6.21 | 4.61 | 3.71–5.72 |
| 19 | 6.08 | 5.72–6.46 | 4.41 | 3.65–5.32 | 7.29 | 4.92–10.81 | 5.59 | 4.80–6.52 | 5.44 | 4.69–6.31 |
| 20 | 1.99 | 0.483–2.63 | 3.74 | 2.83–4.95 | 1.78 | 1.51–2.10 | 1.37 | 1.24–1.51 | 4.78 | 3.60–6.34 |
| 23 | 4.16 | 3.55–4.87 | 4.24 | 3.89–4.62 | 5.08 | 4.12–6.27 | 3.16 | 2.89–3.45 | 1.79 | 1.57–2.04 |
| 24 | 3.04 | 2.55–3.62 | 4.52 | 3.59–5.70 | 4.99 | 4.07–6.11 | 2.37 | 1.63–3.45 | 4.44 | 3.95–4.99 |
| 25 | 4.43 | 3.94–4.97 | 4.83 | 4.28–5.45 | 6.53 | 5.29–8.07 | 4.17 | 3.45–5.04 | 3.98 | 3.59–4.41 |
| 26 | 4.33 | 3.61–5.19 | 4.11 | 3.62–4.67 | 6.07 | 4.93–7.48 | 3.67 | 3.25–4.13 | 3.12 | 2.66–3.66 |
| 27 | 3.40 | 1.74–6.66 | 3.26 | 2.93–3.61 | 4.11 | 3.51–4.81 | 2.43 | 2.26–2.62 | 5.03 | 4.07–6.23 |
| 28 | 3.72 | 2.77–5.01 | 4.42 | 3.03–6.43 | 4.34 | 3.01–6.27 | 3.82 | 2.50–5.84 | 1.55 | 1.47–1.64 |

* All values are given in μM . No IC₅₀ values were calculated when less than 50% cell growth inhibition was detected at 10 μM .

Figure S1

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*S*,8*R*,9*S*,11*bS*)-Benzyl 7-formyl-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**4**):



¹³C-NMR of compound (4*R*,4*aS*,6*aS*,7*S*,8*R*,9*S*,11*bS*)-Benzyl 7-formyl-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**4**):



Figure S3

COSY NMR of compound (4*R*,4*aS*,6*aS*,7*S*,8*R*,9*S*,11*bS*)-Benzyl 7-formyl-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**4**):

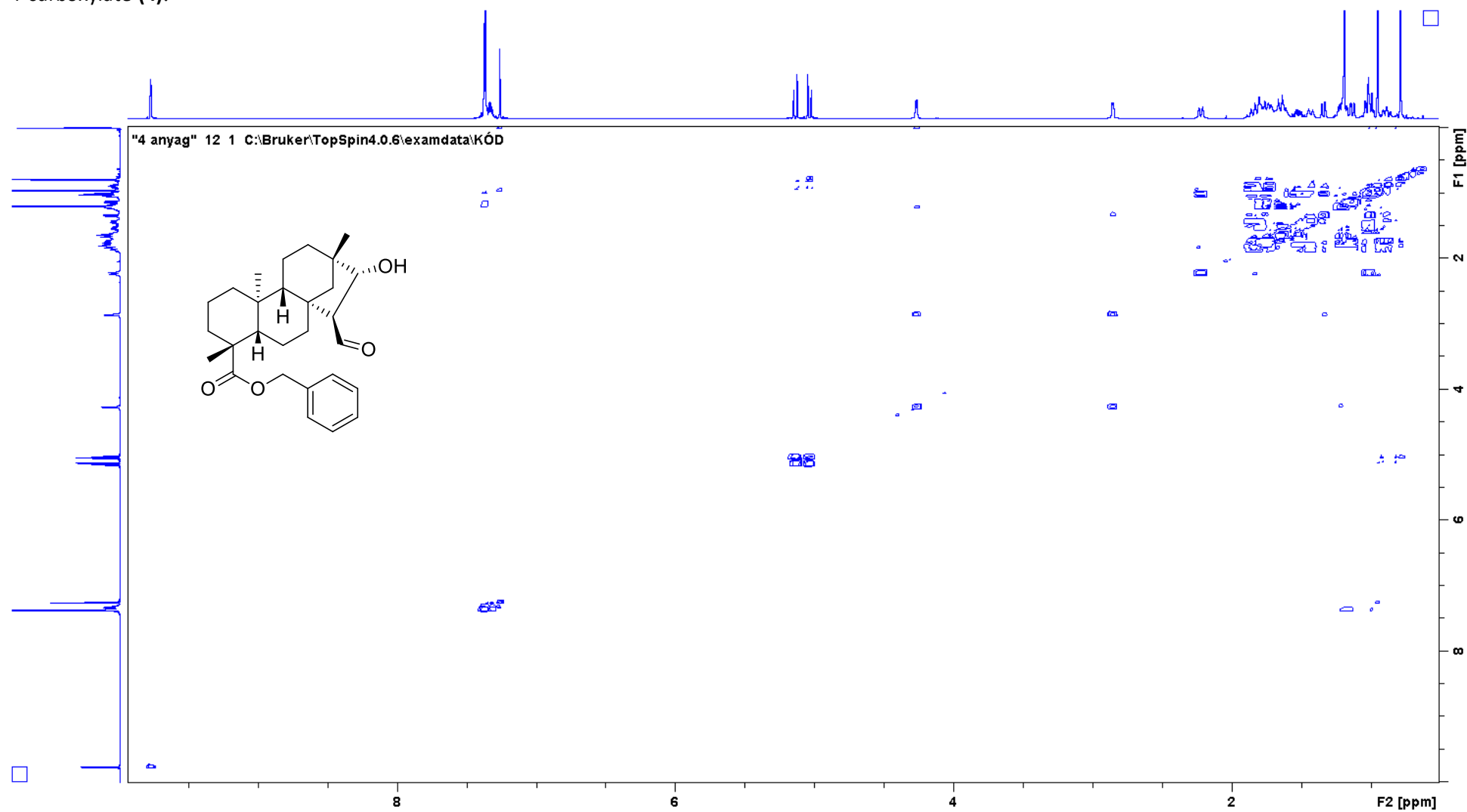


Figure S4

NOESY NMR of compound (4*R*,4*aS*,6*aS*,7*S*,8*R*,9*S*,11*bS*)-Benzyl 7-formyl-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**4**):

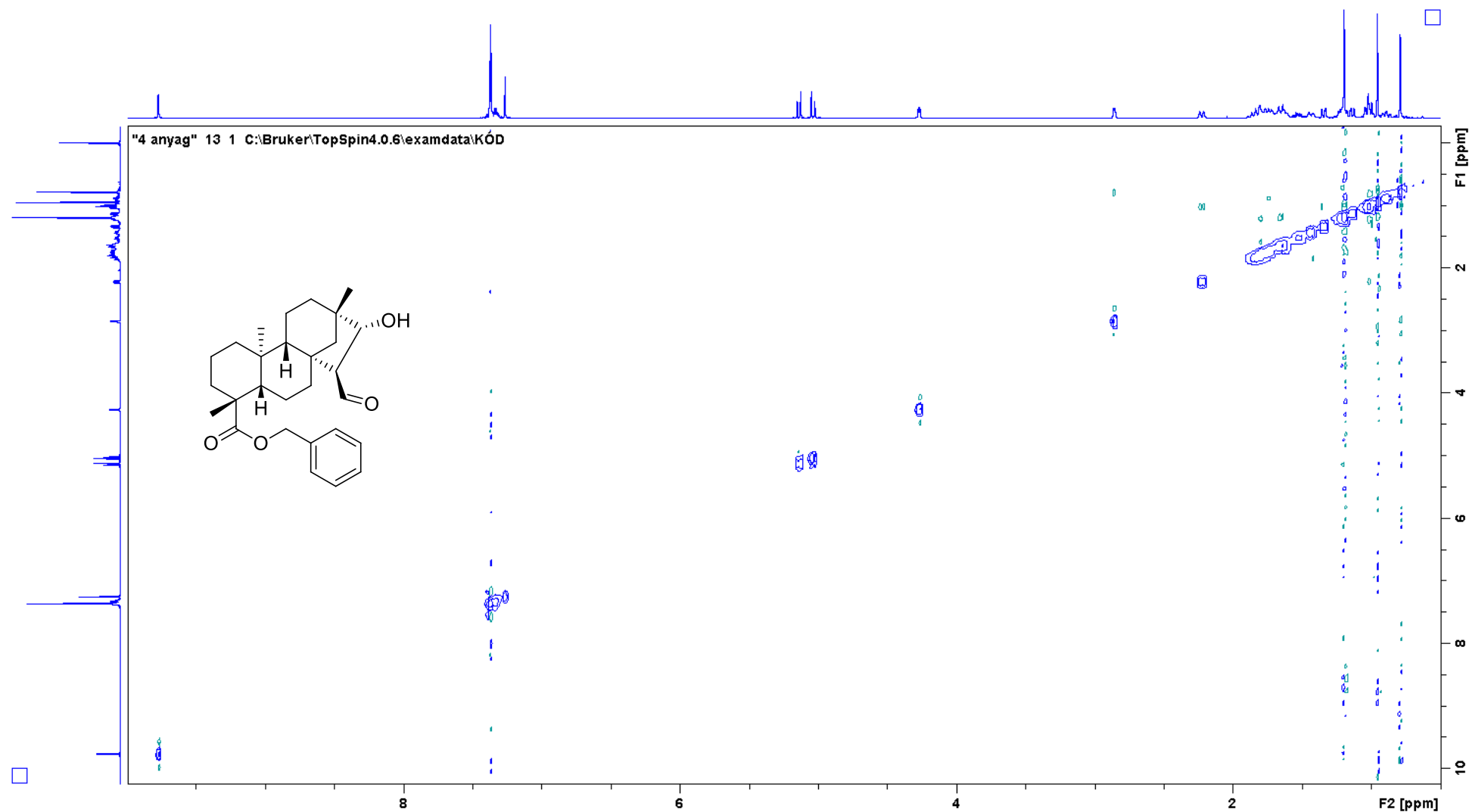


Figure S5

HSQC of compound (4*R*,4*aS*,6*aS*,7*S*,8*R*,9*S*,11*bS*)-Benzyl 7-formyl-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**4**):

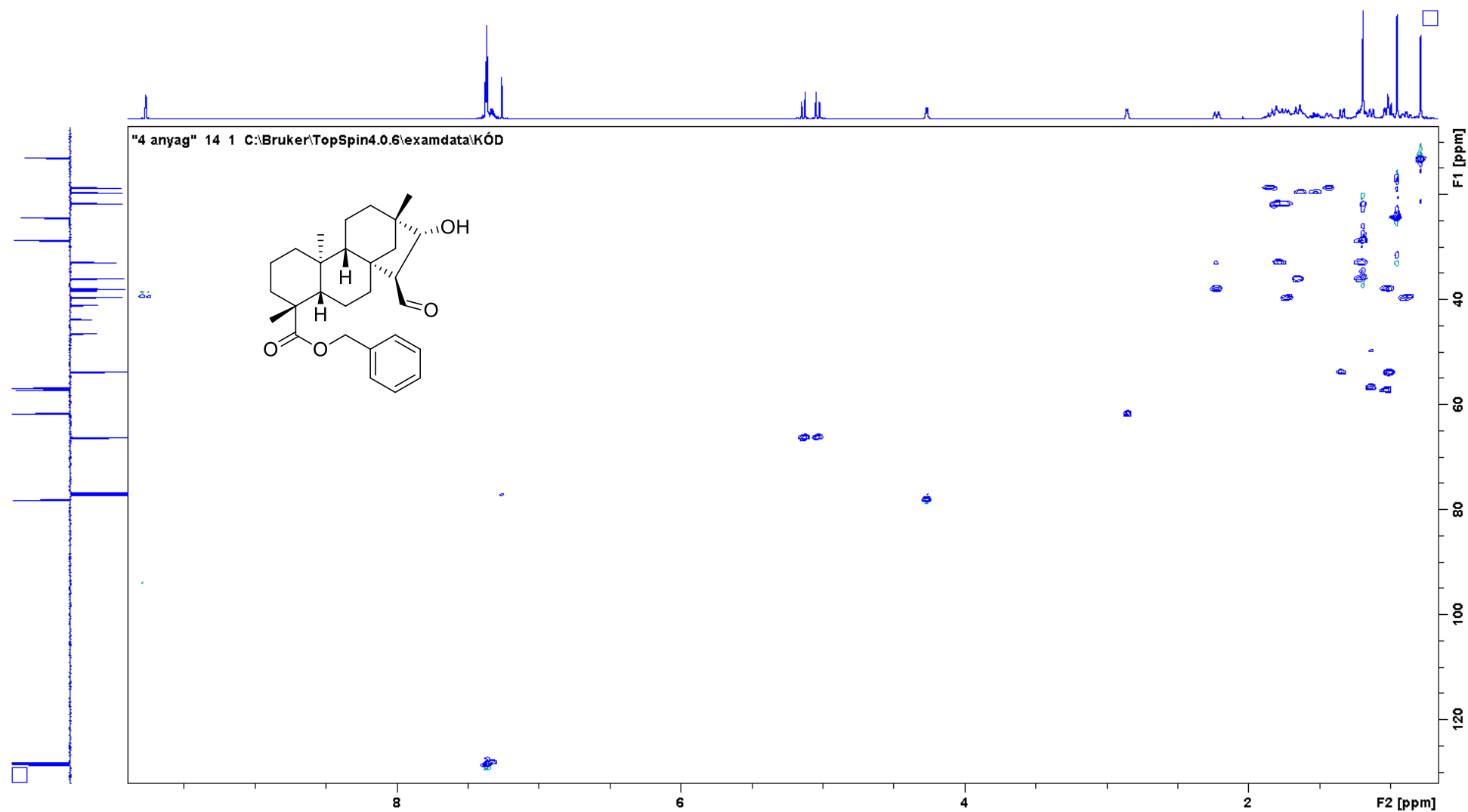


Figure S6

HMBC of compound (4*R*,4*aS*,6*aS*,7*S*,8*R*,9*S*,11*bS*)-Benzyl 7-formyl-8-hydroxy-4,9,11*b*-trimethyltetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**4**):

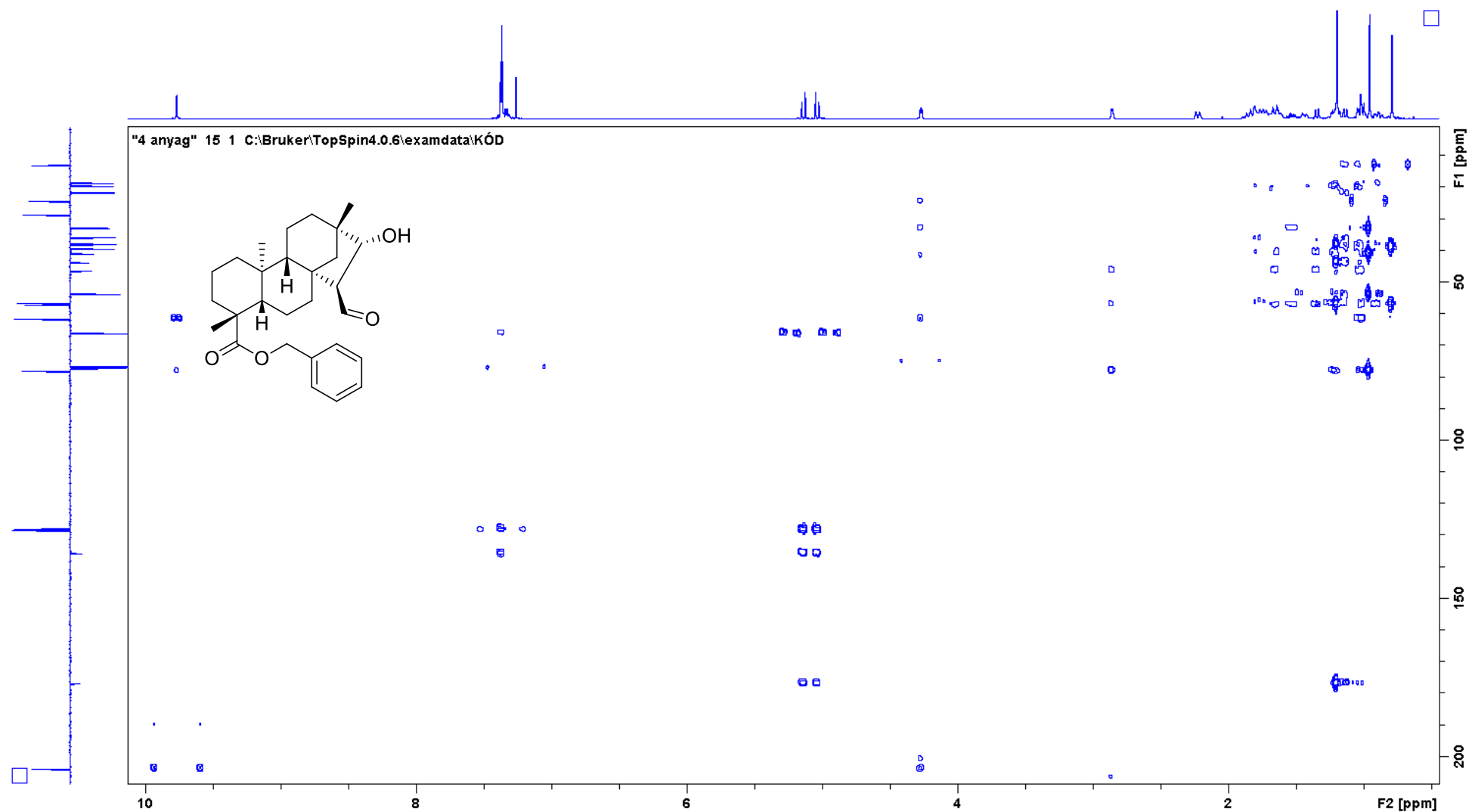


Figure S7

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

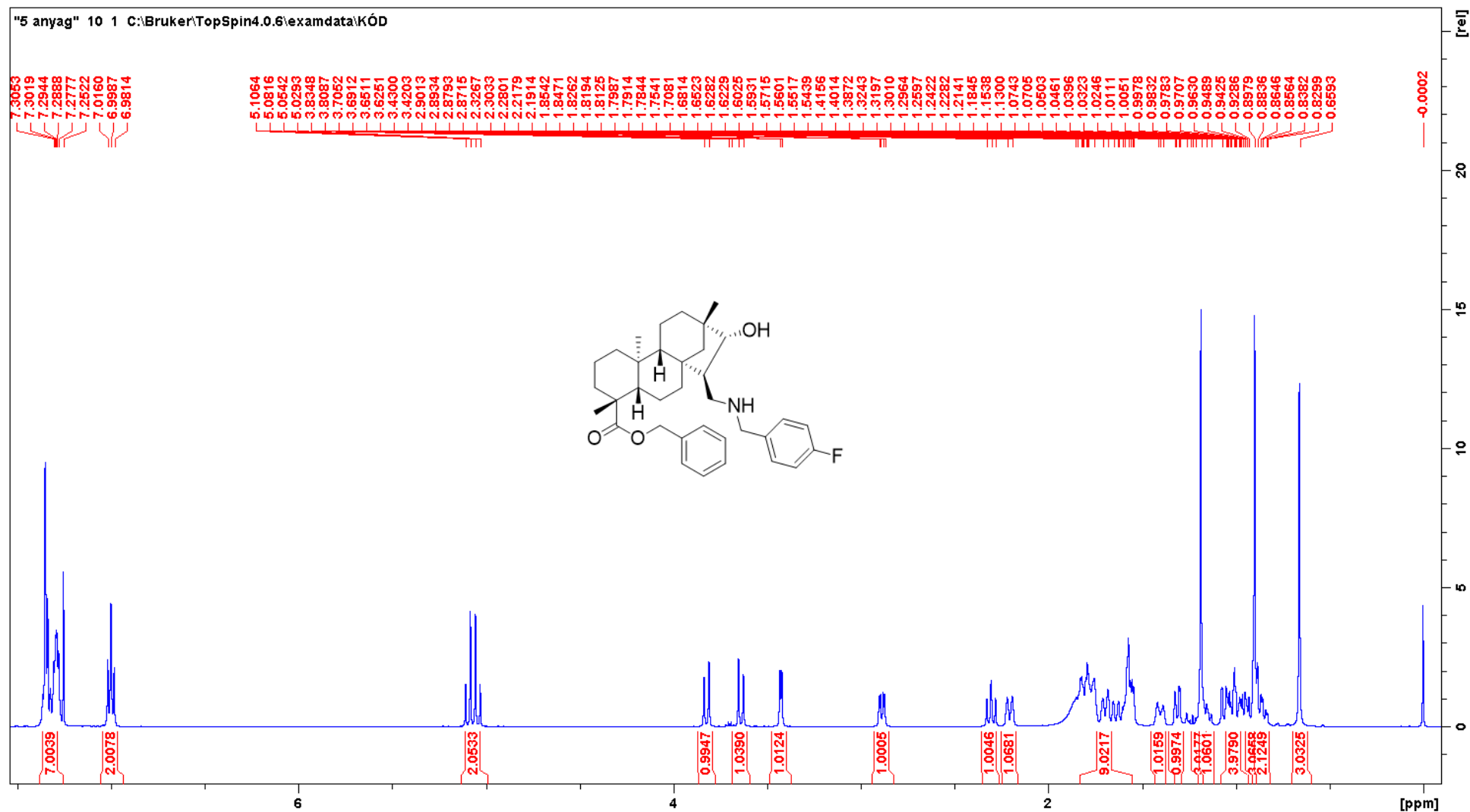


Figure S8

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradeca hydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

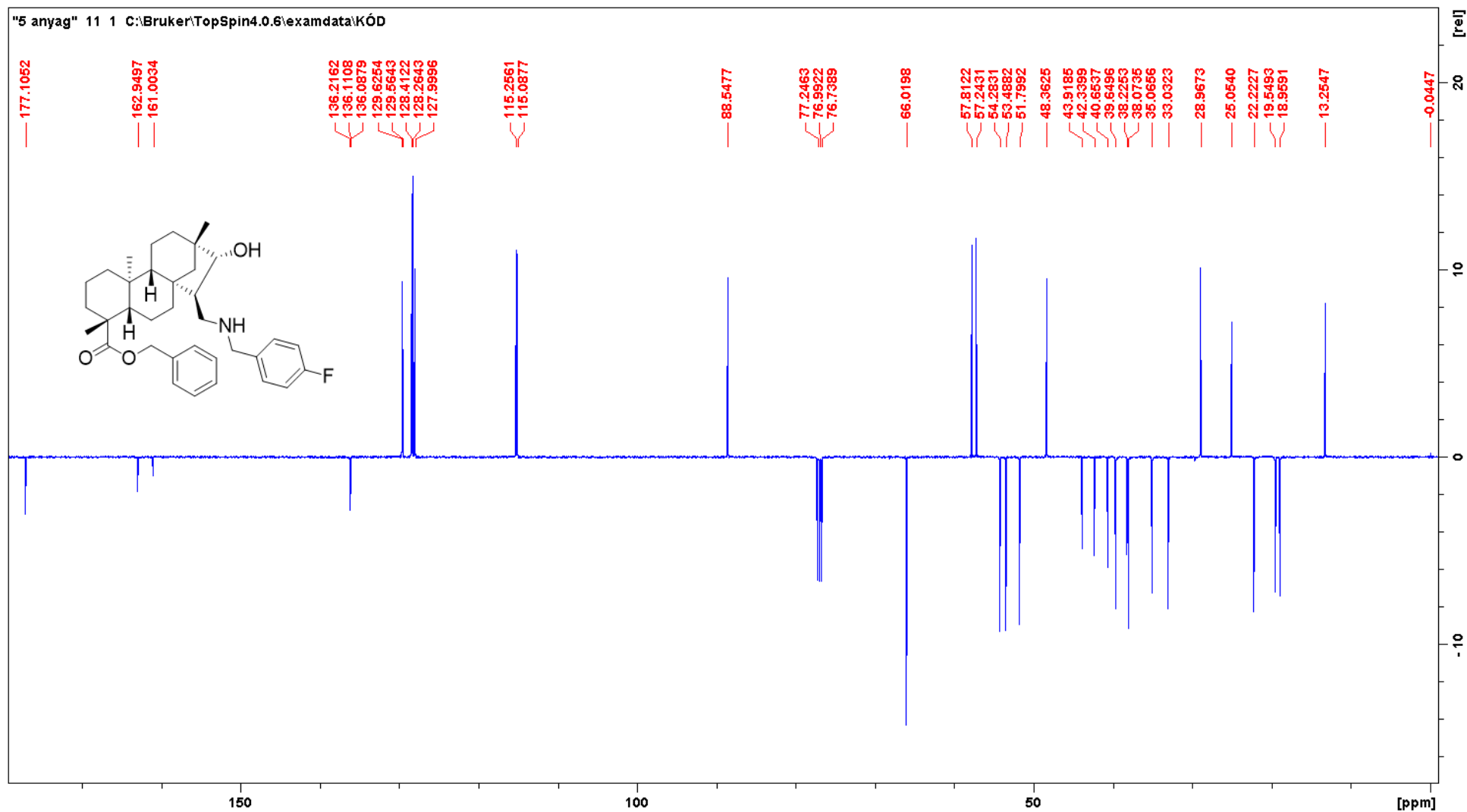


Figure S9

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

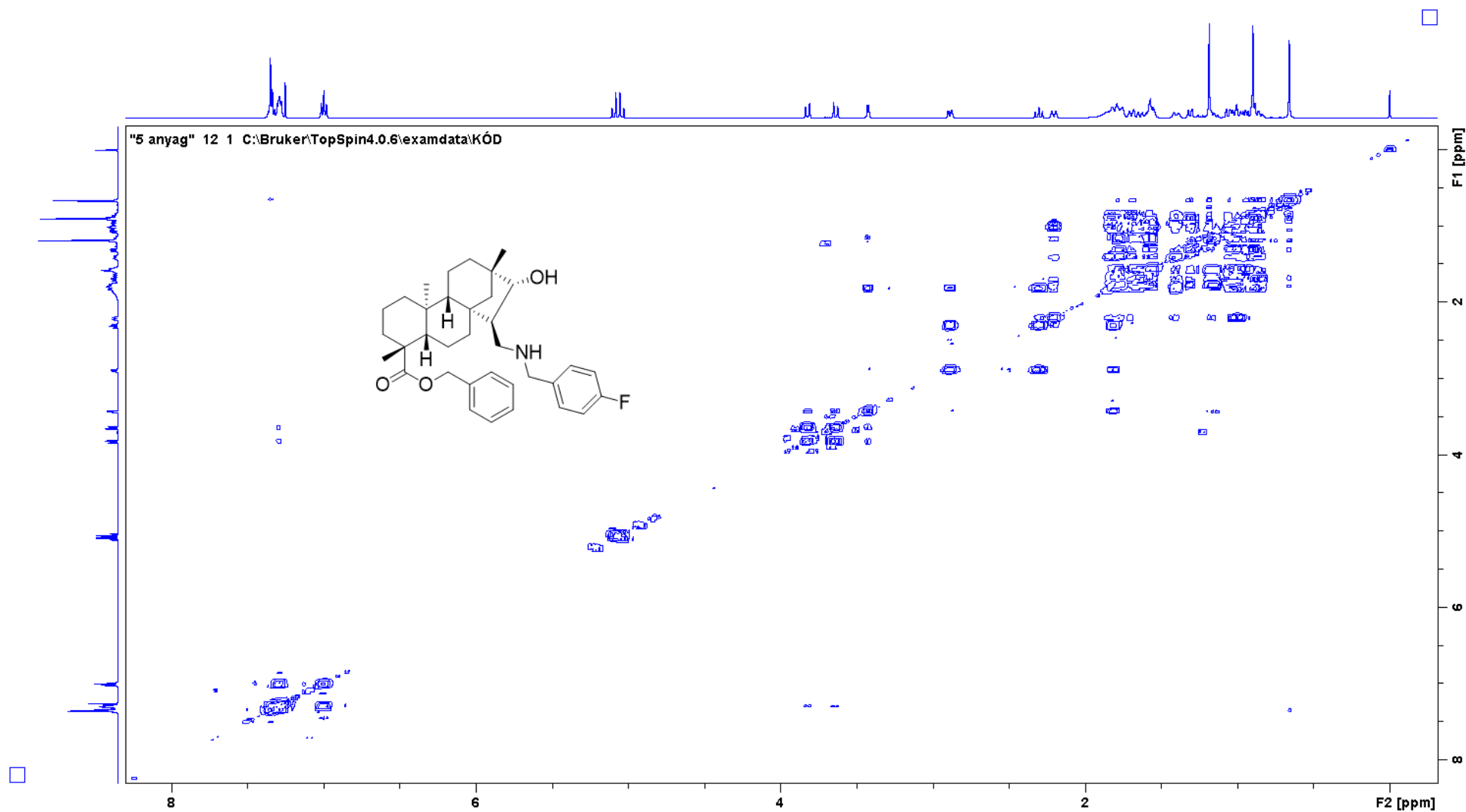


Figure S10

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

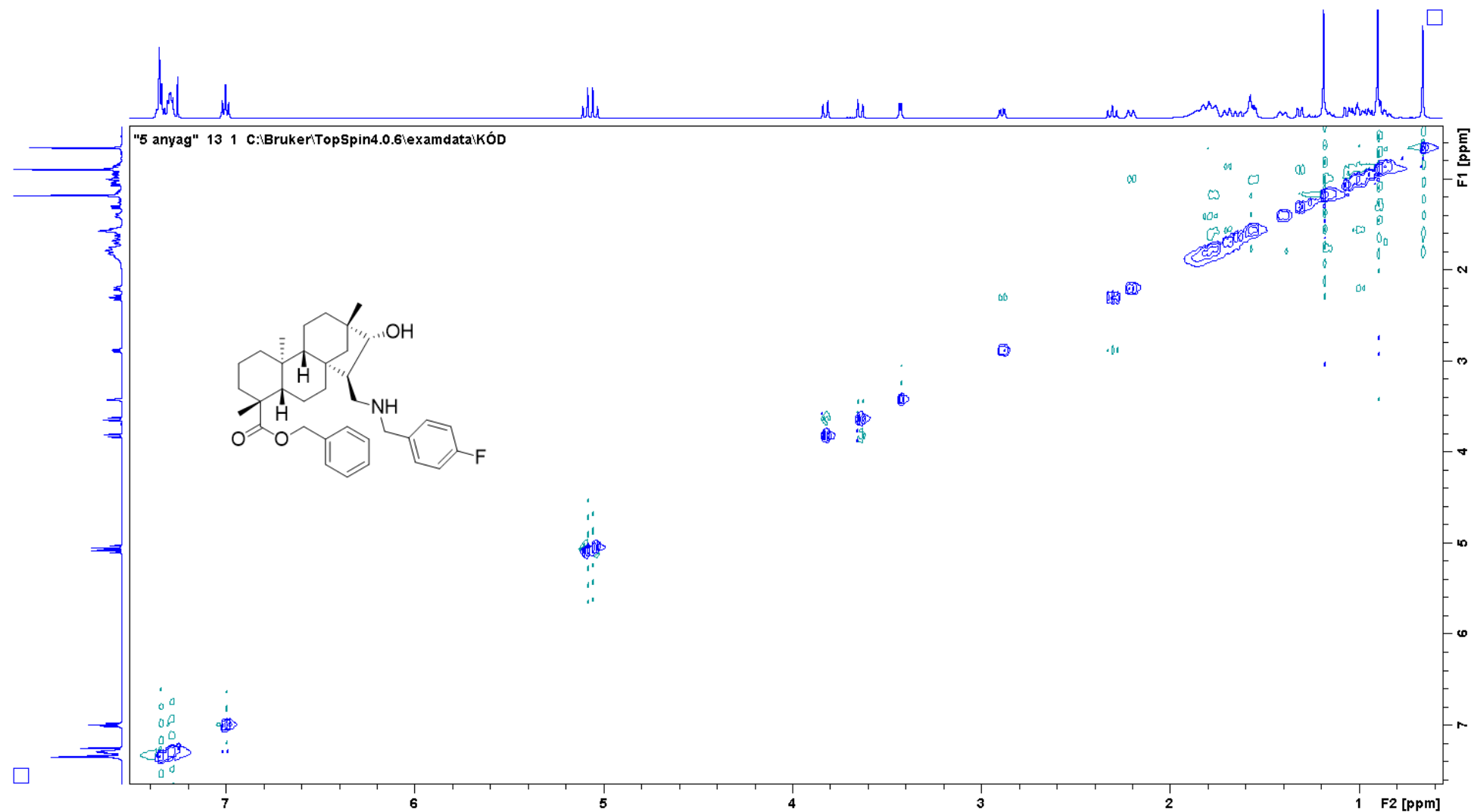


Figure S11

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

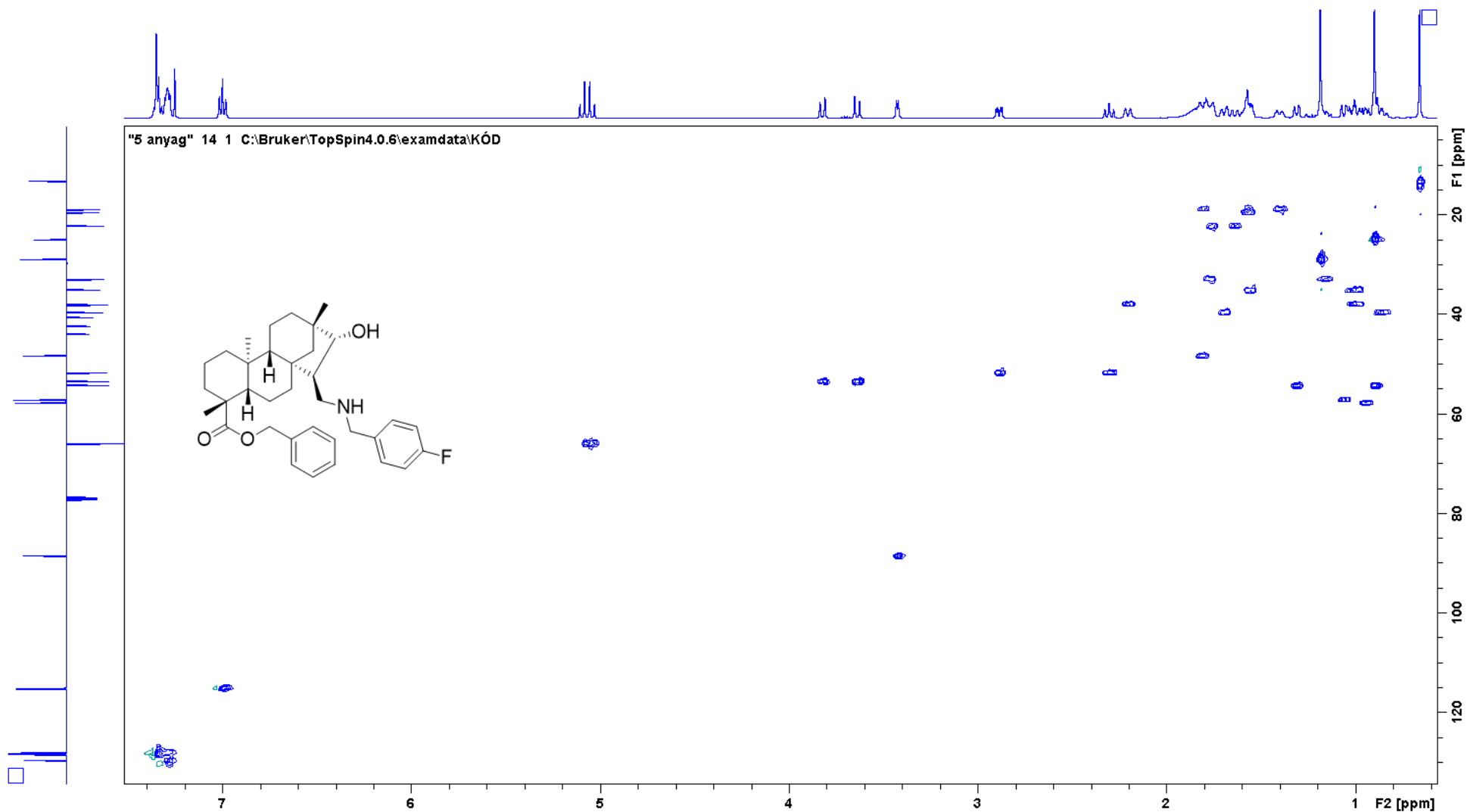


Figure S12

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

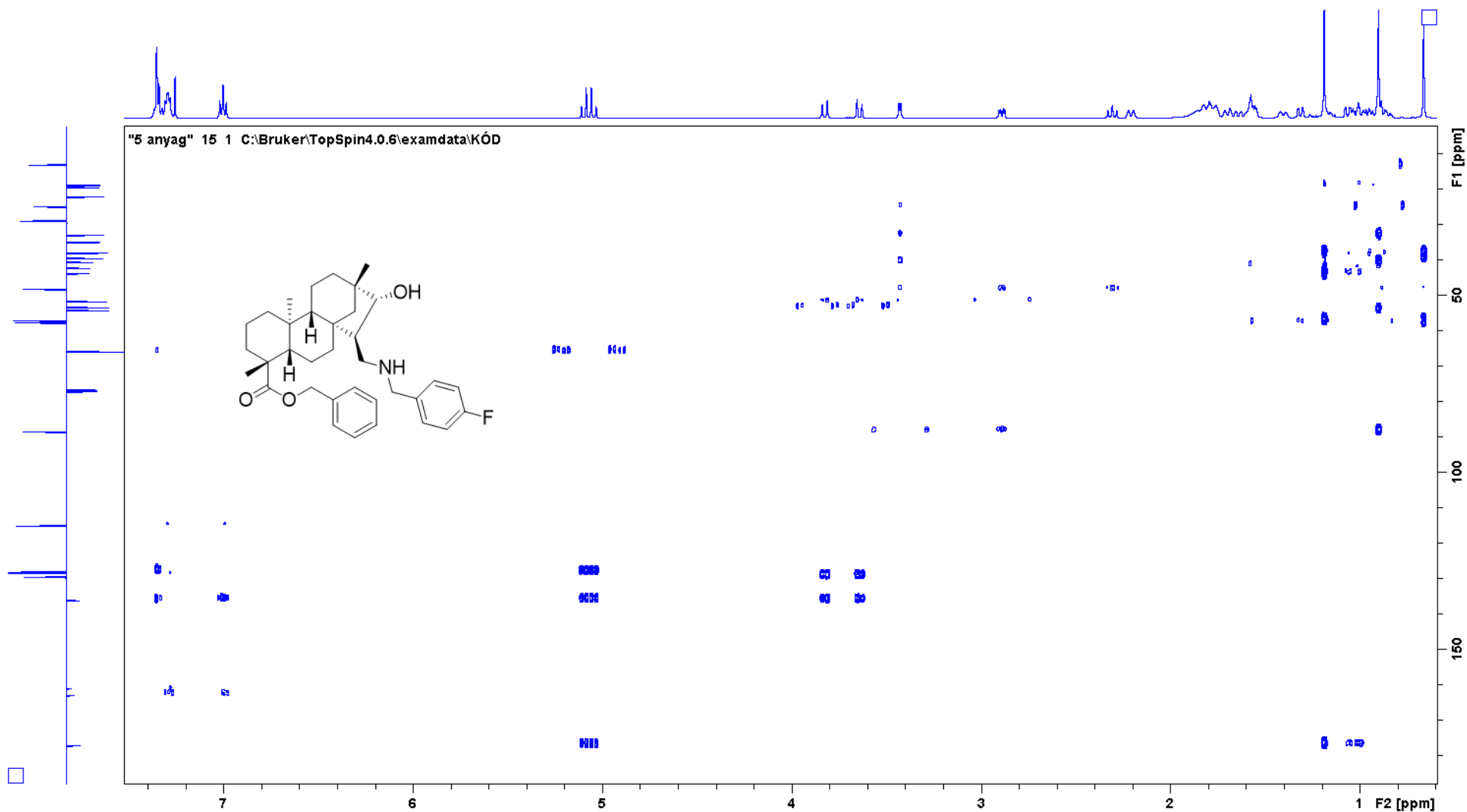


Figure S13

^{19}F of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**5**):

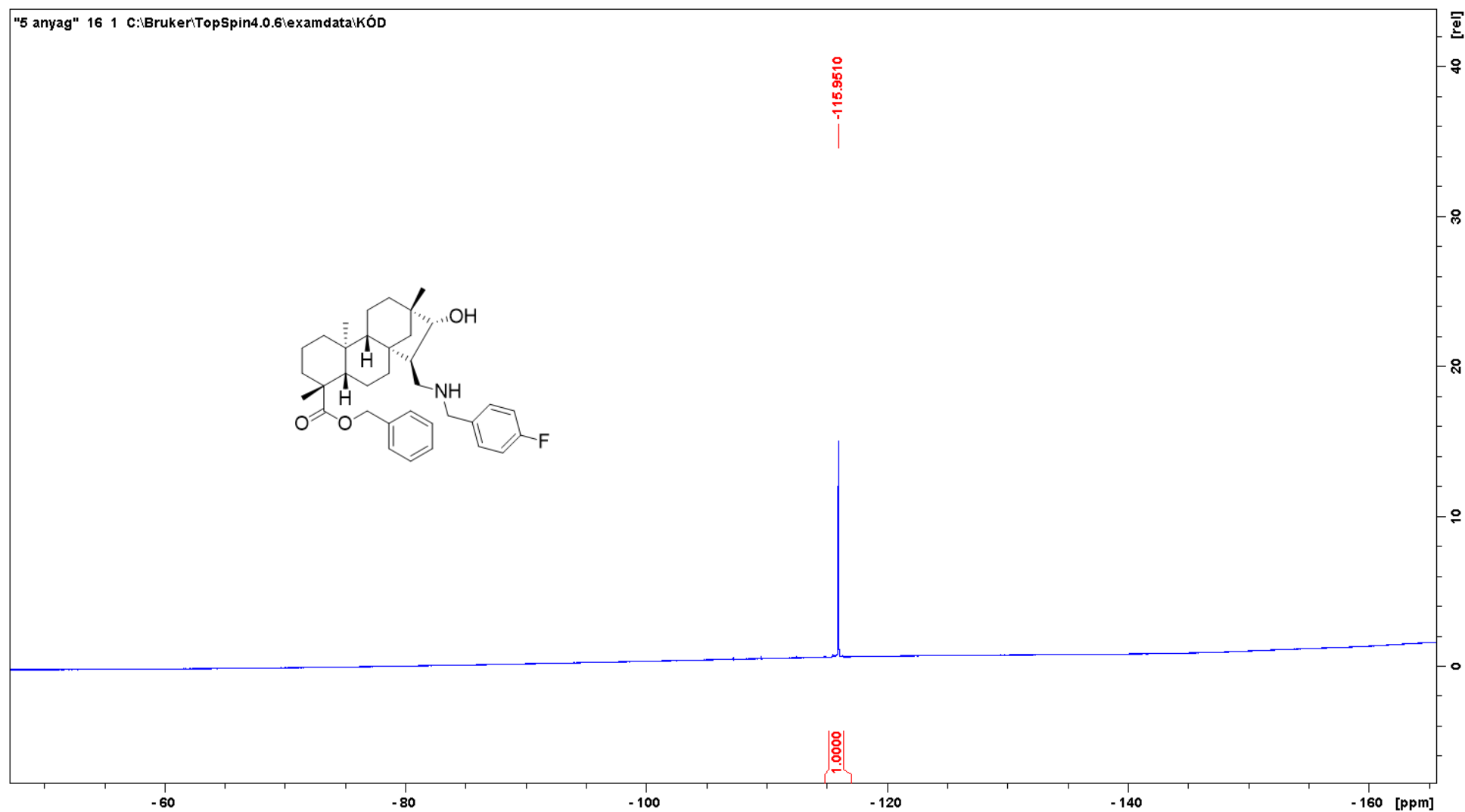


Figure S14

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

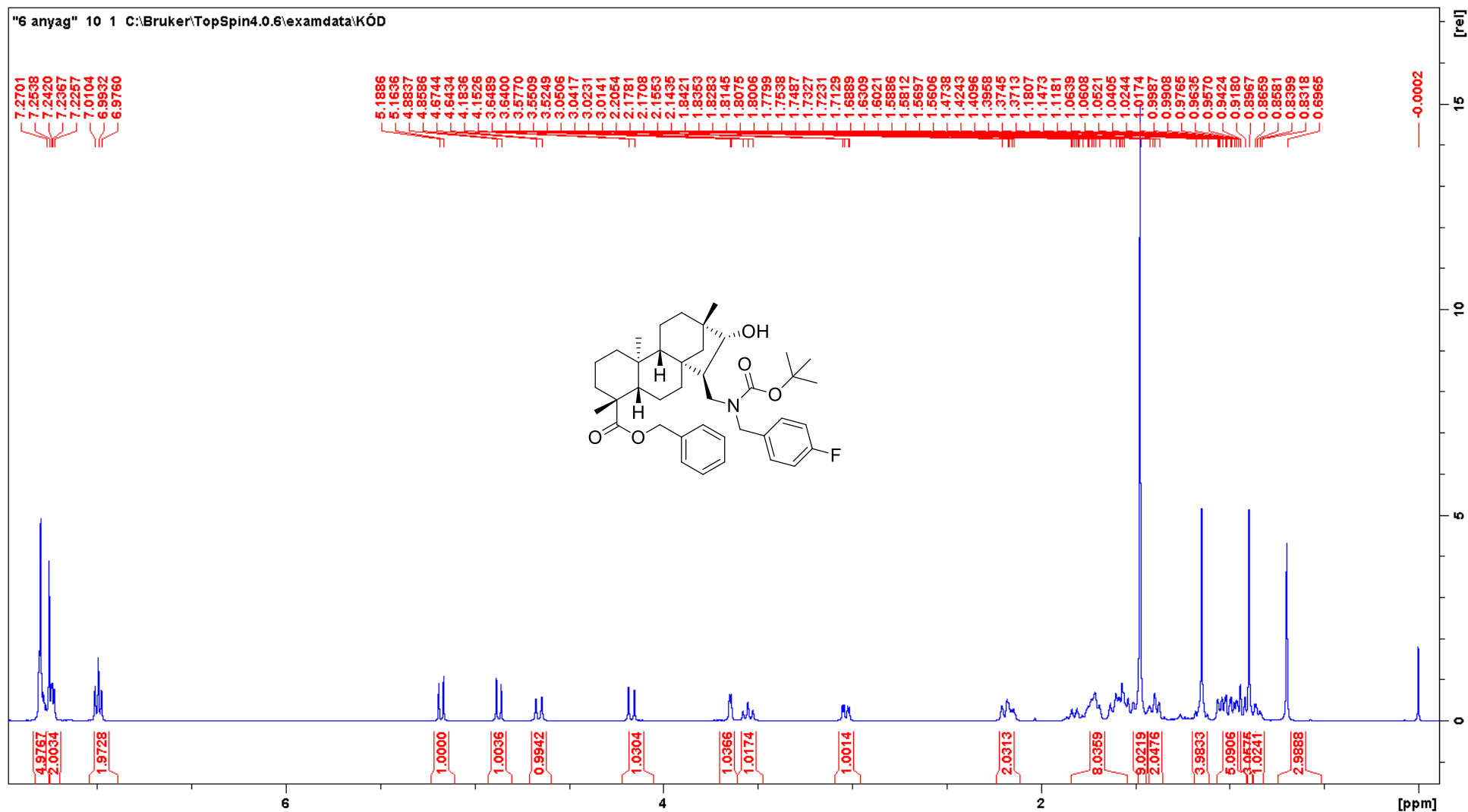


Figure S15

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

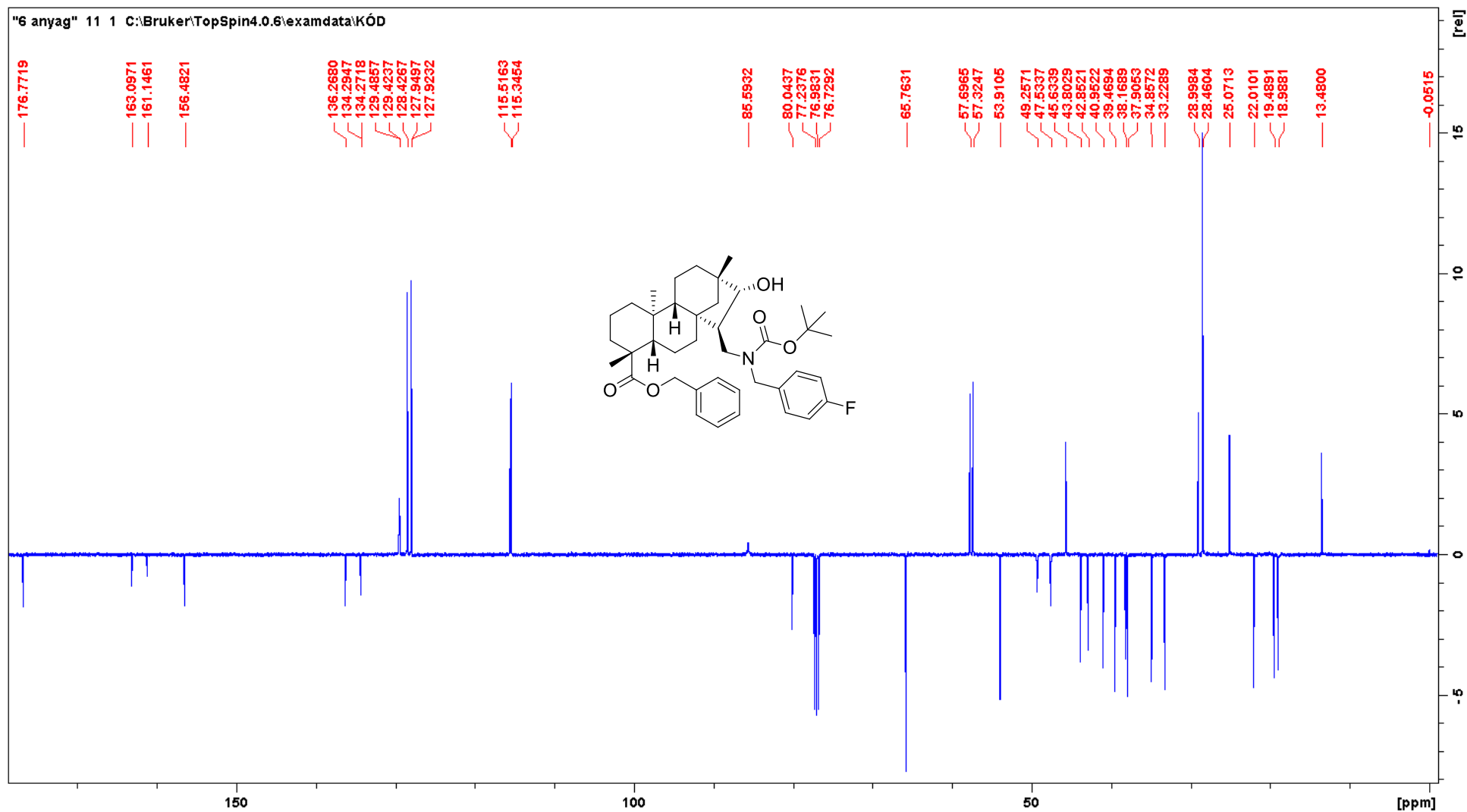


Figure S16

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

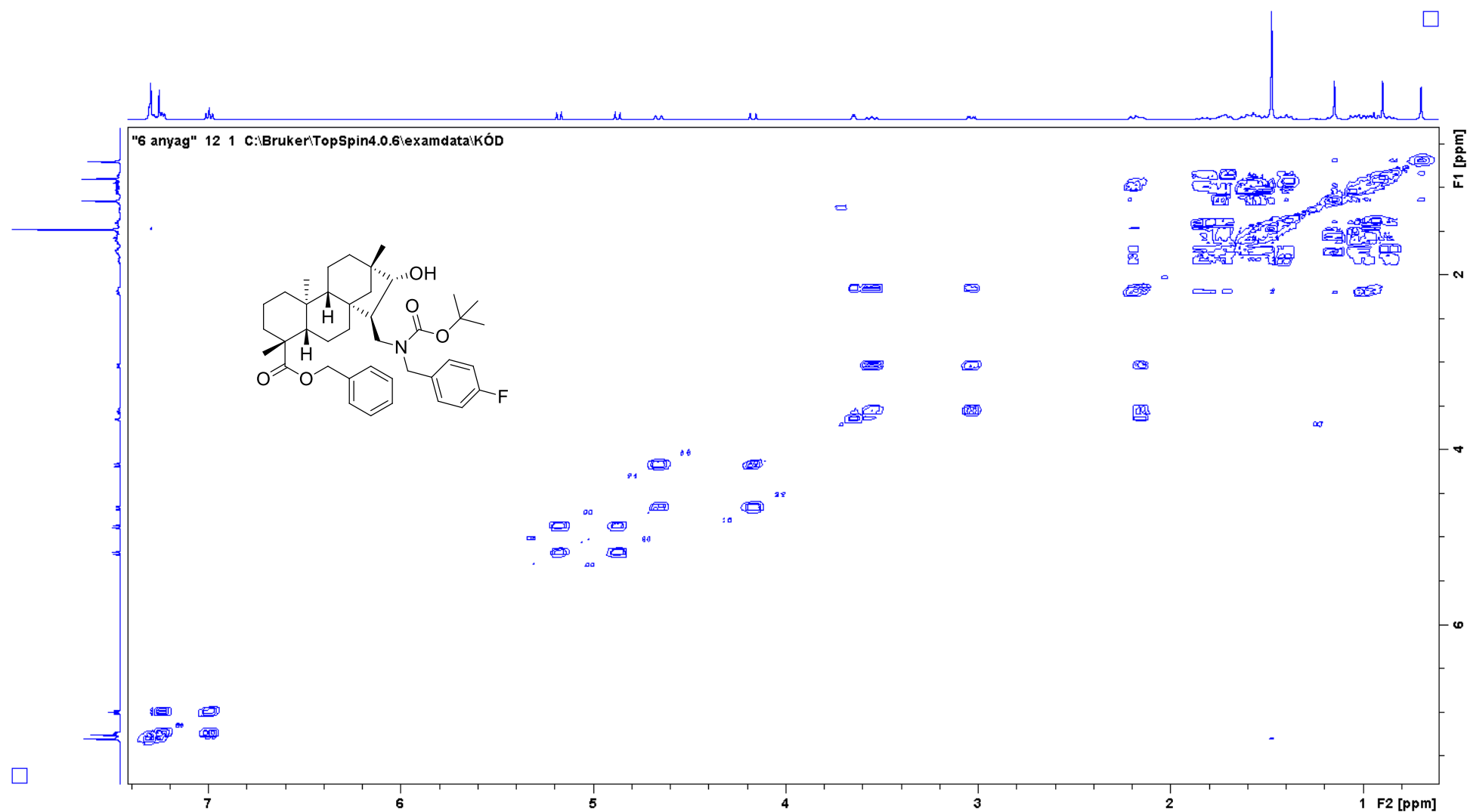


Figure S17

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

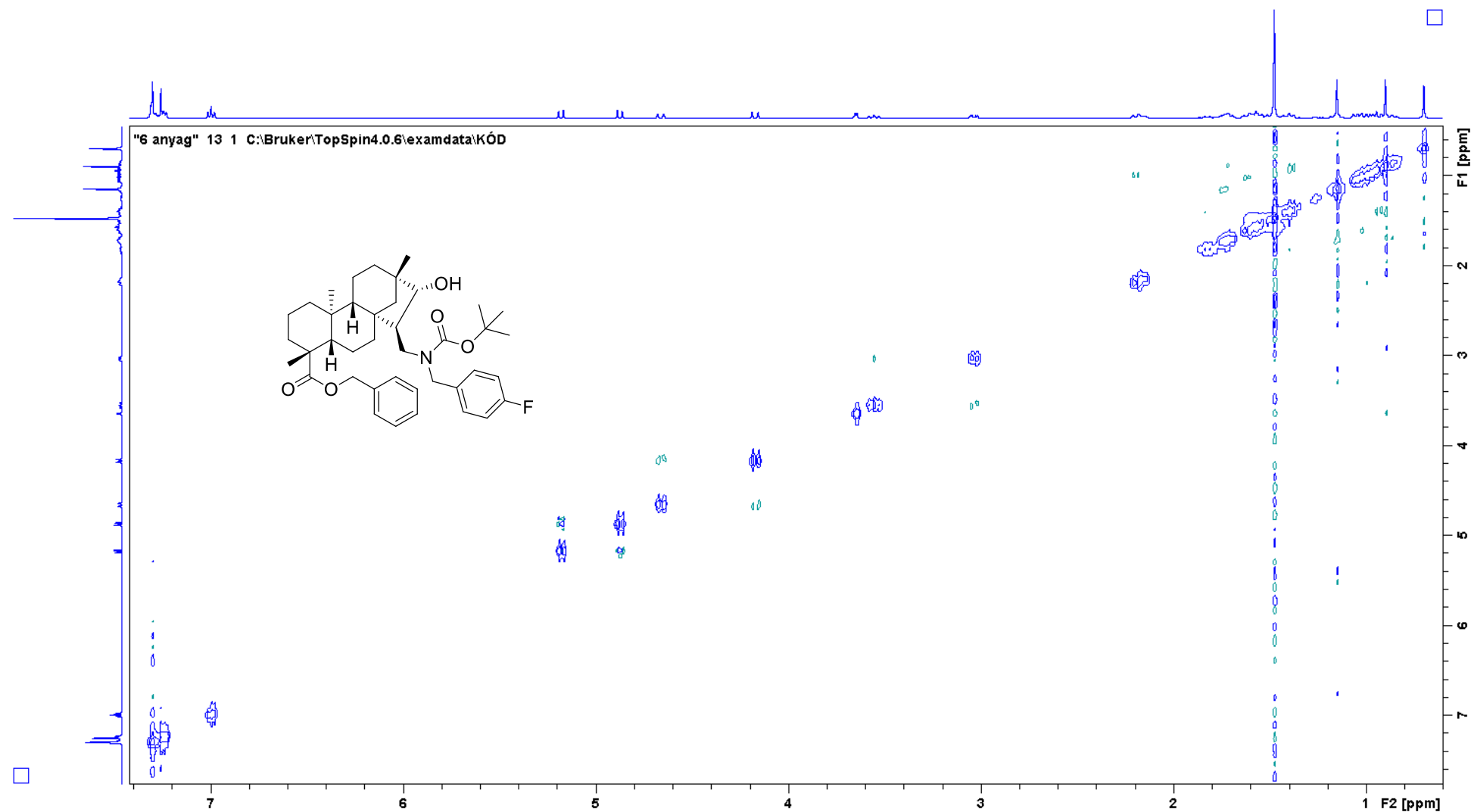


Figure S18

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

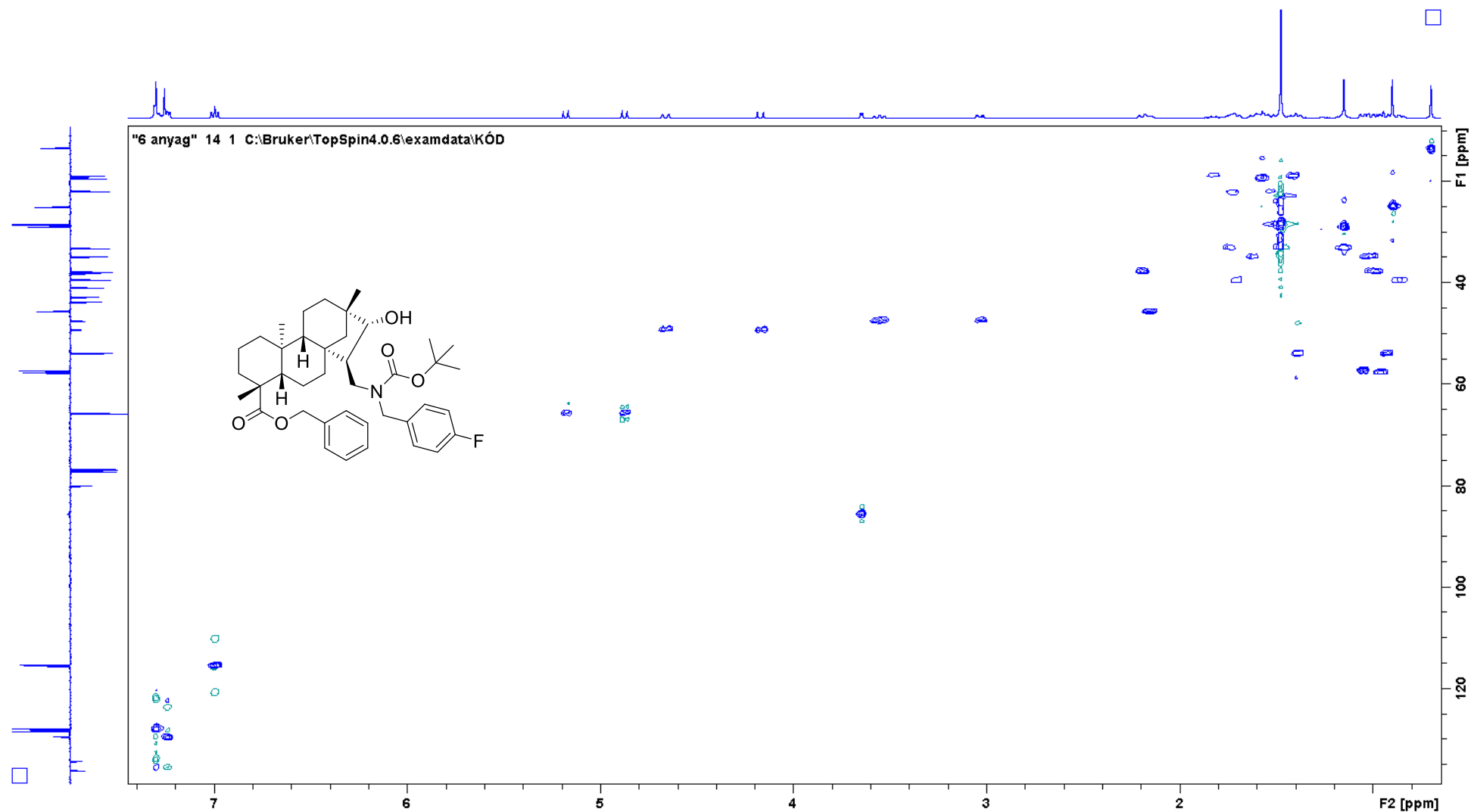


Figure S19

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

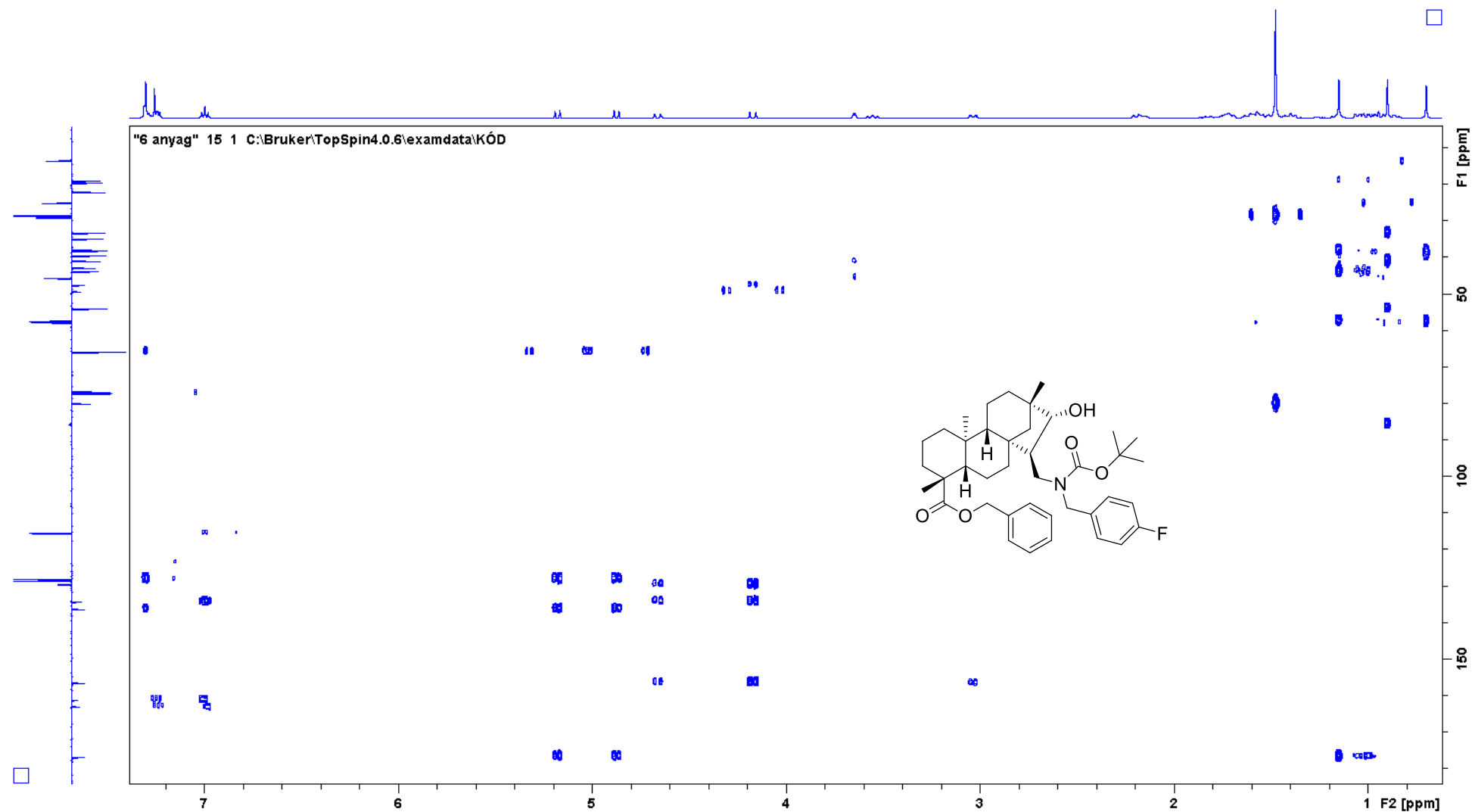


Figure S20

^{19}F -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**6**):

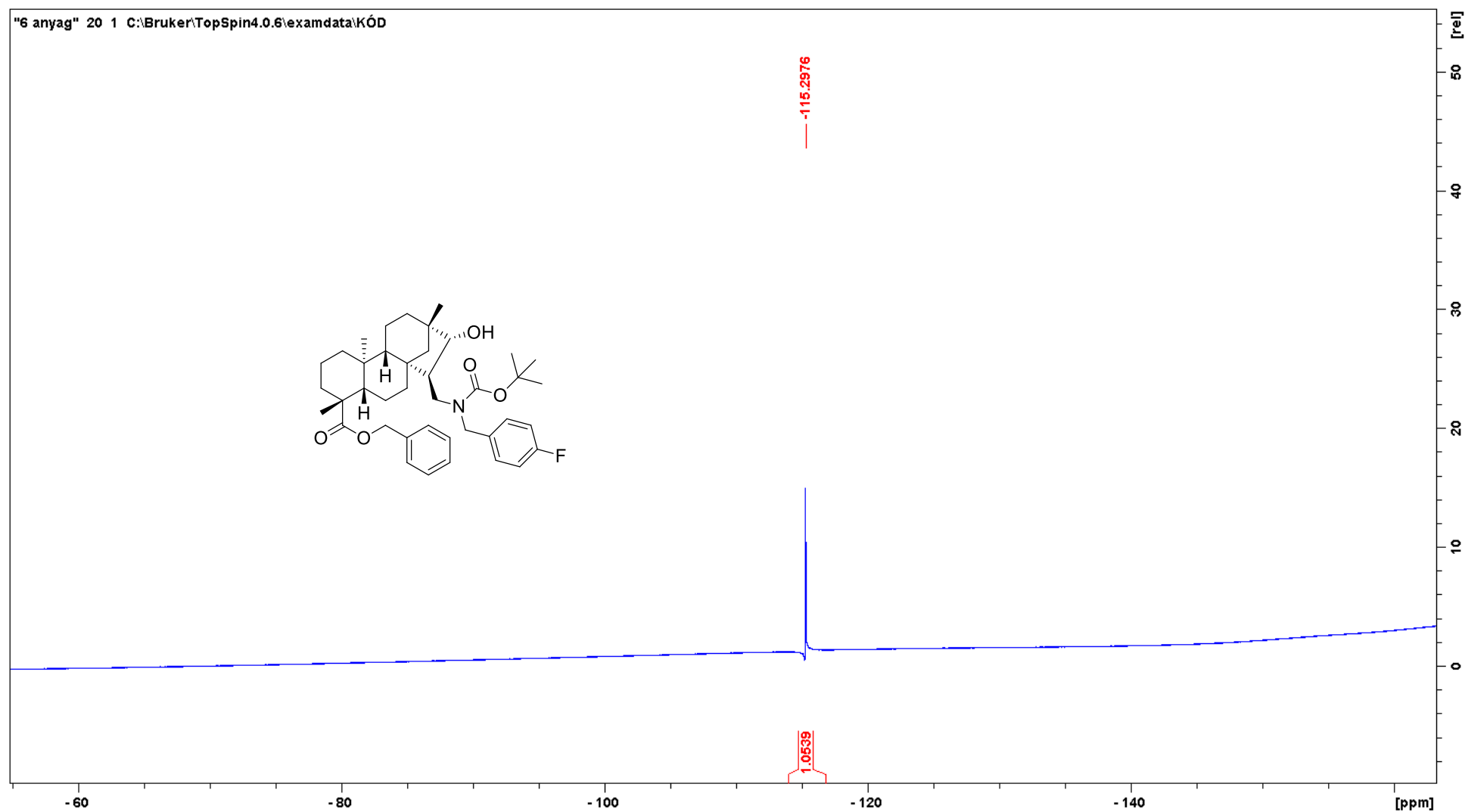


Figure S21

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((*Tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**7**):

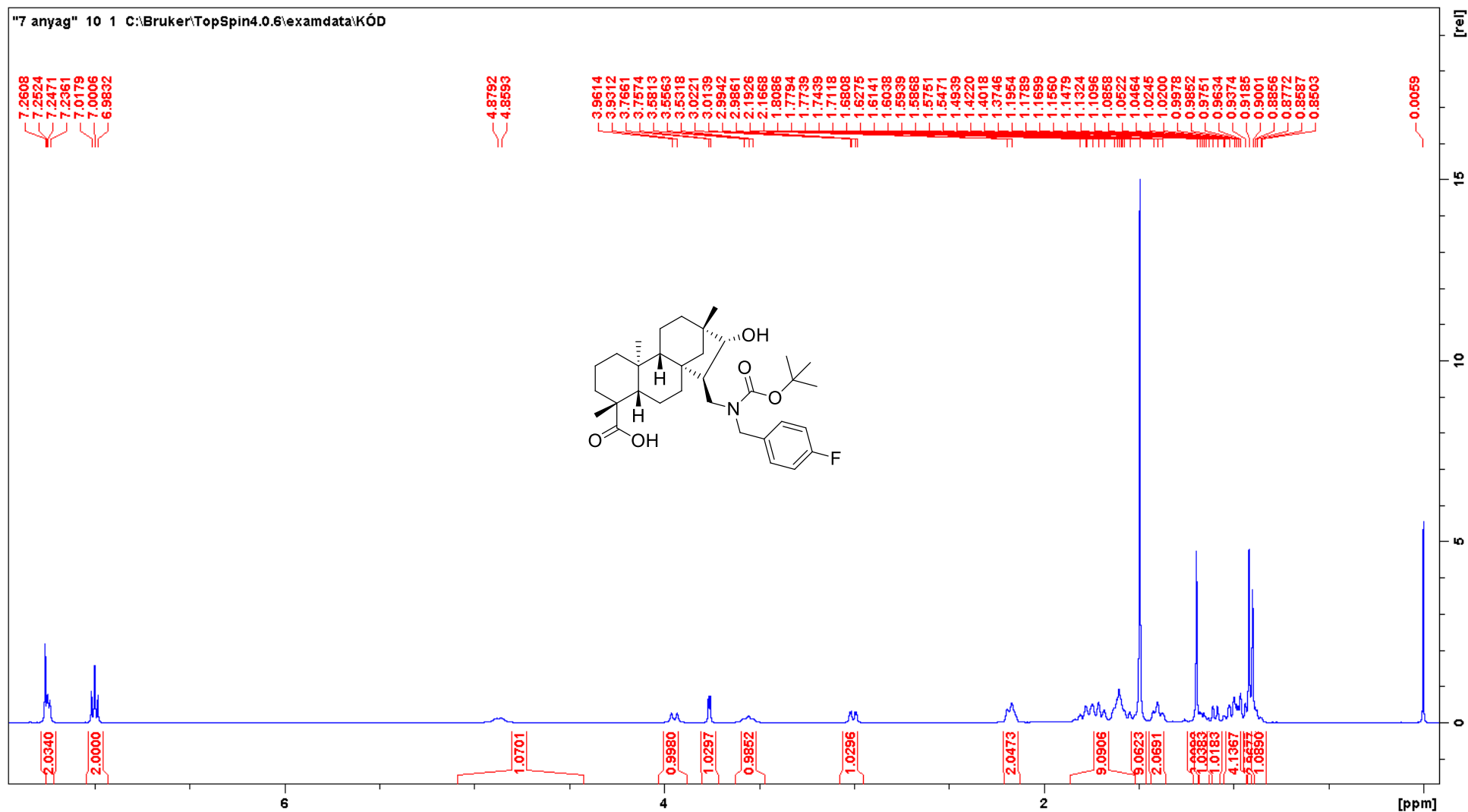
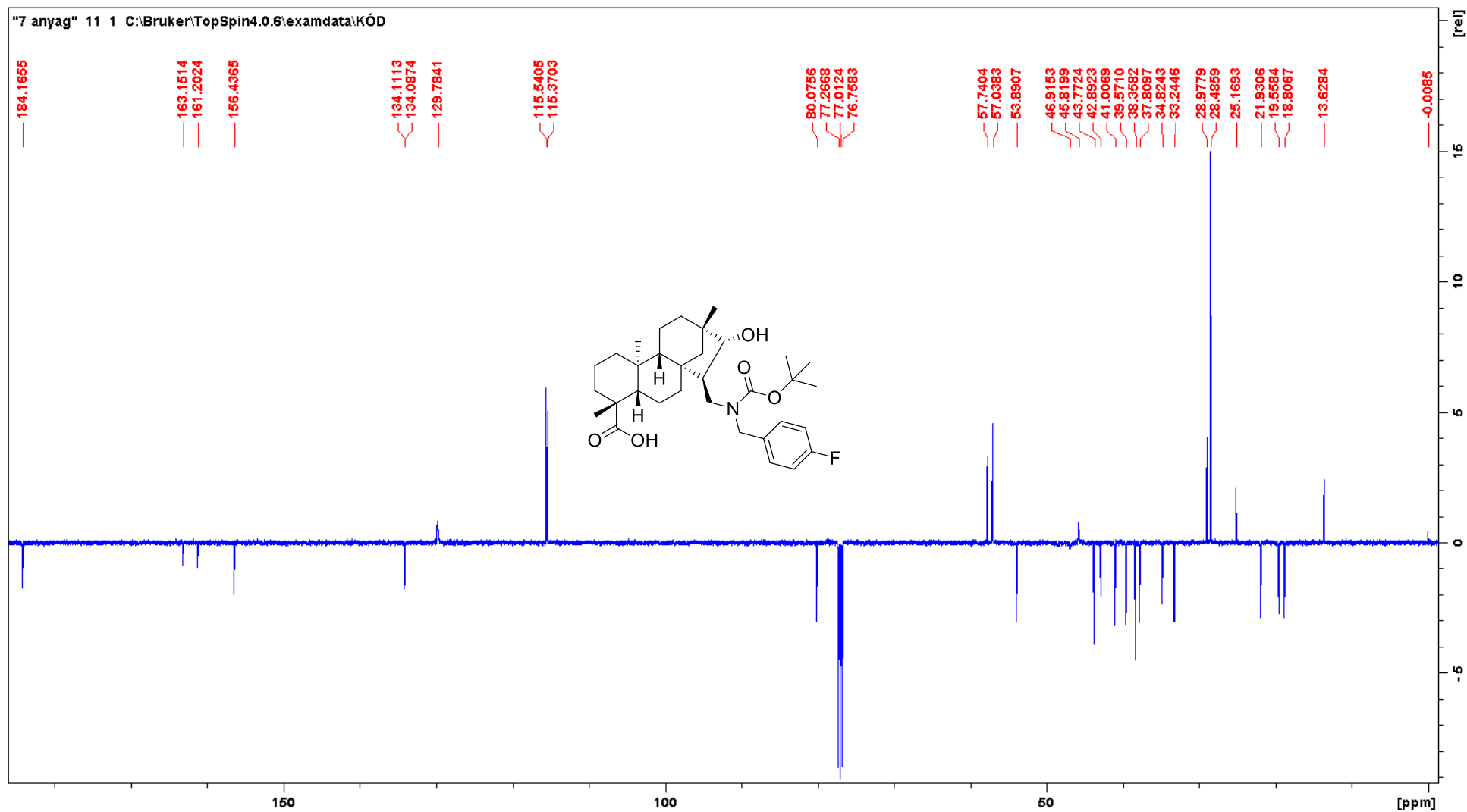


Figure S22

^{213}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((*Tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**7**):



COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((*Tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**7**):



Figure S24

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((*Tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**7**):

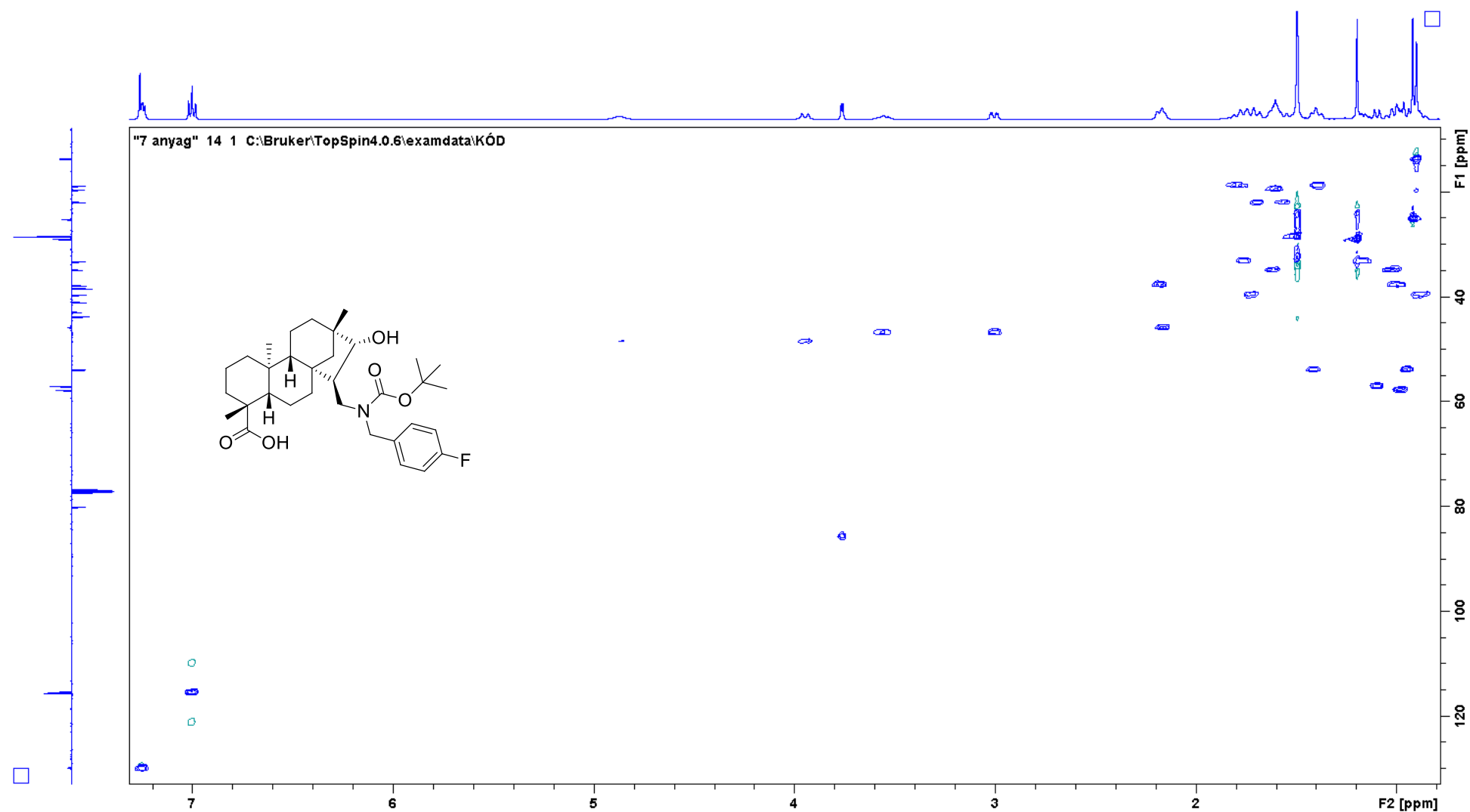
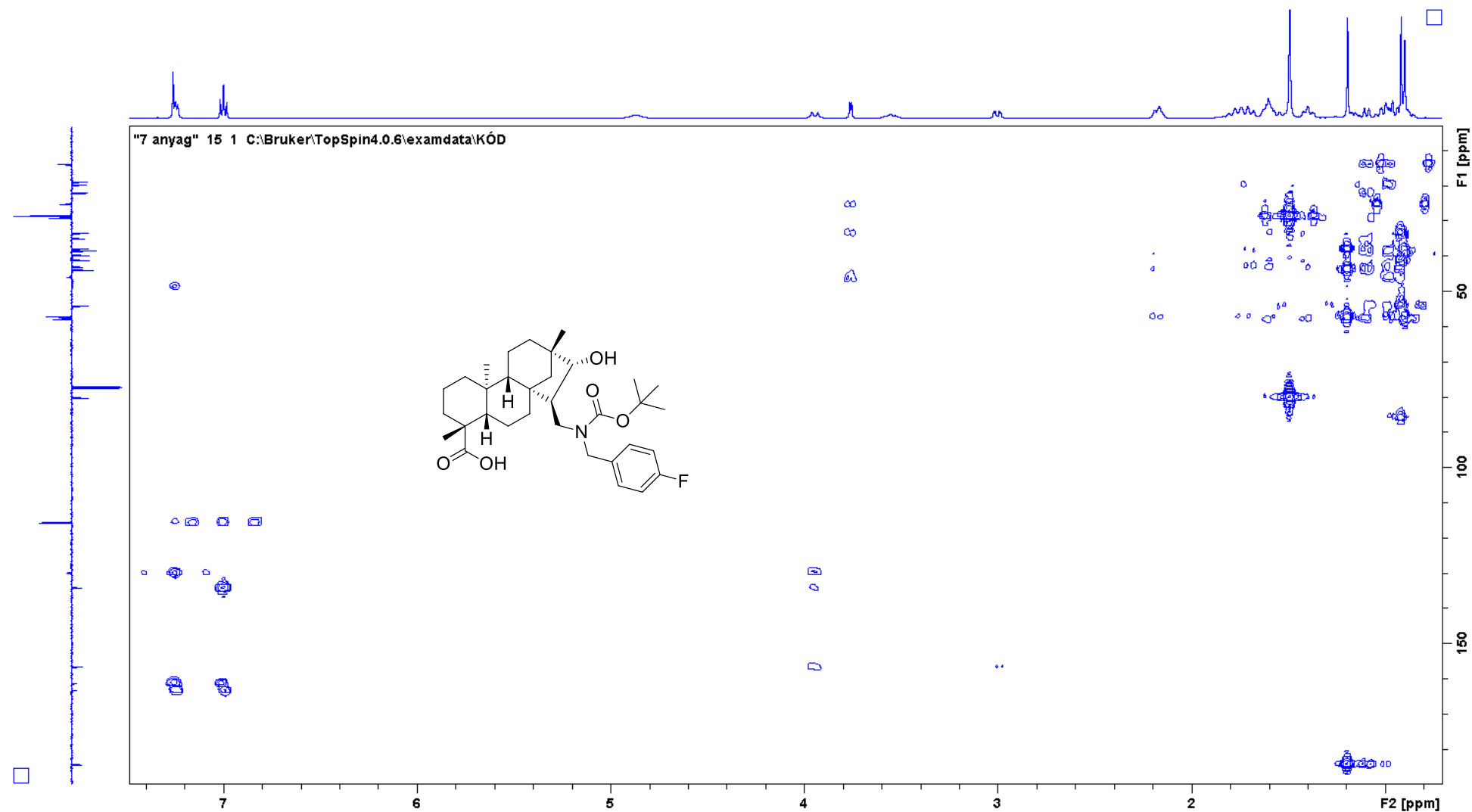


Figure S25

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((*Tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**7**):



¹⁹F-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((*Tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**7**):

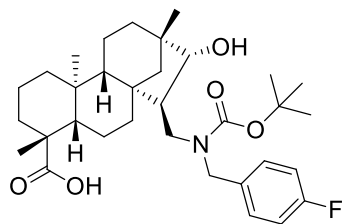


Figure S27

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

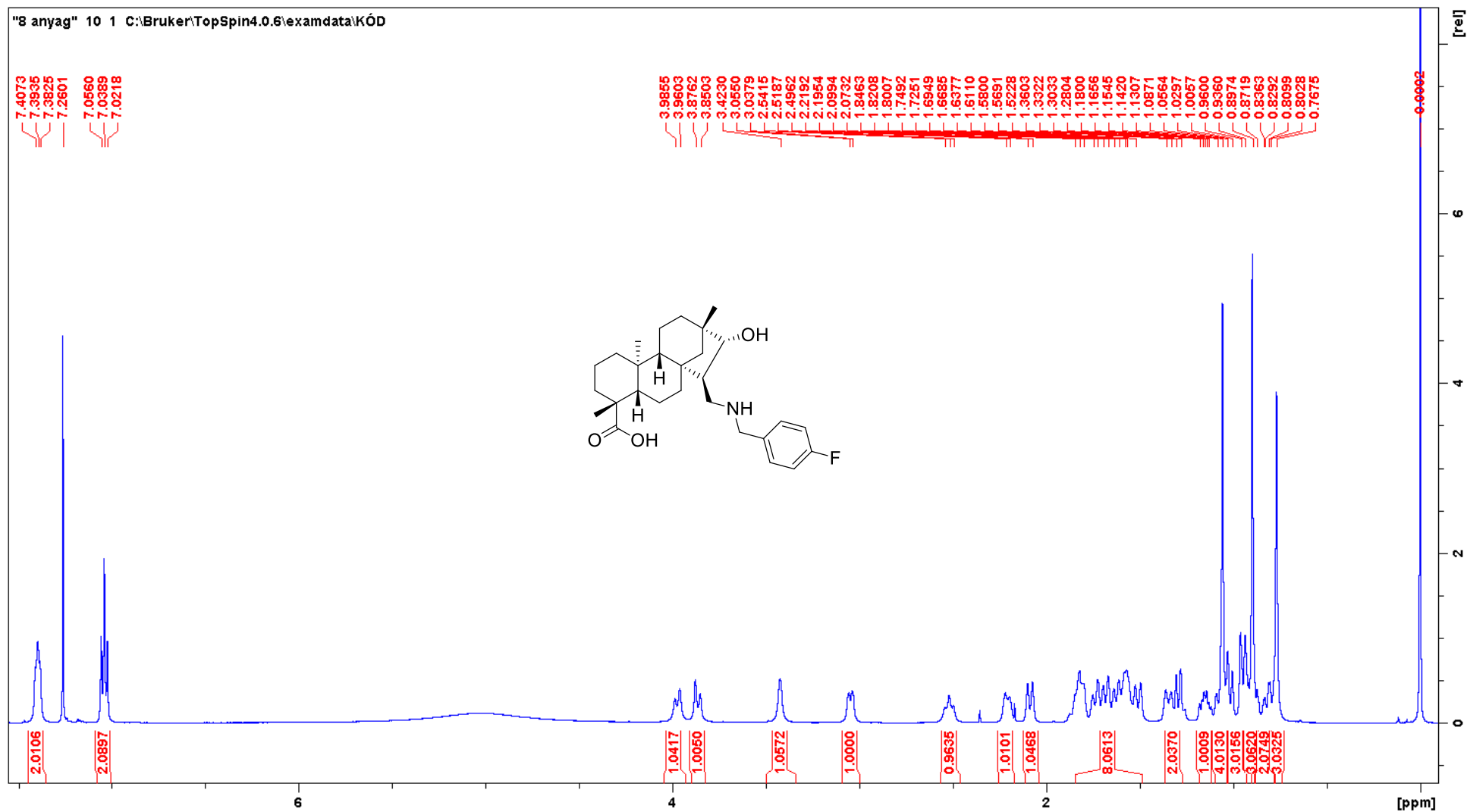


Figure S28

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

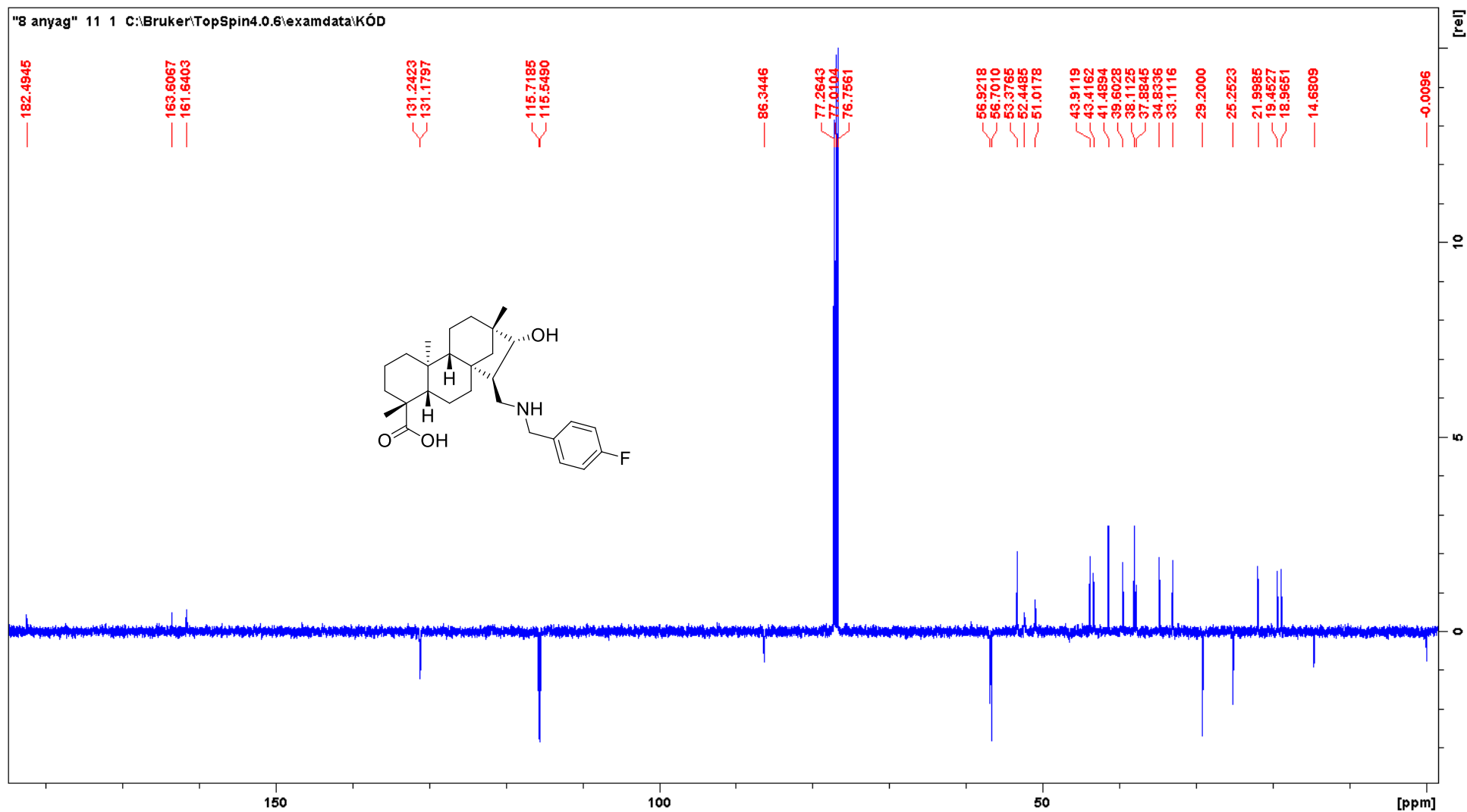


Figure S29

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

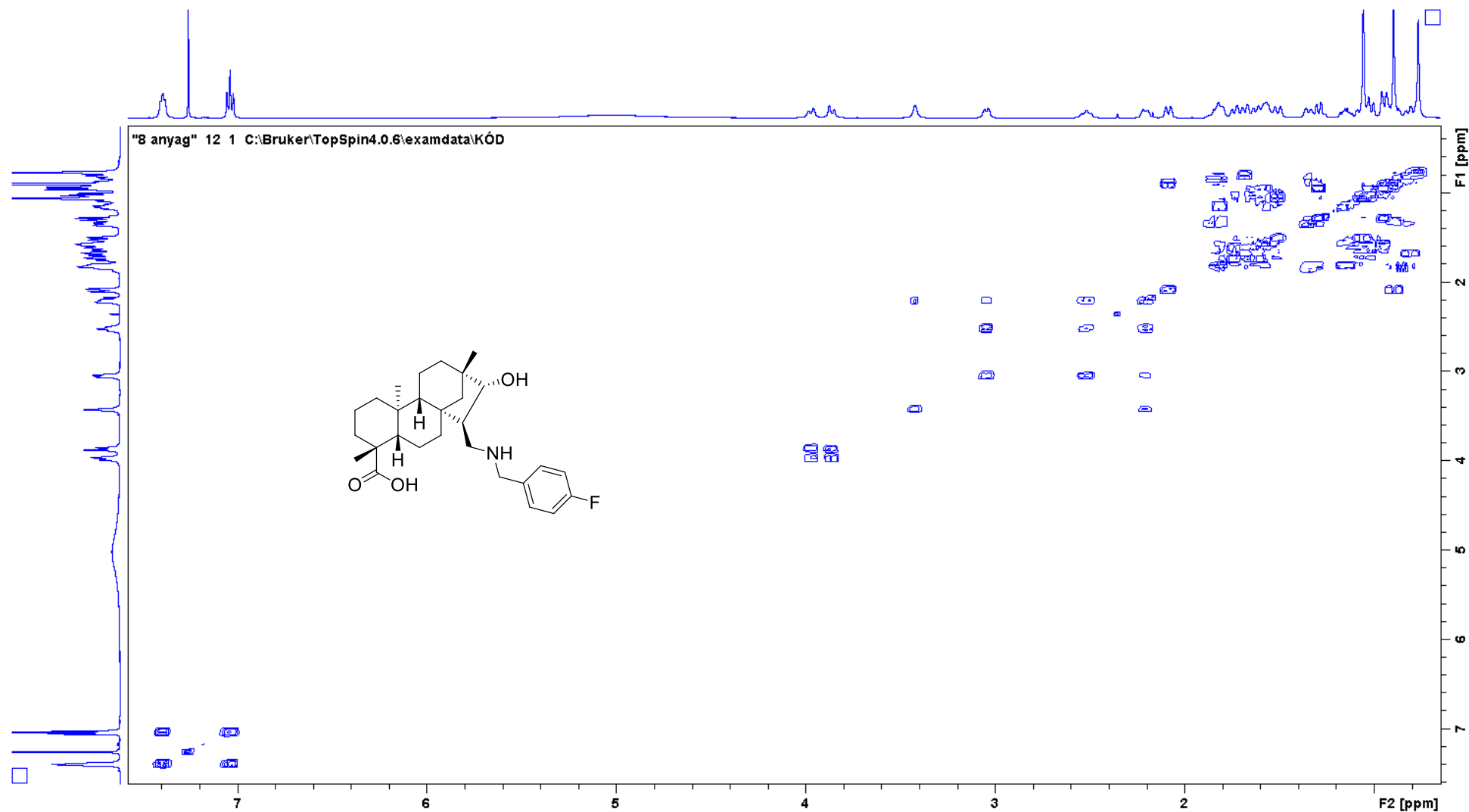


Figure S30

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

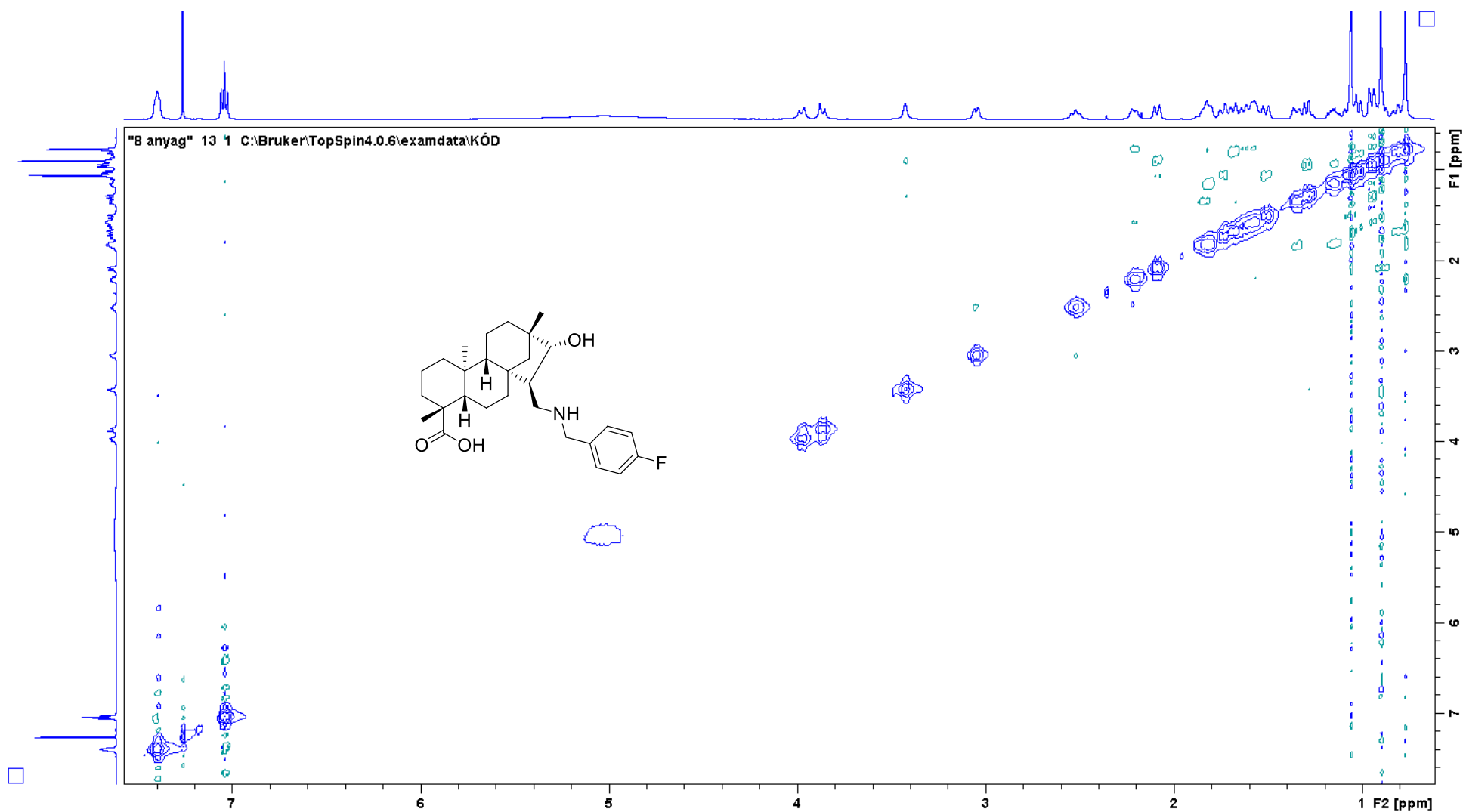


Figure S31

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

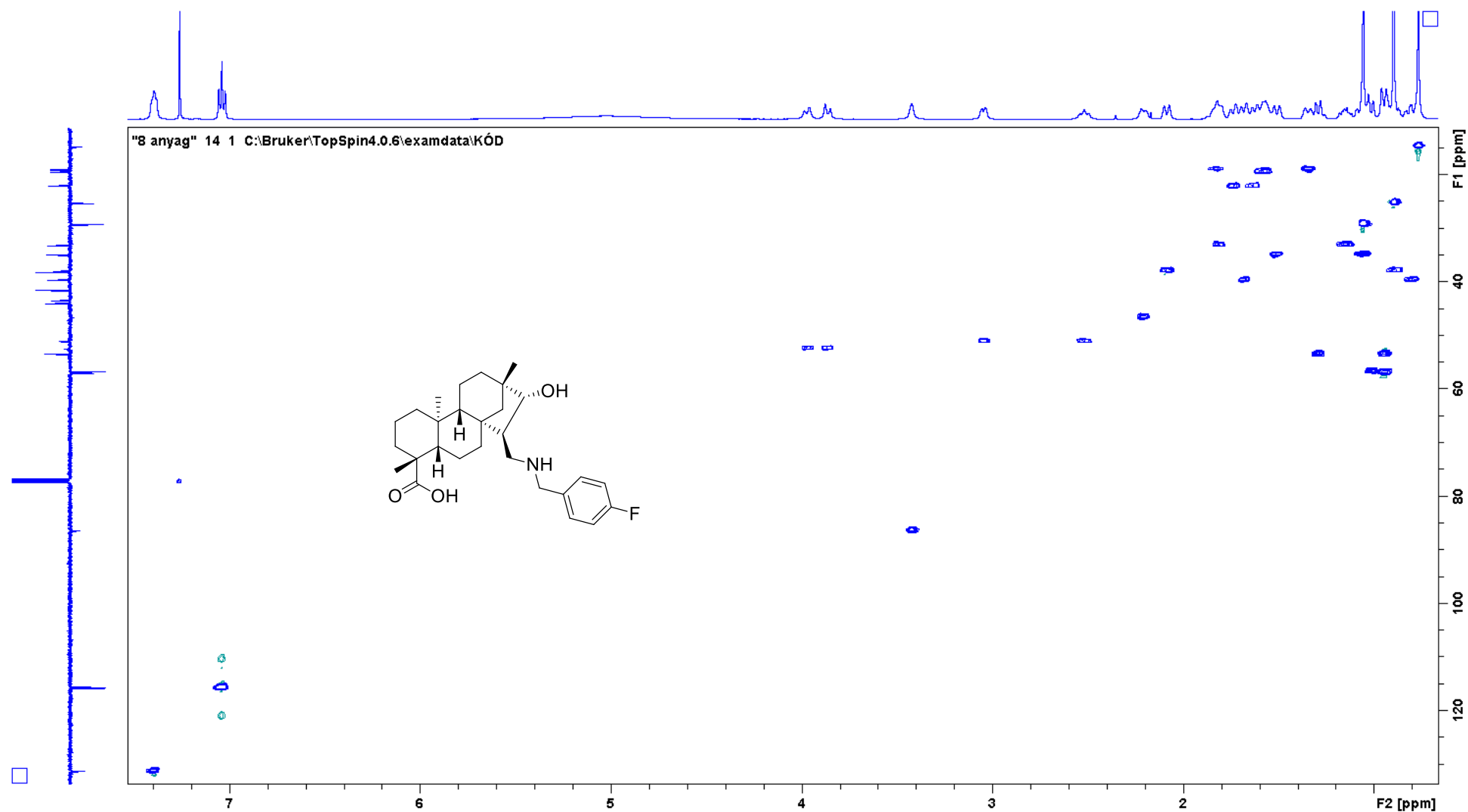


Figure S32

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

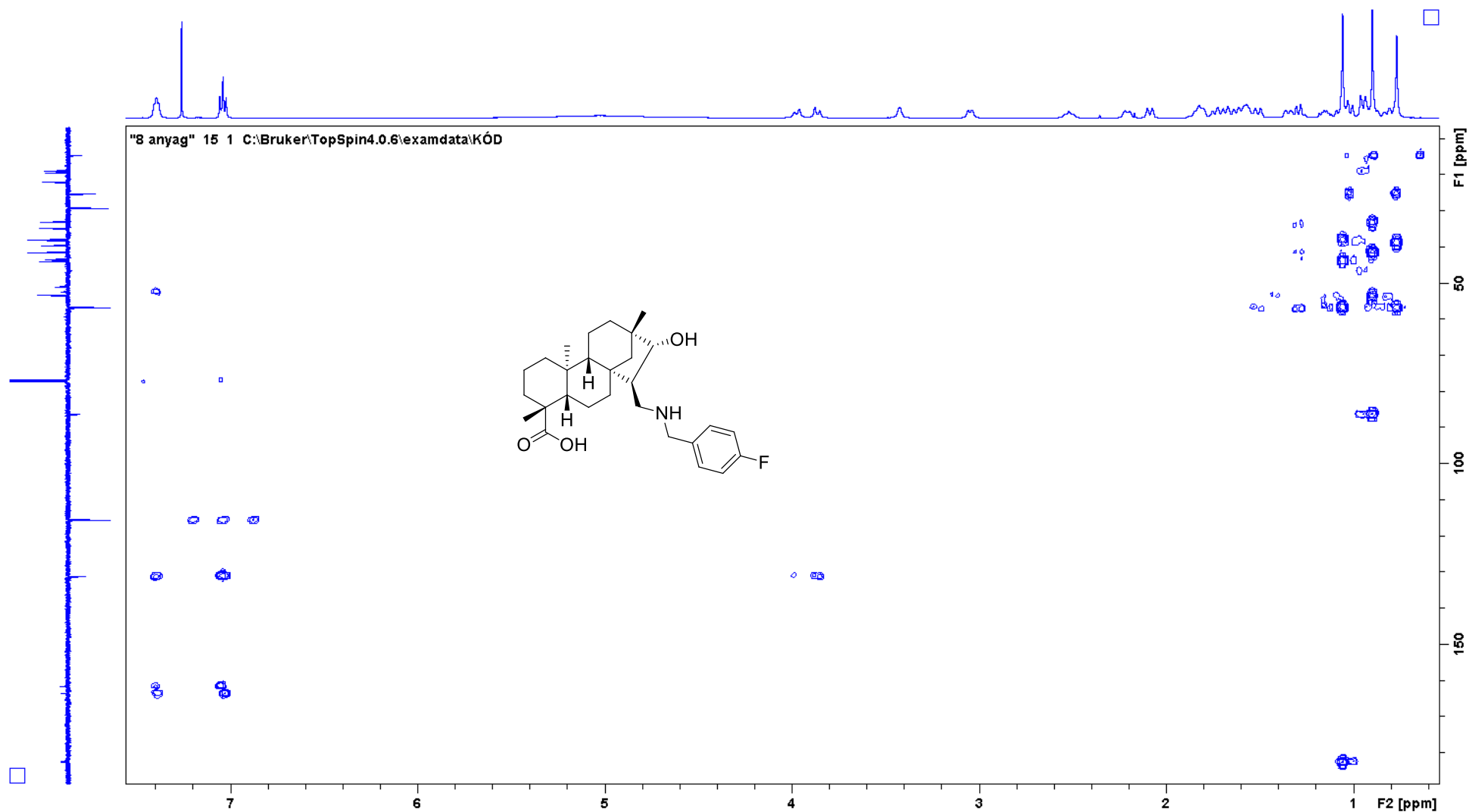


Figure S33

^{19}F -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-7-(((4-Fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylic acid (**8**):

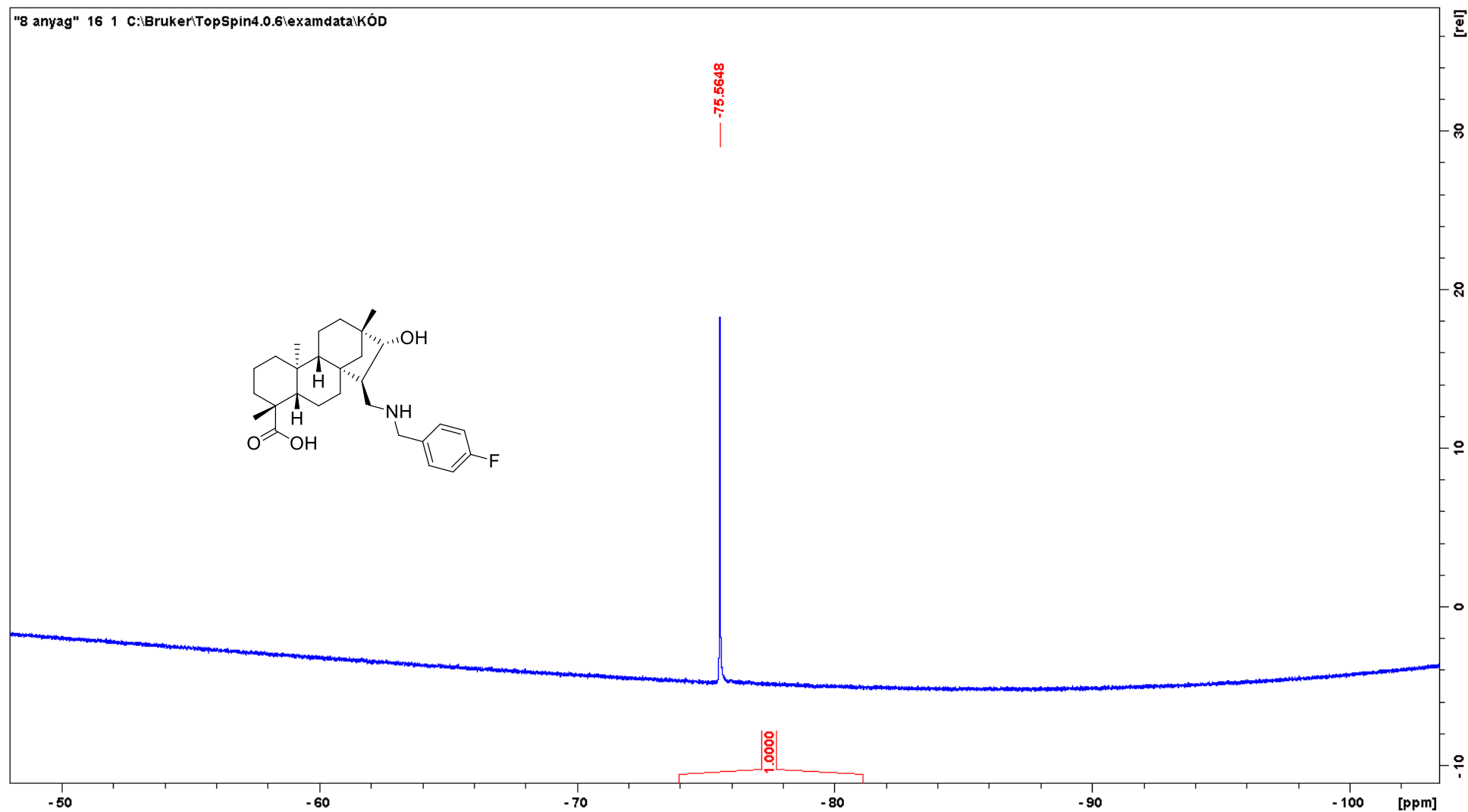


Figure S34

¹H-NMR of compound 3-(4-Bromobutoxy)-3-oxopropyl acrylate (**10**):

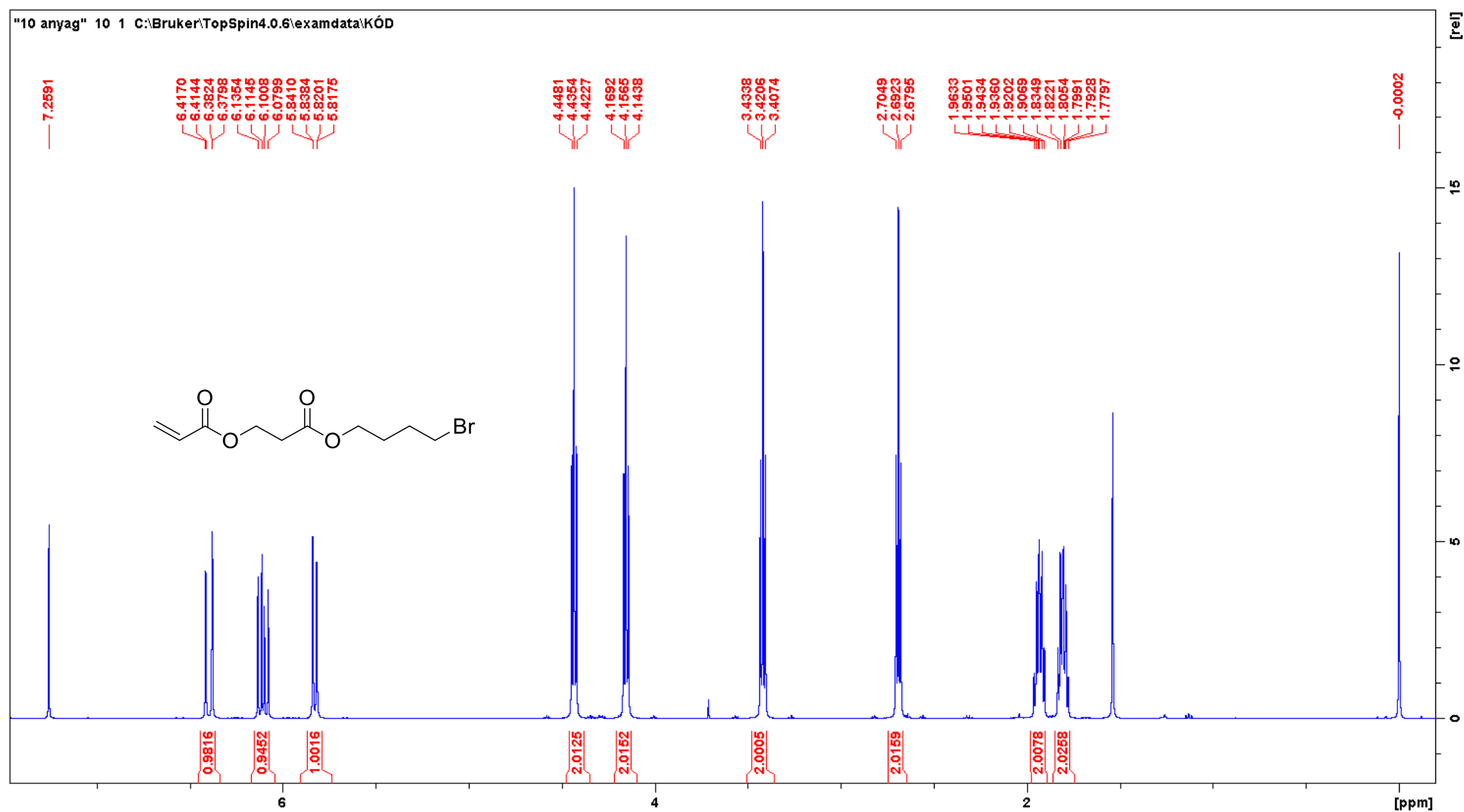


Figure S35

^{13}C -NMR of compound 3-(4-Bromobutoxy)-3-oxopropyl acrylate (**10**):

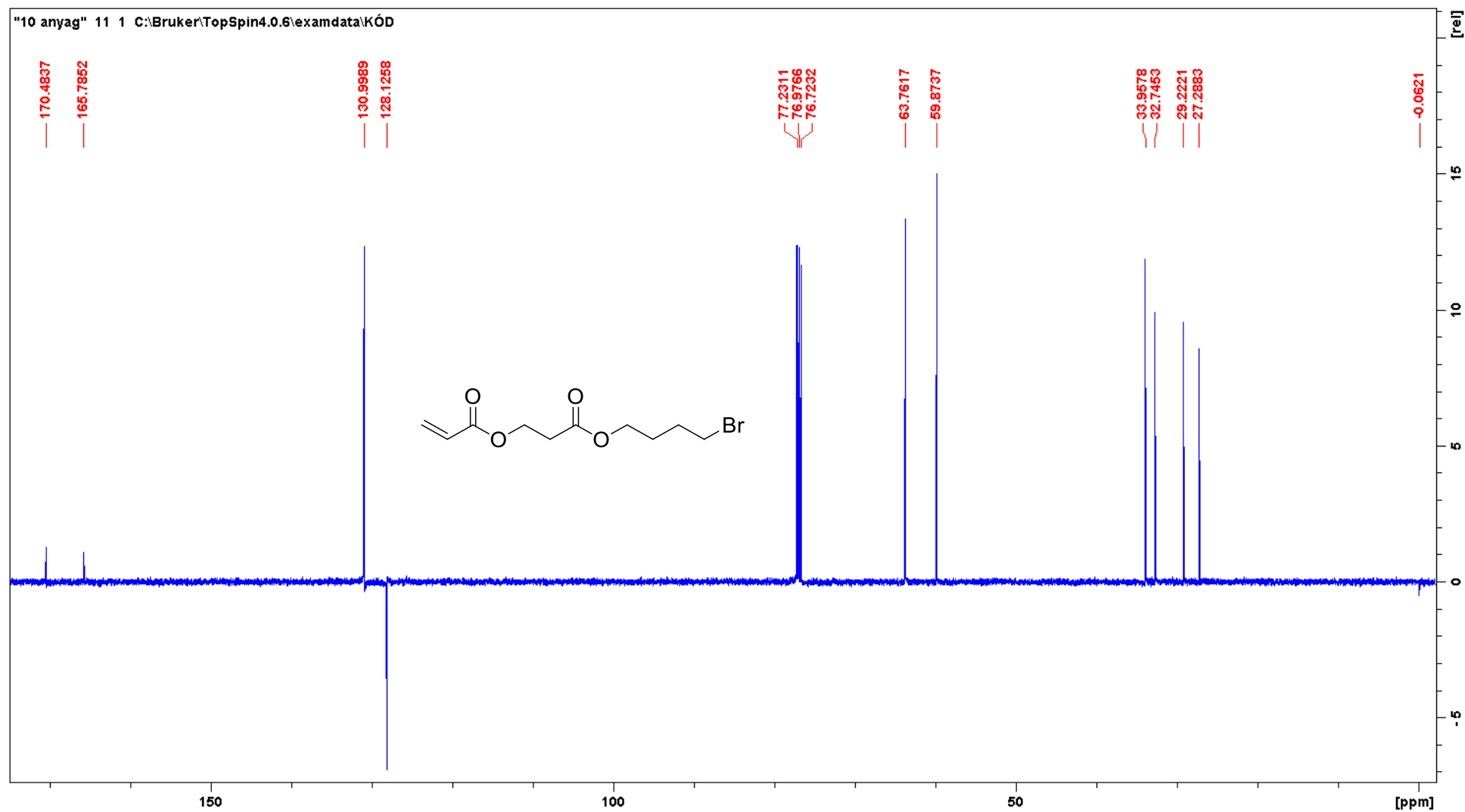


Figure S36
COSY of compound 3-(4-Bromobutoxy)-3-oxopropyl acrylate (**10**):

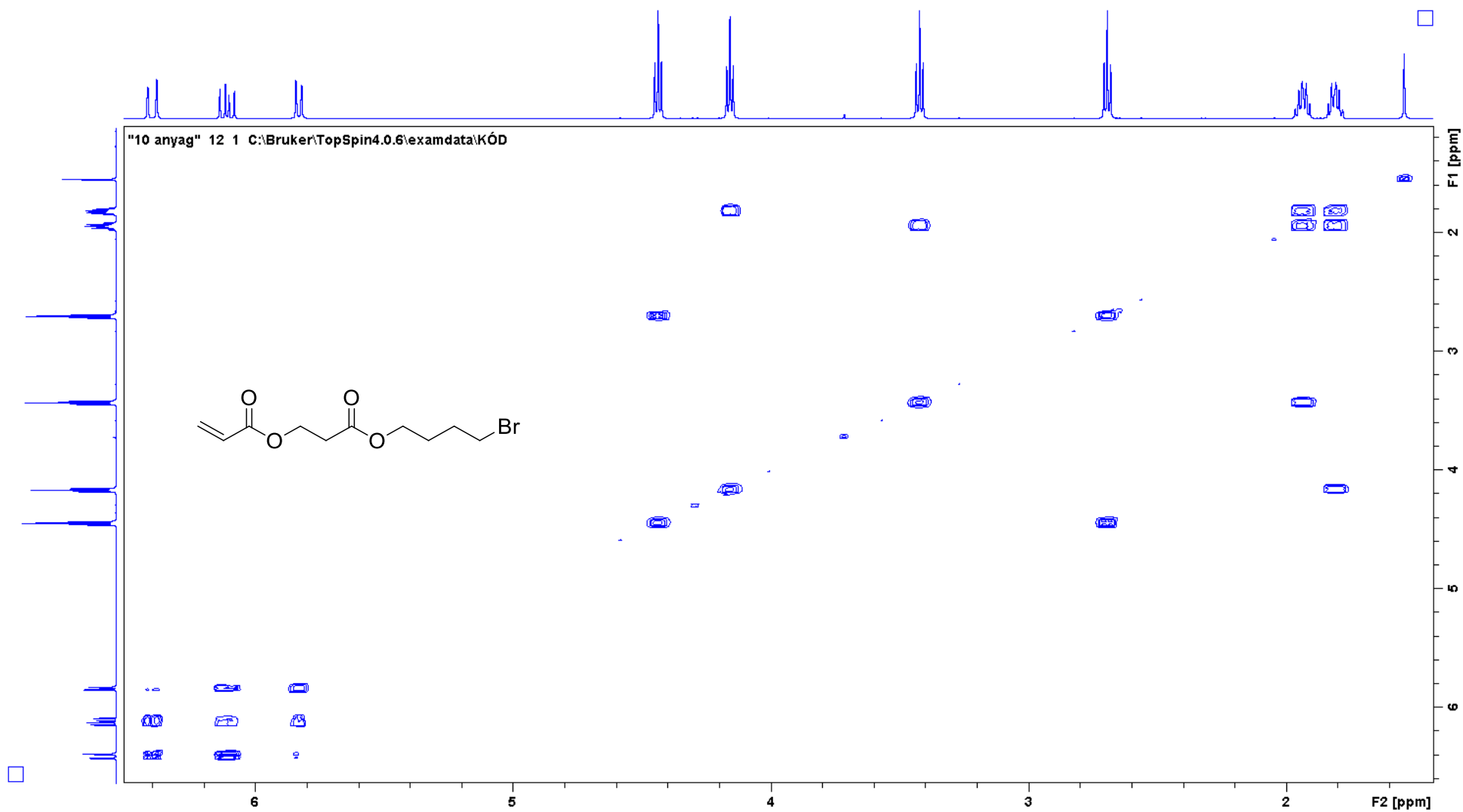


Figure S37

NOESY of compound 3-(4-Bromobutoxy)-3-oxopropyl acrylate (**10**):

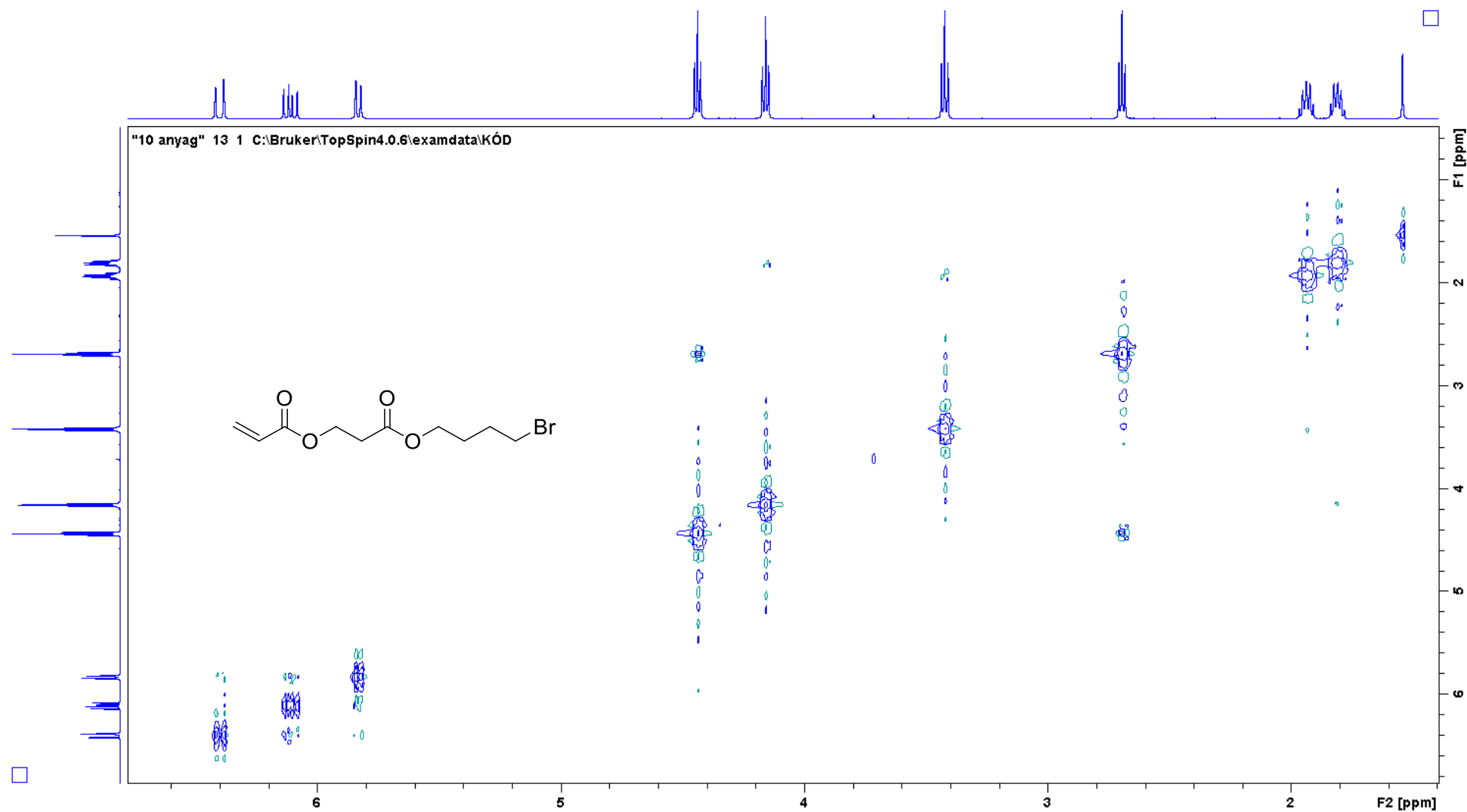


Figure S38
HSQC of compound 3-(4-Bromobutoxy)-3-oxopropyl acrylate (**10**):

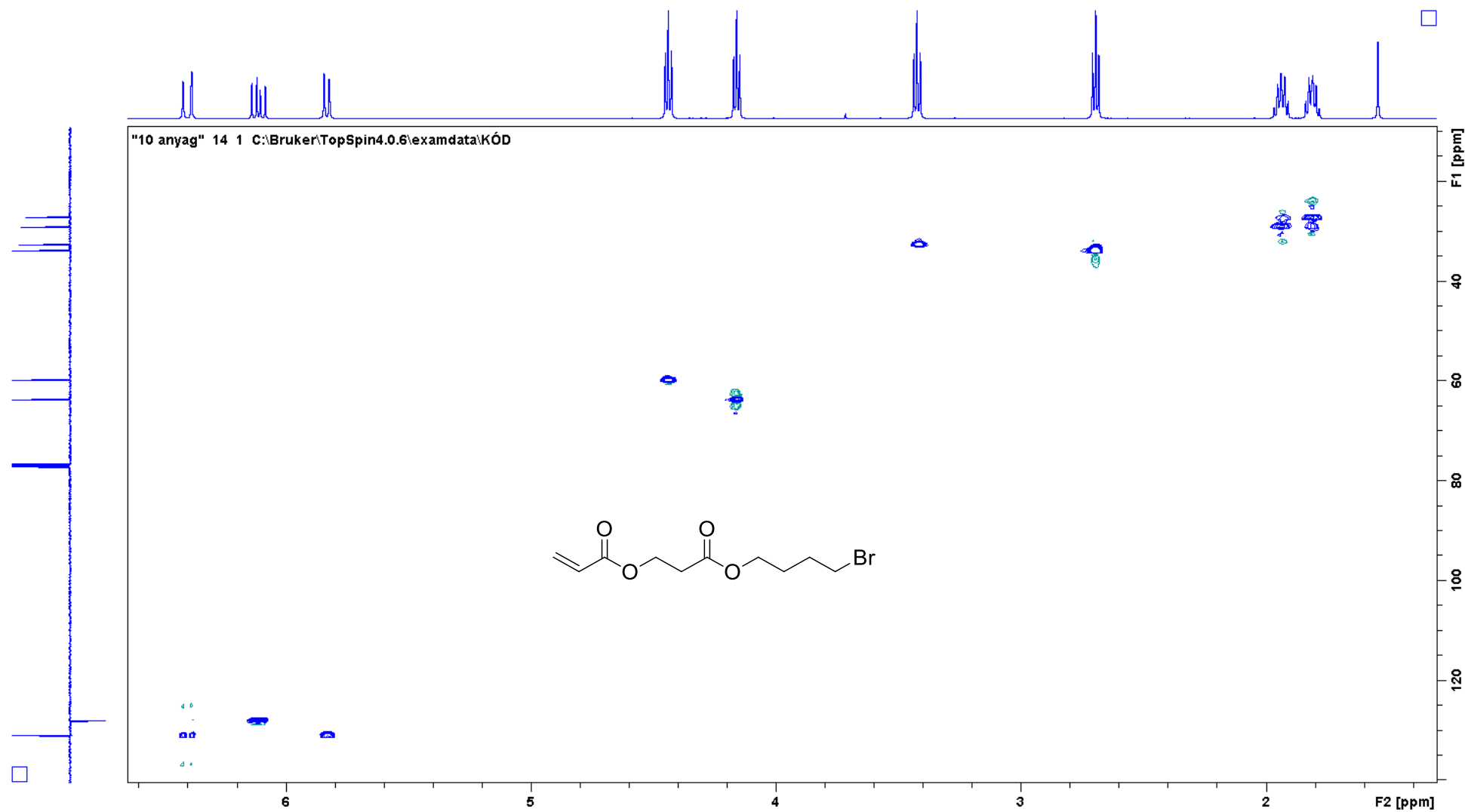


Figure S39
HMBC of compound 3-(4-Bromobutoxy)-3-oxopropyl acrylate (**10**):

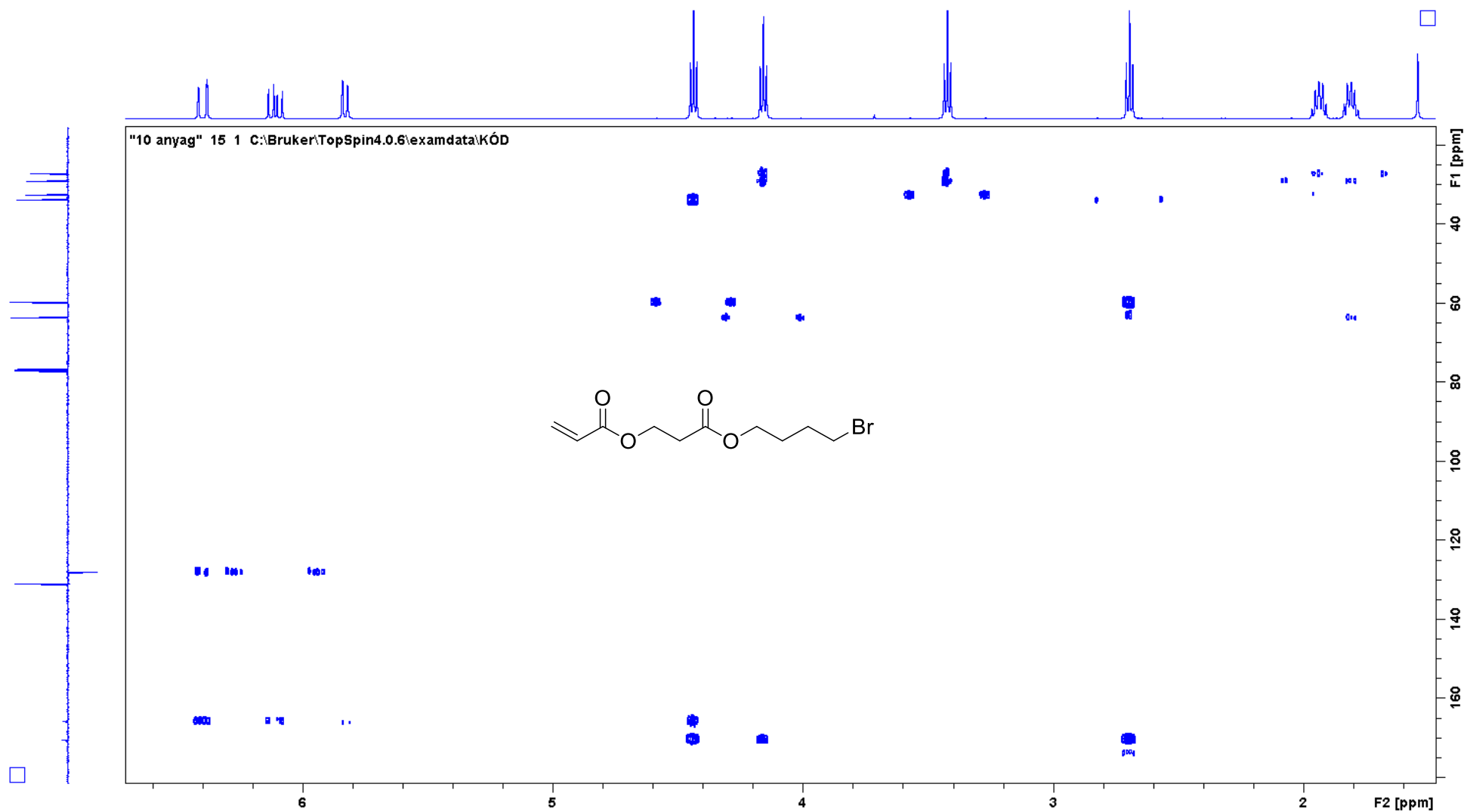


Figure S40

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

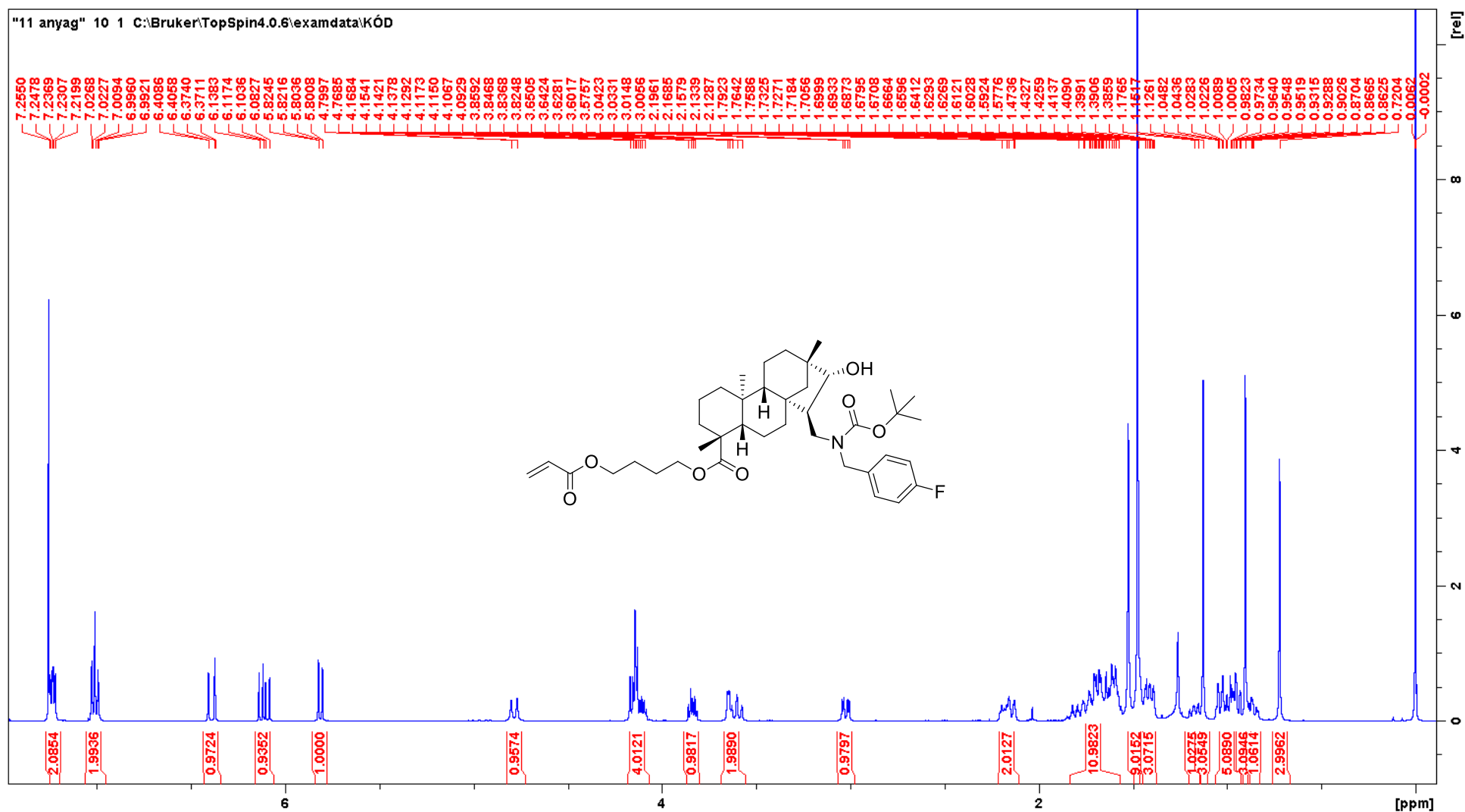


Figure S41

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

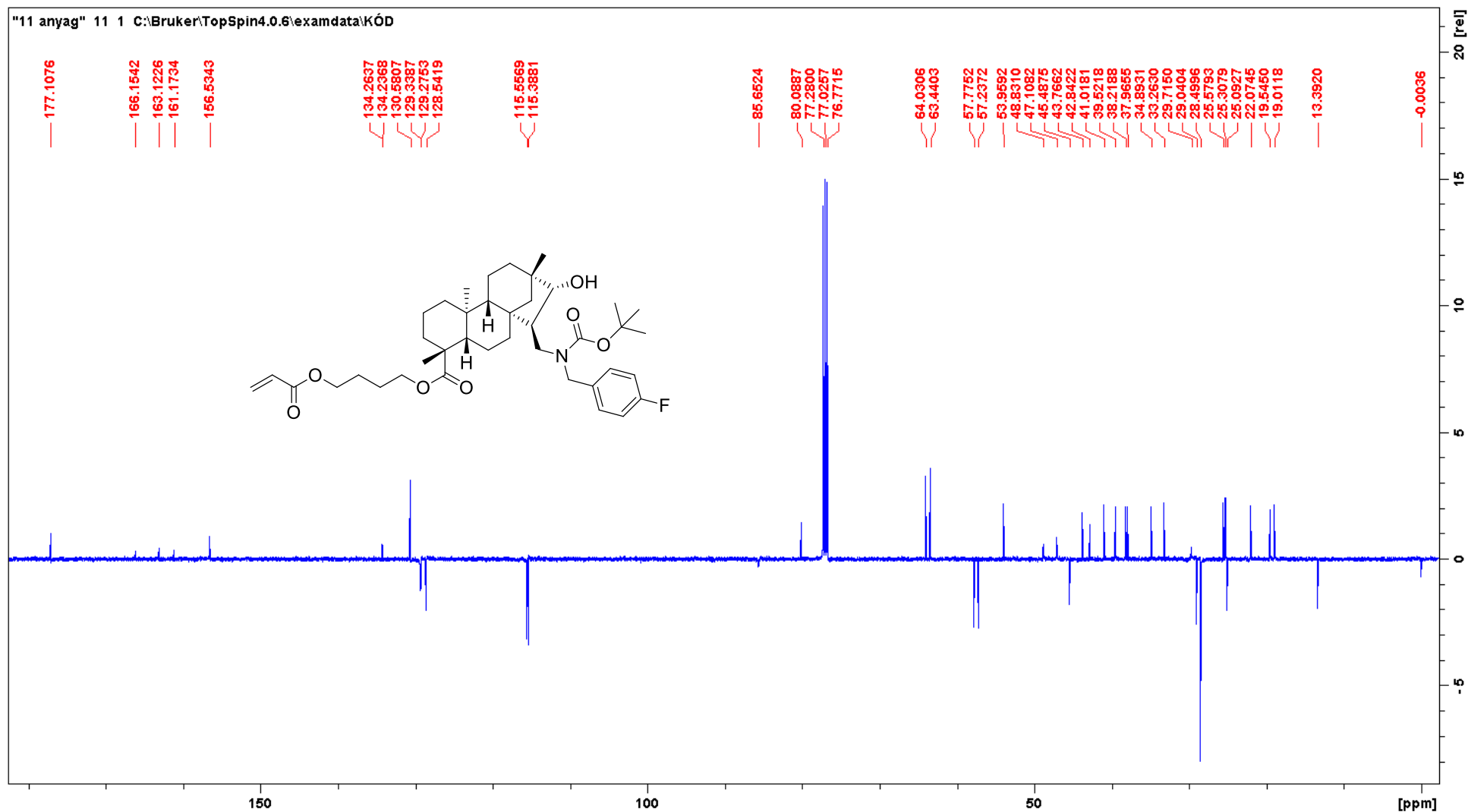


Figure S42

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

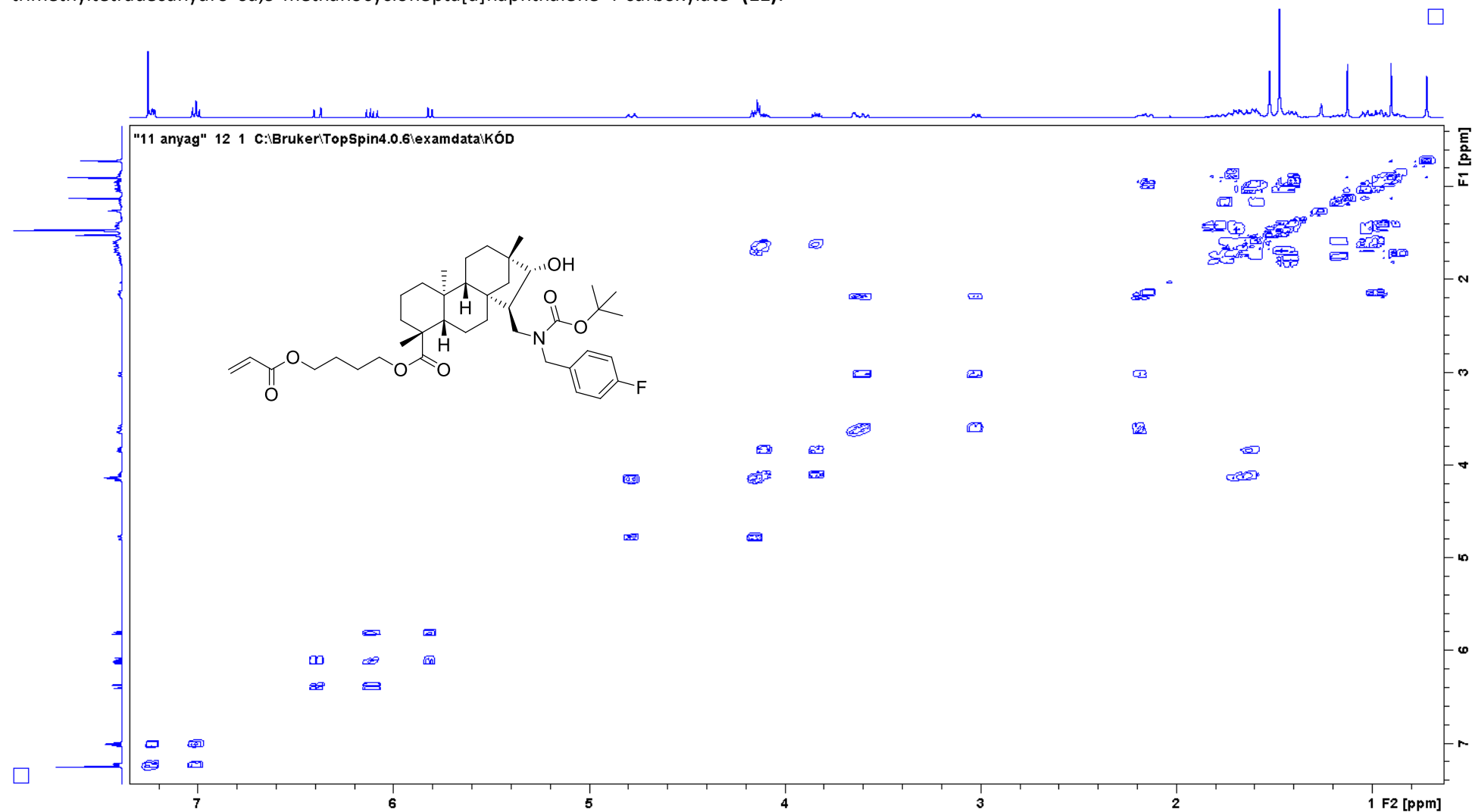


Figure S43

NOESY of compound (4*R*,4*a**S*,6*a**S*,7*R*,8*R*,9*S*,11*b**S*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

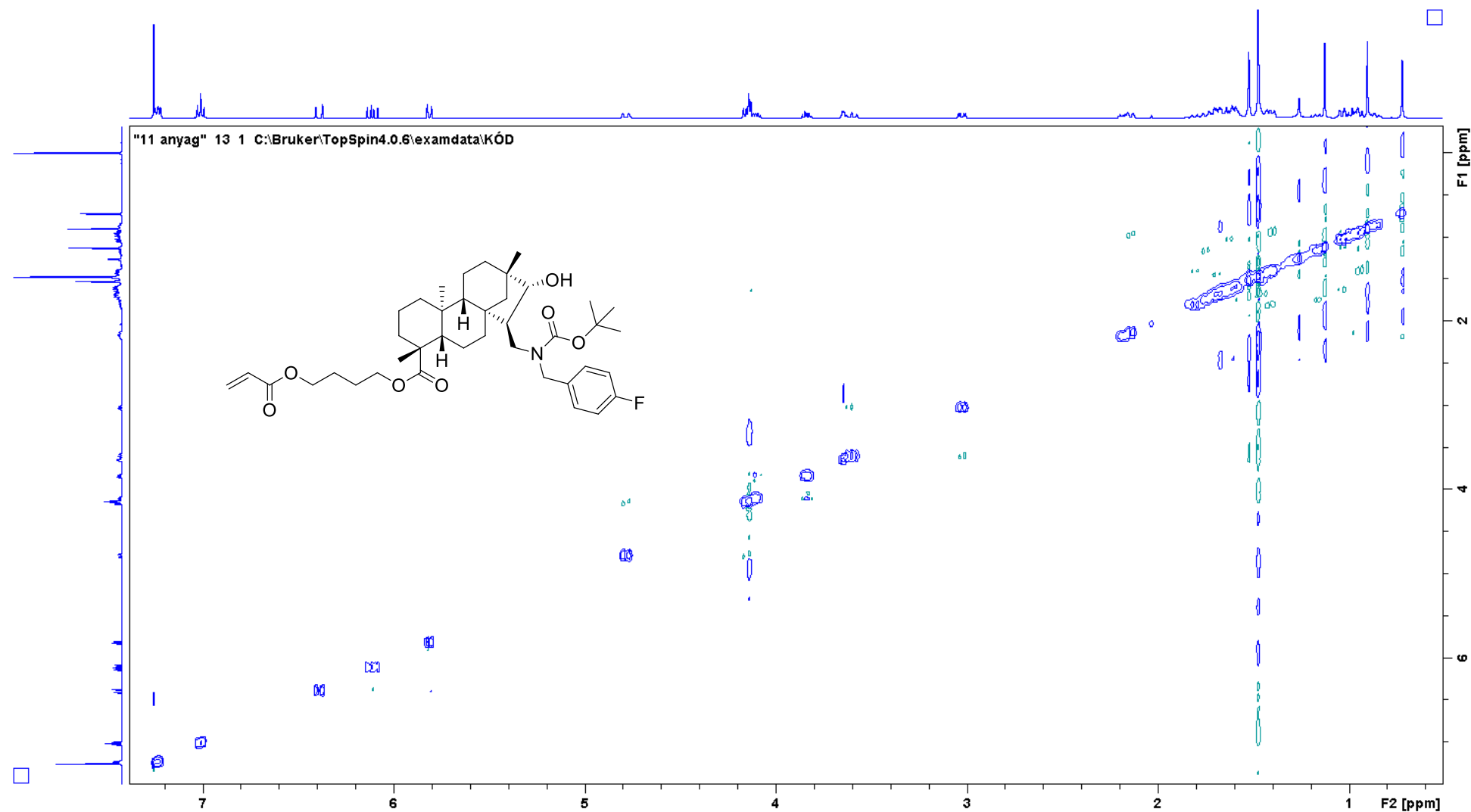


Figure S44

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

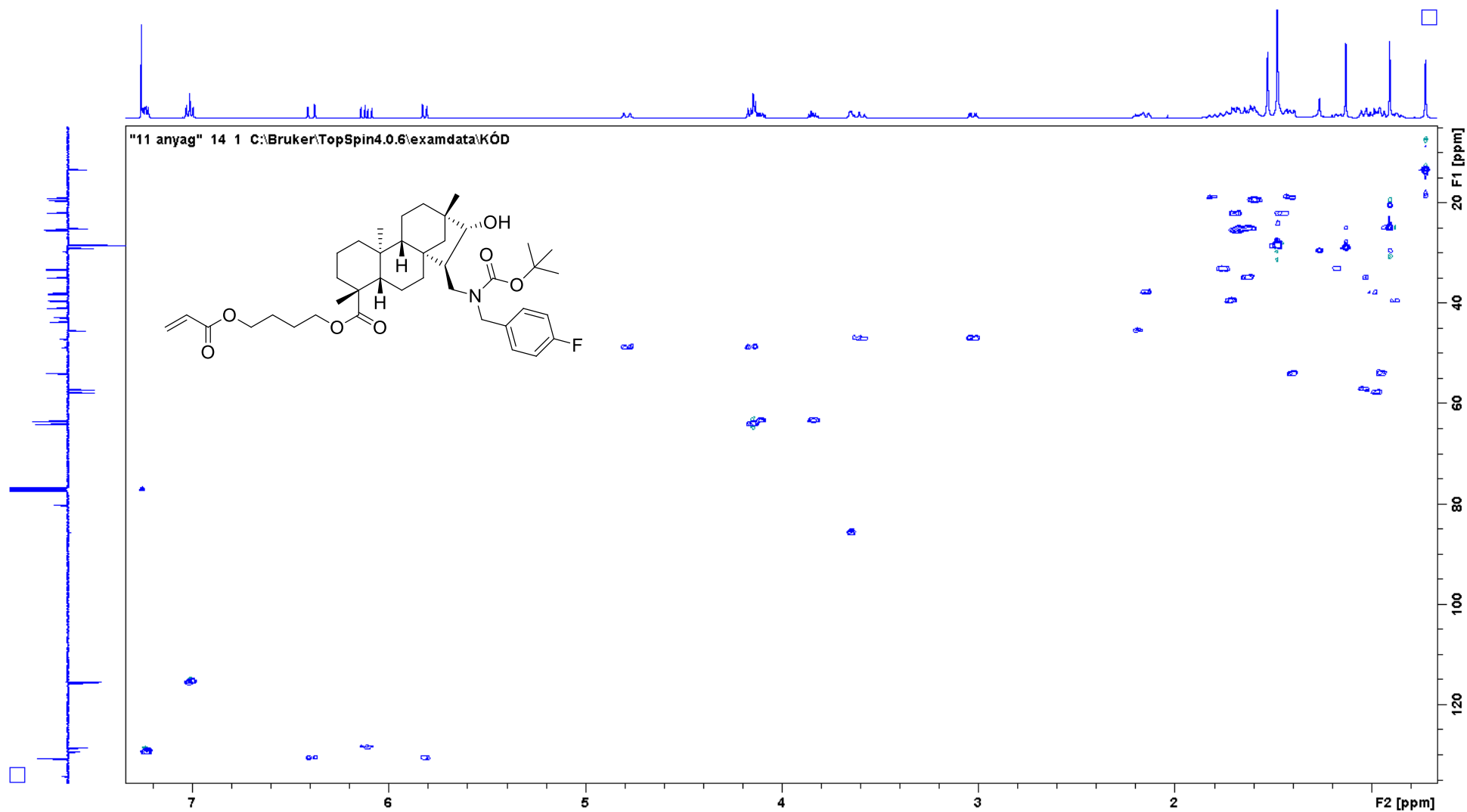


Figure S45

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

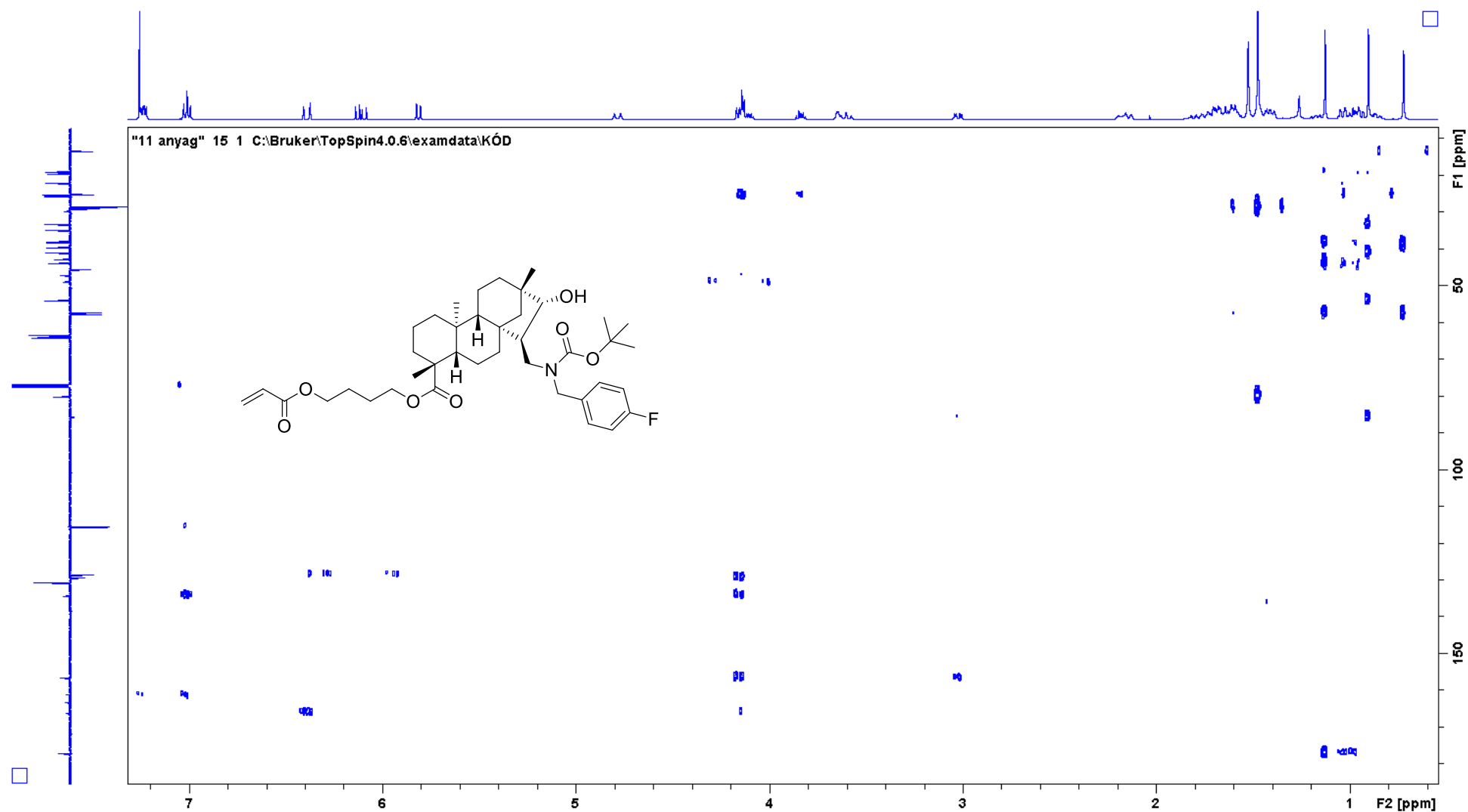


Figure S46

^{19}F -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-(Acryloyloxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**11**):

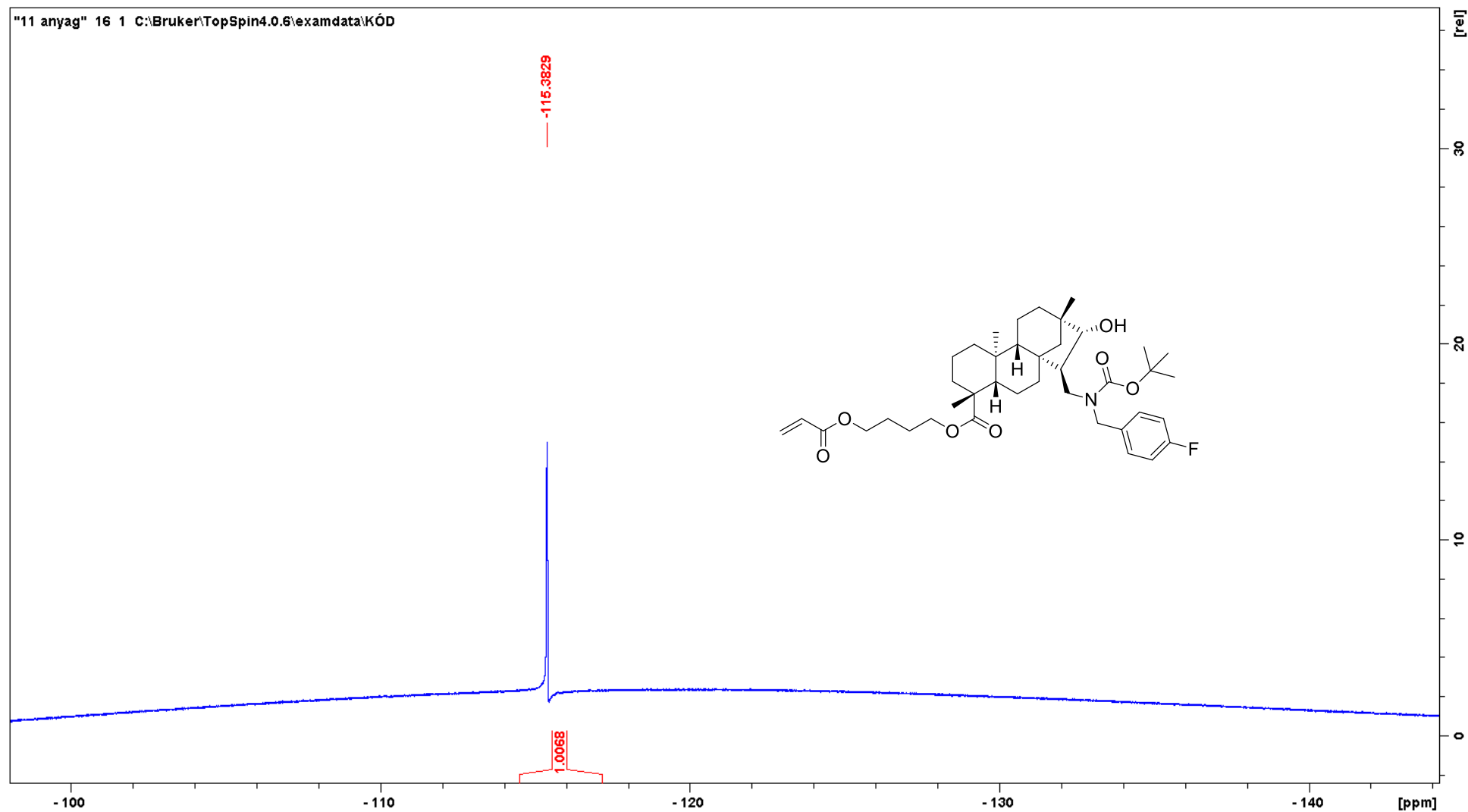


Figure S47

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

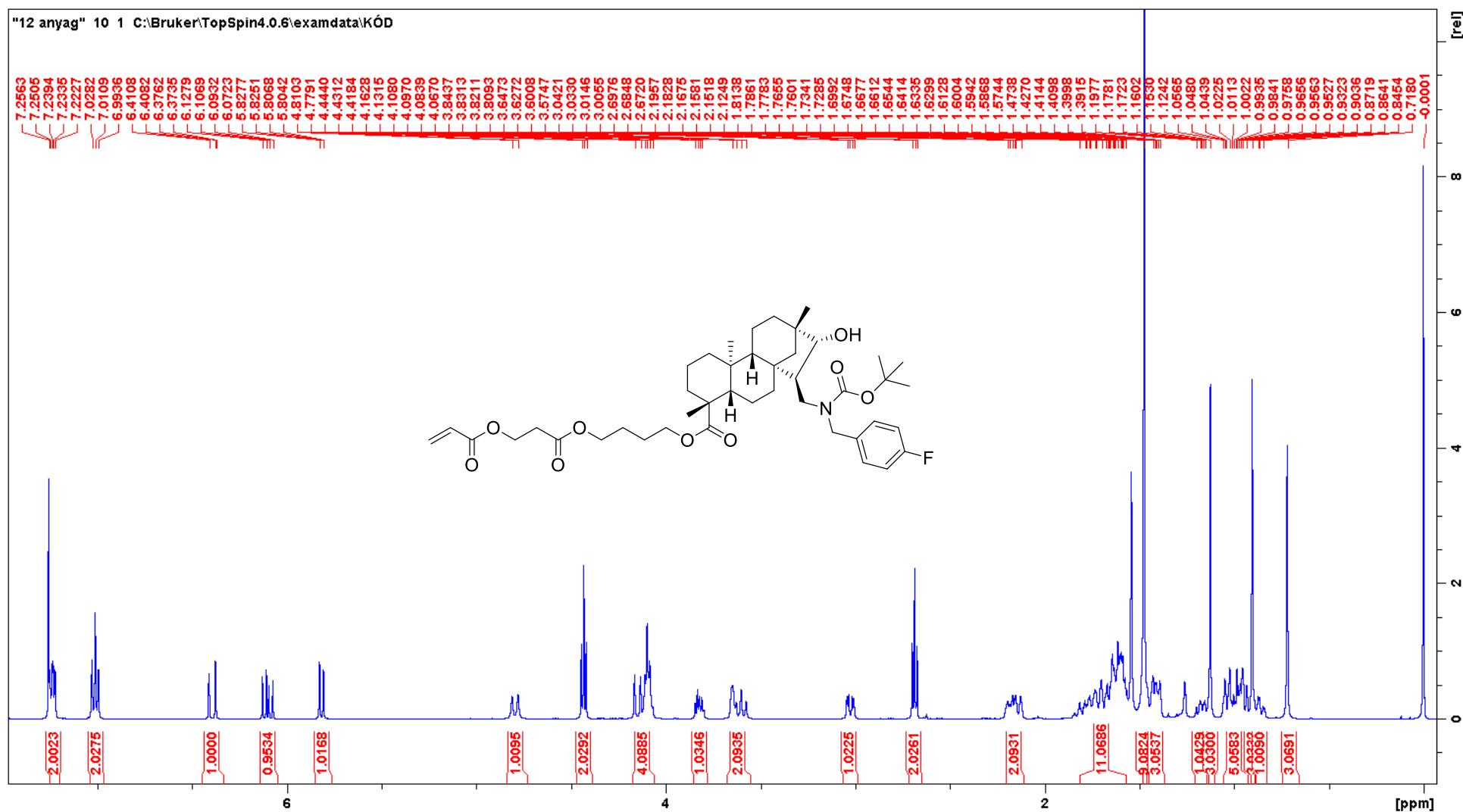


Figure S48

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

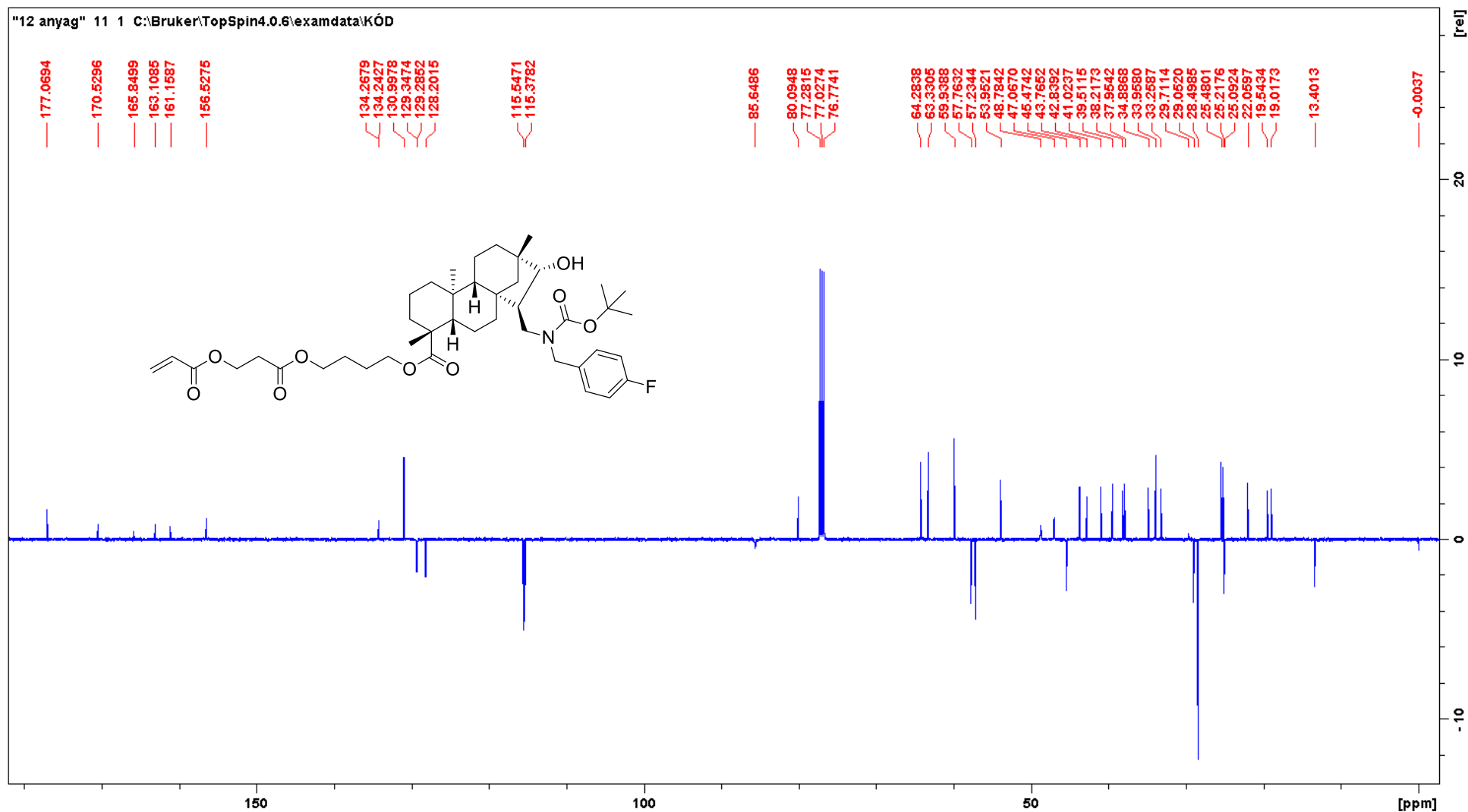


Figure S49

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

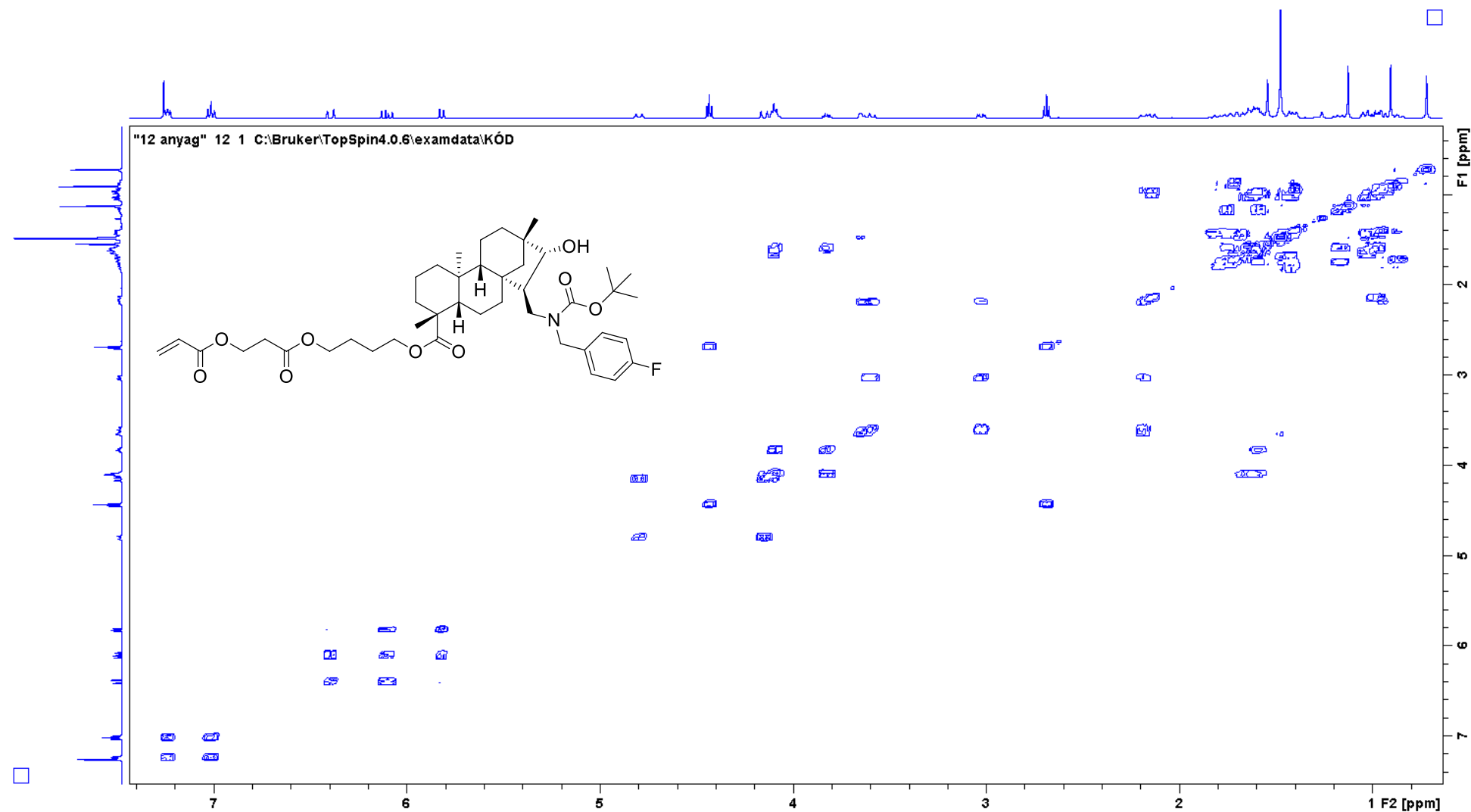


Figure S50

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

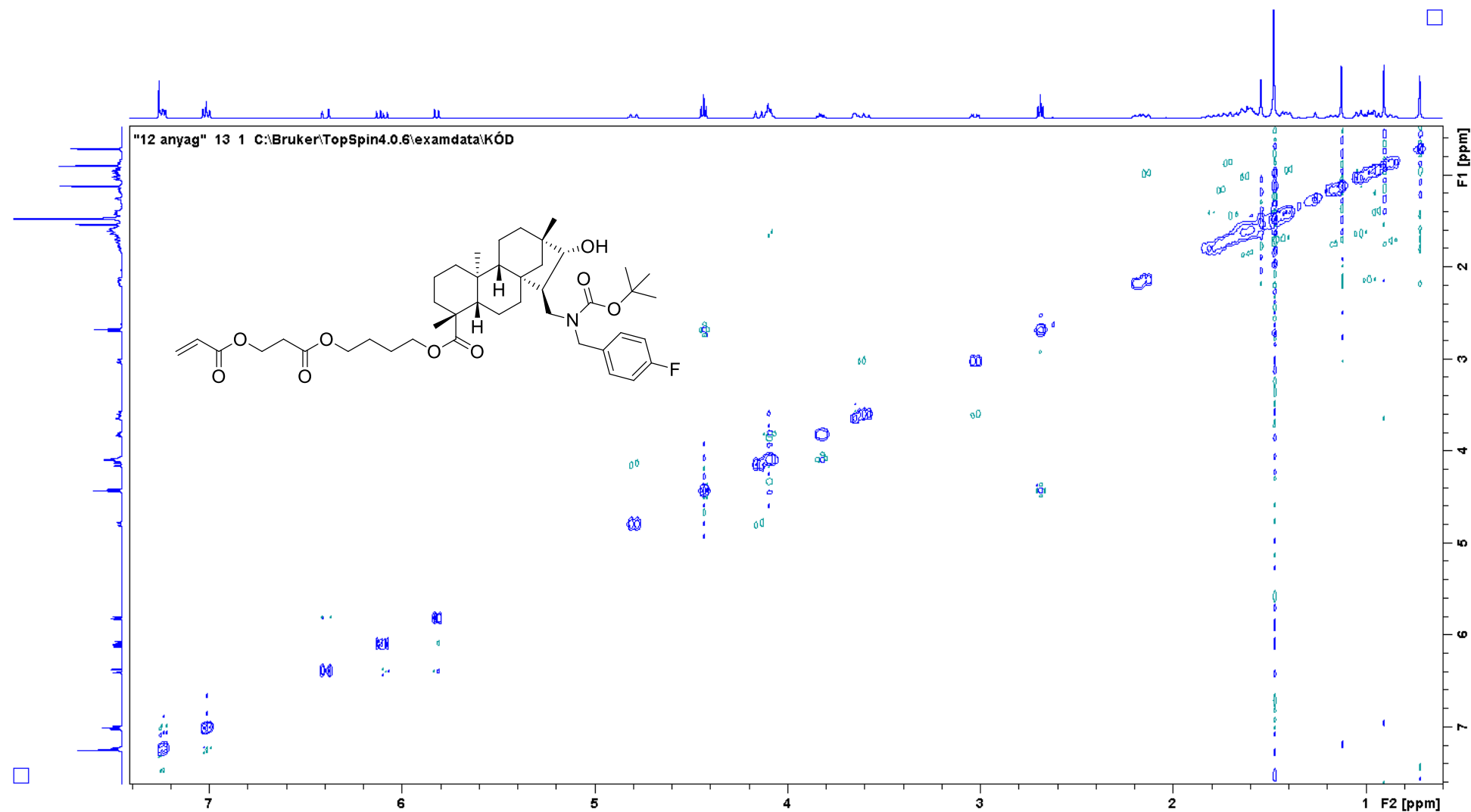


Figure S51

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

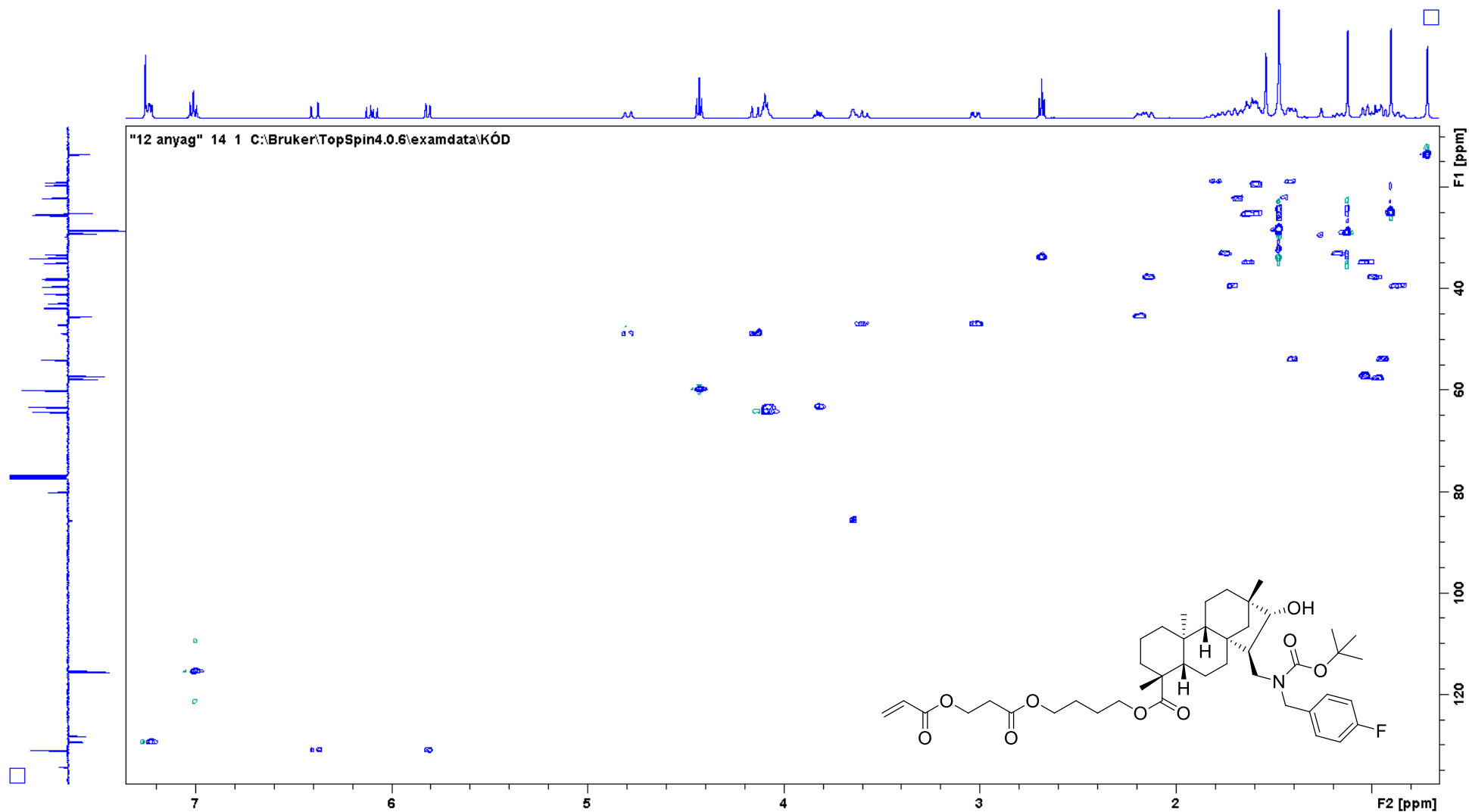


Figure S52

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

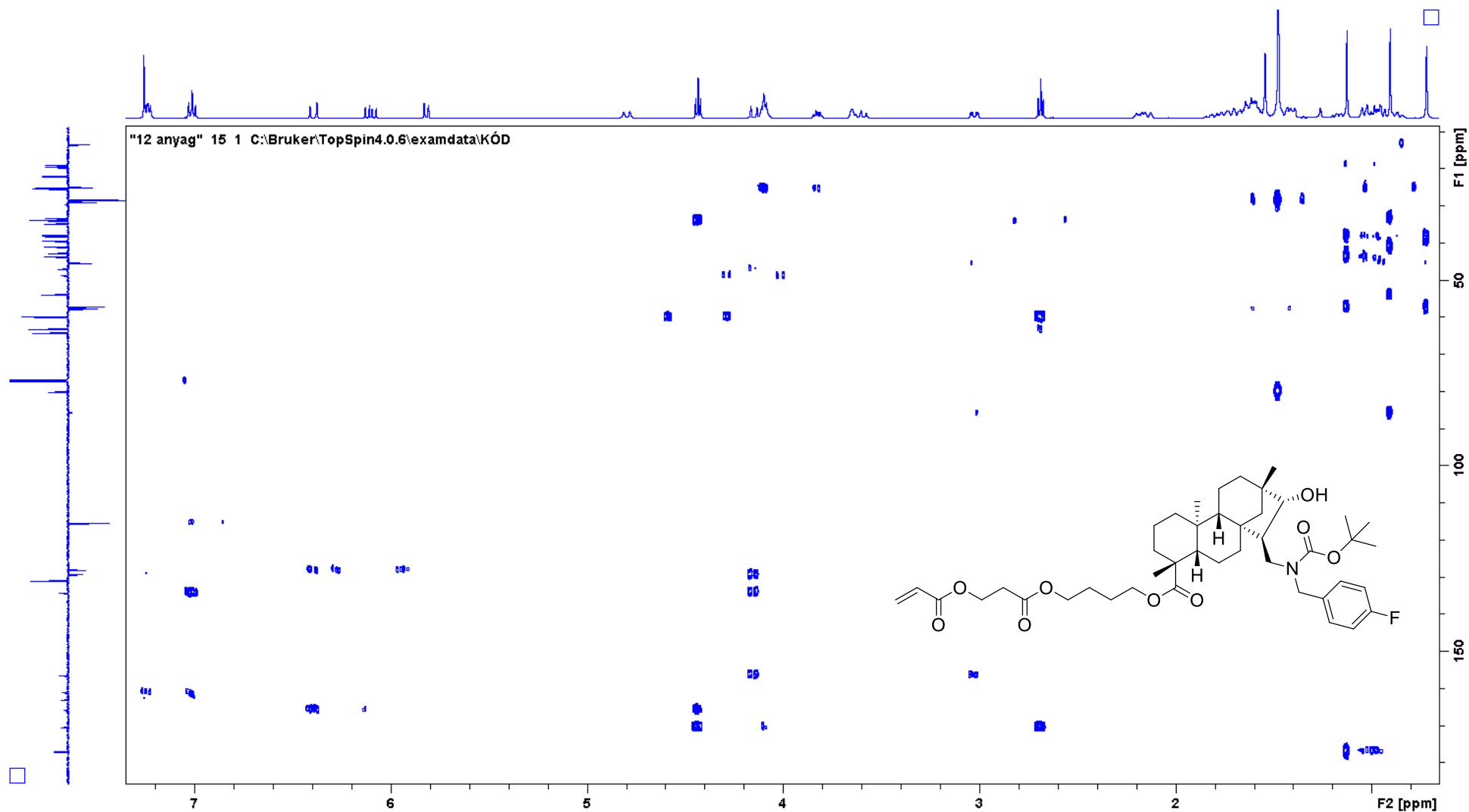


Figure S53

^{19}F -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-4-((3-(Acryloyloxy)propanoyl)oxy)butyl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**12**):

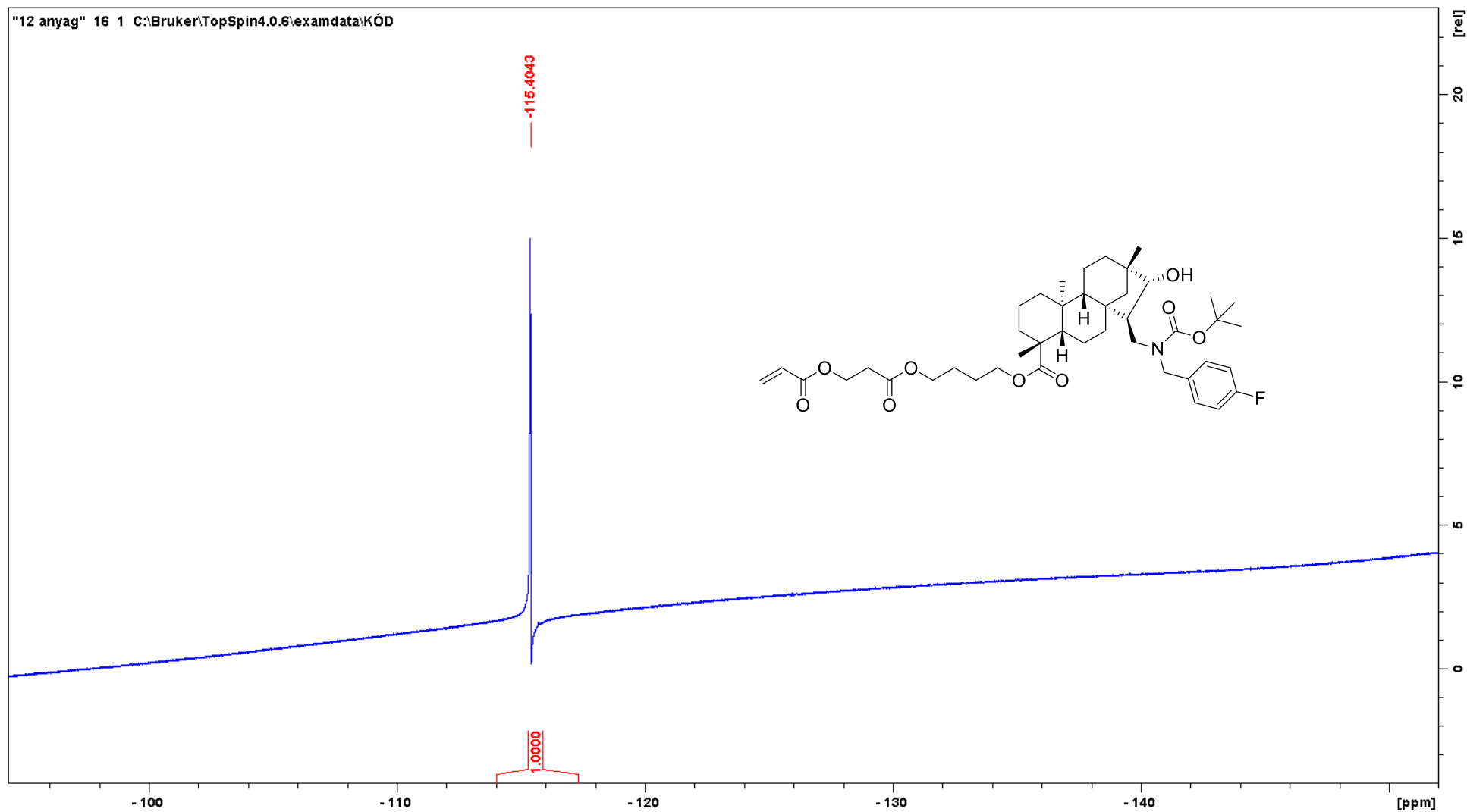


Figure S54

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**13**):

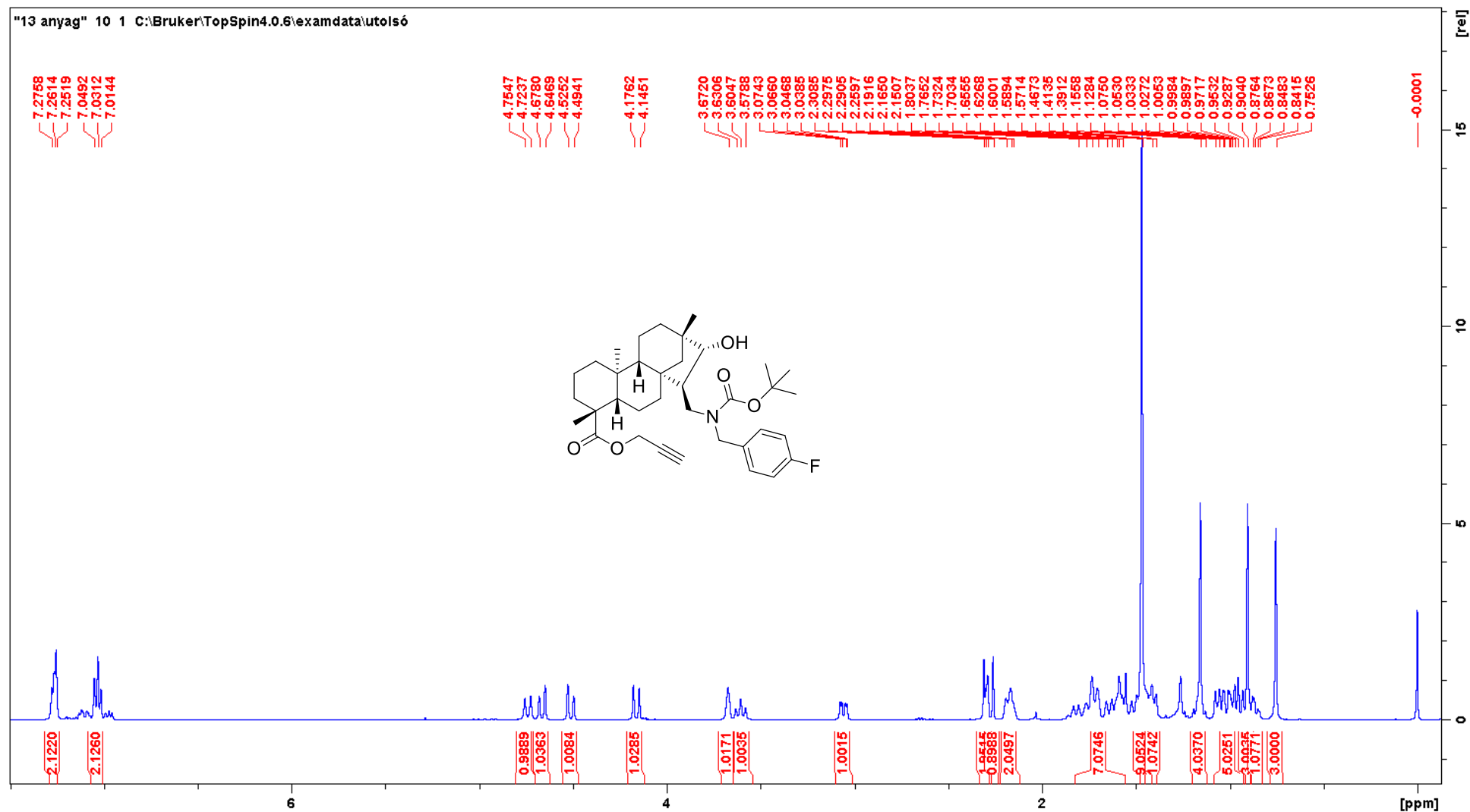


Figure S55

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**13**):

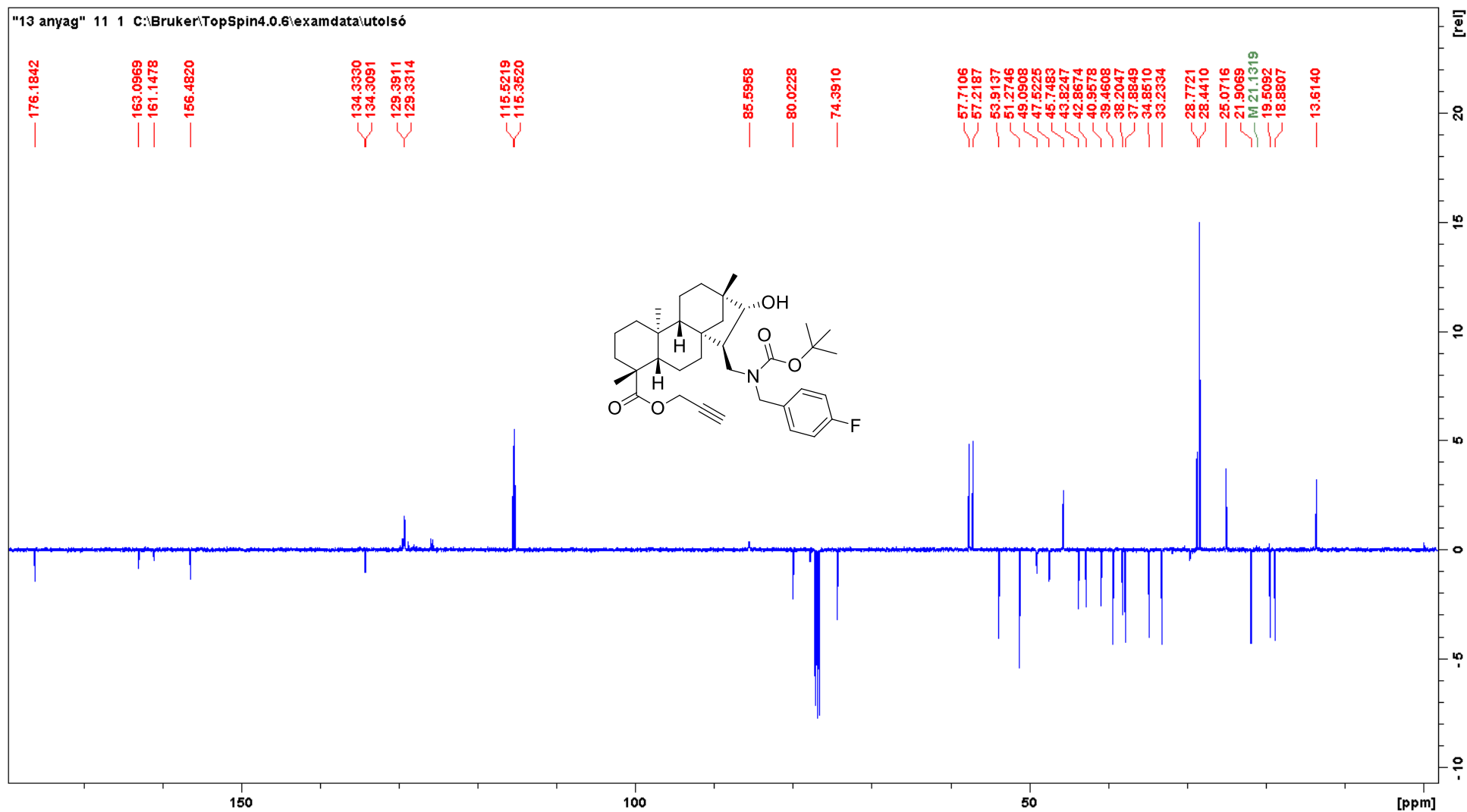


Figure S56

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**13**):

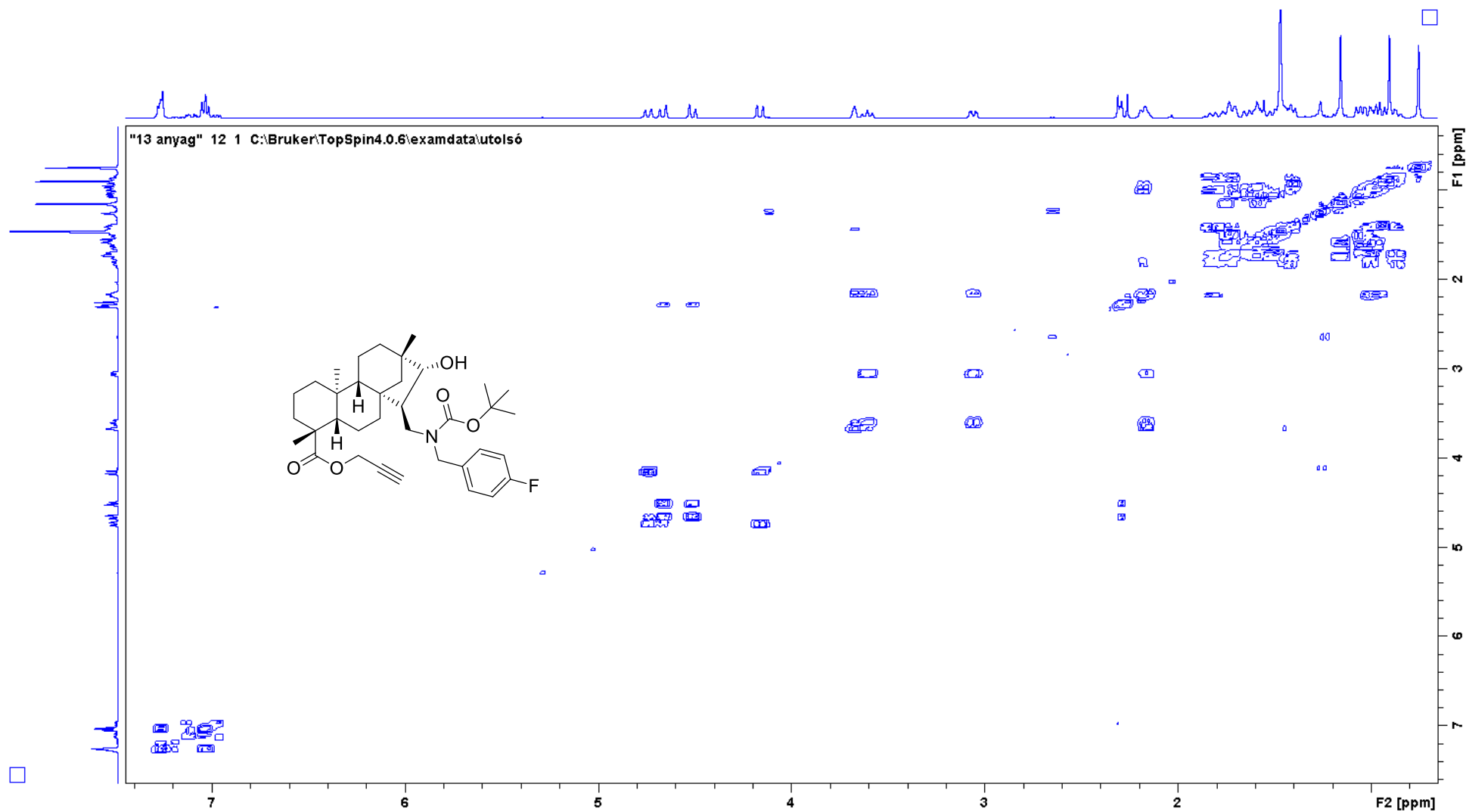


Figure S57

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**13**):

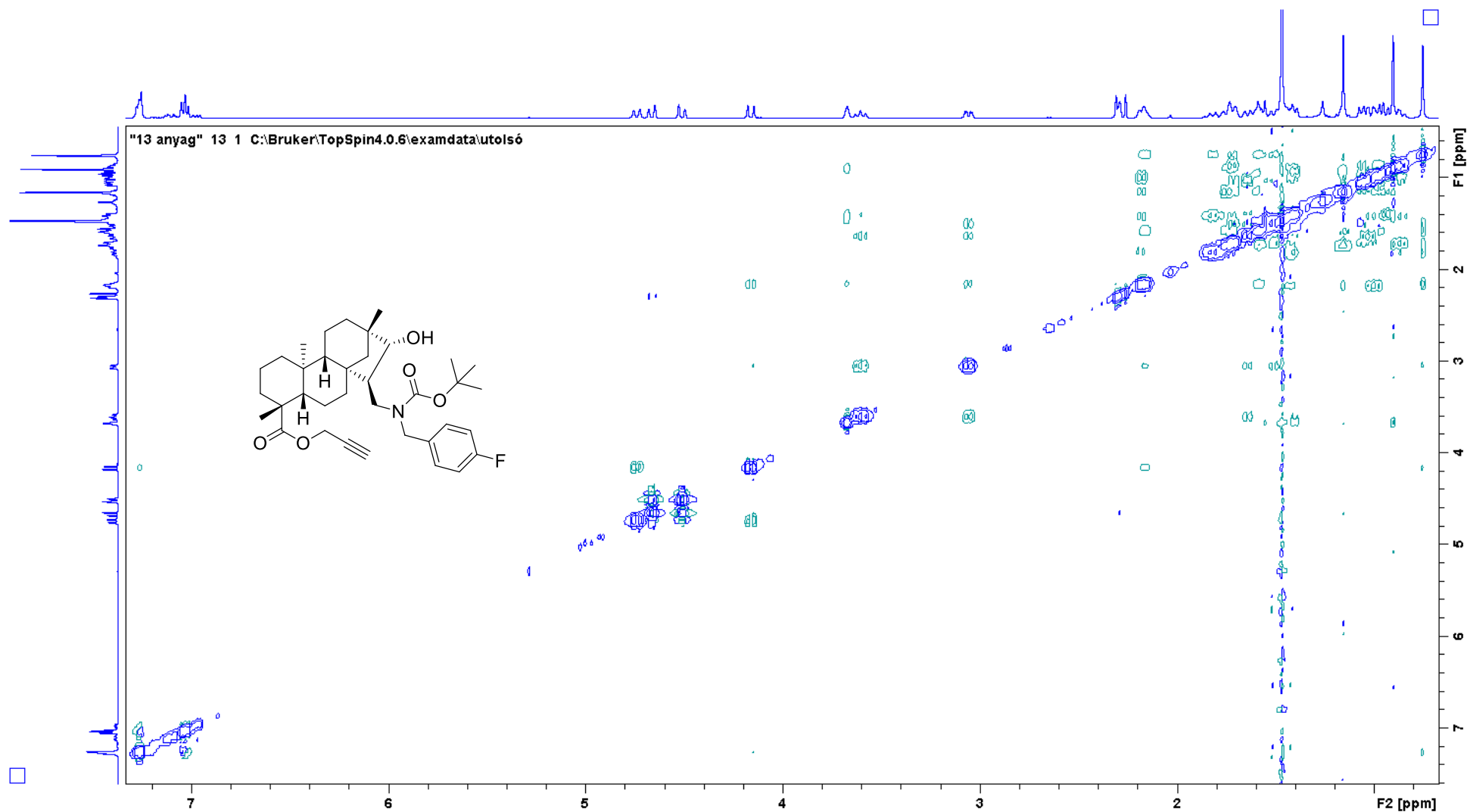


Figure S58

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**13**):

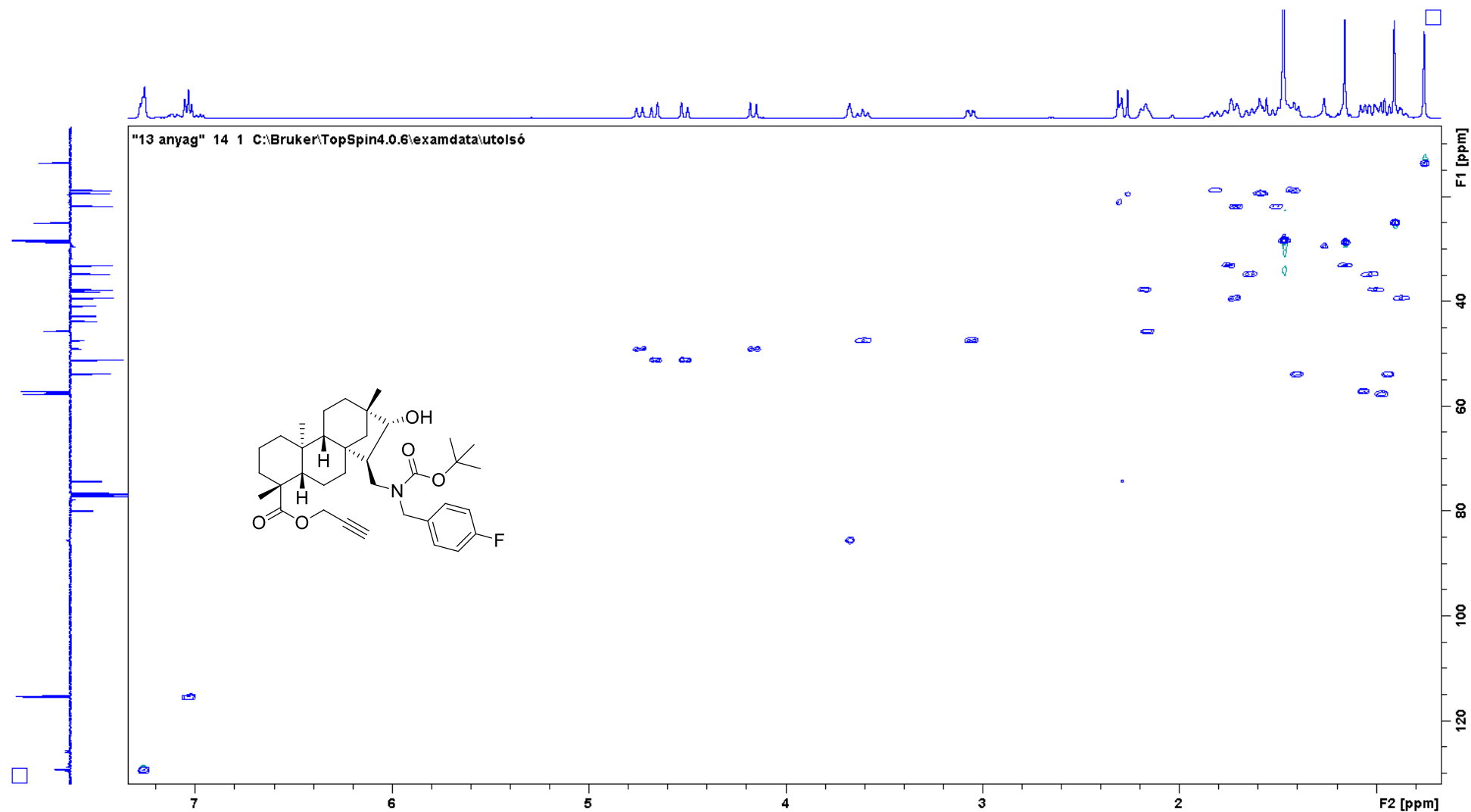


Figure S59

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((*tert*-butoxycarbonyl)(4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**13**):

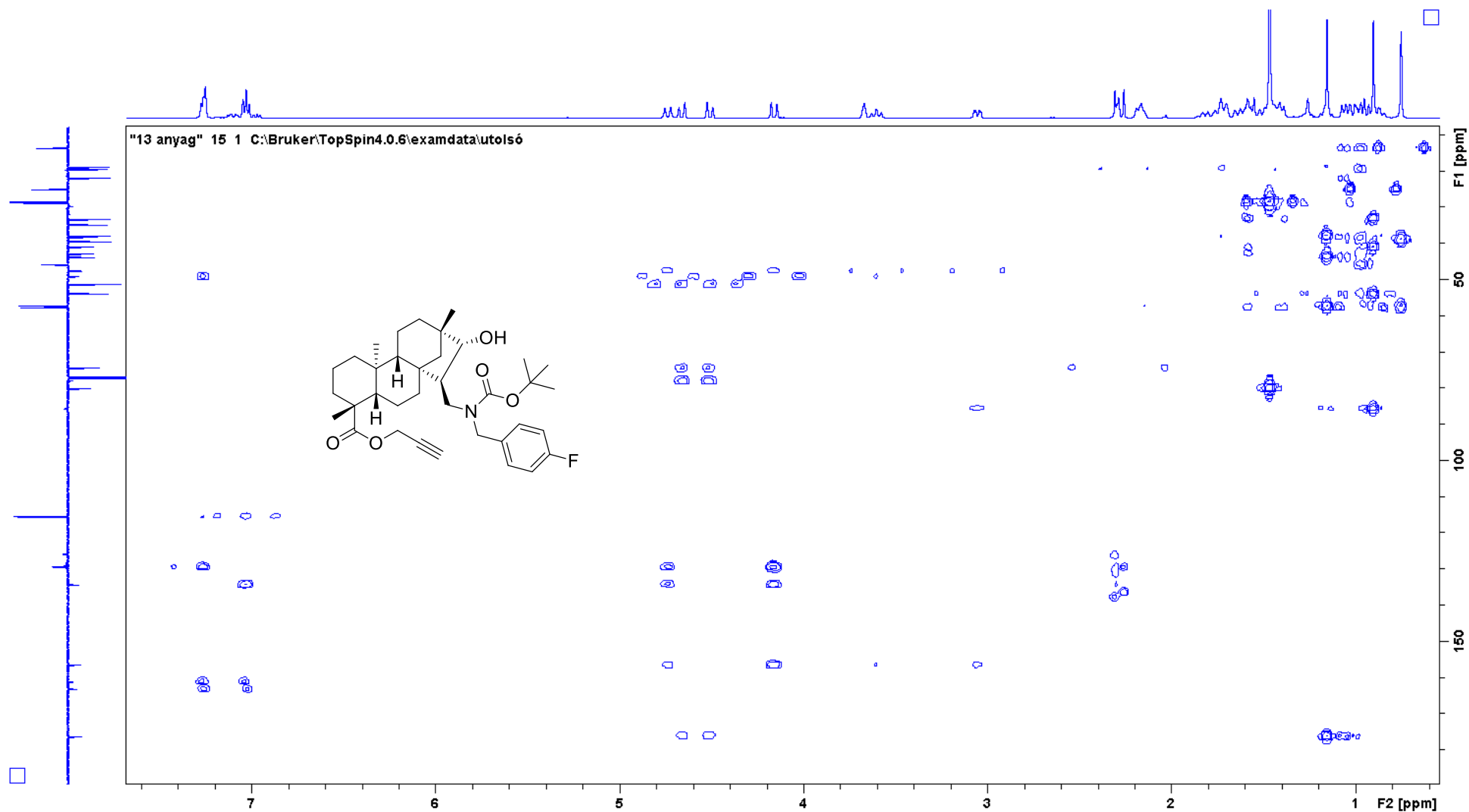


Figure S60

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

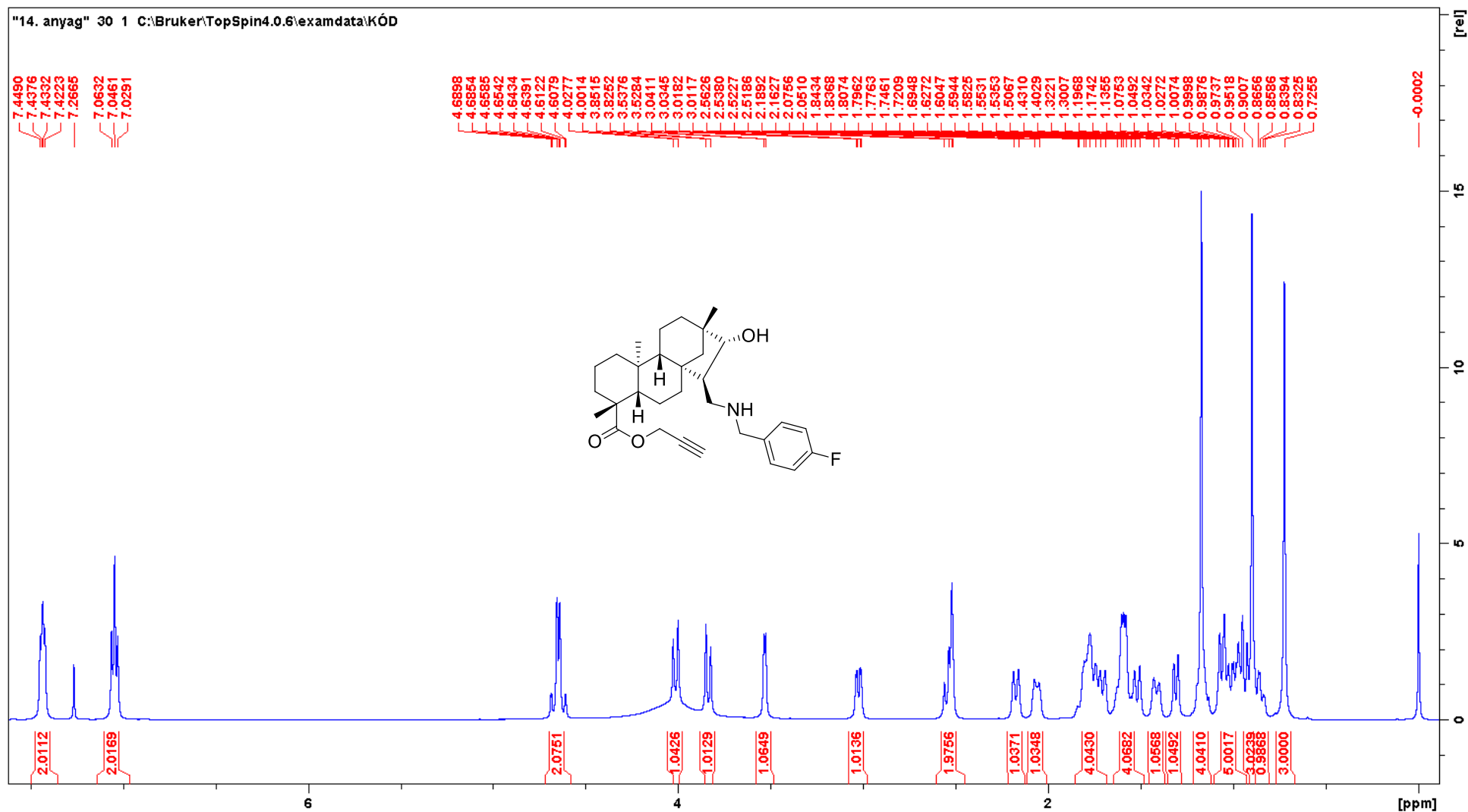


Figure S61

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

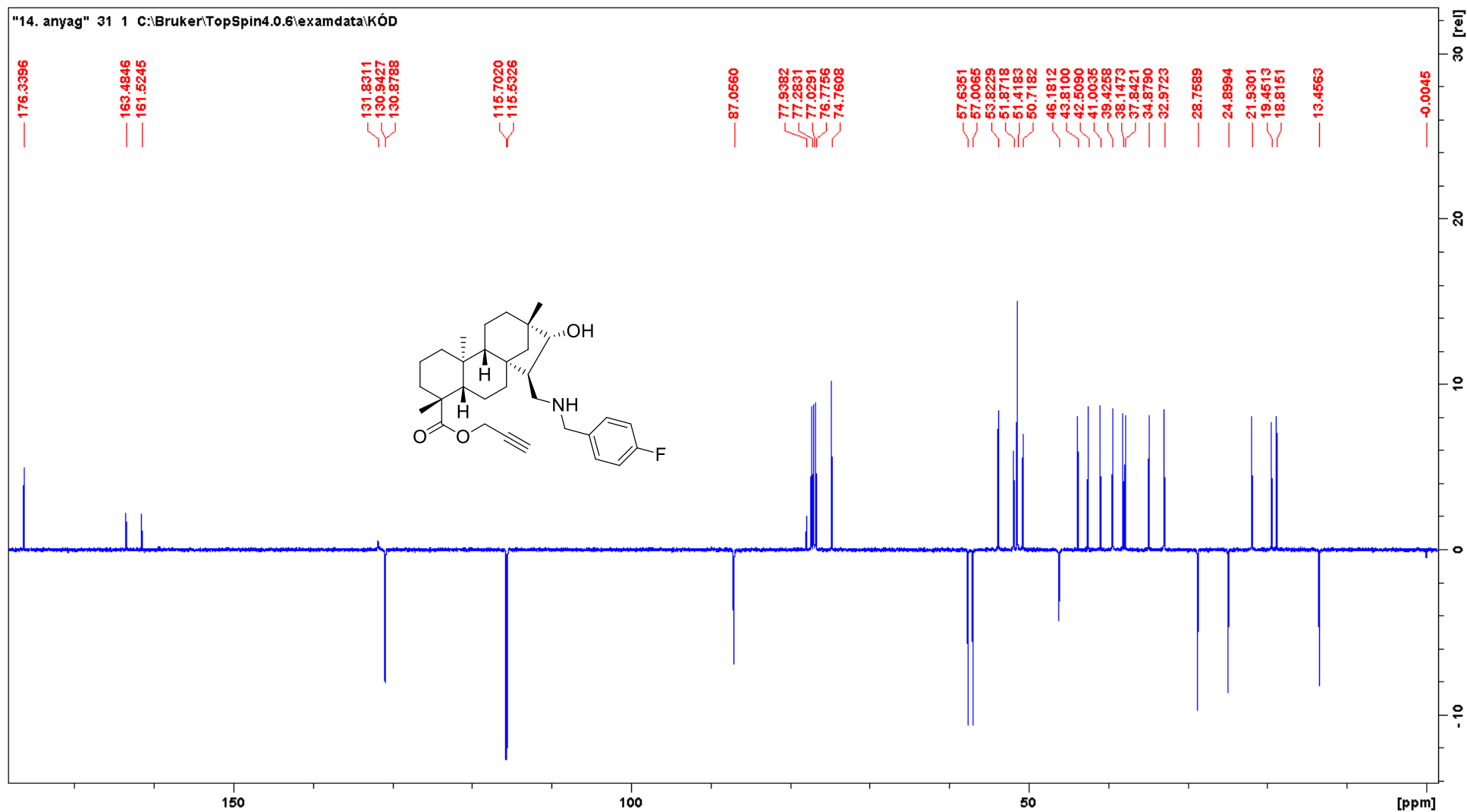


Figure S62

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

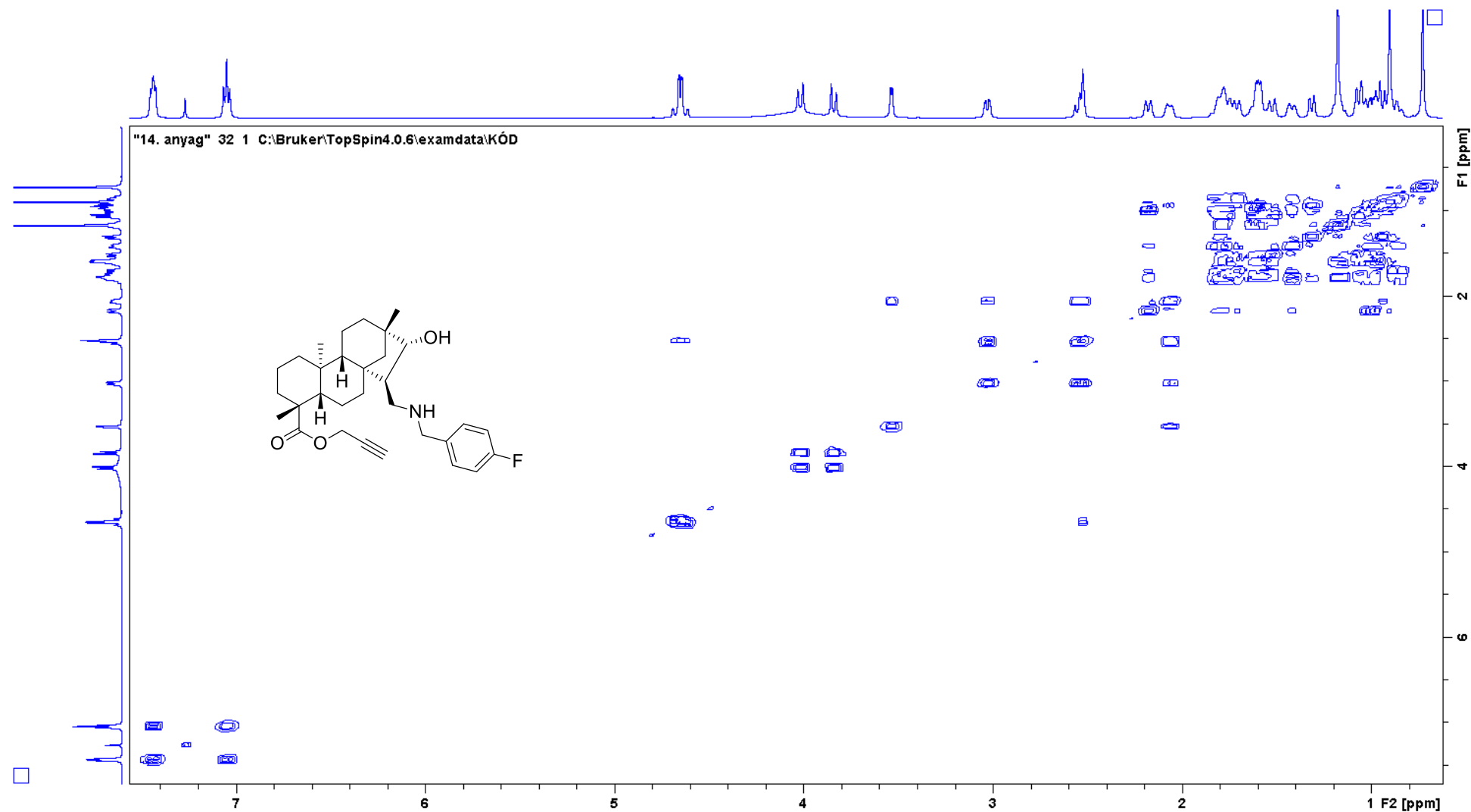


Figure S63

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

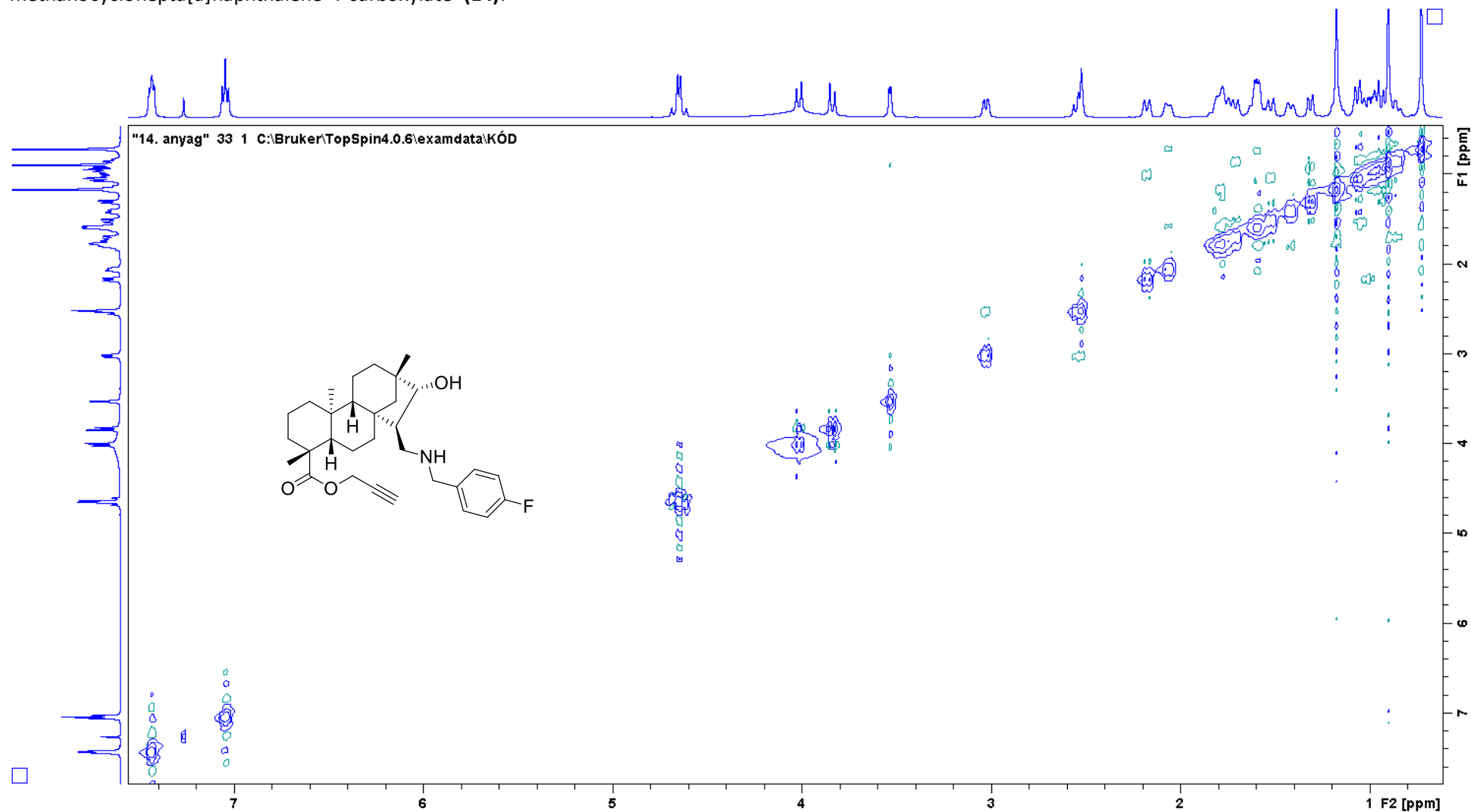


Figure S64

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

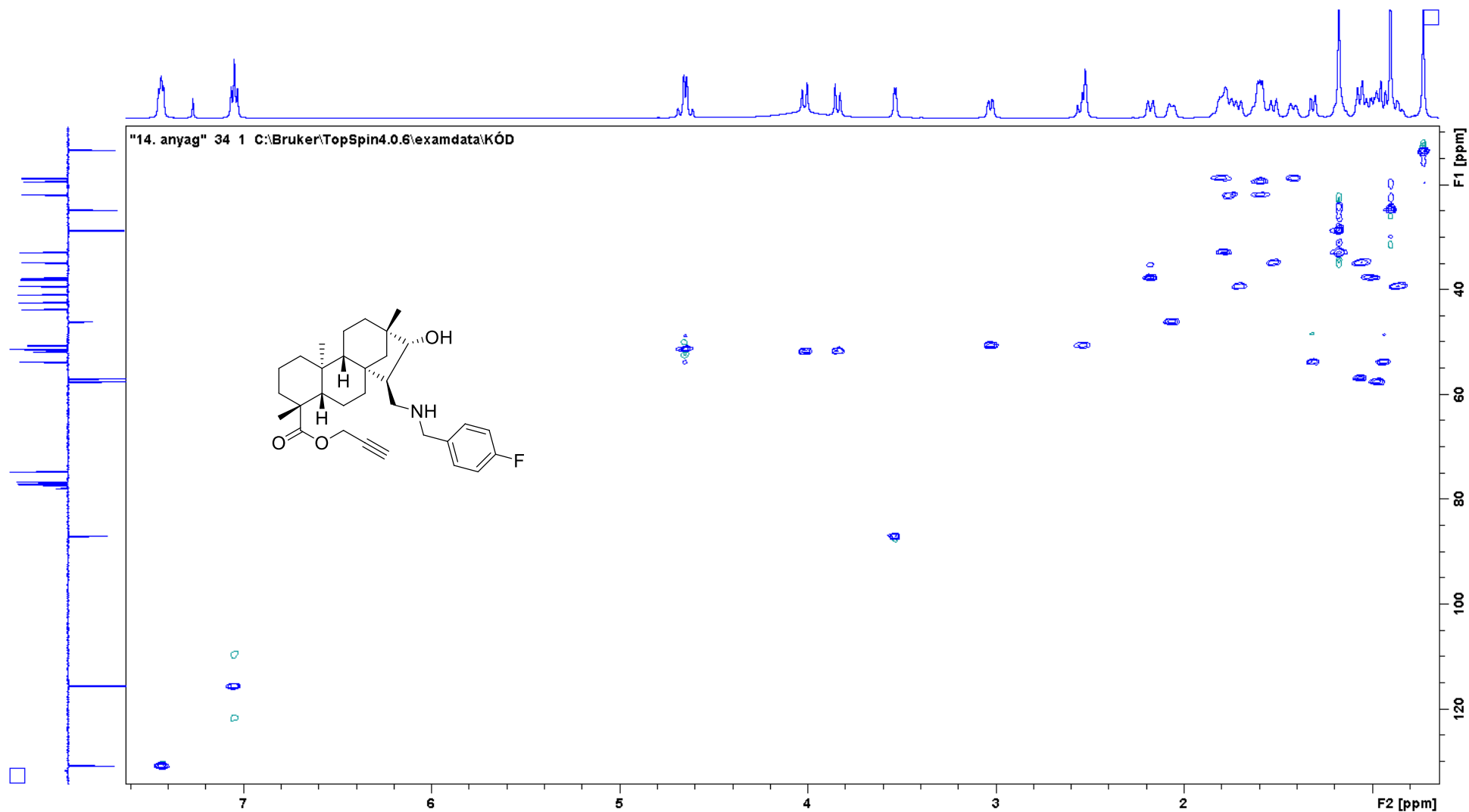


Figure S65

HMBC of compound (4*R*,4*a**S*,6*a**S*,7*R*,8*R*,9*S*,11*b**S*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

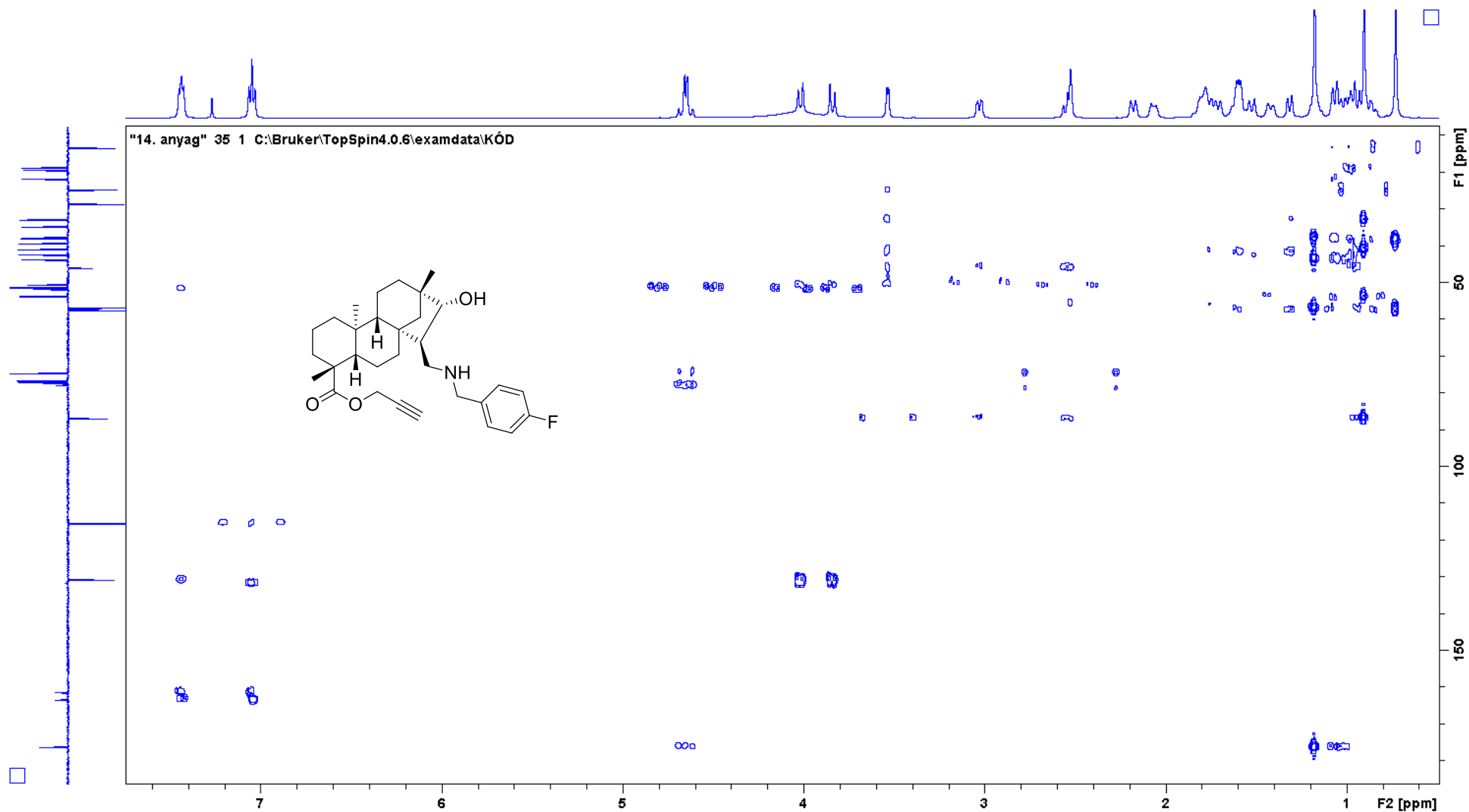


Figure S66

^{19}F -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Prop-2-yn-1-yl 7-(((4-fluorobenzyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**14**):

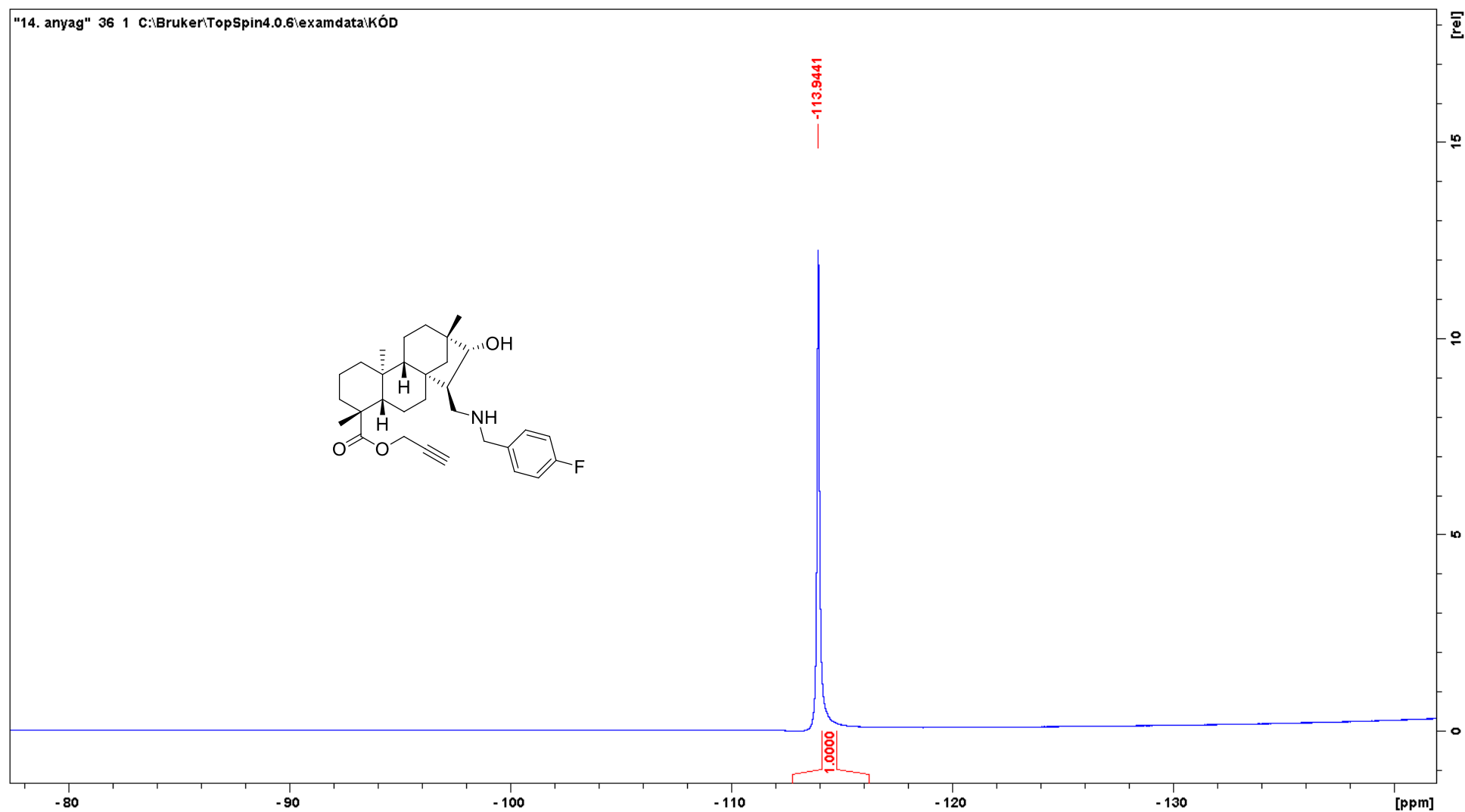


Figure S67

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**15**):

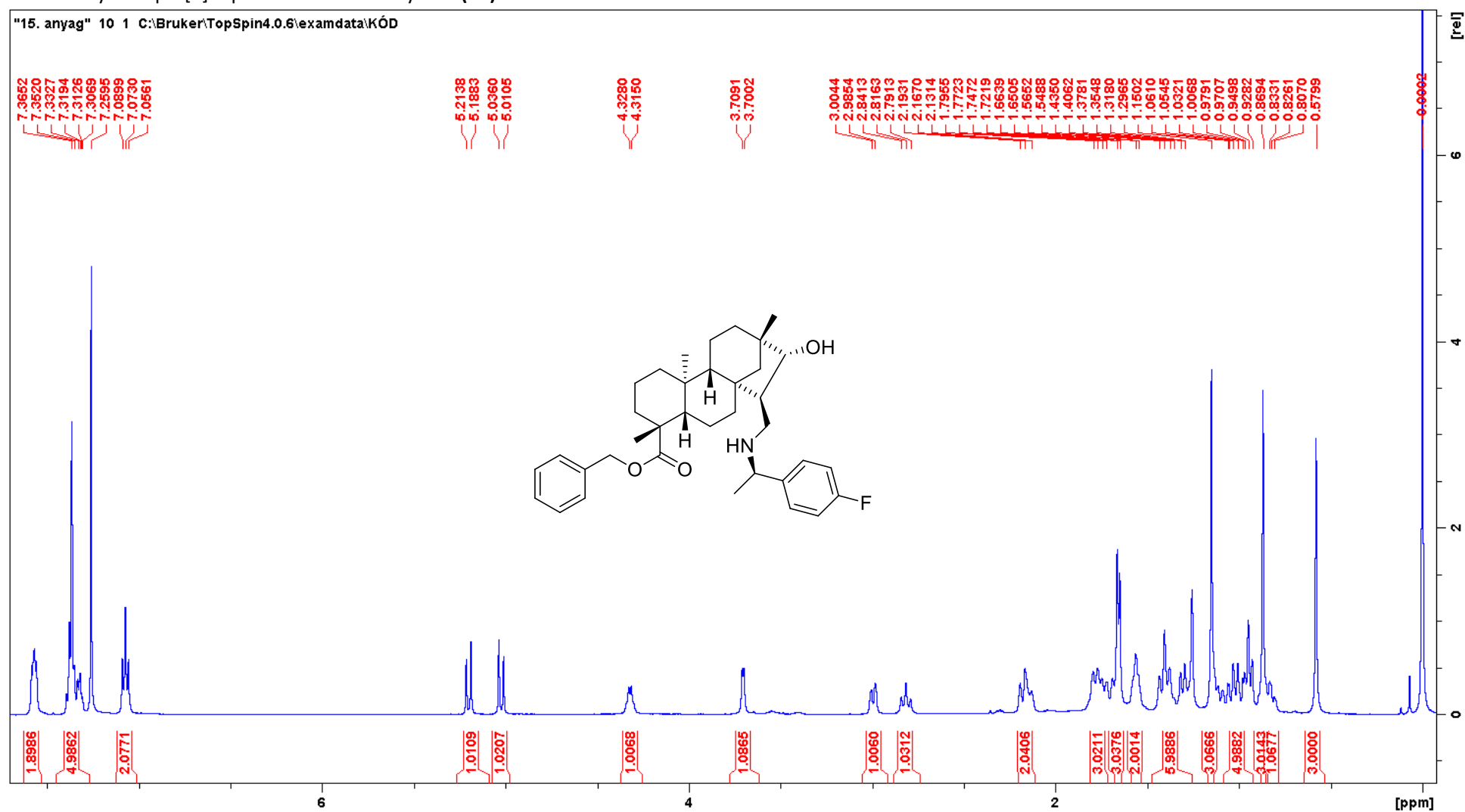


Figure S68

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**15**):

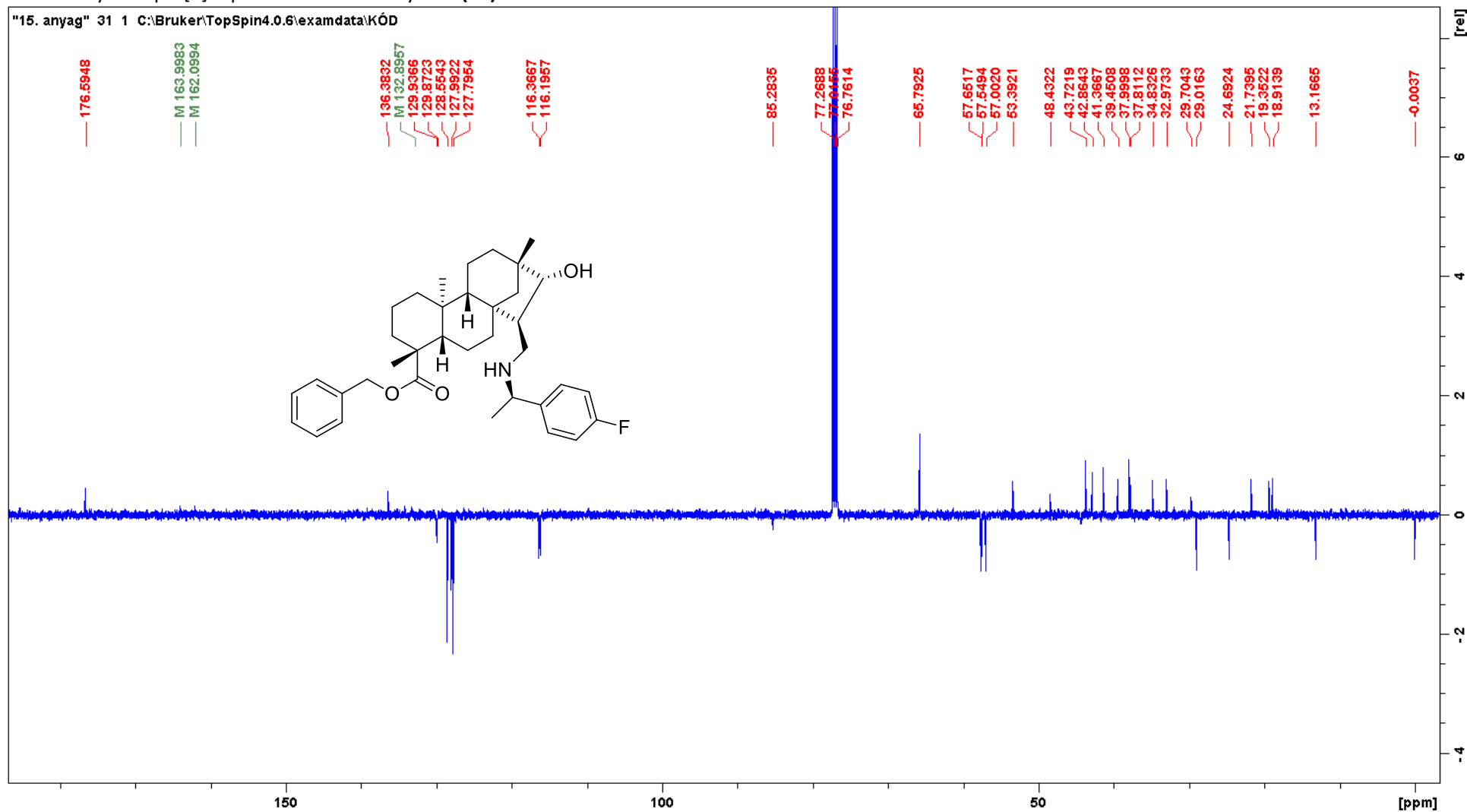


Figure S69

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**15**):

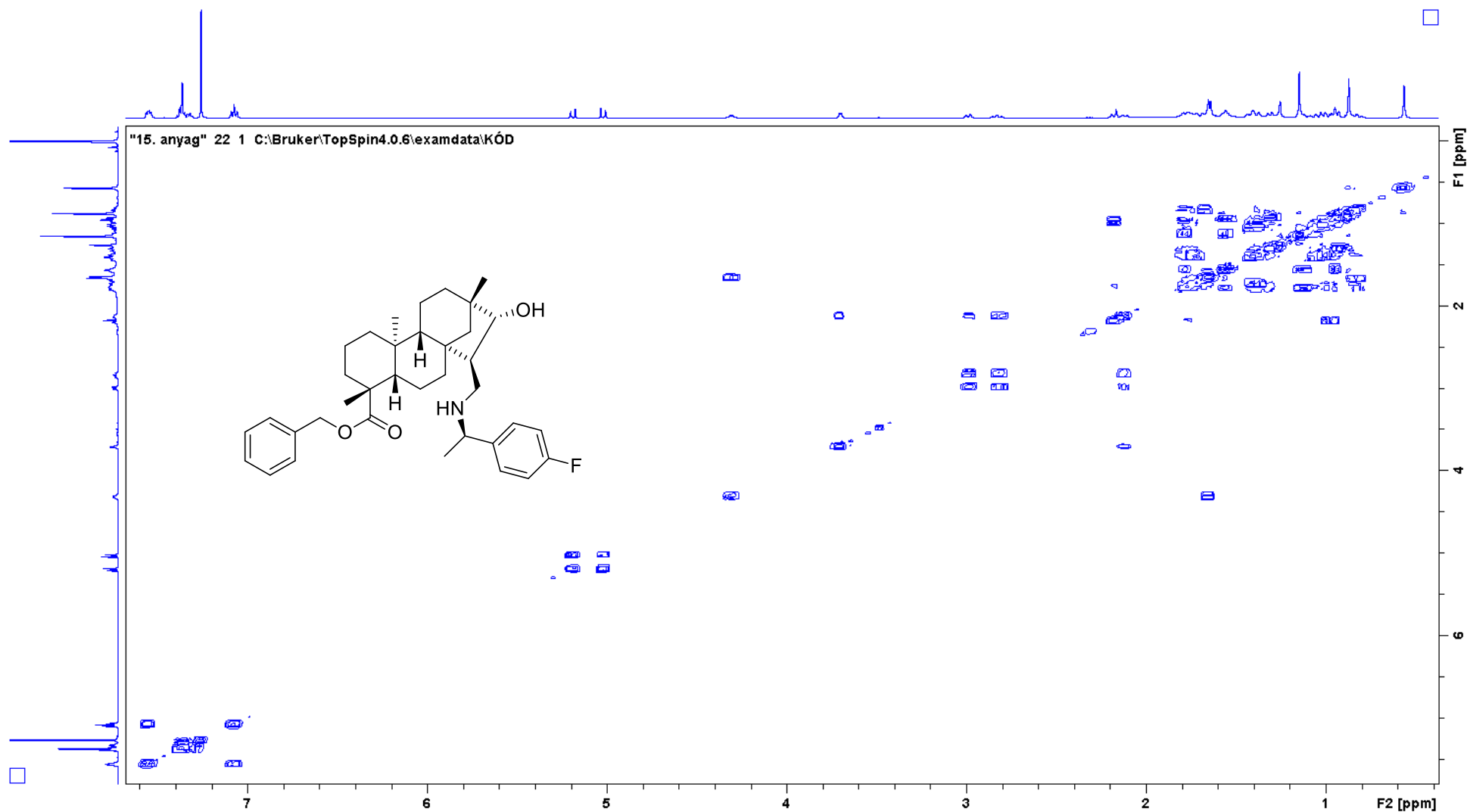


Figure S70

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**15**):

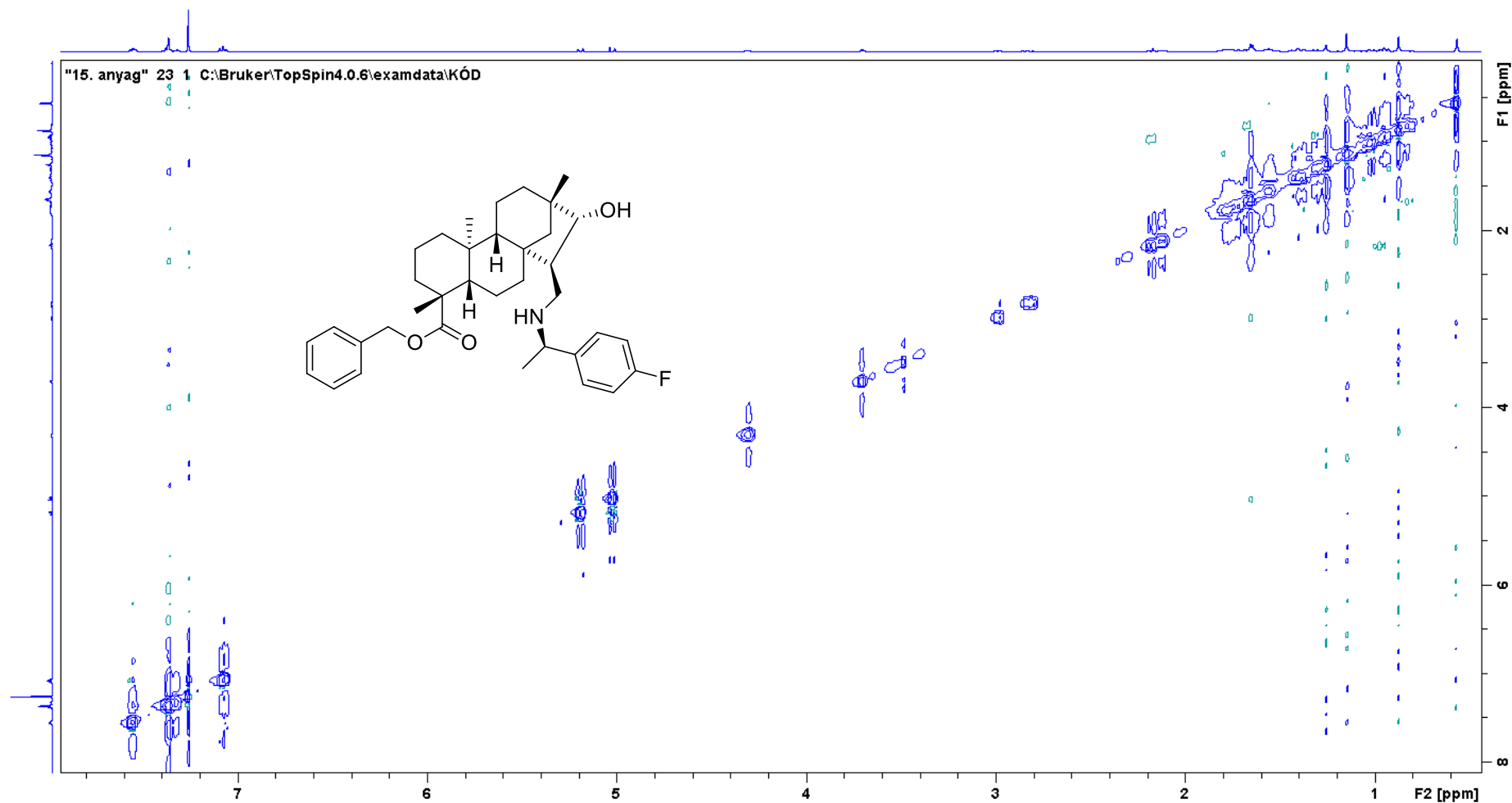


Figure S71

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**15**):

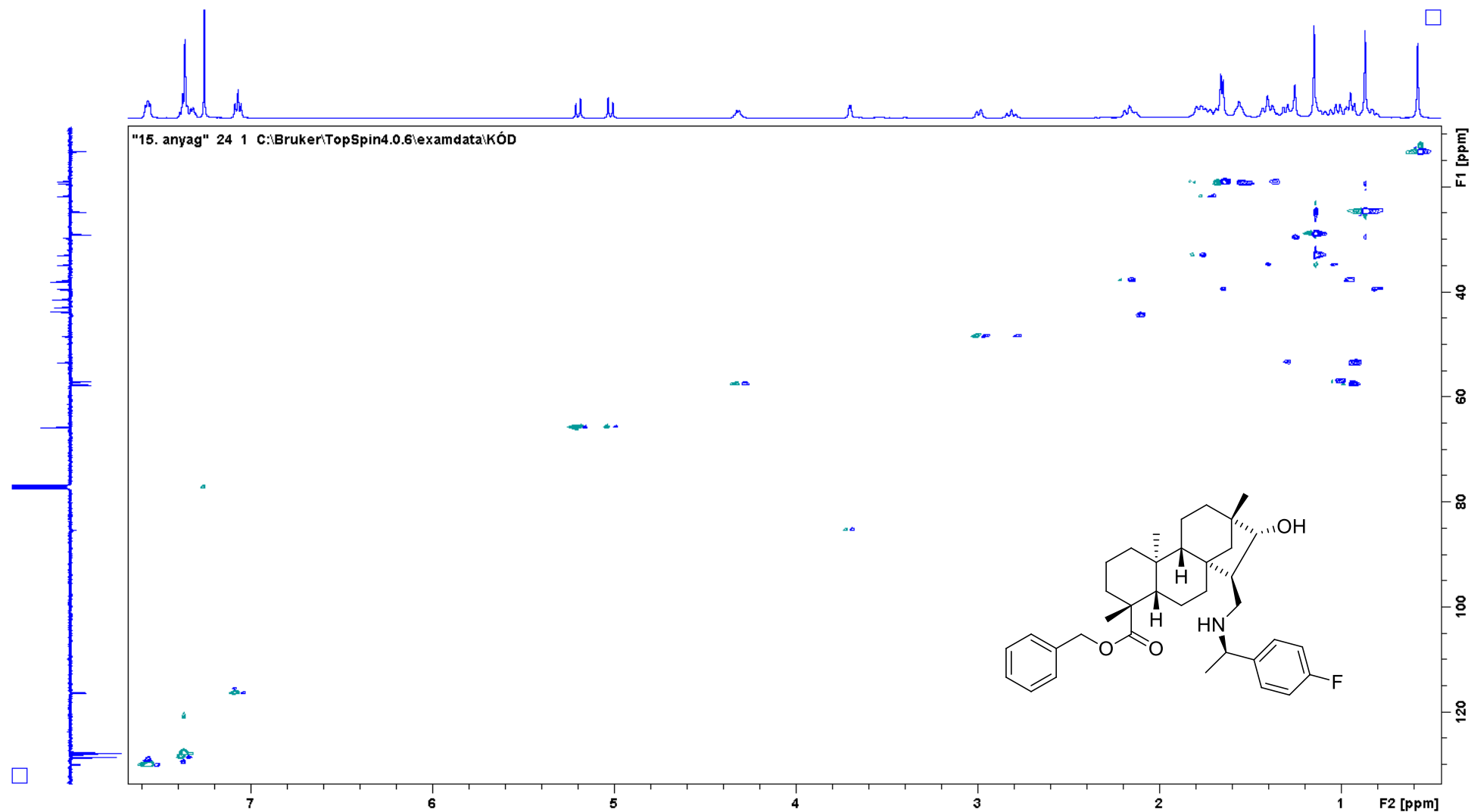


Figure S72

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**15**):

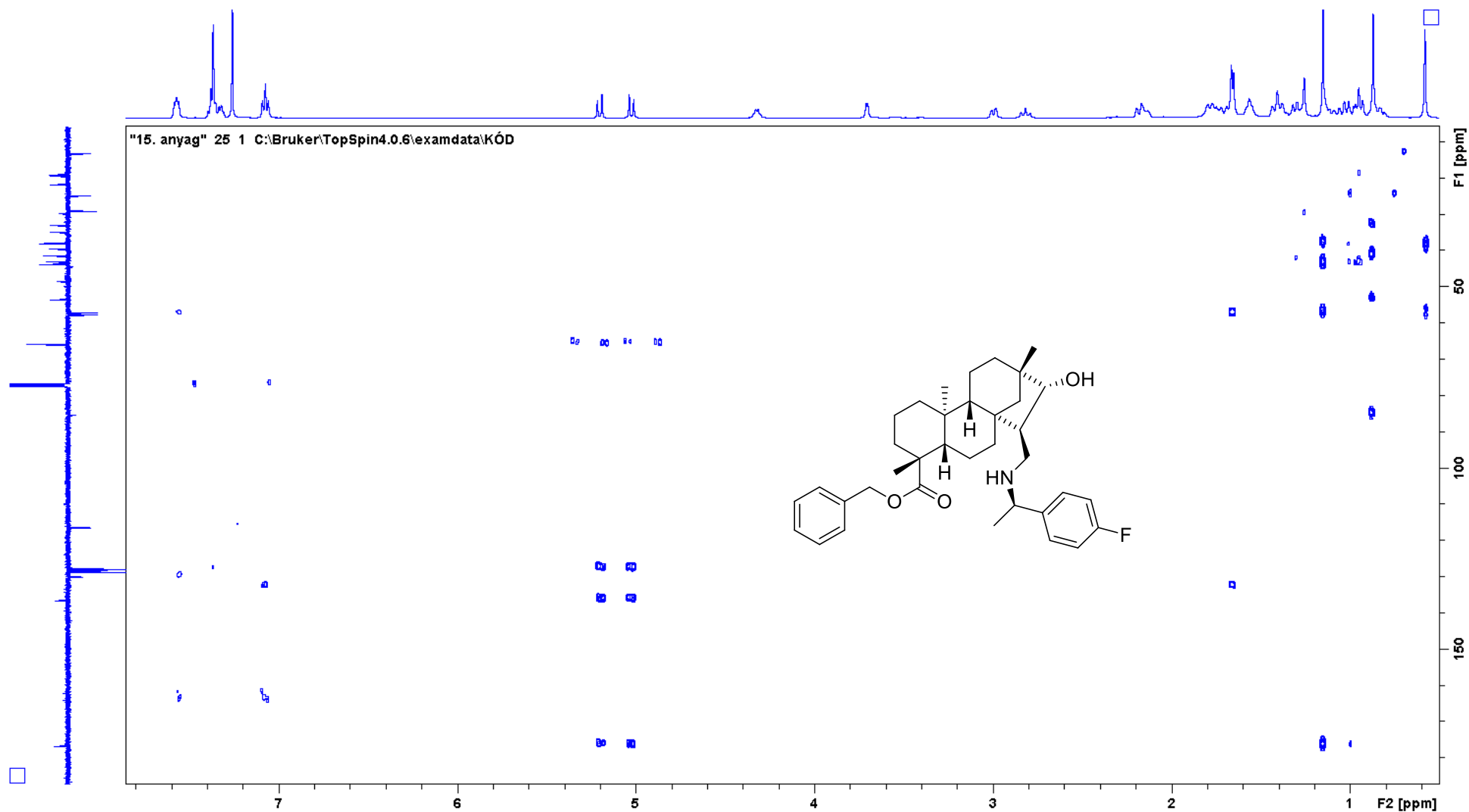


Figure S73

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-((((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**16**):

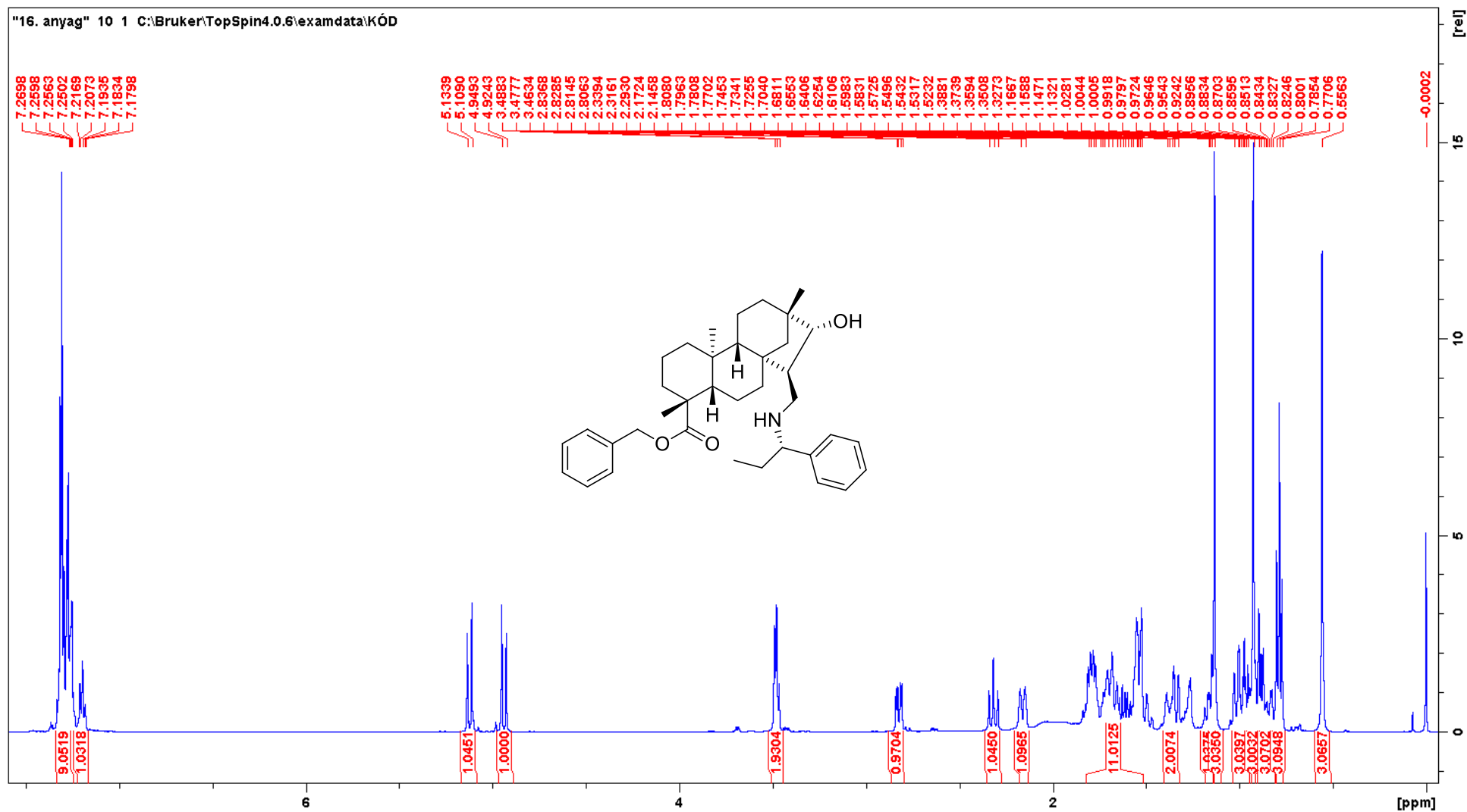


Figure S74

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**16**):

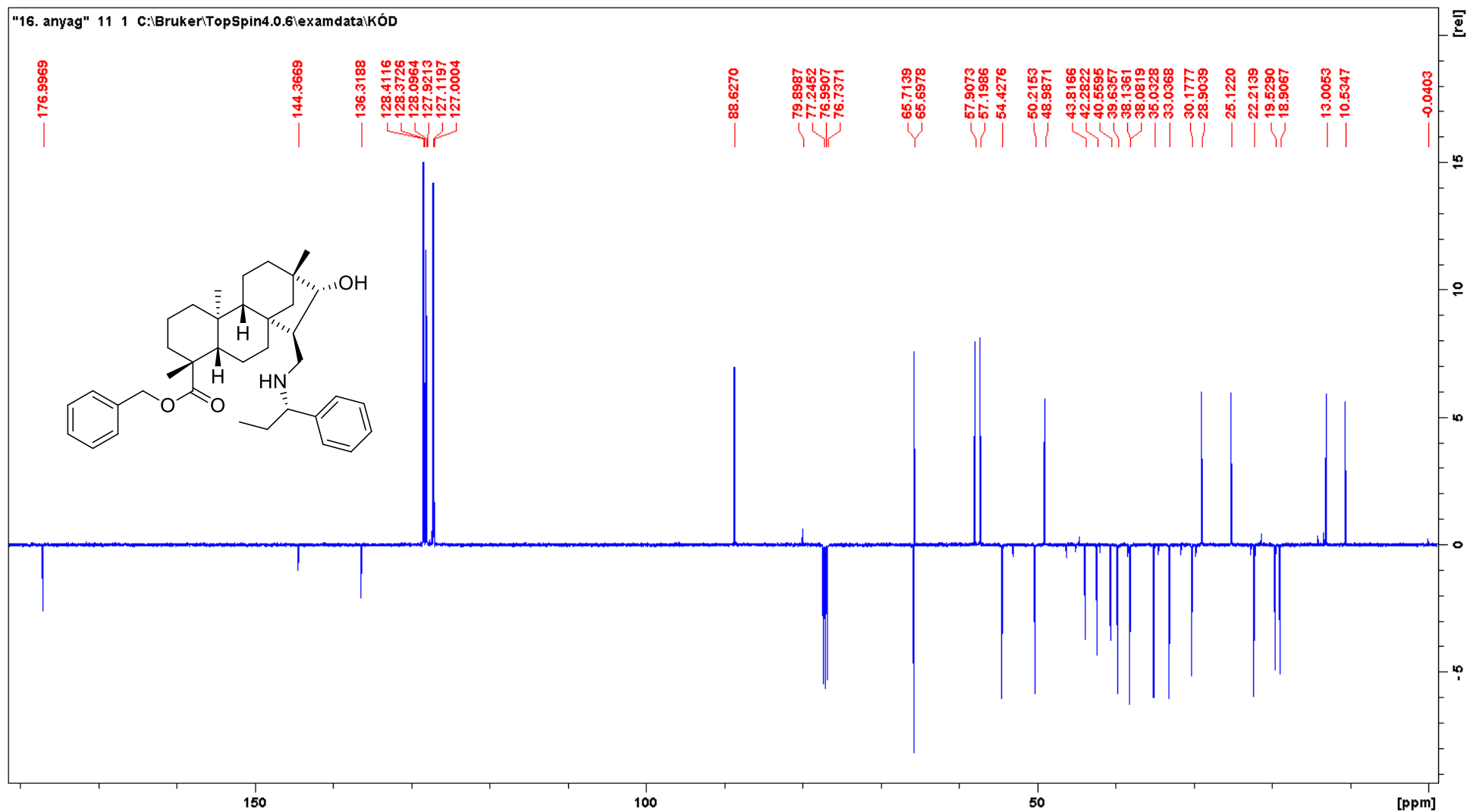


Figure S75

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**16**):

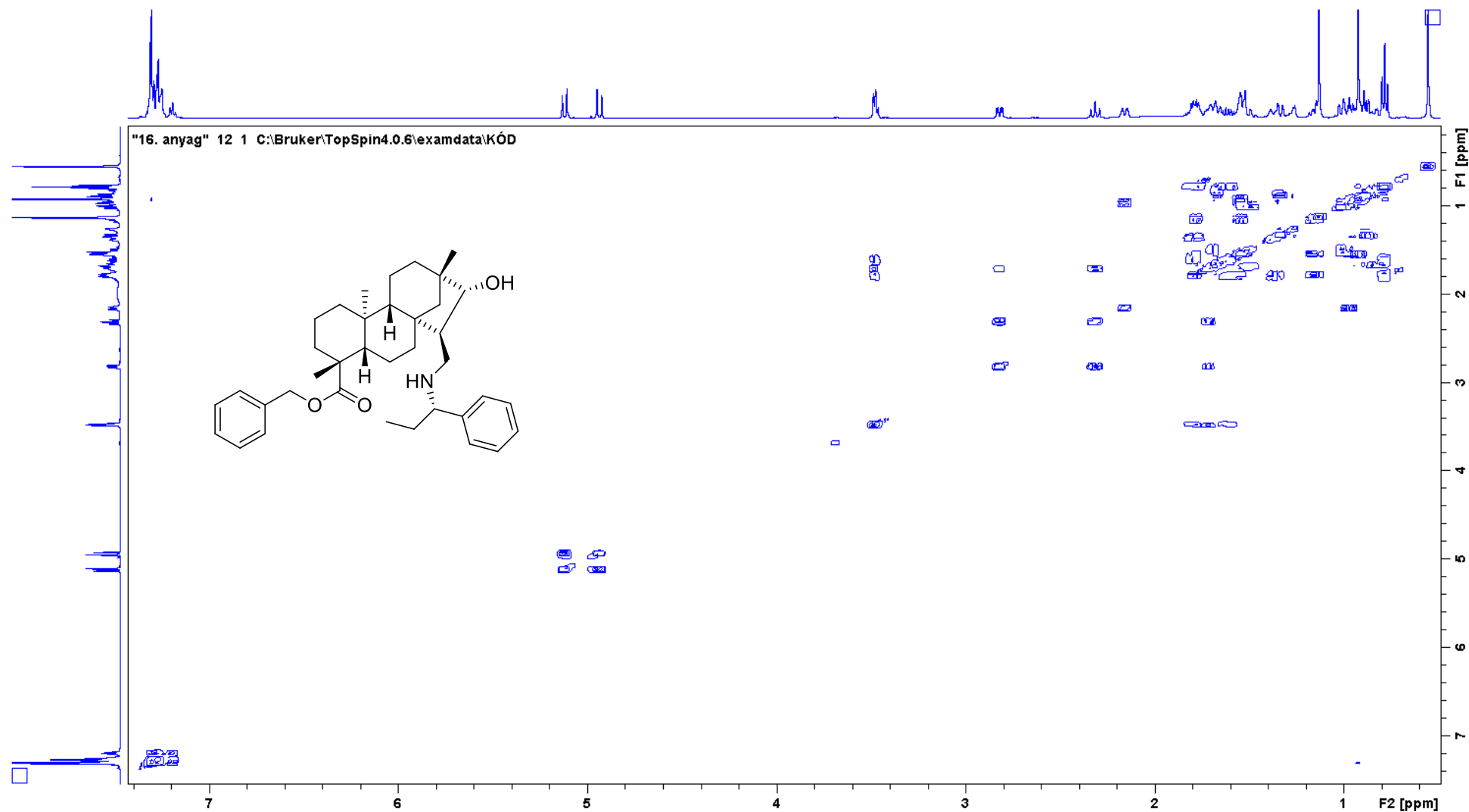


Figure S76

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**16**):

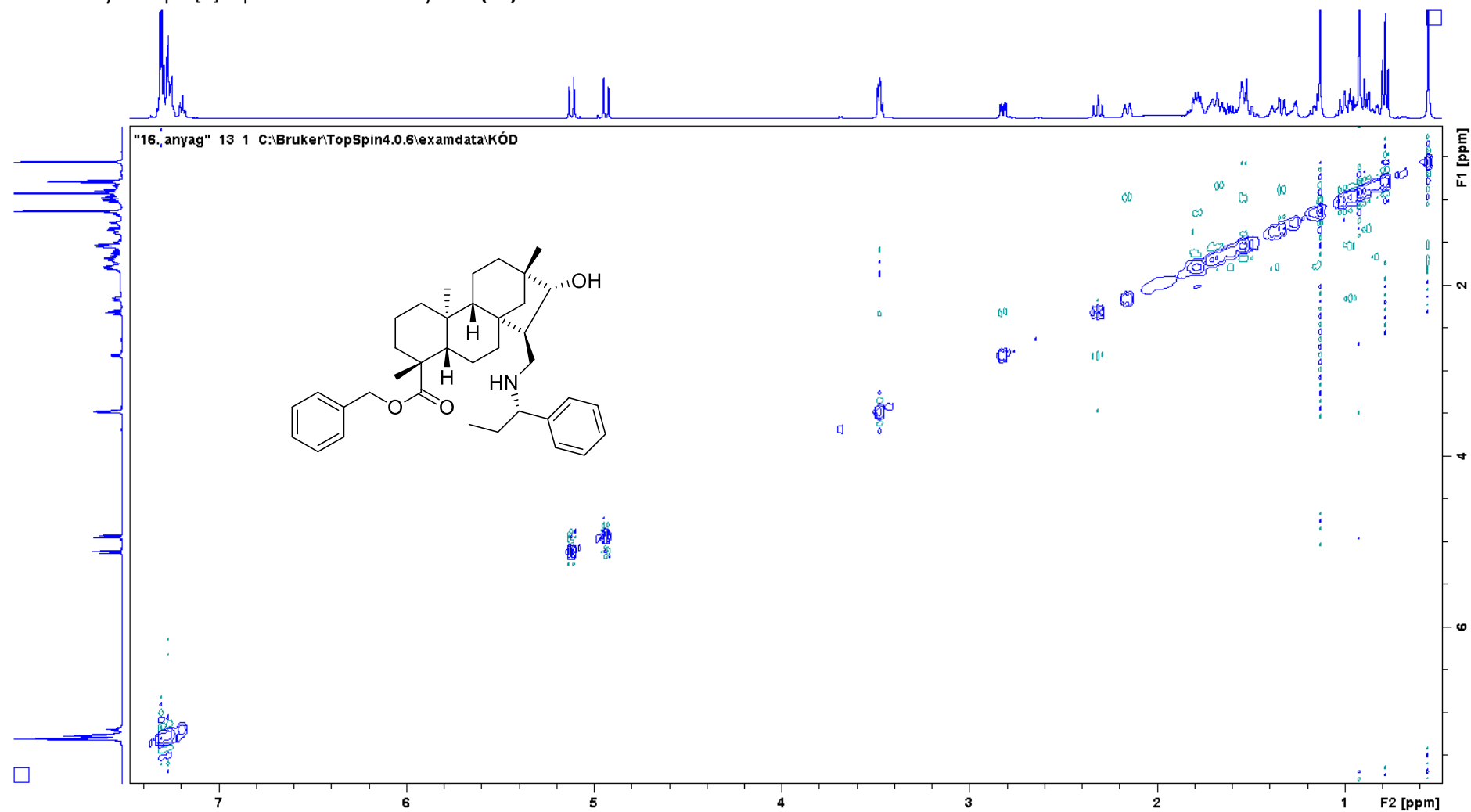


Figure S77

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**16**):

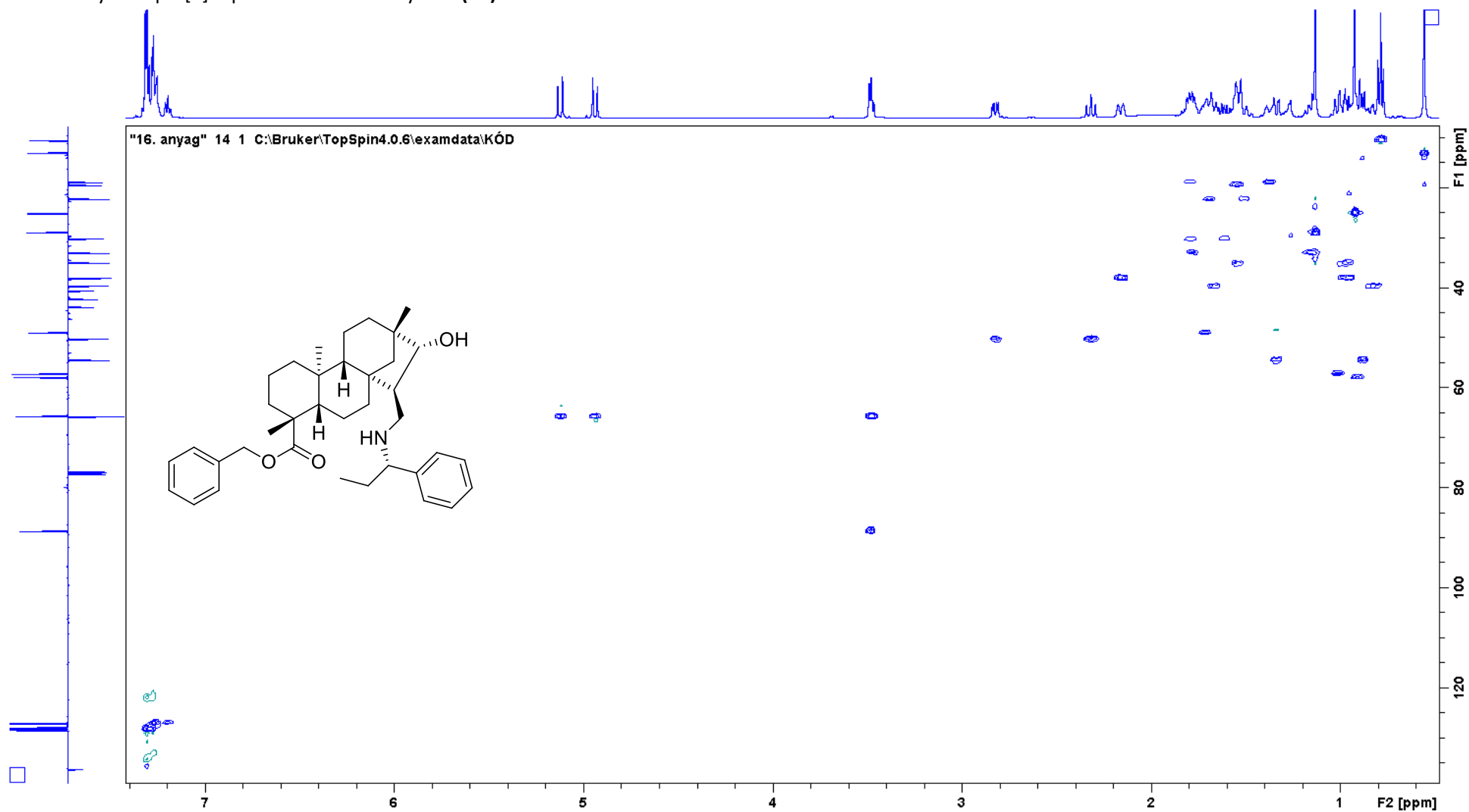


Figure S78

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**16**):

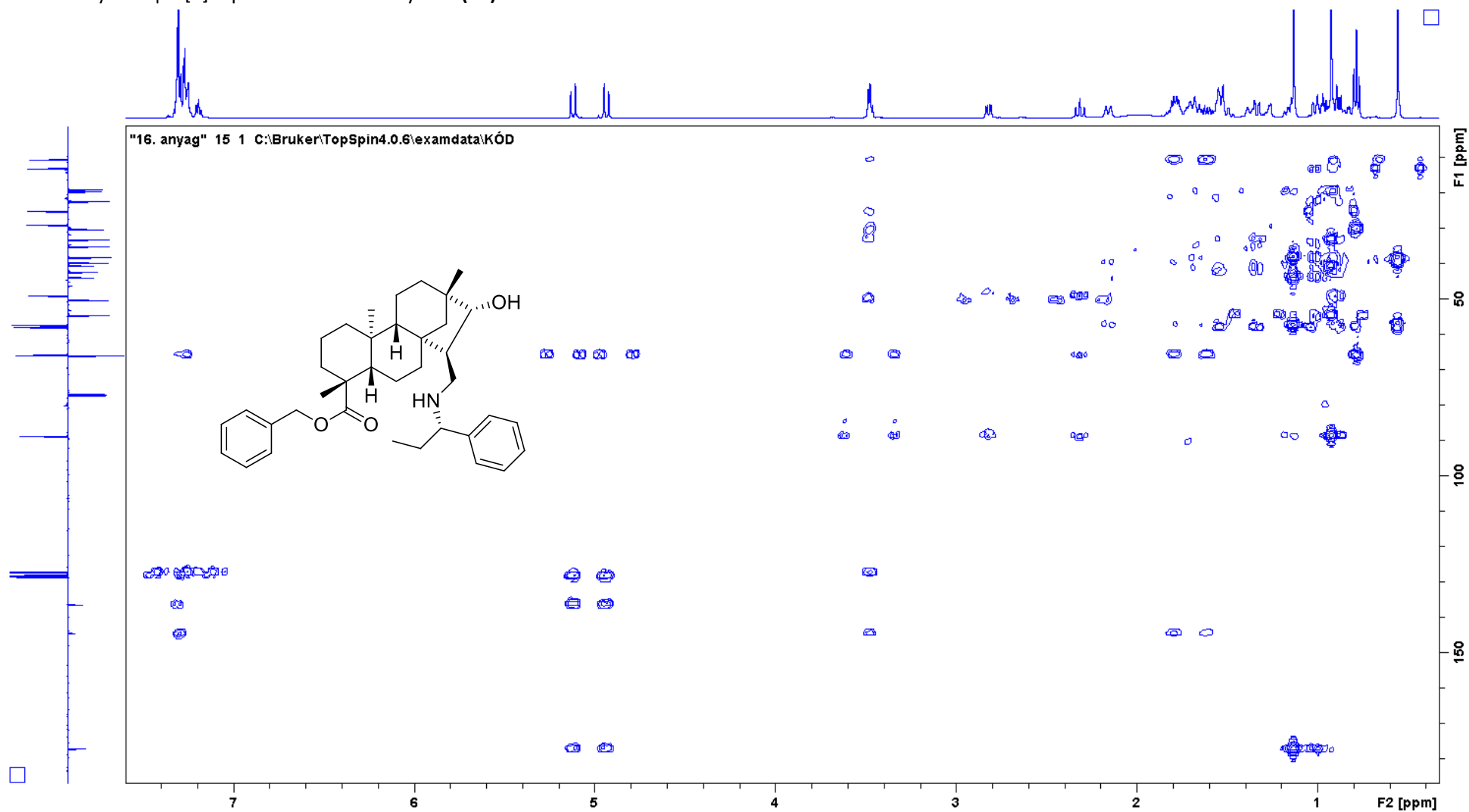


Figure S79

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-((((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**17**):

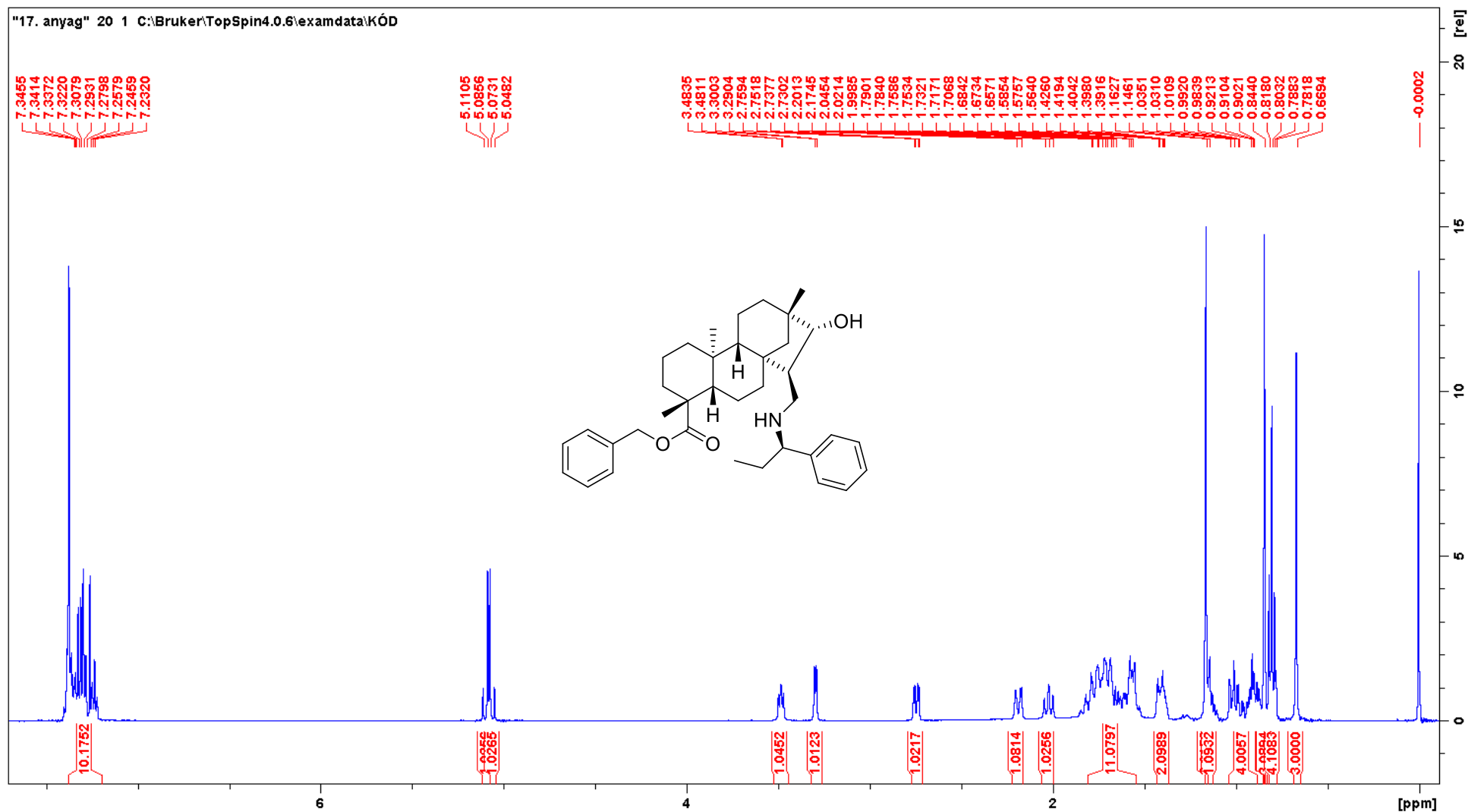


Figure S80

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradeca-hydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**17**):

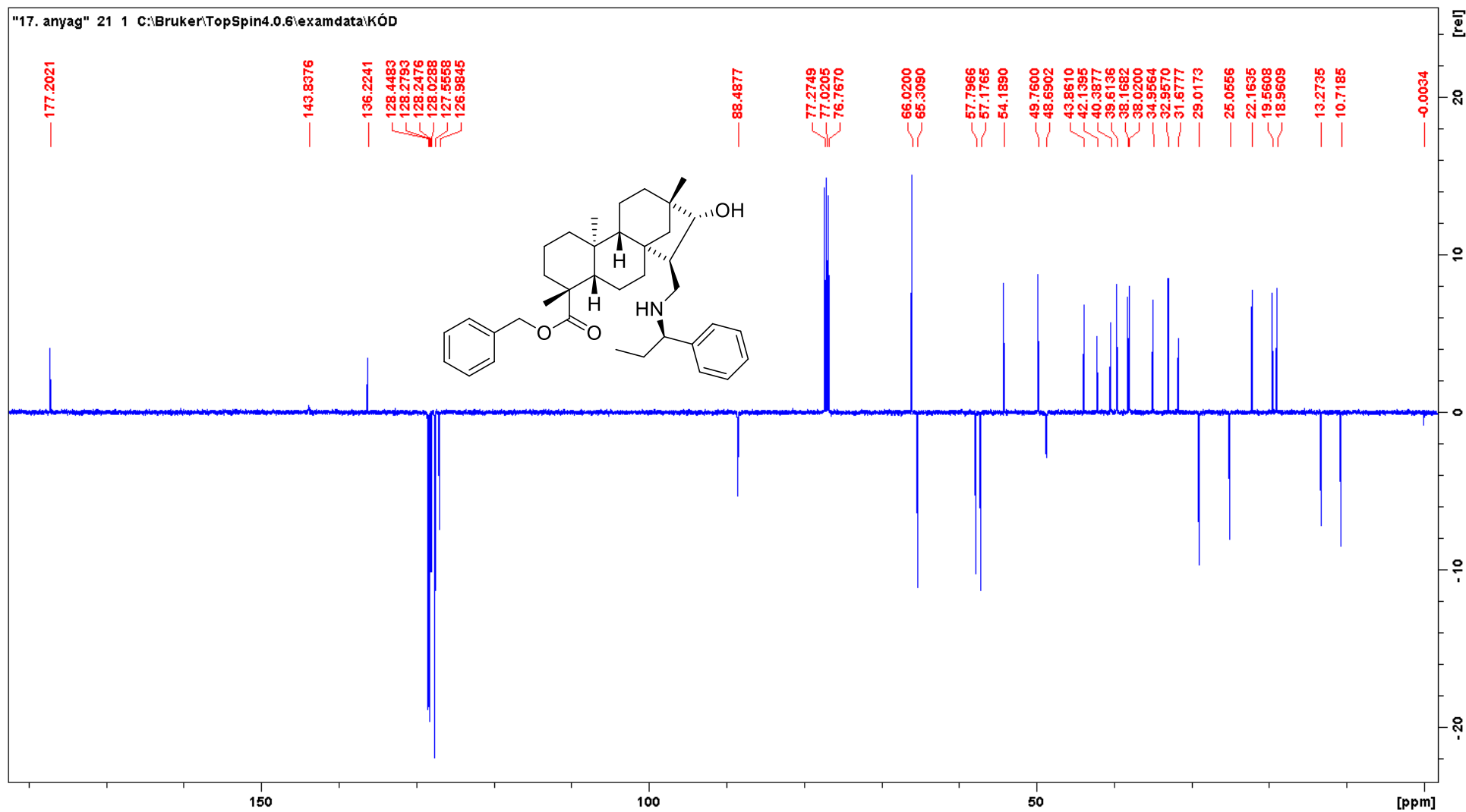


Figure S81

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**17**):

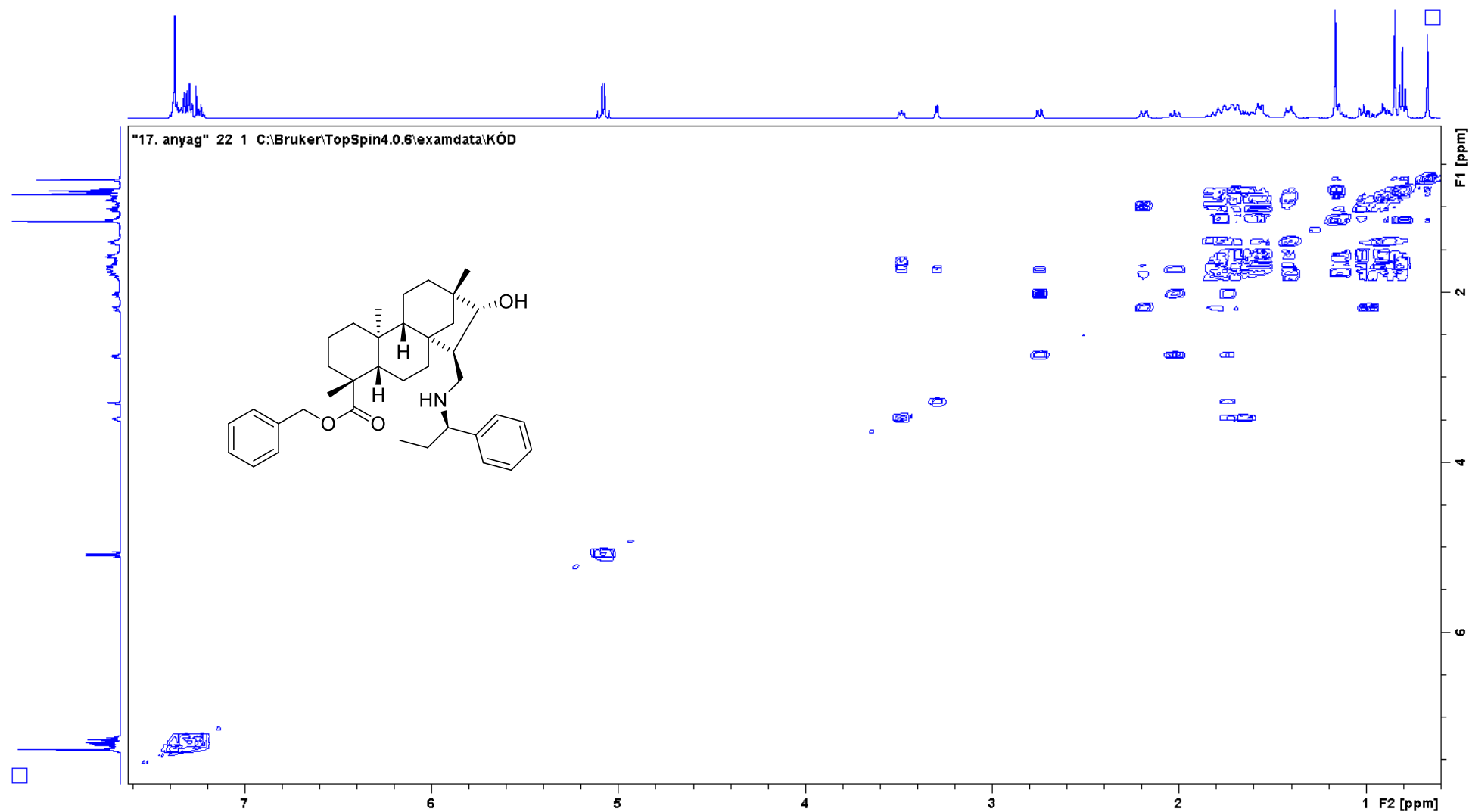


Figure S82

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**17**):

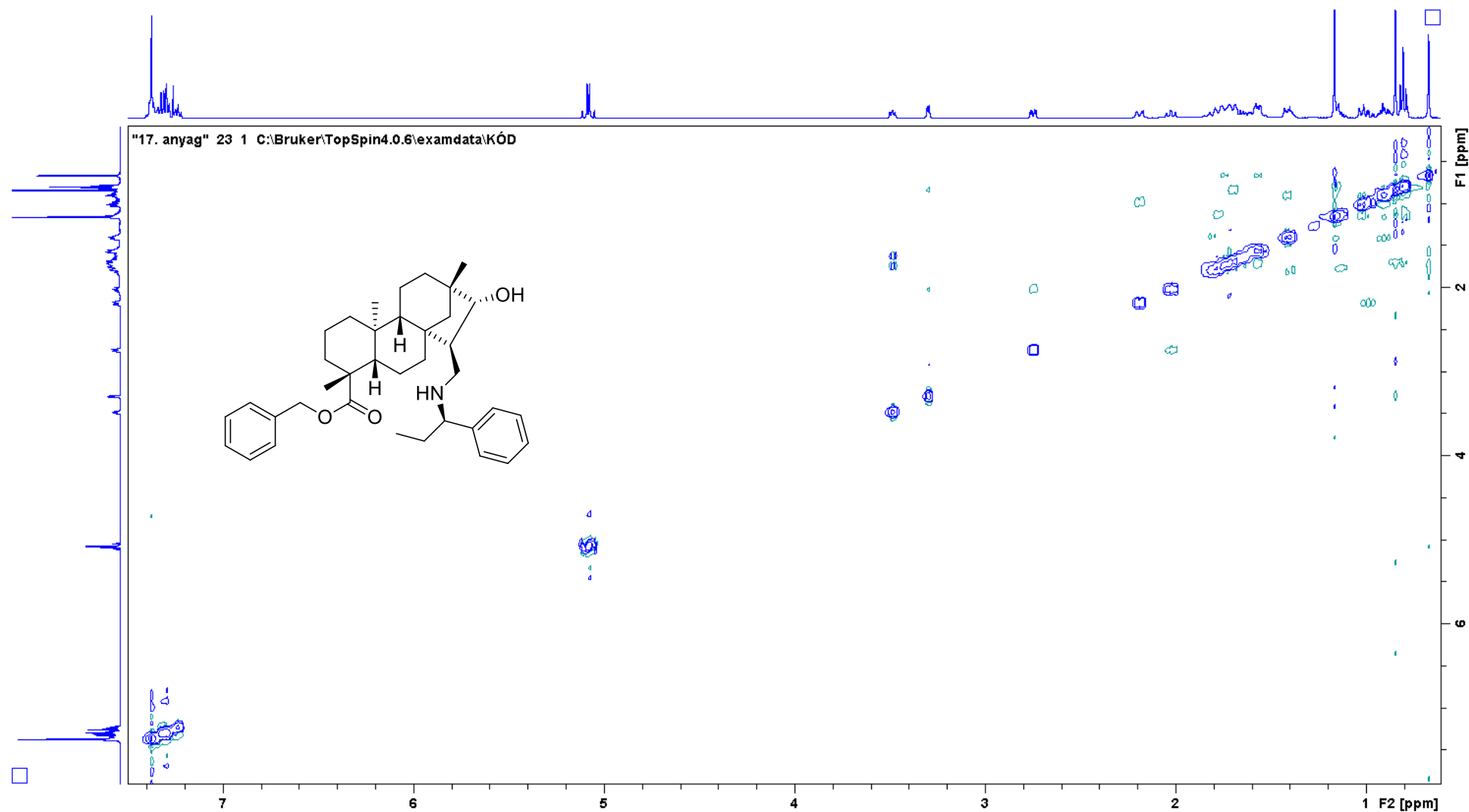


Figure S83

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**17**):

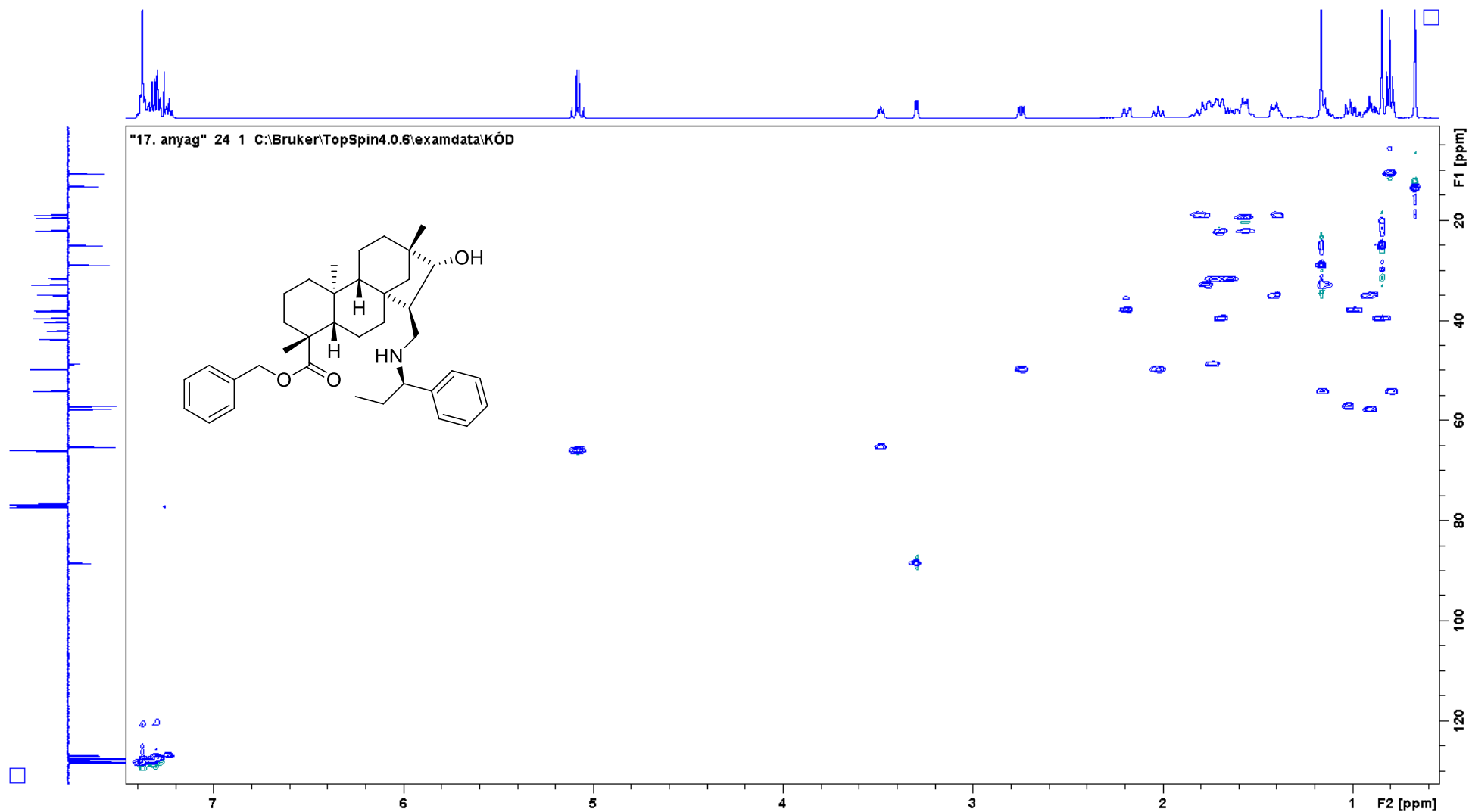


Figure S84

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**17**):

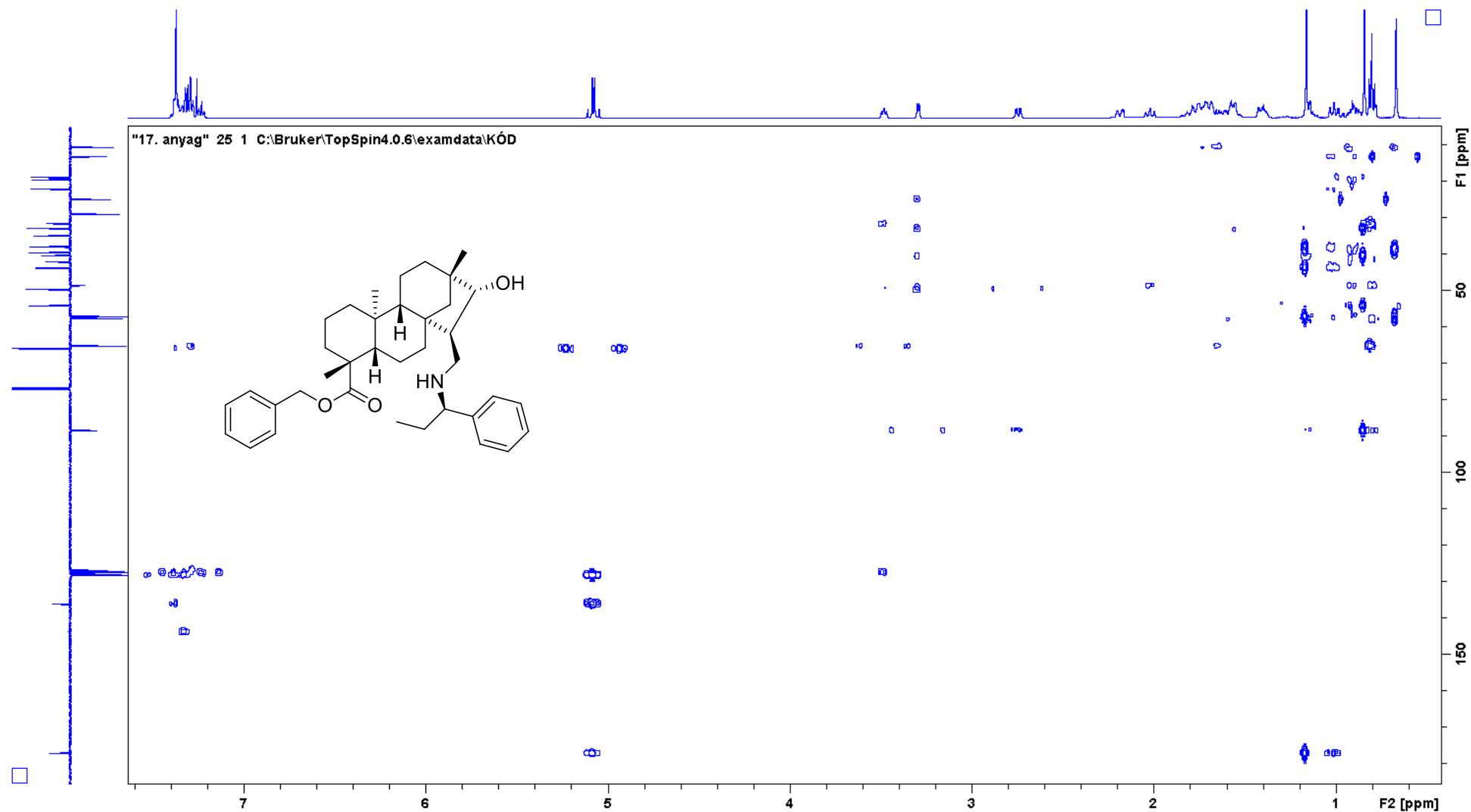


Figure S85

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-((((*R*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**18**):

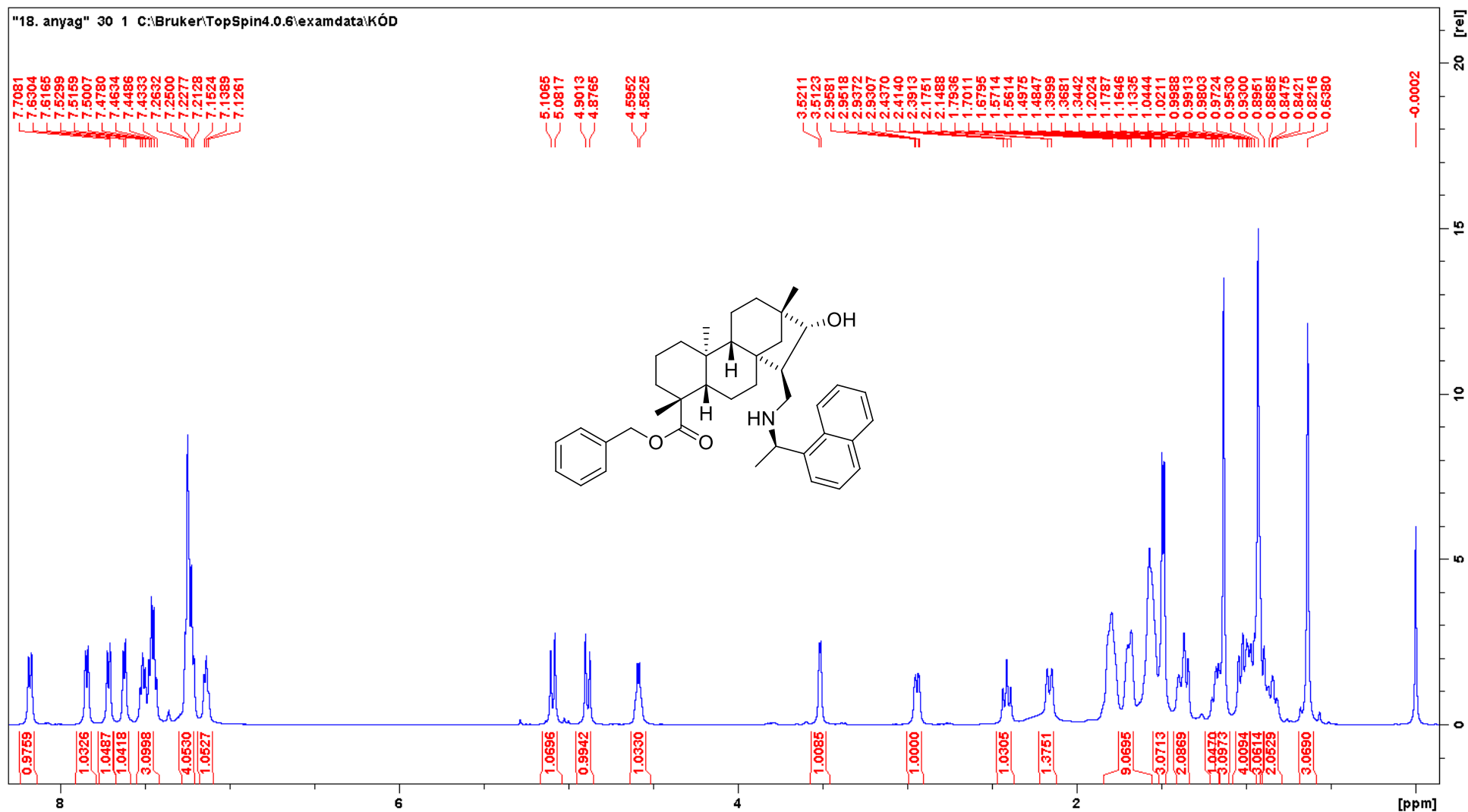


Figure S86

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**18**):

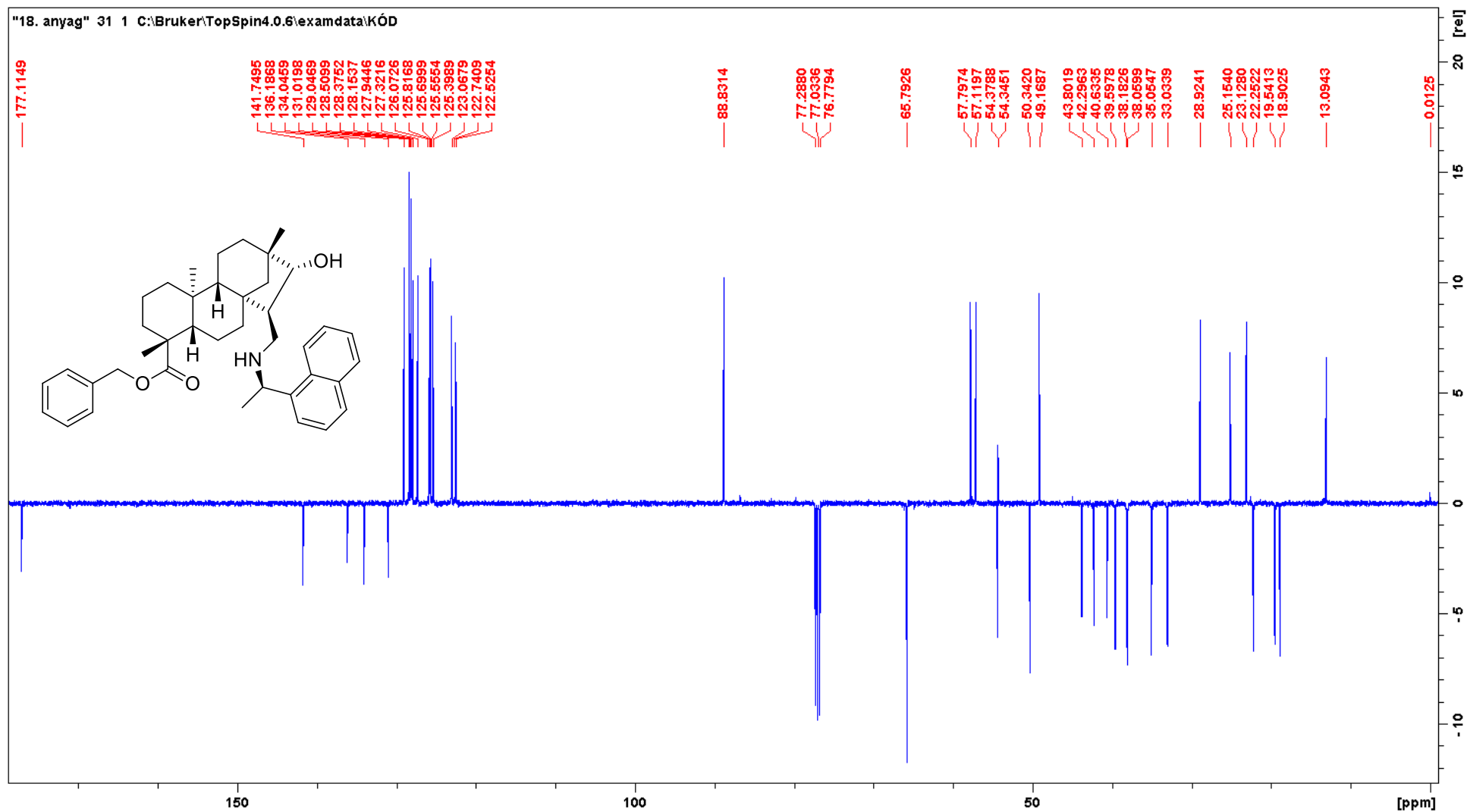


Figure S87

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**18**):

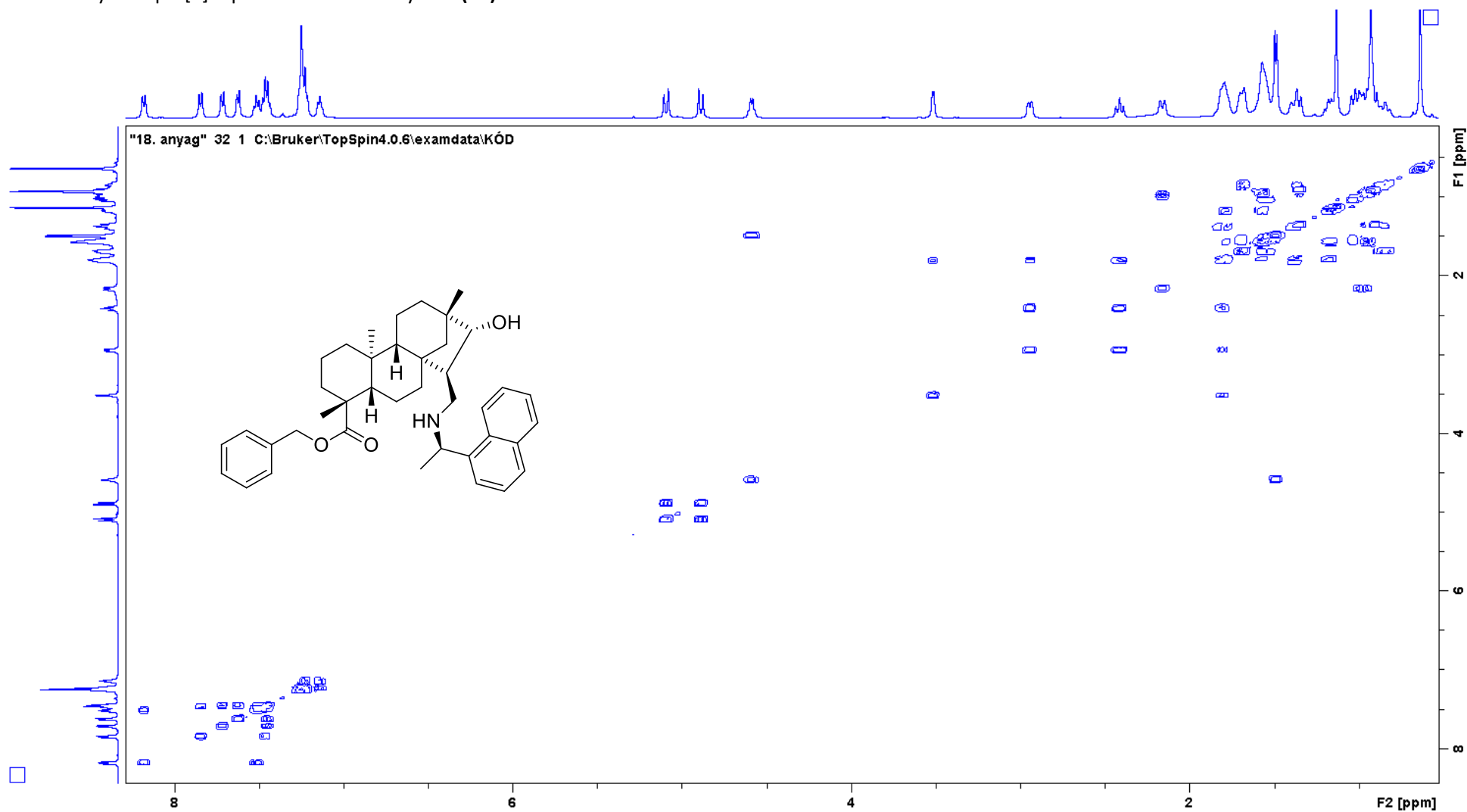


Figure S88

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-((((*R*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**18**):

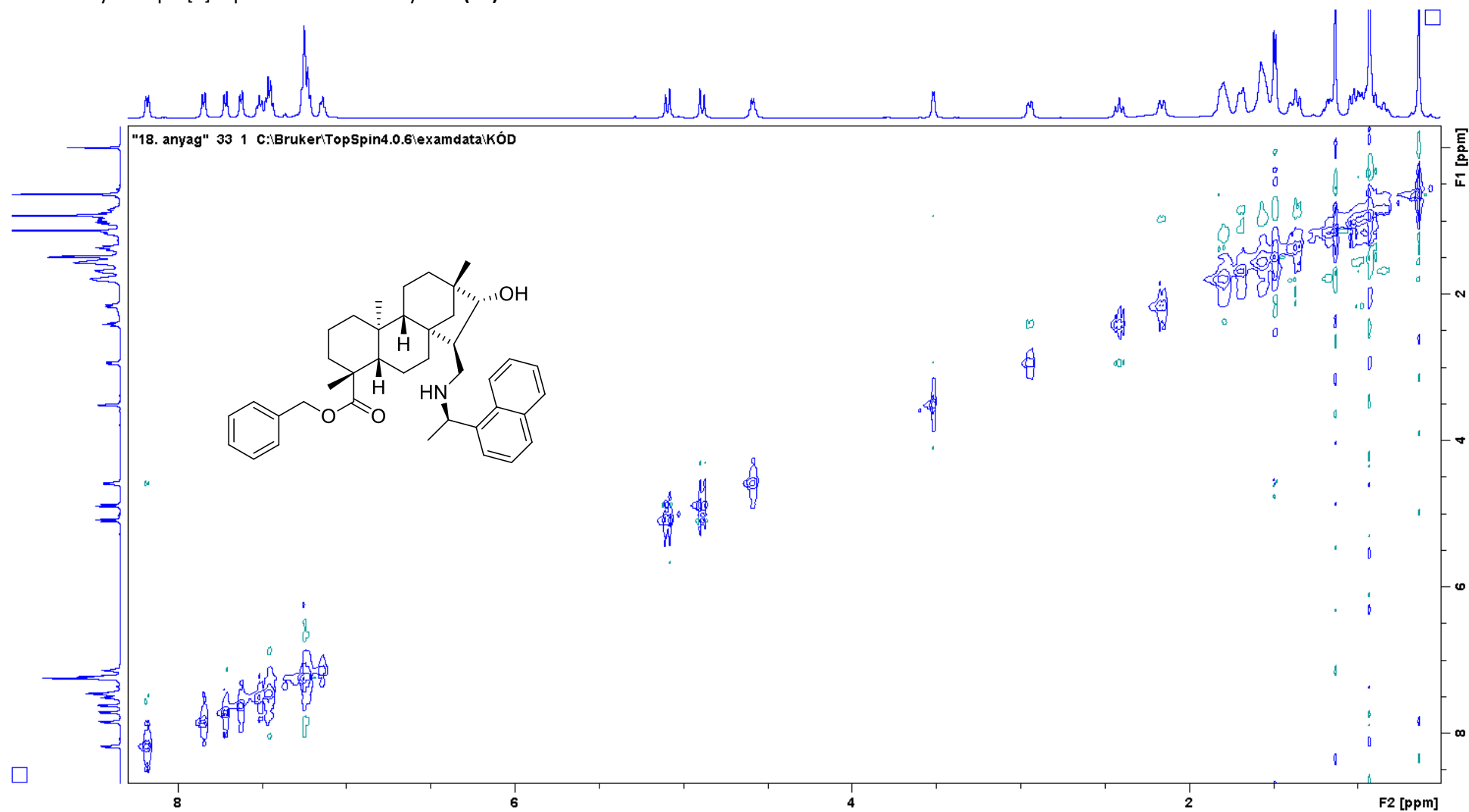


Figure S89

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**18**):

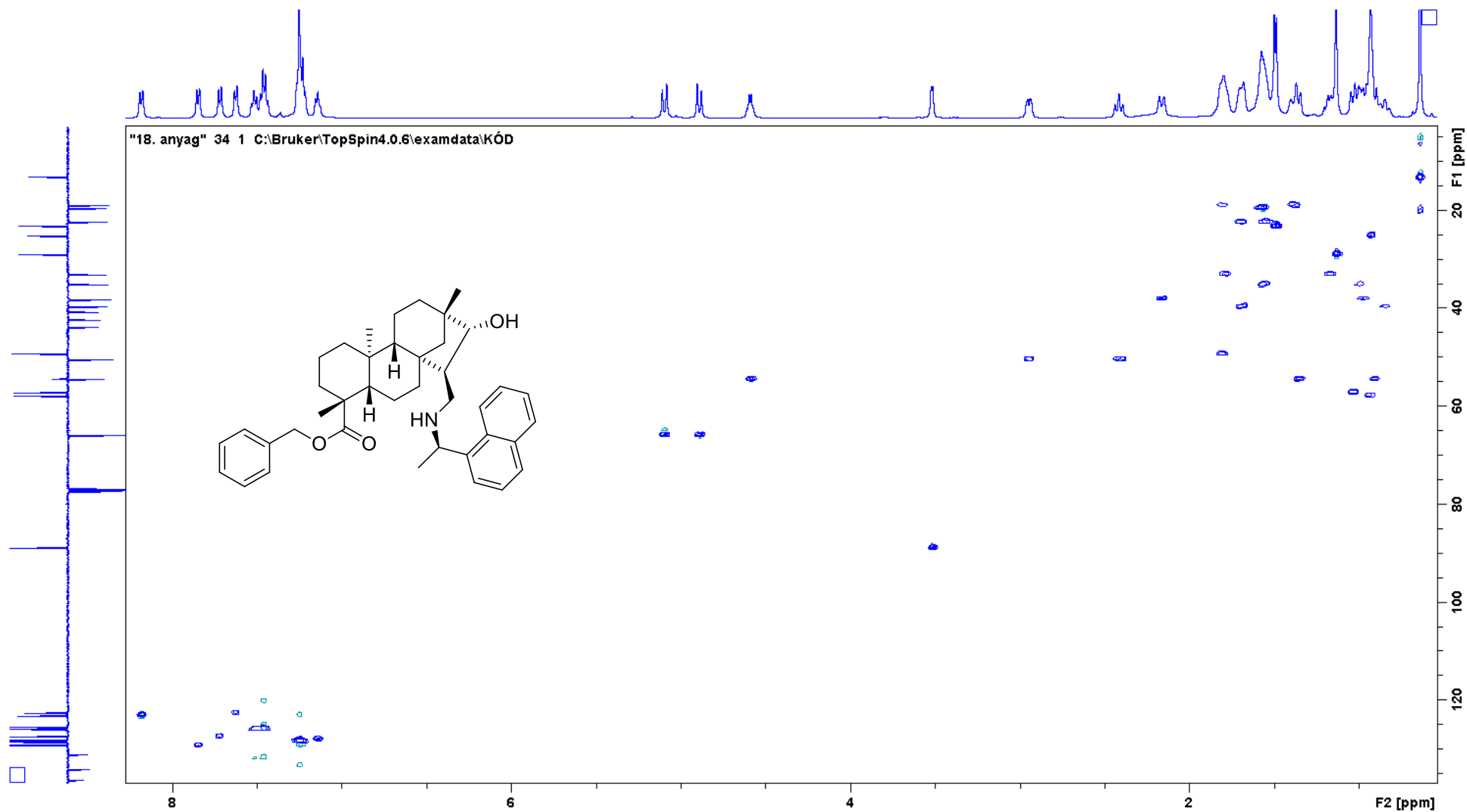


Figure S90

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**18**):

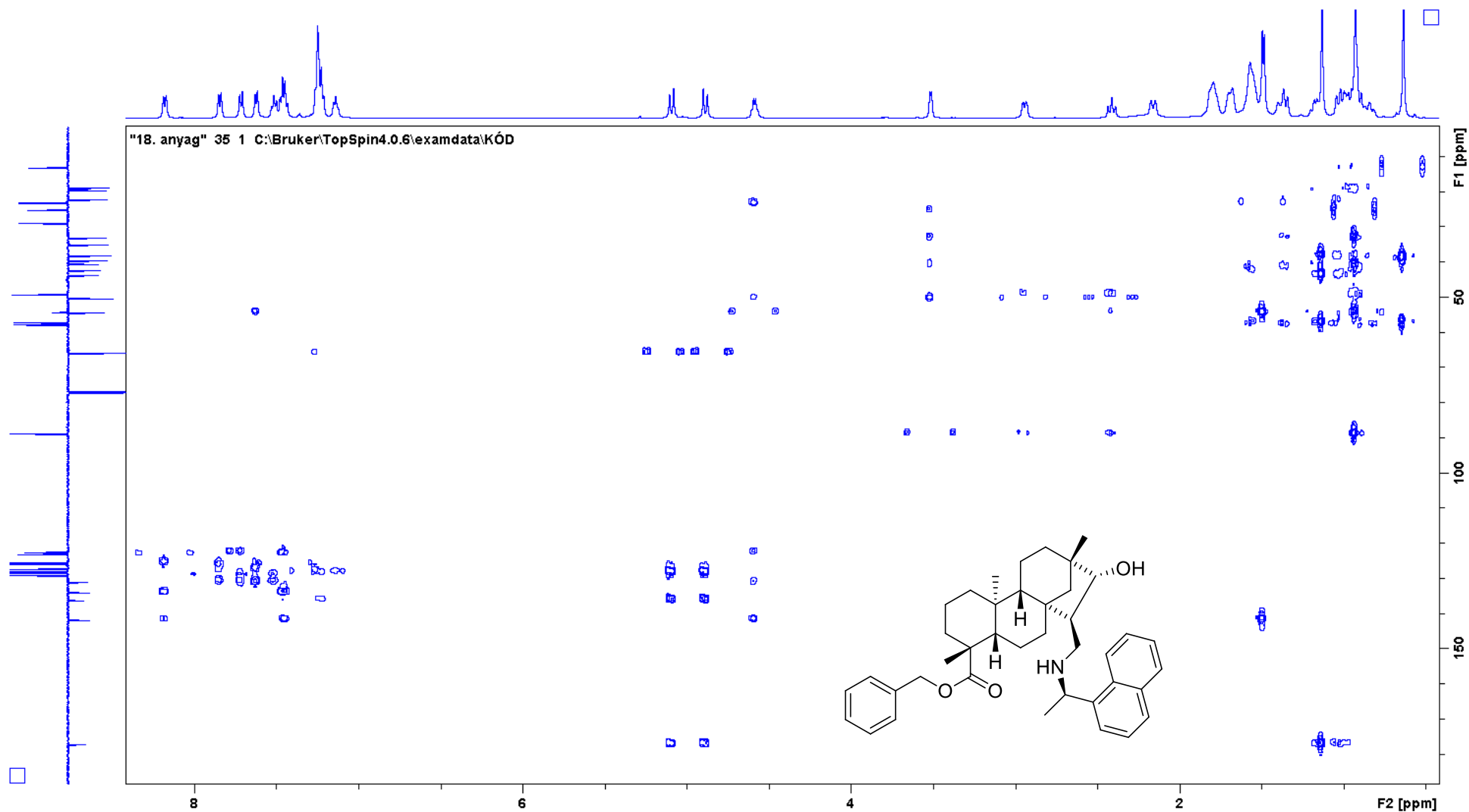


Figure S91

^1H -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradeca hydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**19**):

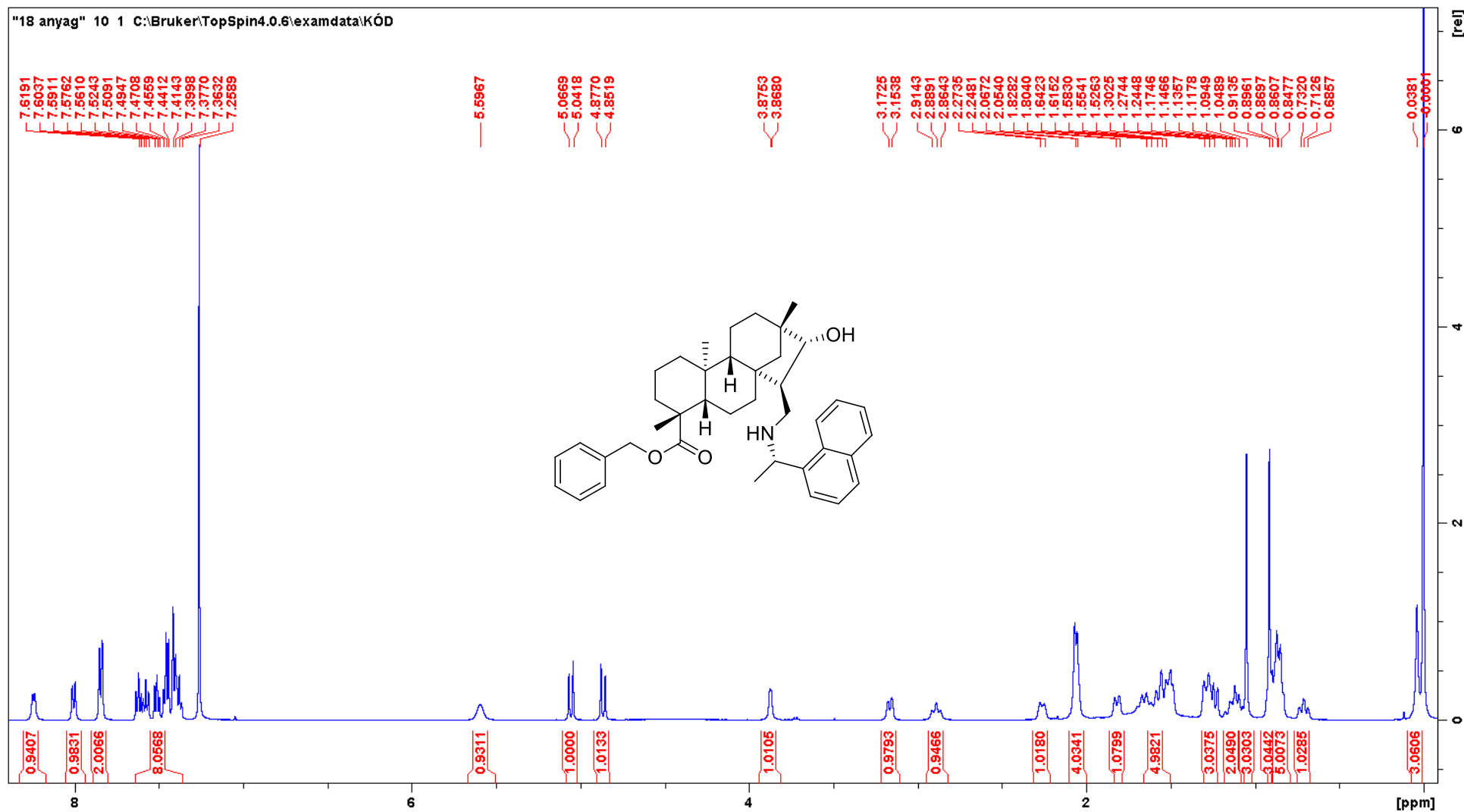


Figure S92

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**19**):

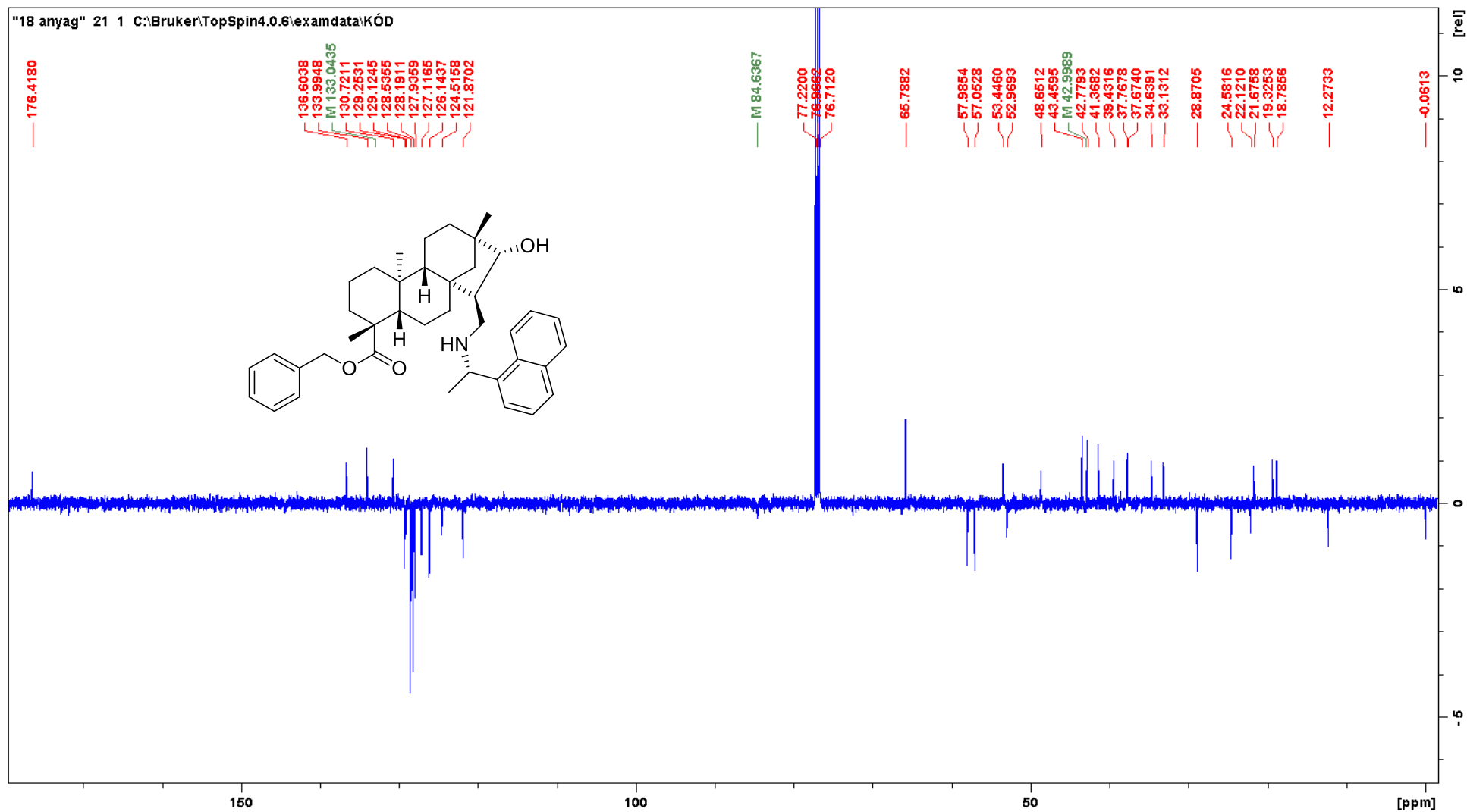


Figure S93

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**19**):

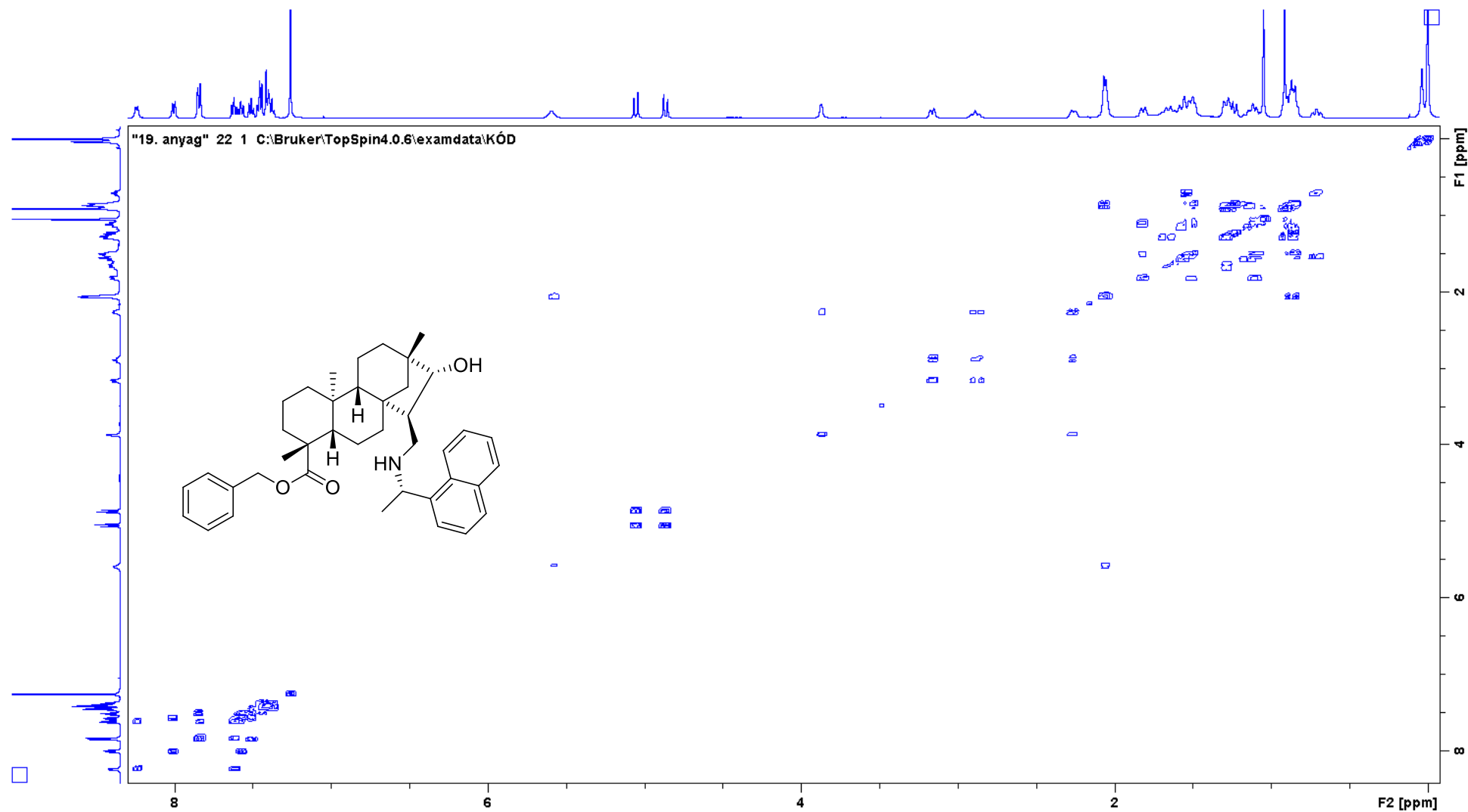


Figure S94

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**19**):

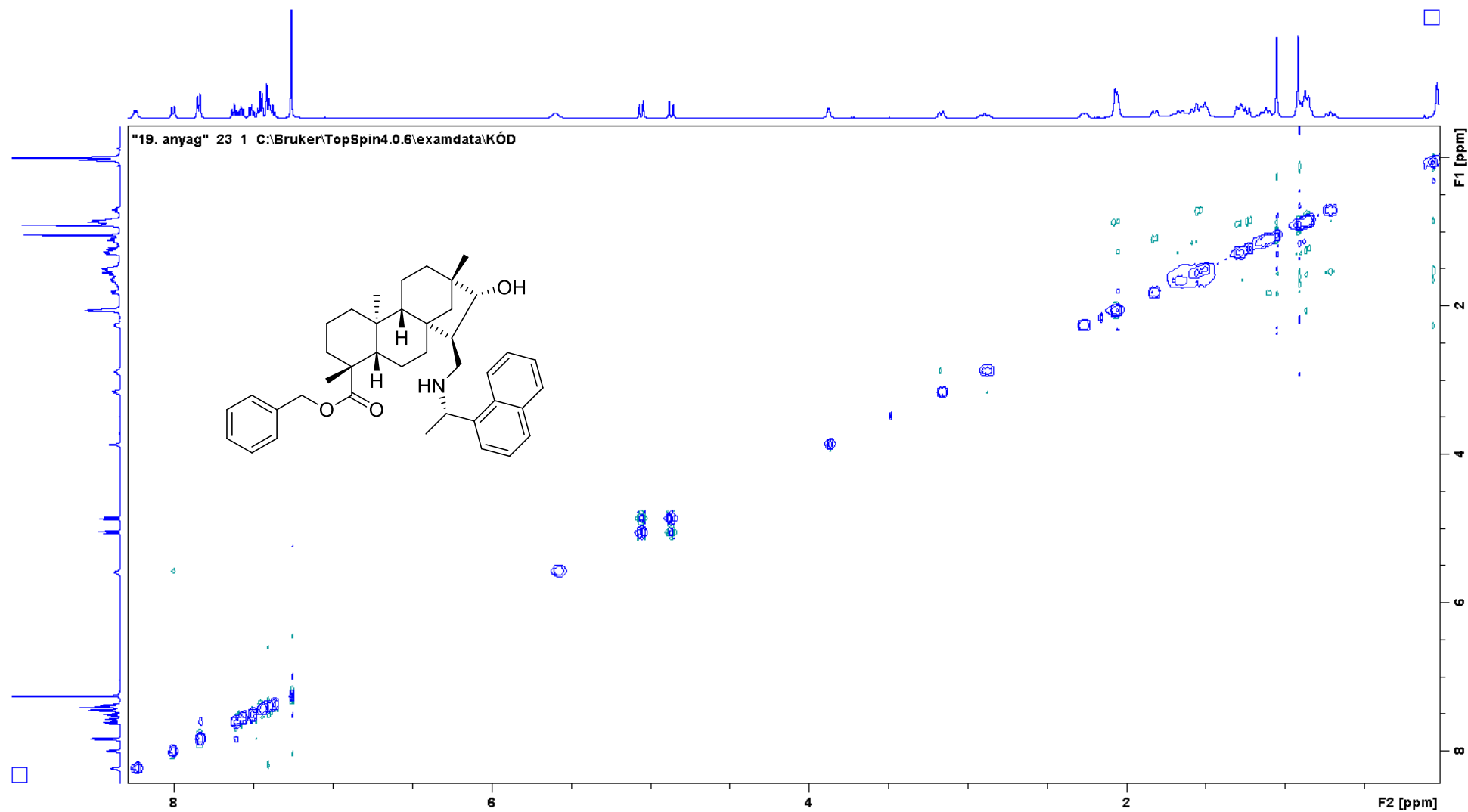


Figure S95

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**19**):

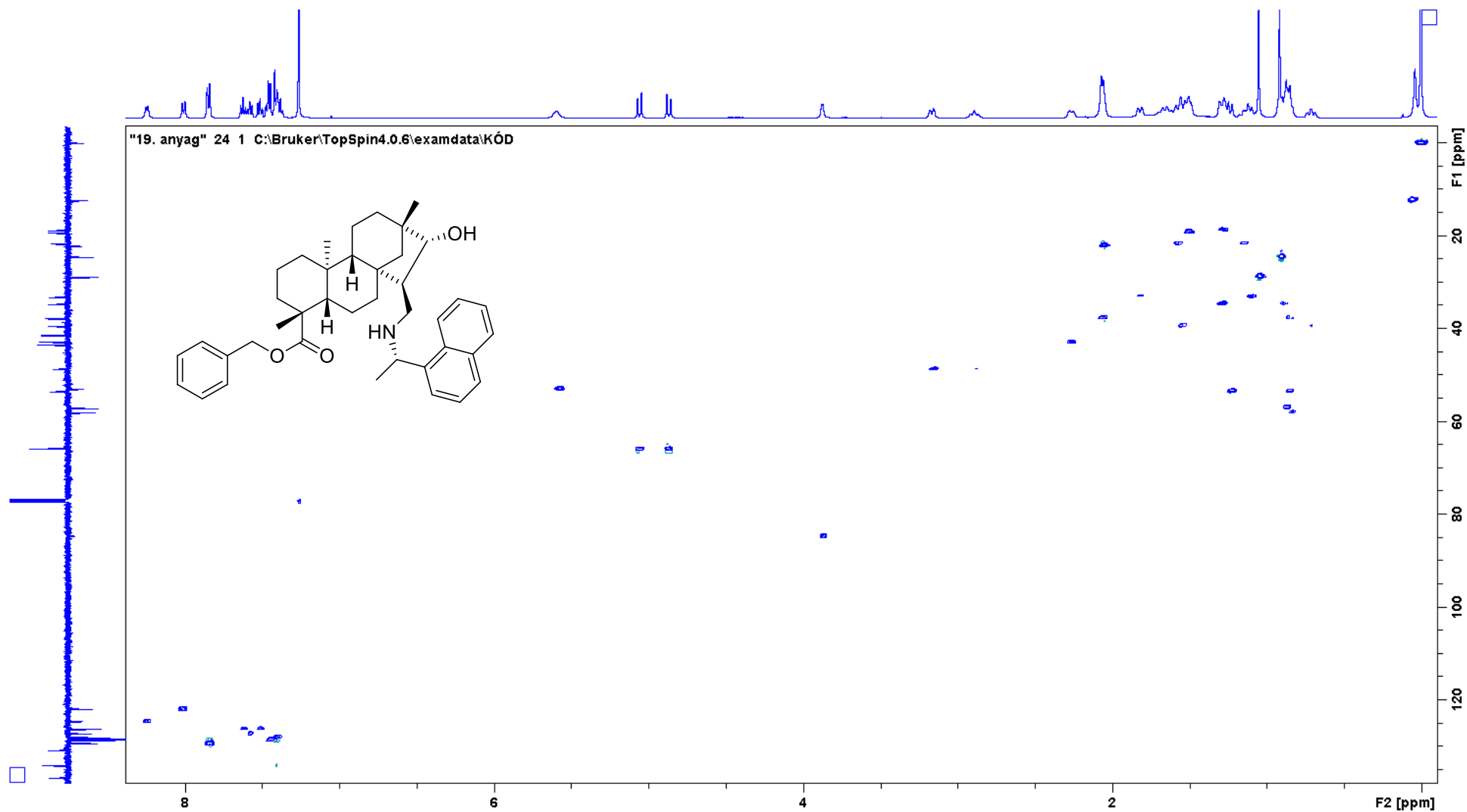


Figure S96

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Benzyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-1-yl)ethyl)amino)methyl)tetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**19**):

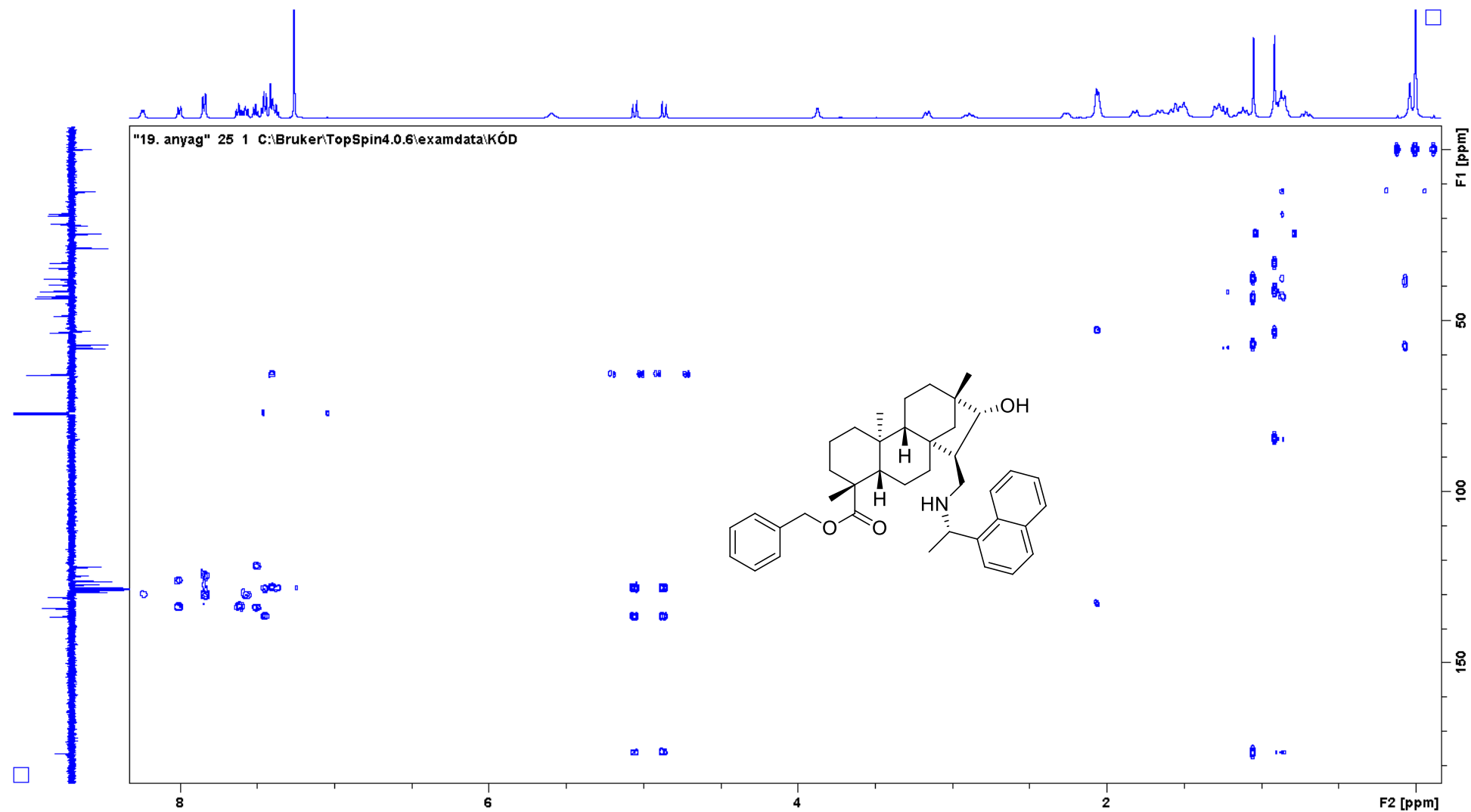


Figure S97

¹H-NMR of compound (4*R*,4*a**S*,7*R*,8*R*,11*b**S*)-Benzyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradeca-hydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**20**):

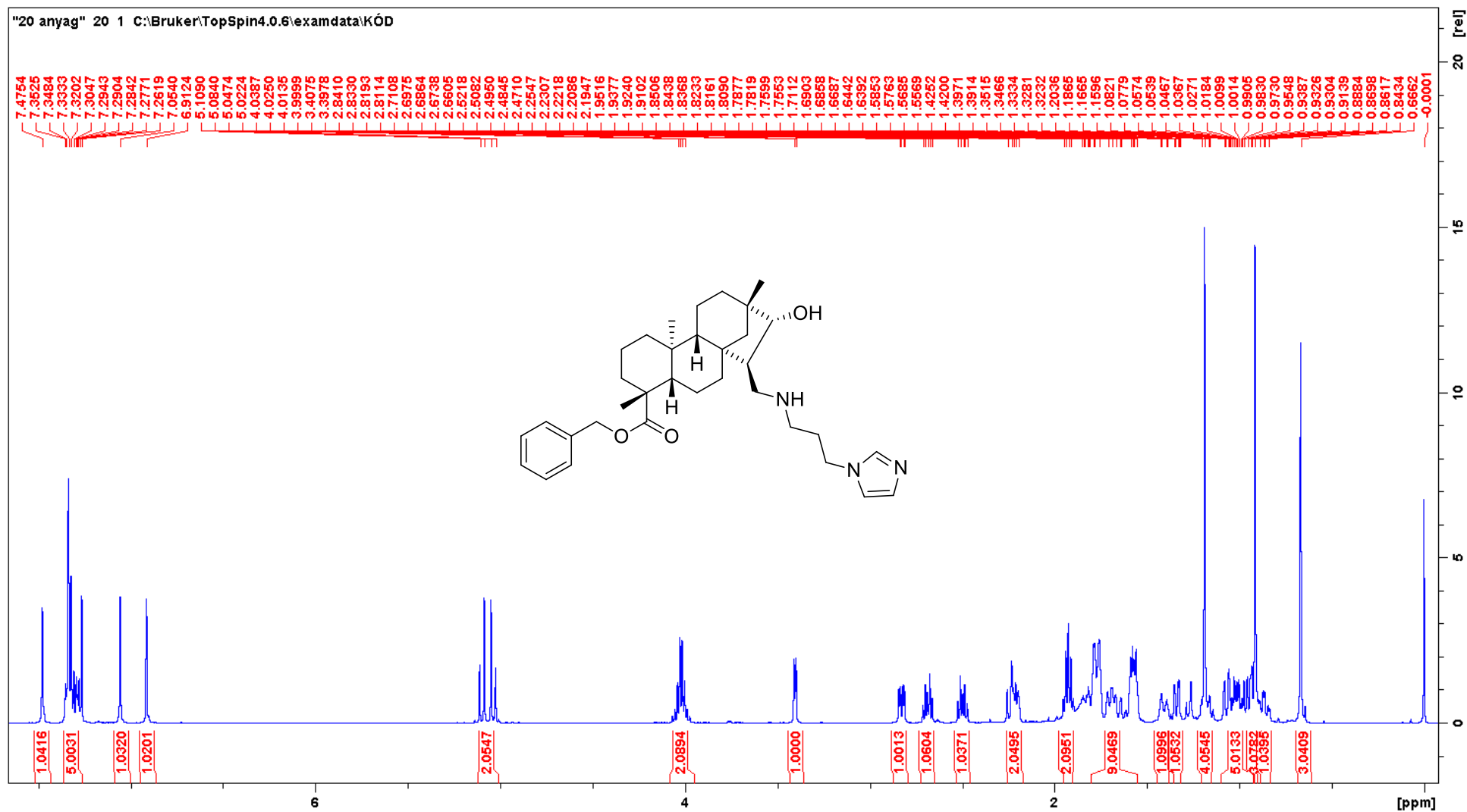


Figure S98

^{13}C -NMR of compound (4*R*,4*aS*,7*R*,8*R*,11*bS*)-Benzyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**20**):

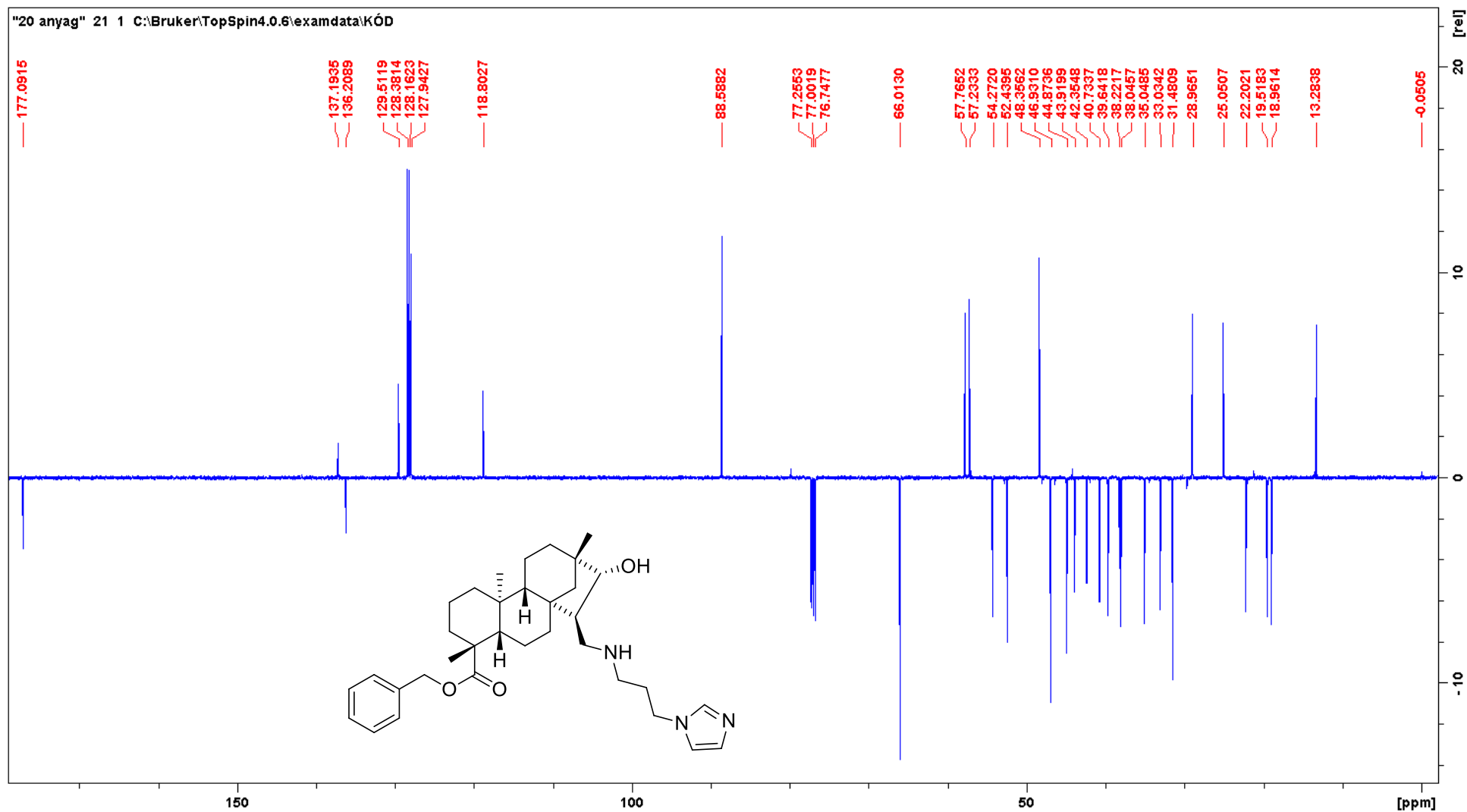


Figure S99

COSY of compound (4*R*,4*aS*,7*R*,8*R*,11*bS*)-Benzyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**20**):

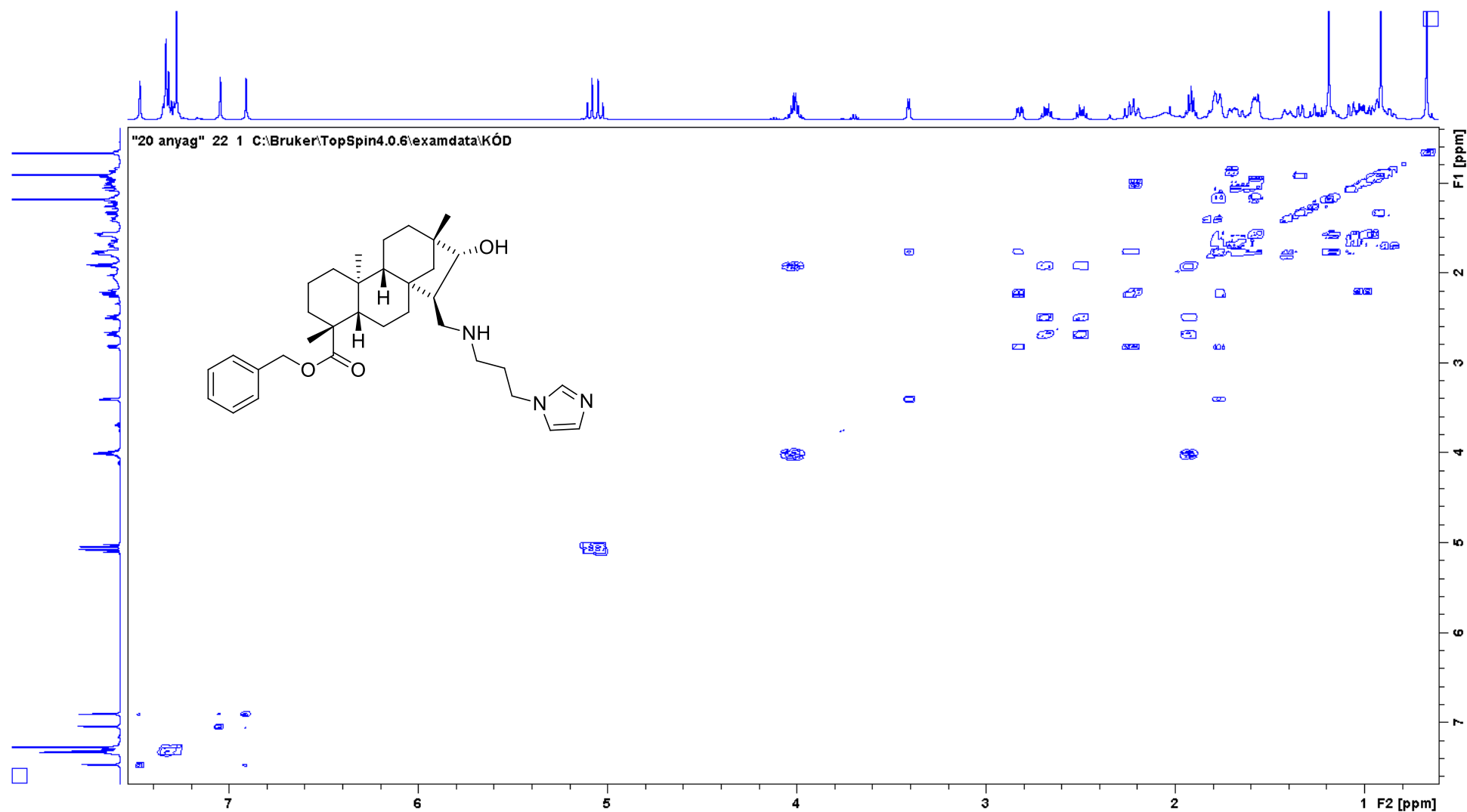


Figure S100

NOESY of compound (4*R*,4*aS*,7*R*,8*R*,11*bS*)-Benzyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**20**):

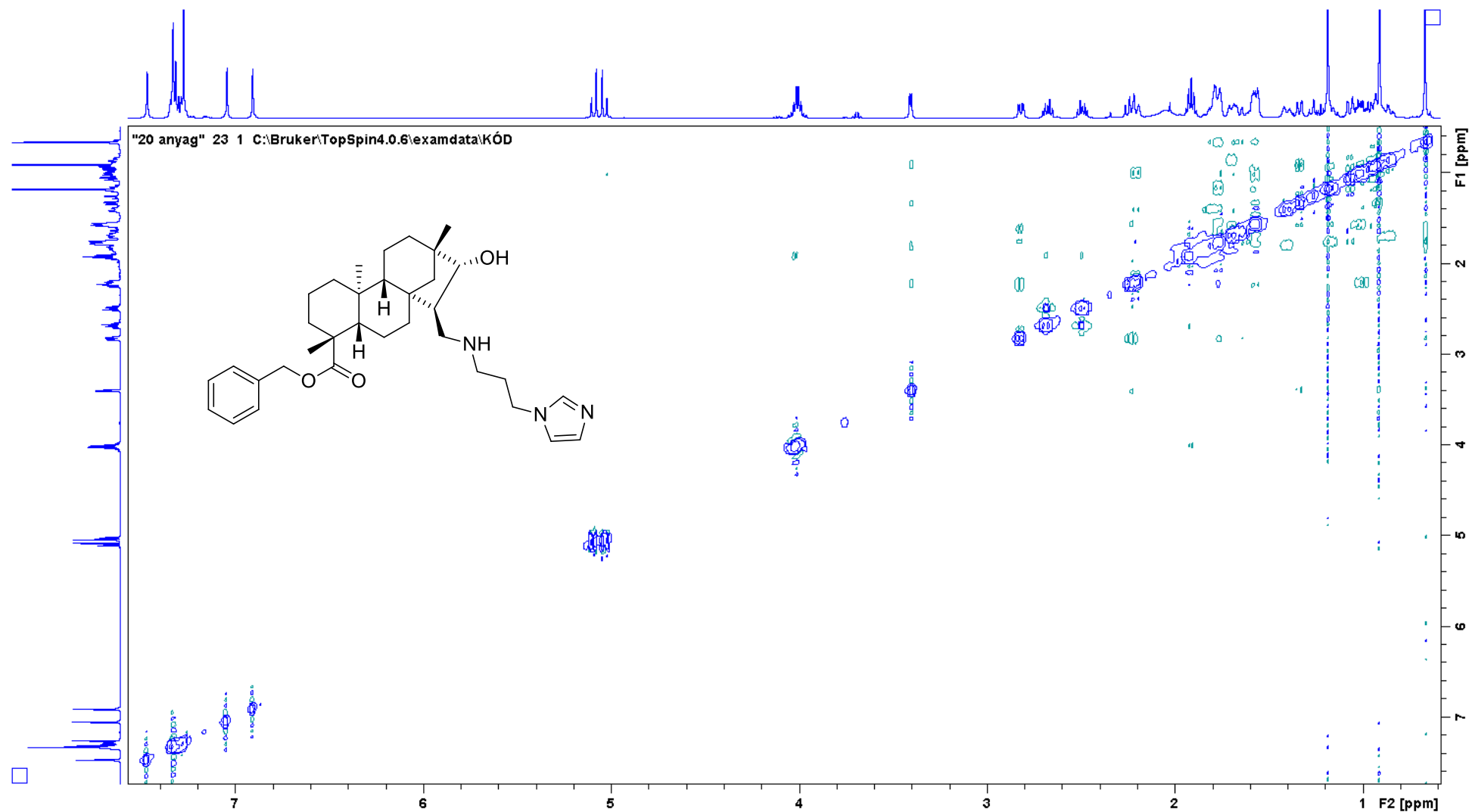


Figure S101

HSQC of compound (4*R*,4*a**S*,7*R*,8*R*,11*b**S*)-Benzyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**20**):

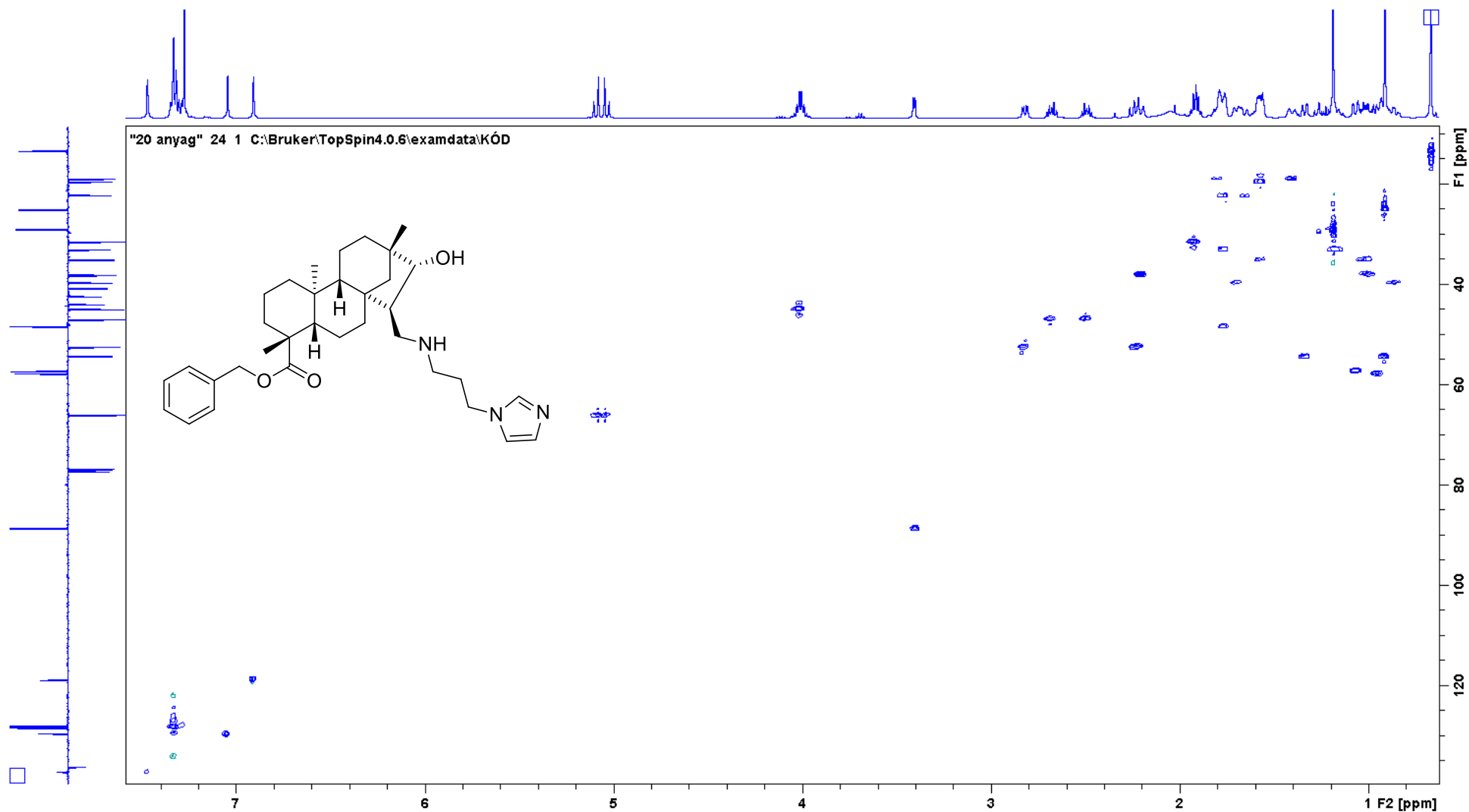


Figure S102

HMBC of compound (4*R*,4*aS*,7*R*,8*R*,11*bS*)-Benzyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**20**):

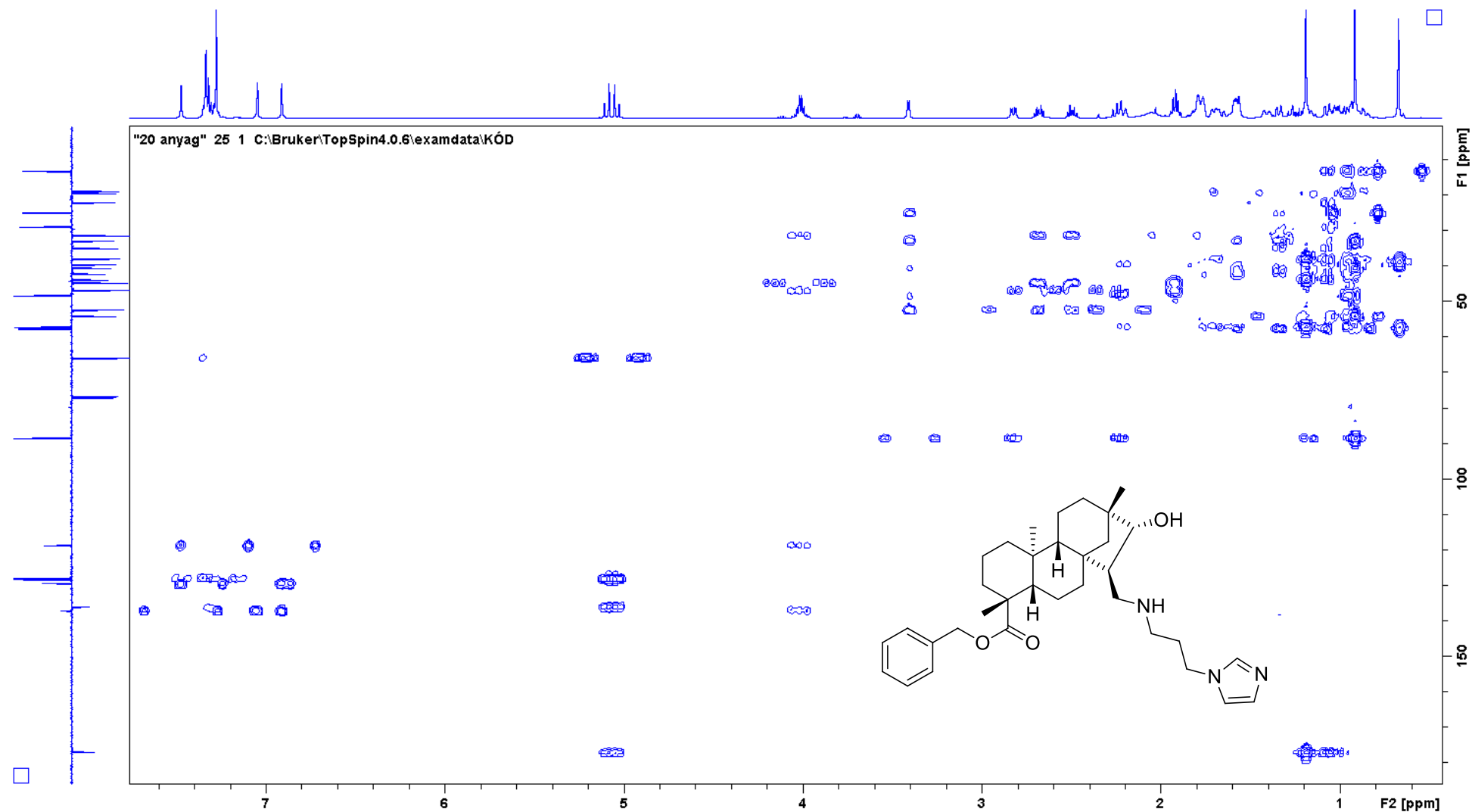


Figure S103

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

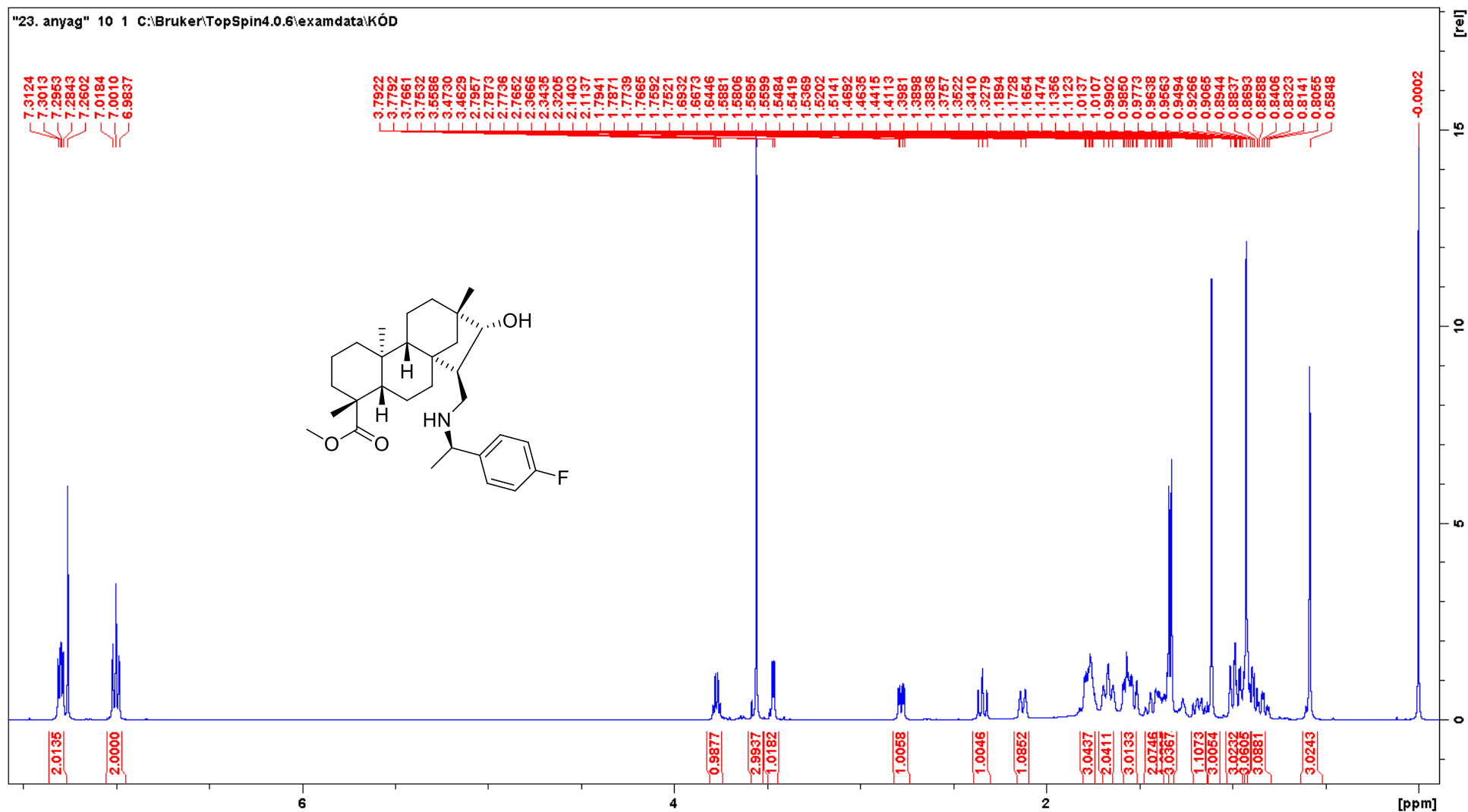


Figure S104

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

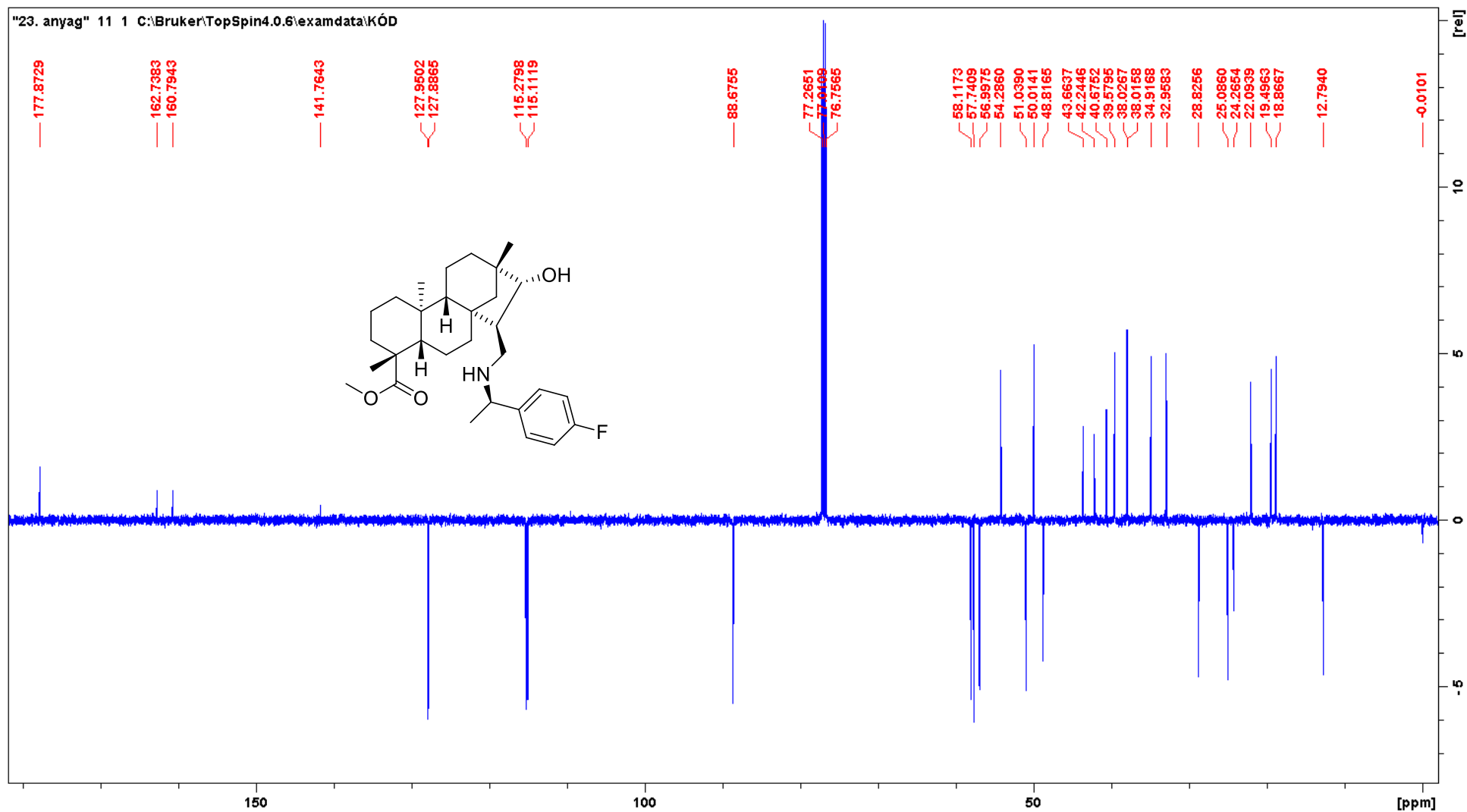


Figure S105

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

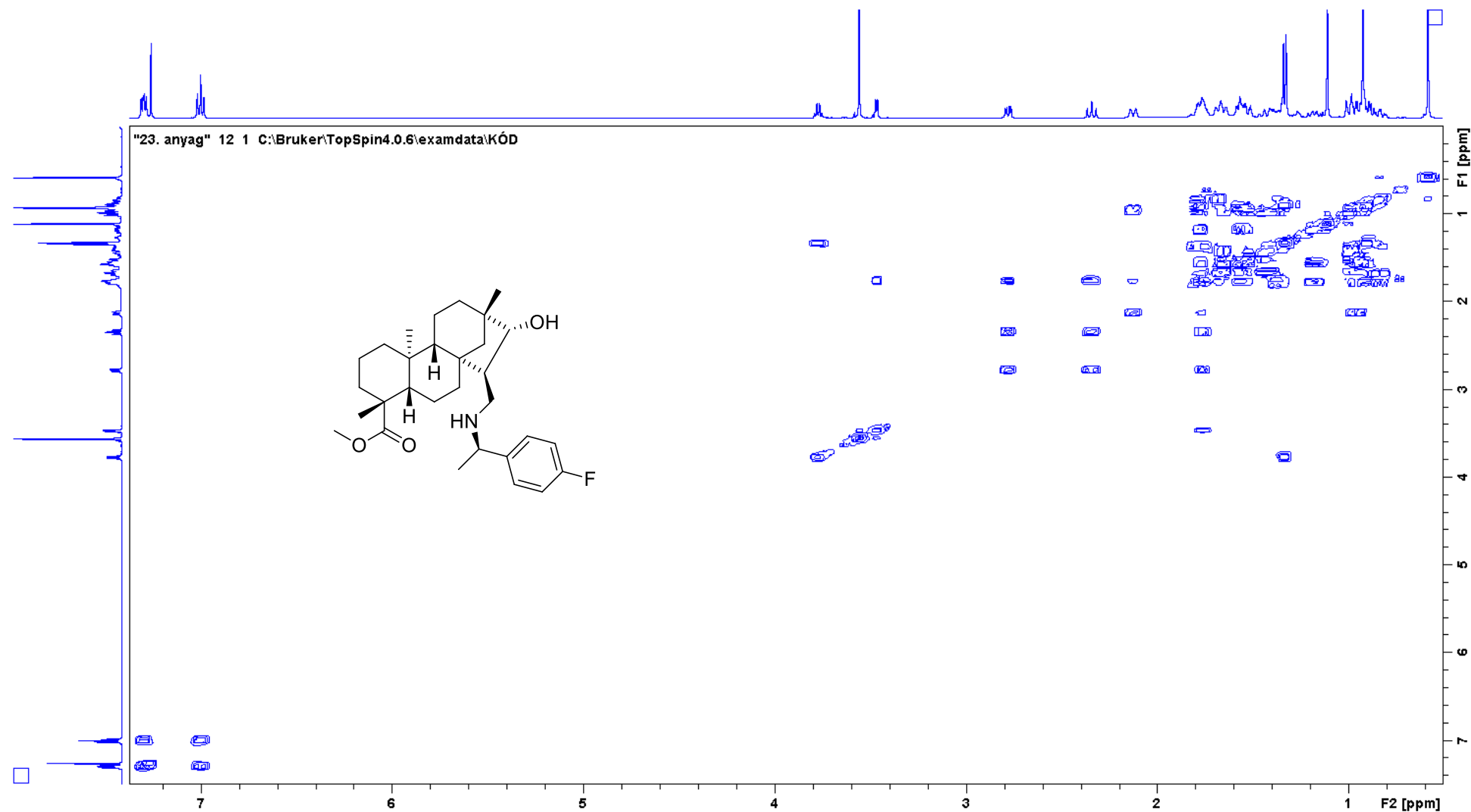


Figure S106

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

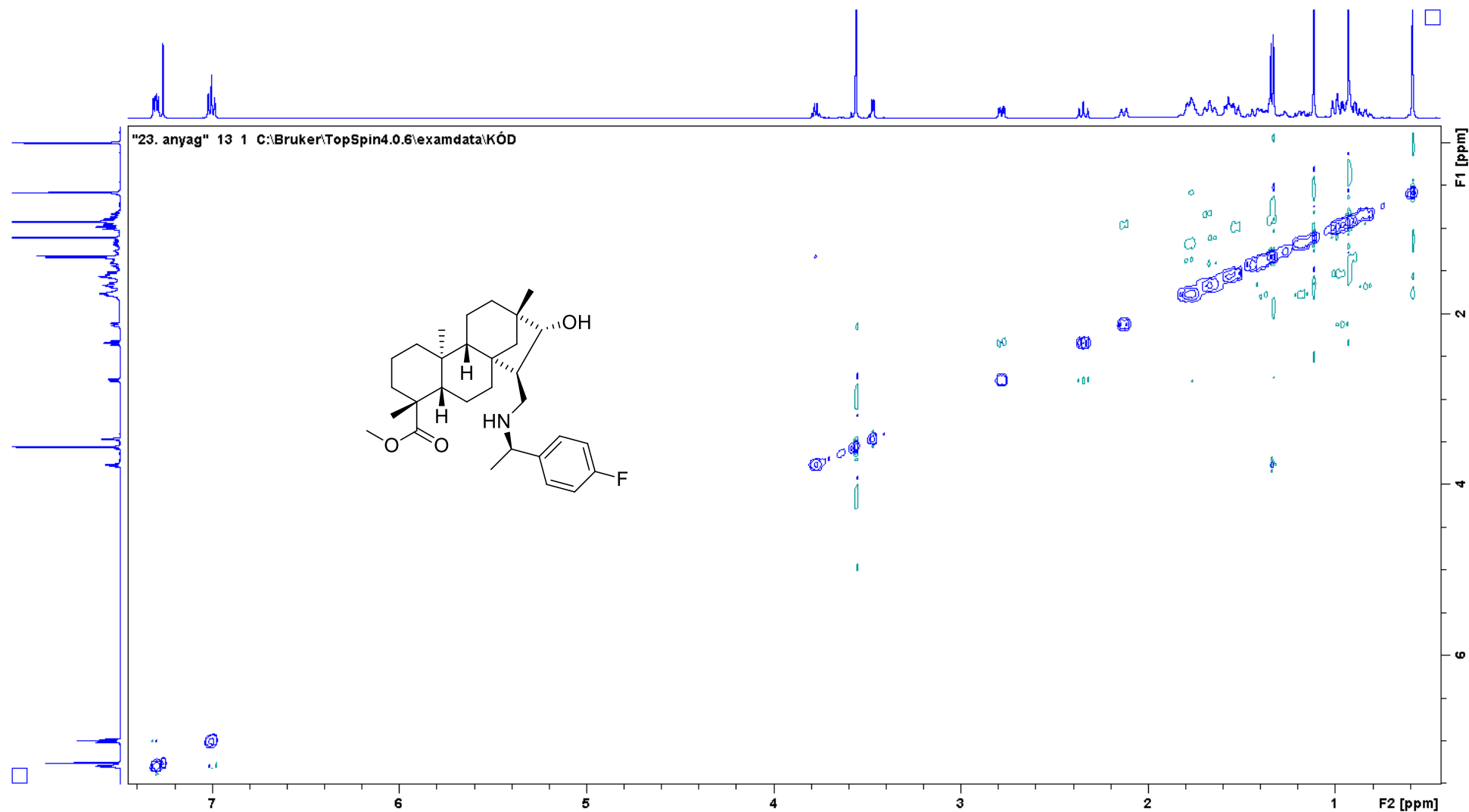


Figure S107

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

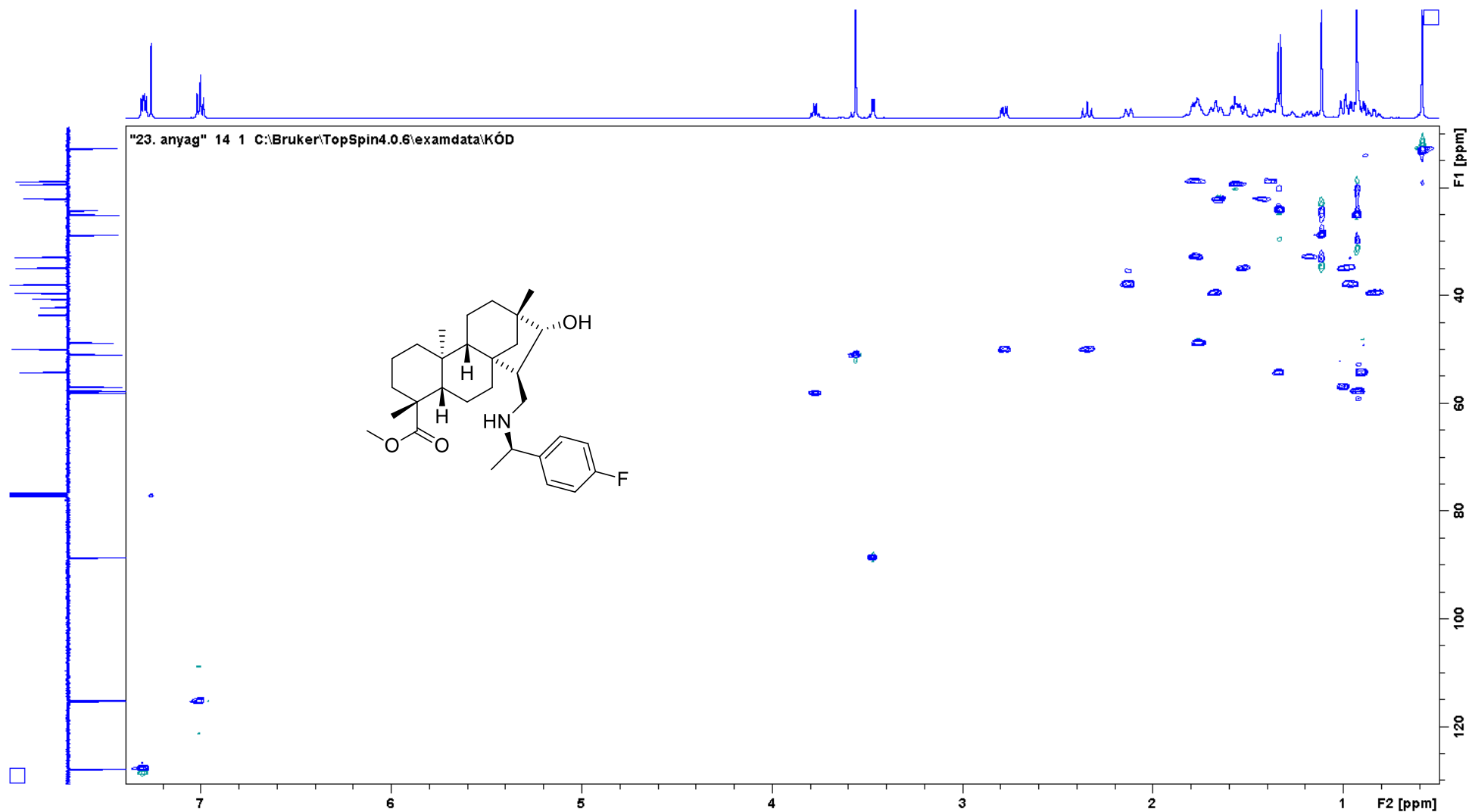


Figure S108

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-((((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

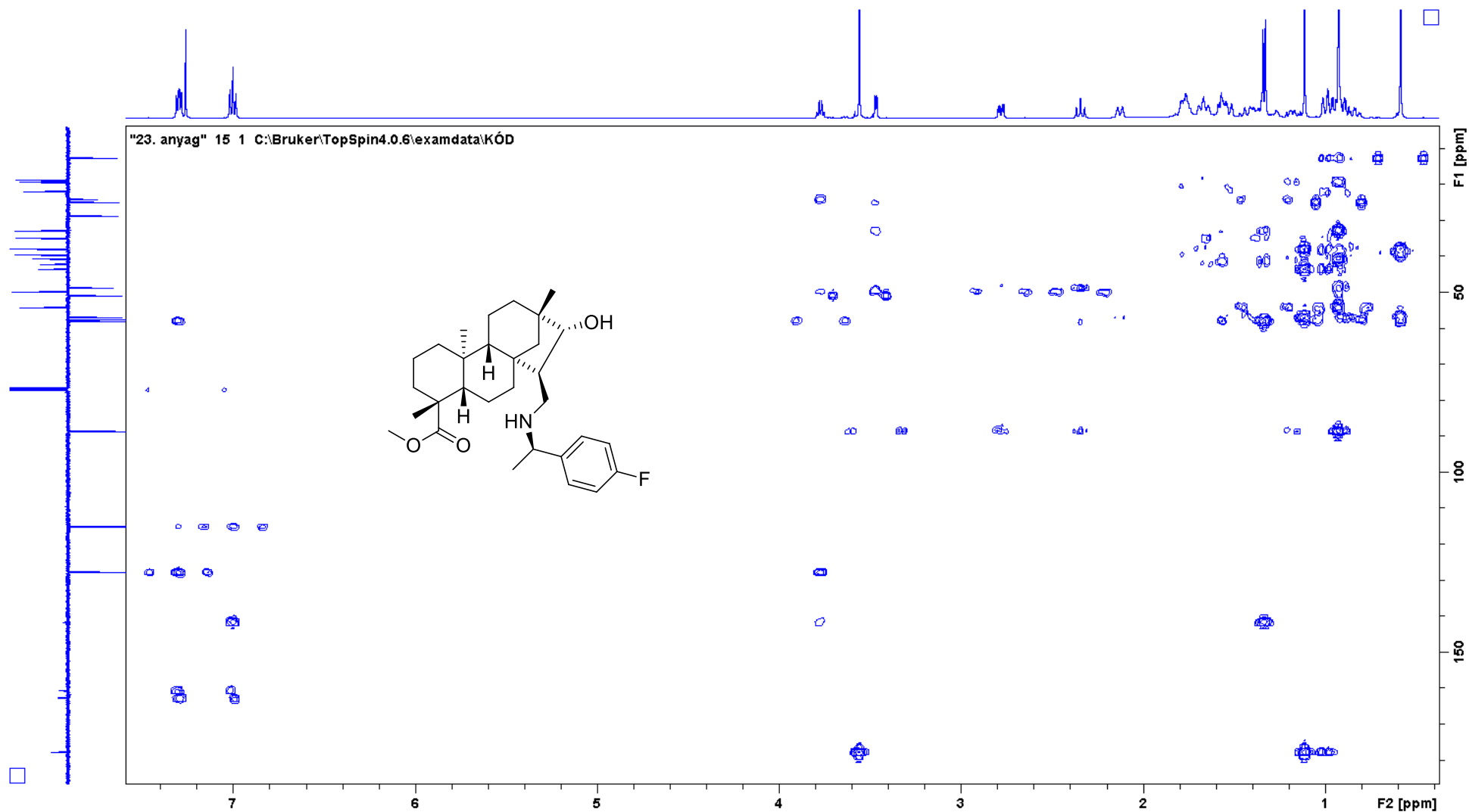


Figure S109

^{19}F -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-(((*R*)-1-(4-fluorophenyl)ethyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**23**):

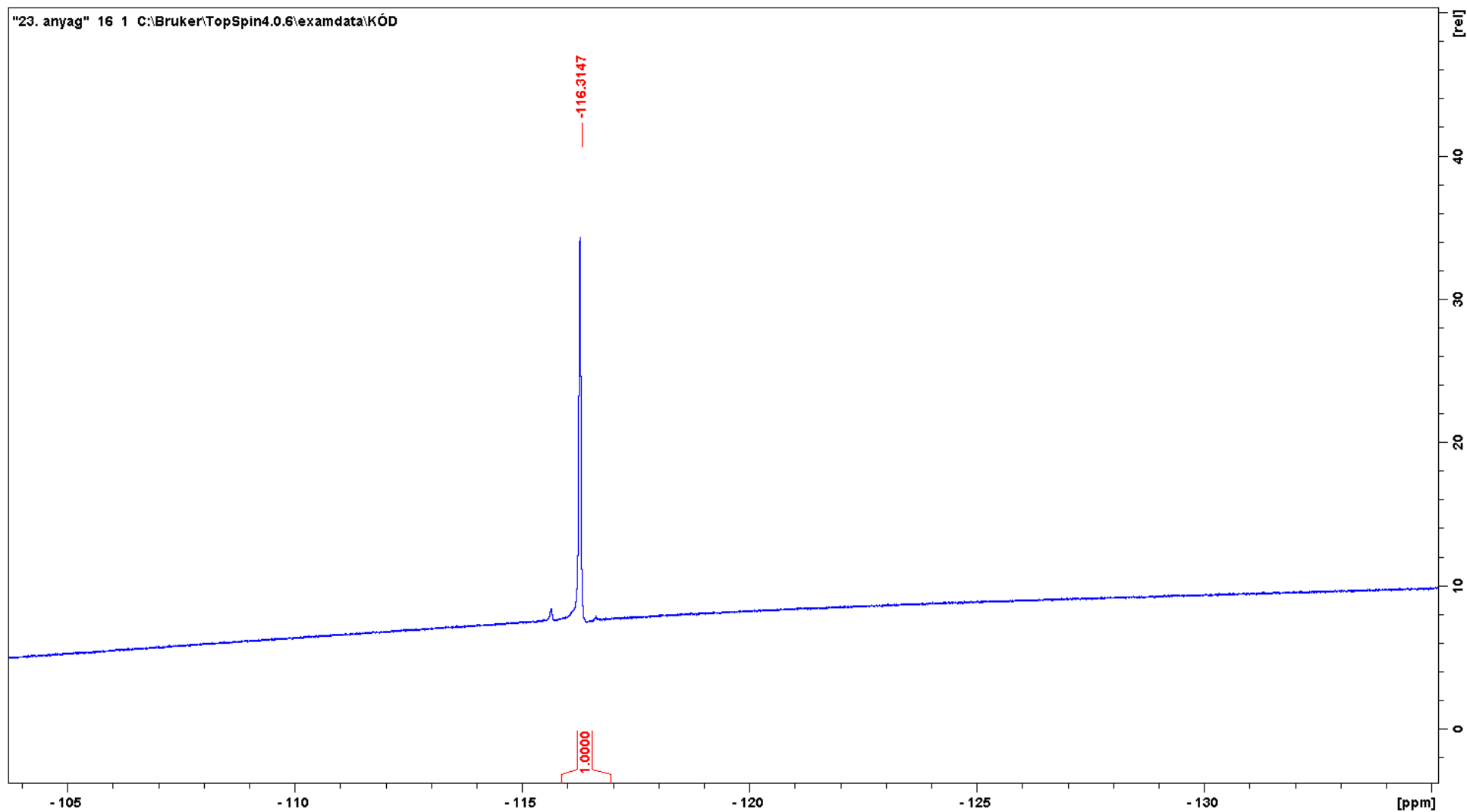


Figure S110

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**24**):

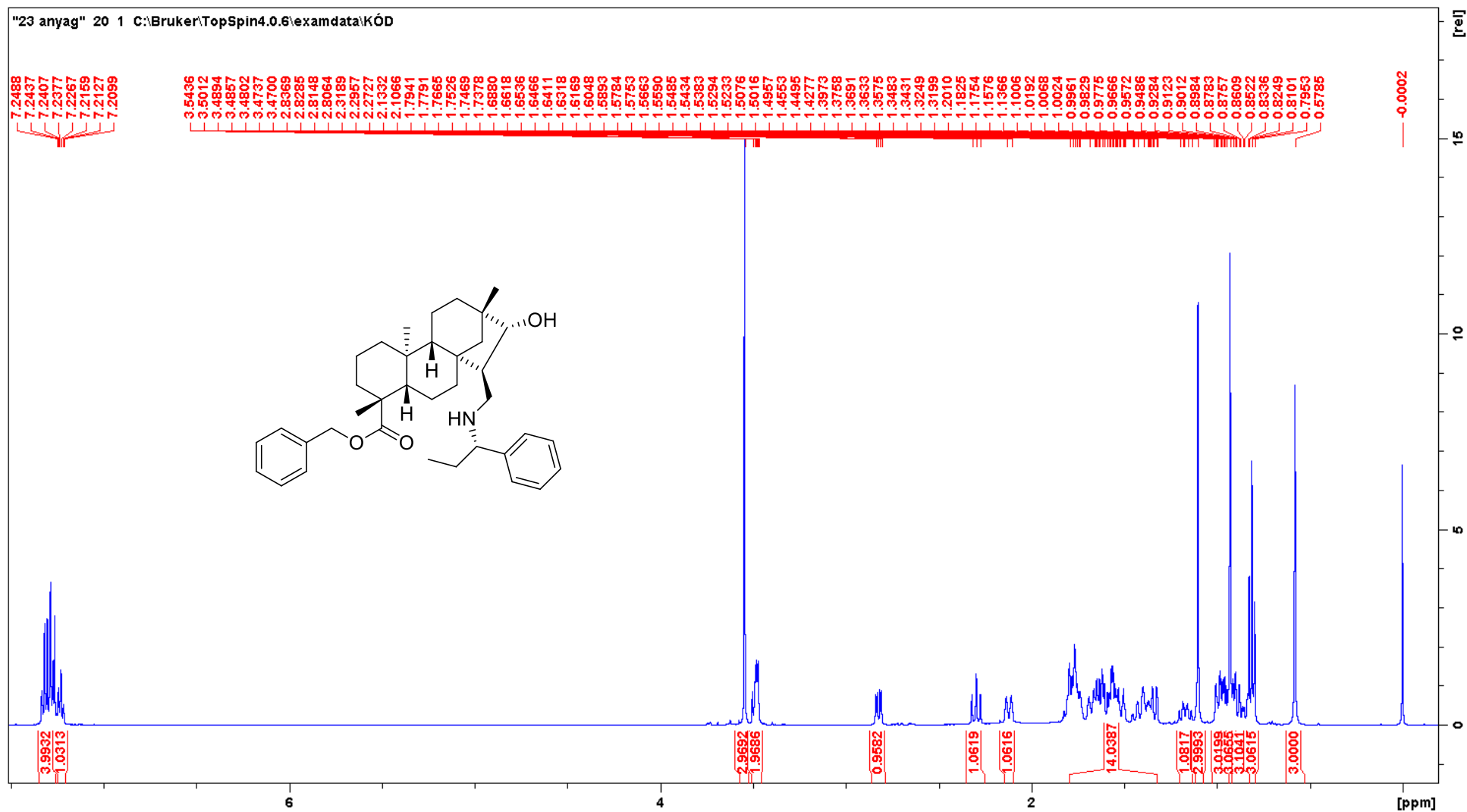


Figure S111

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**24**):

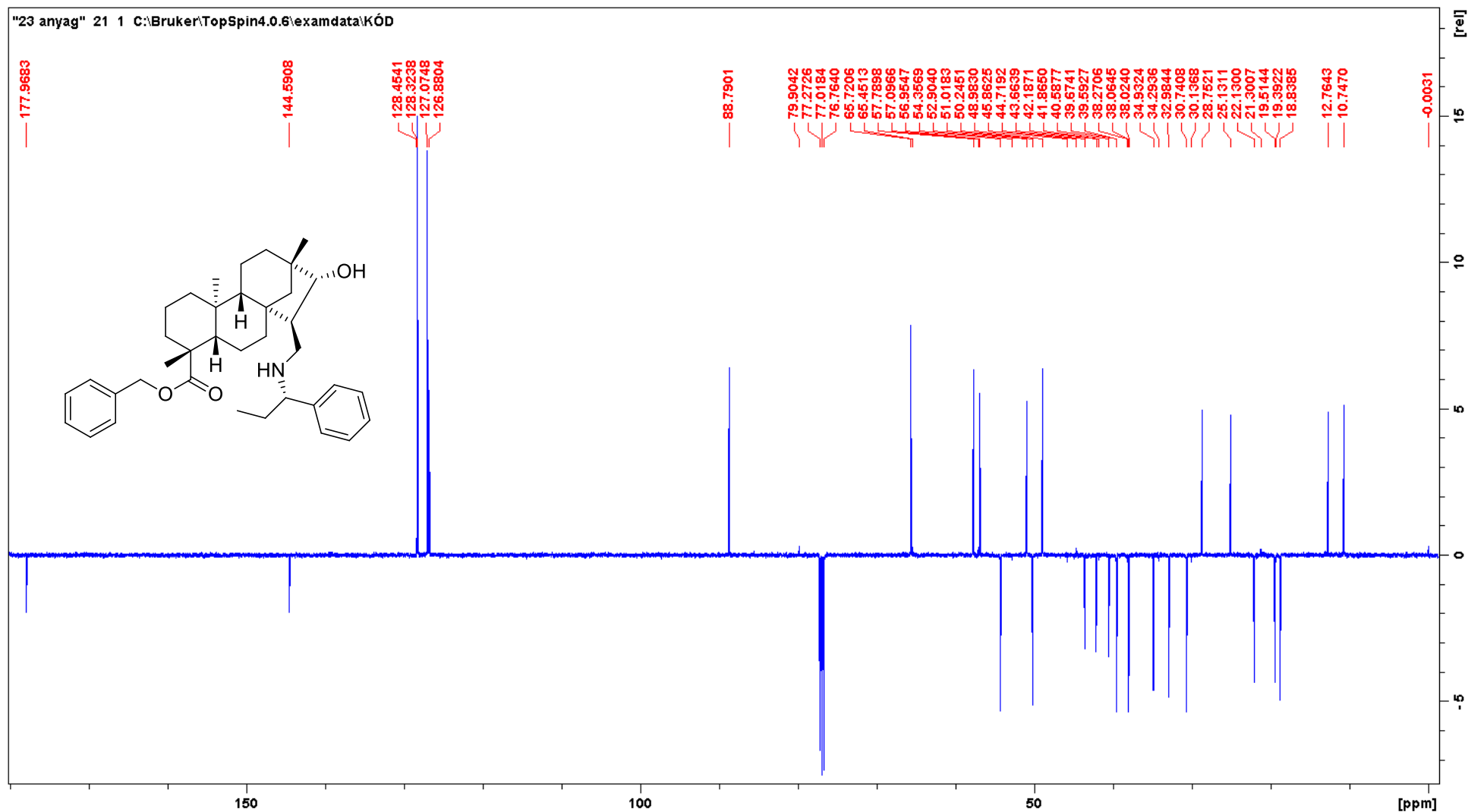


Figure S112

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**24**):

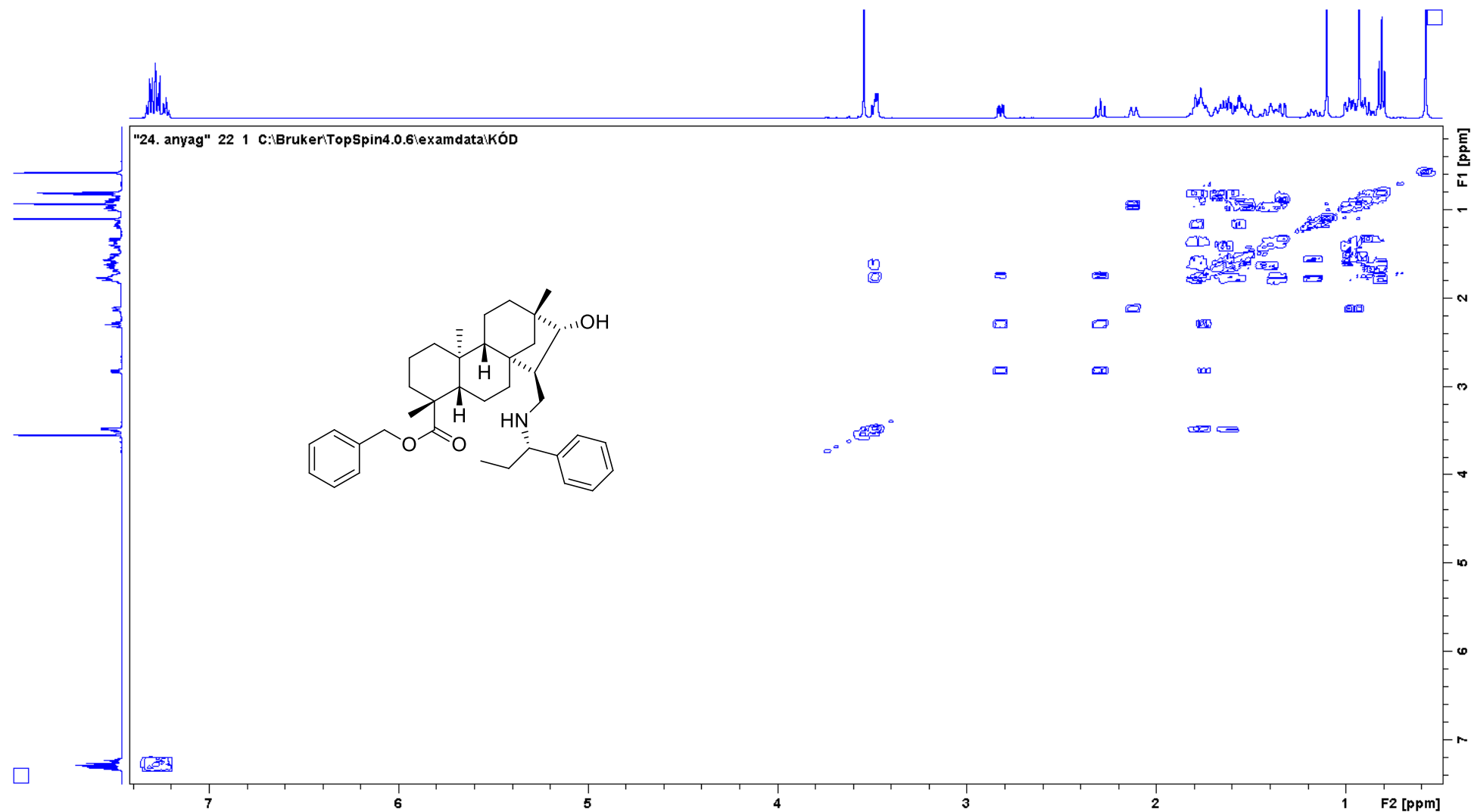


Figure S113

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**24**):

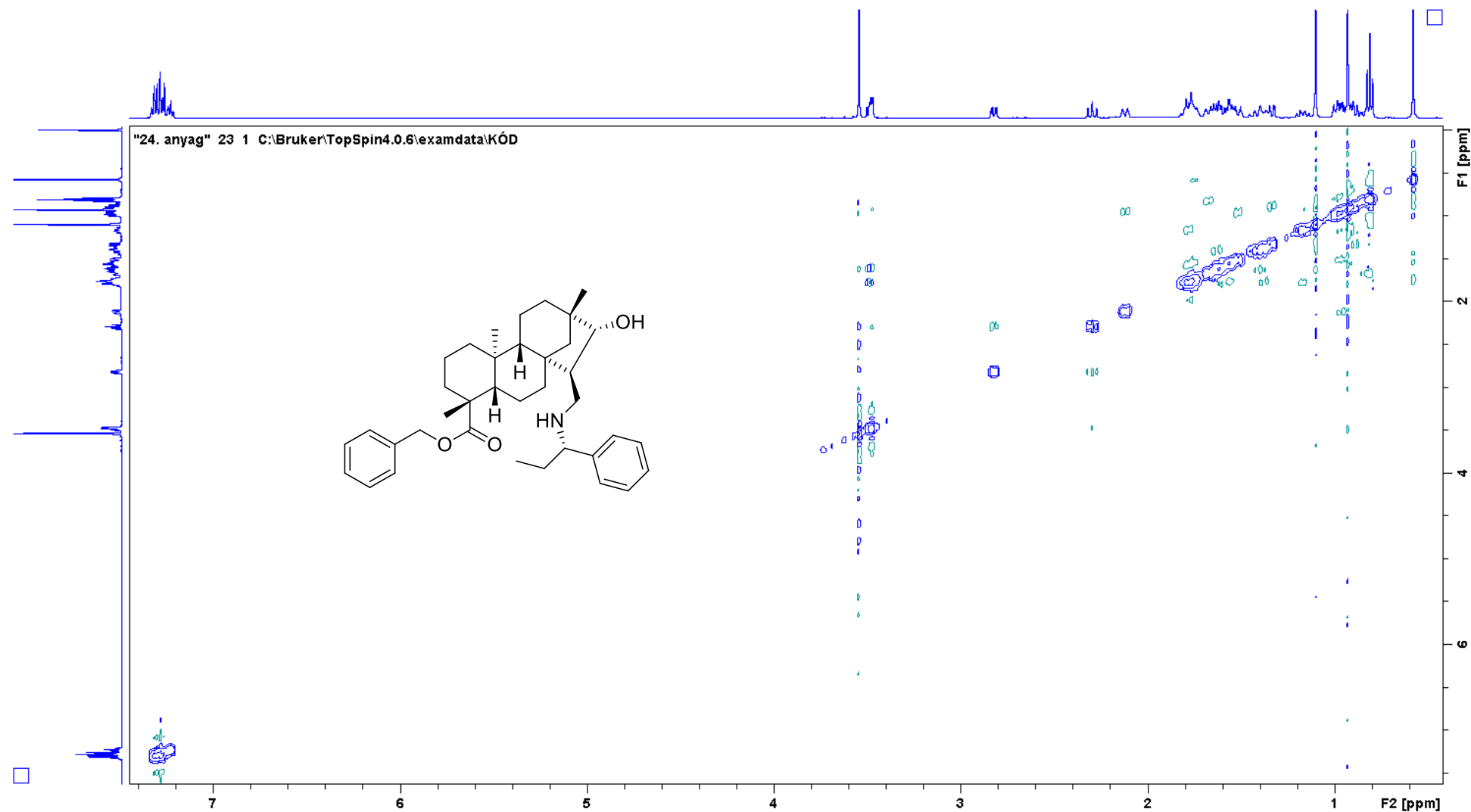


Figure S114

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-phenylpropyl)amino)methyl)tetra decahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**24**):

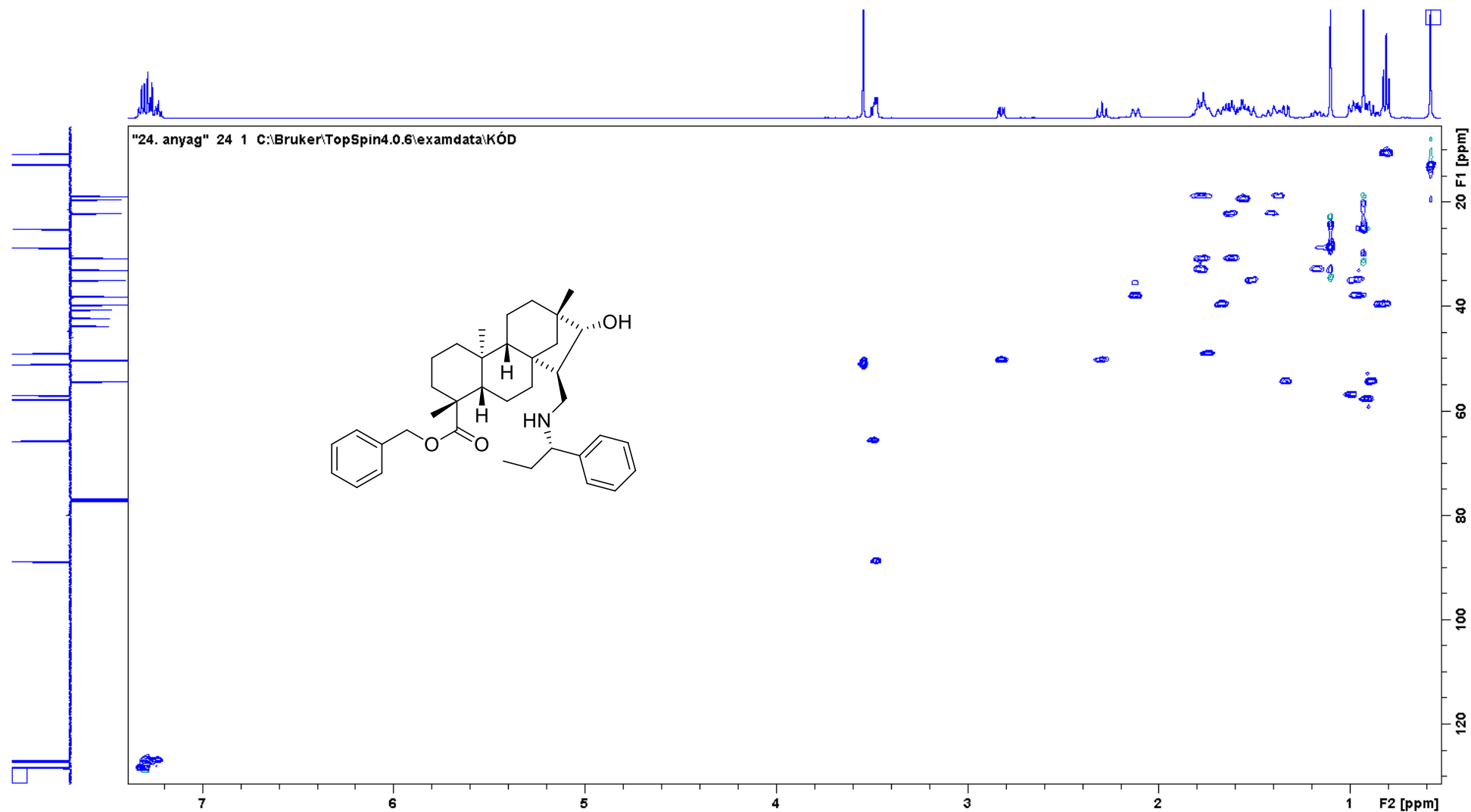


Figure S115

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-((((*R*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**24**):

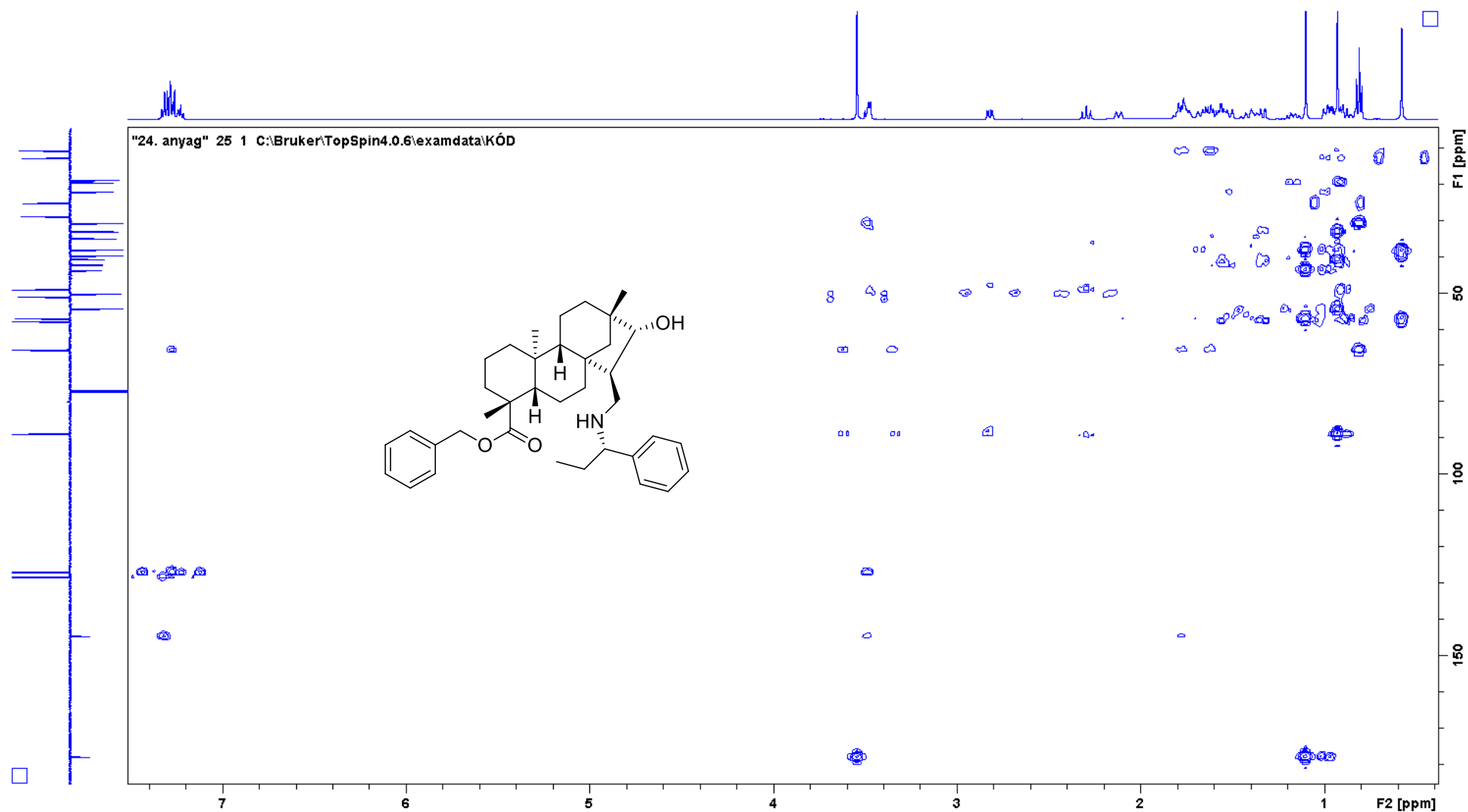


Figure S116

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**25**):

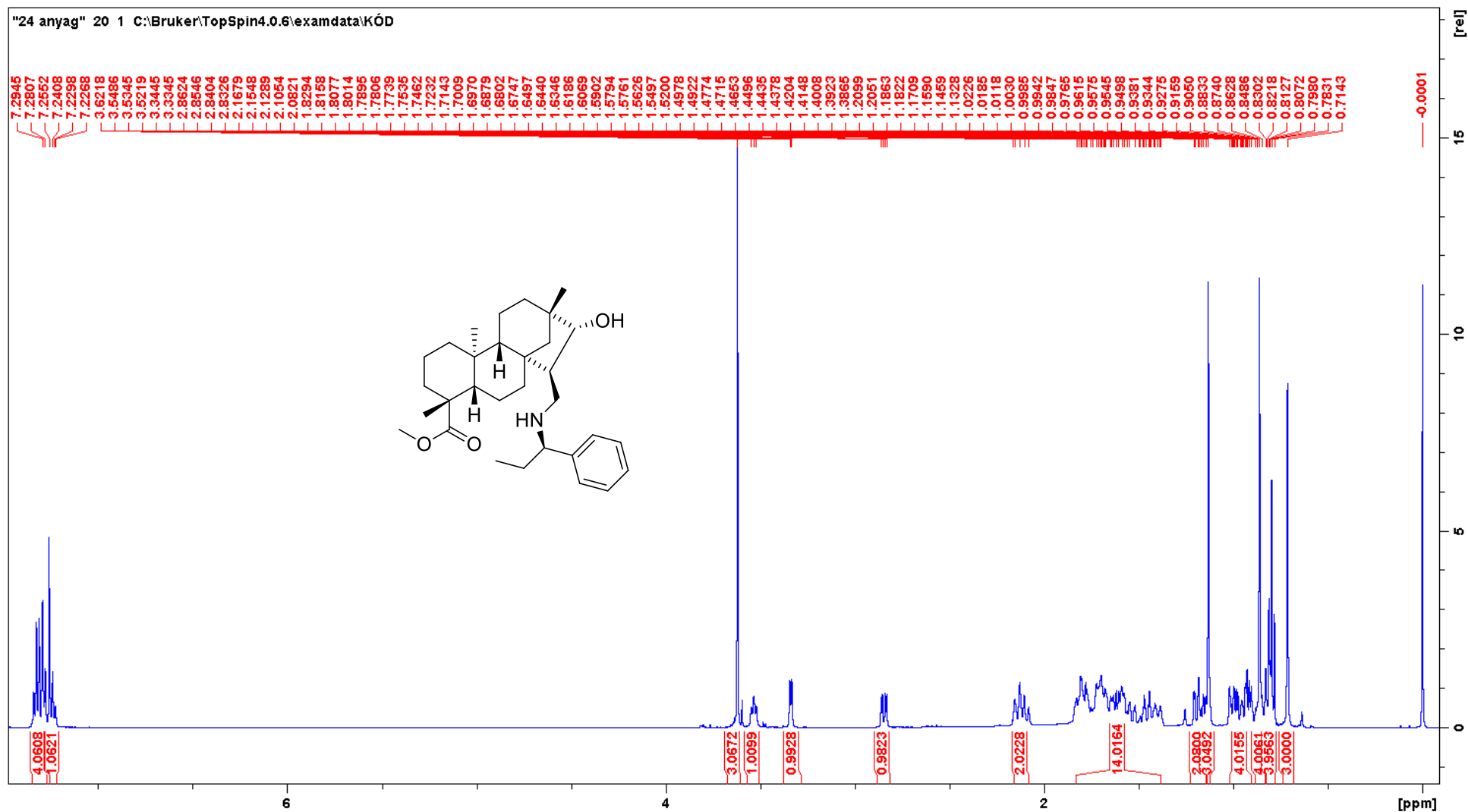
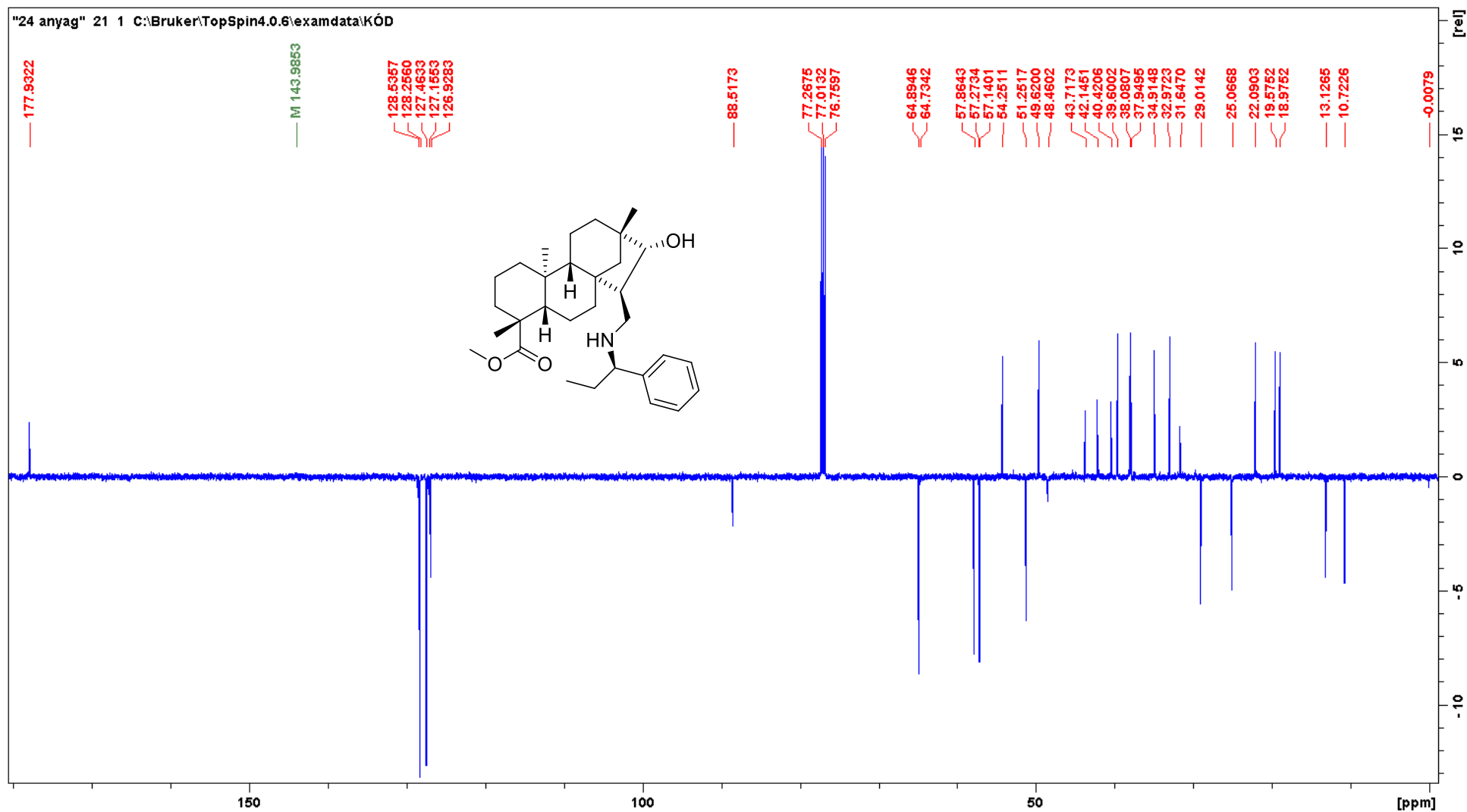


Figure S117

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**25**):



COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**25**):



Figure S119

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**25**):

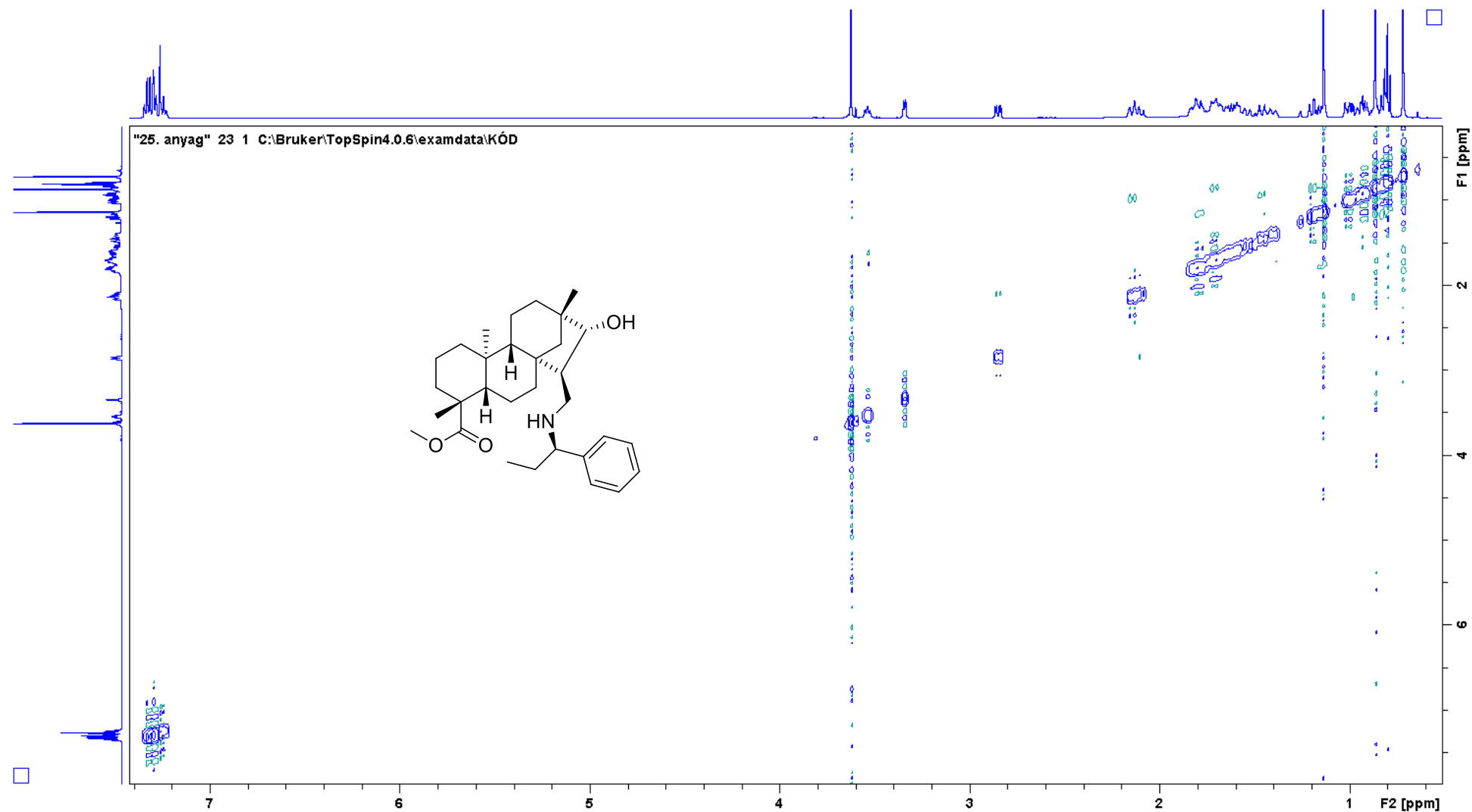


Figure S120

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**25**):

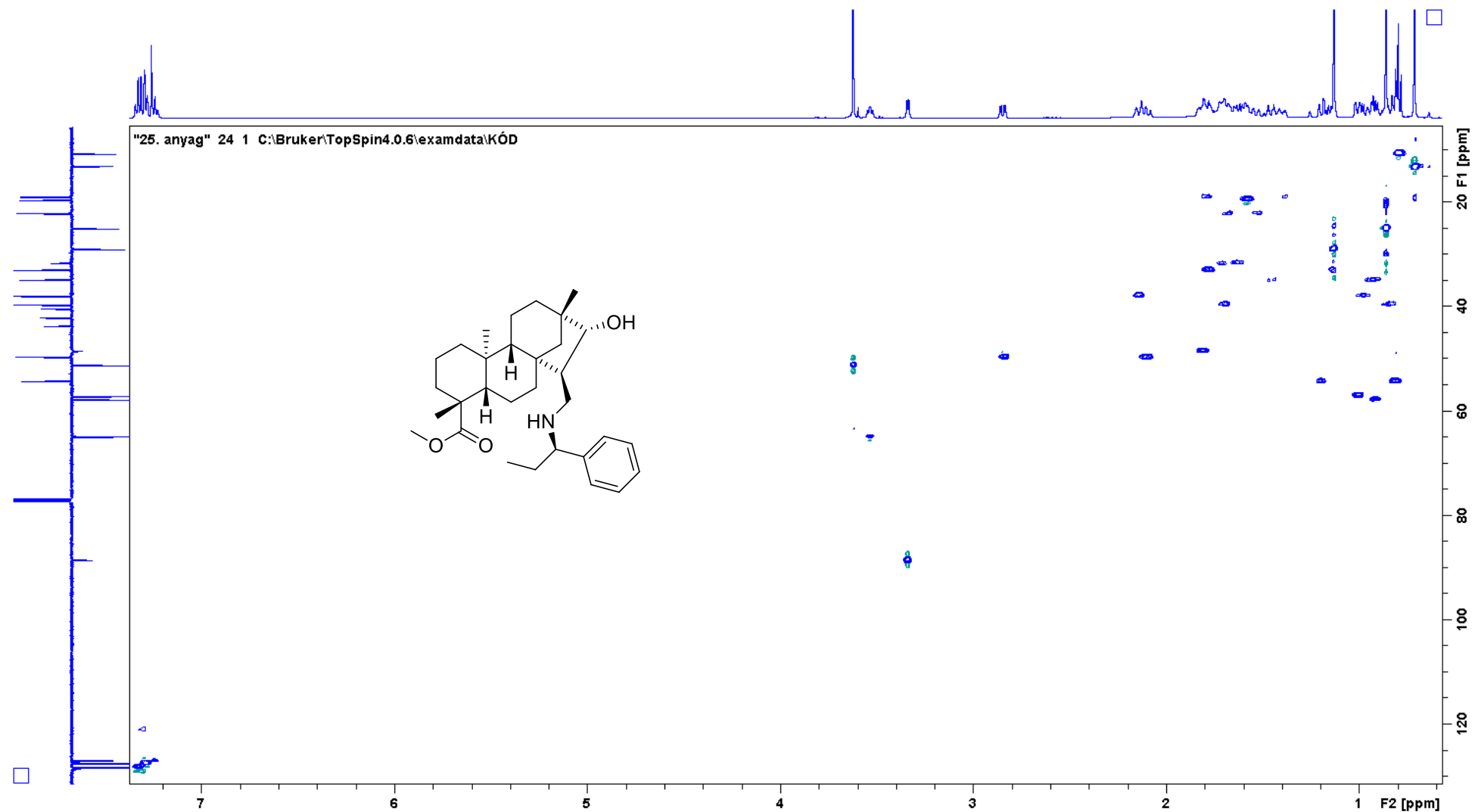


Figure S121

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-phenylpropyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**25**):

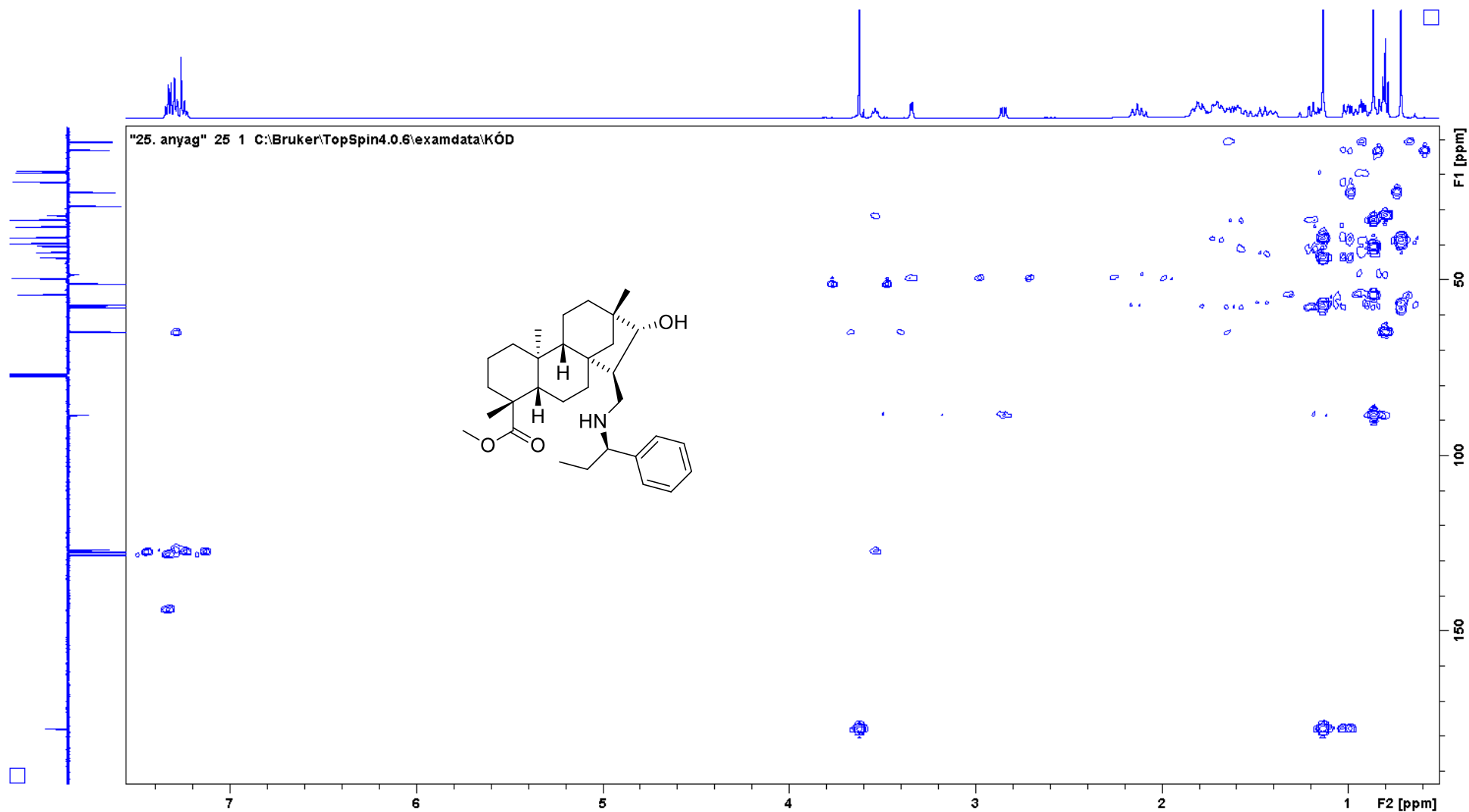


Figure S122

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**26**):

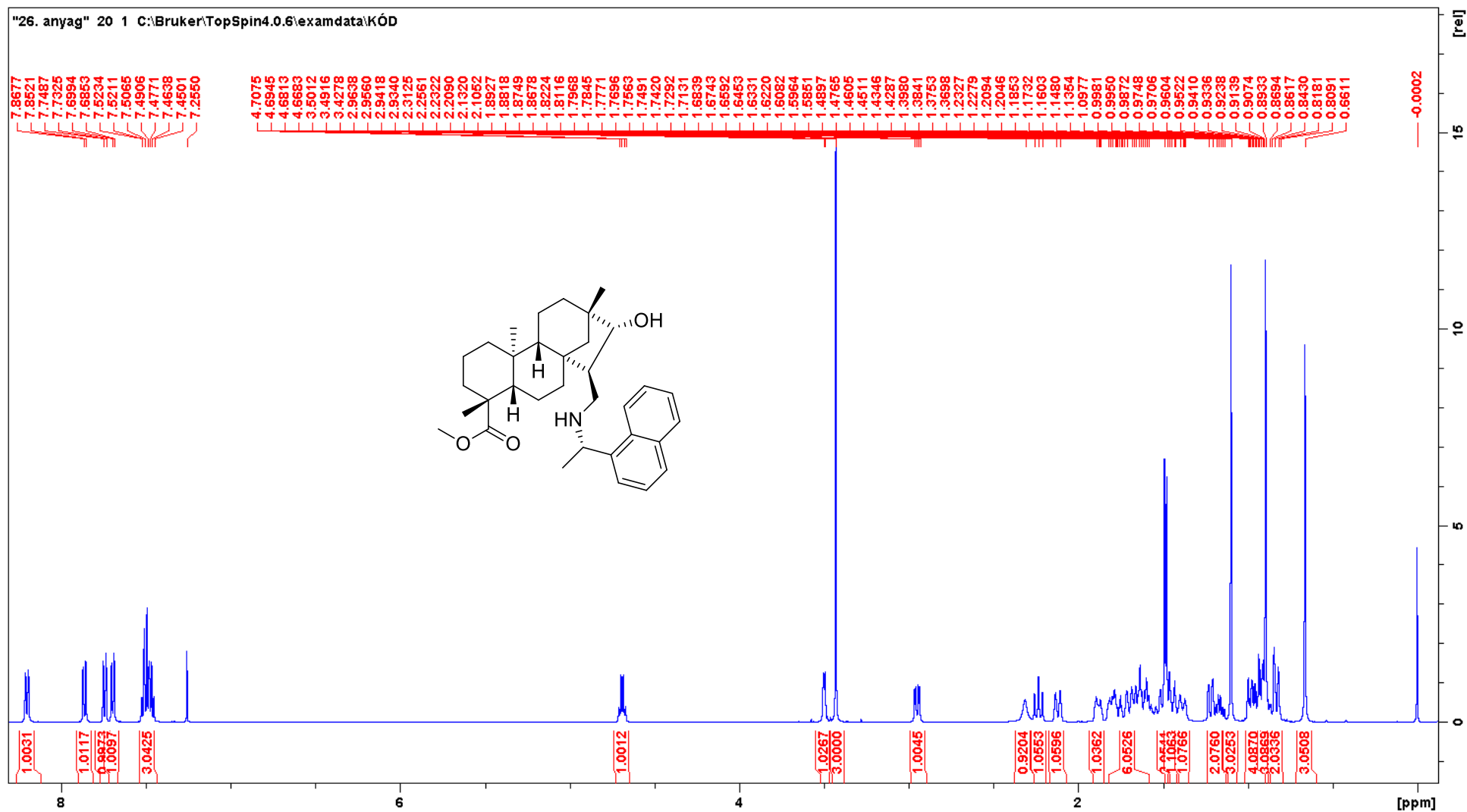


Figure S123

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetrahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**26**):

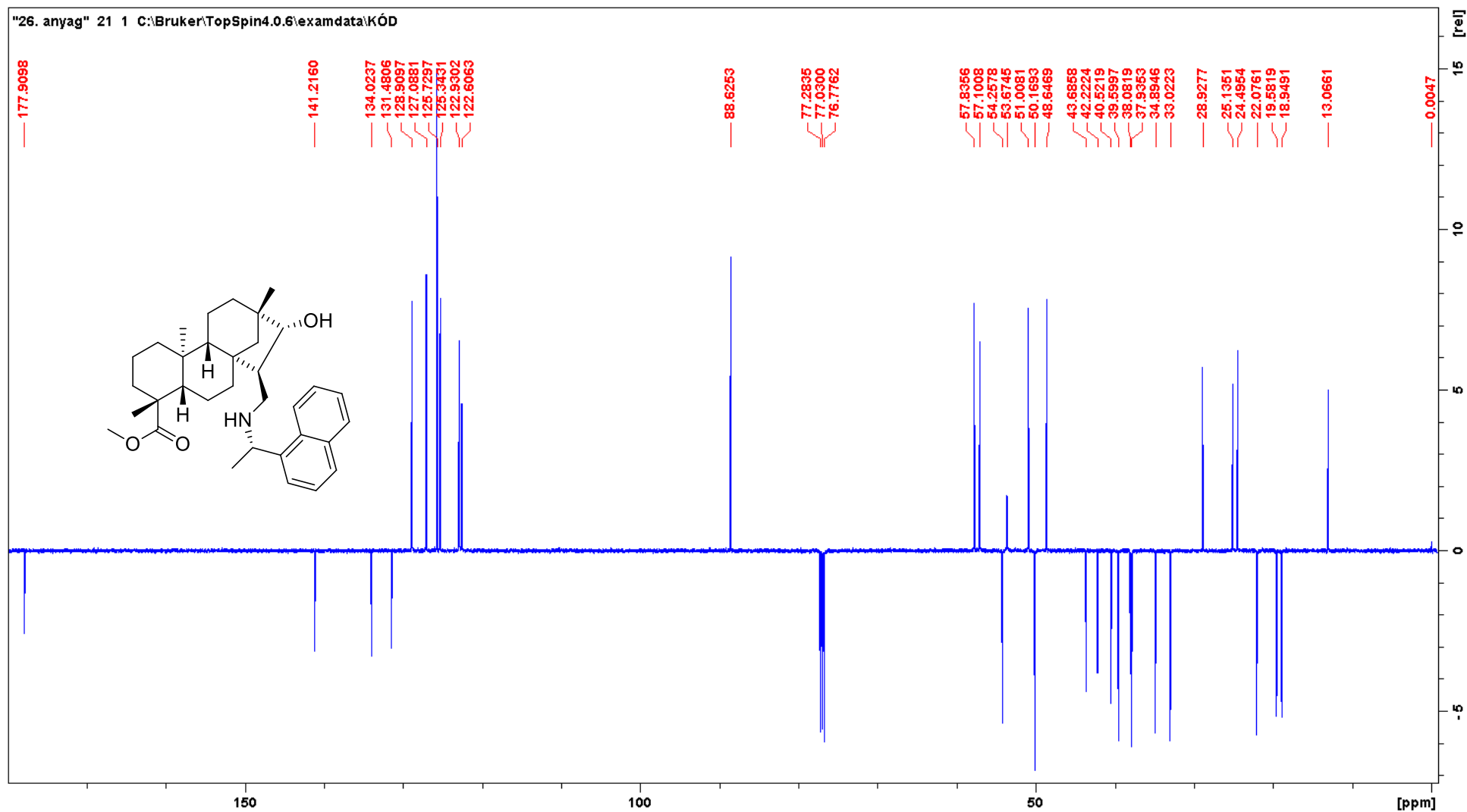


Figure S124

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**26**):

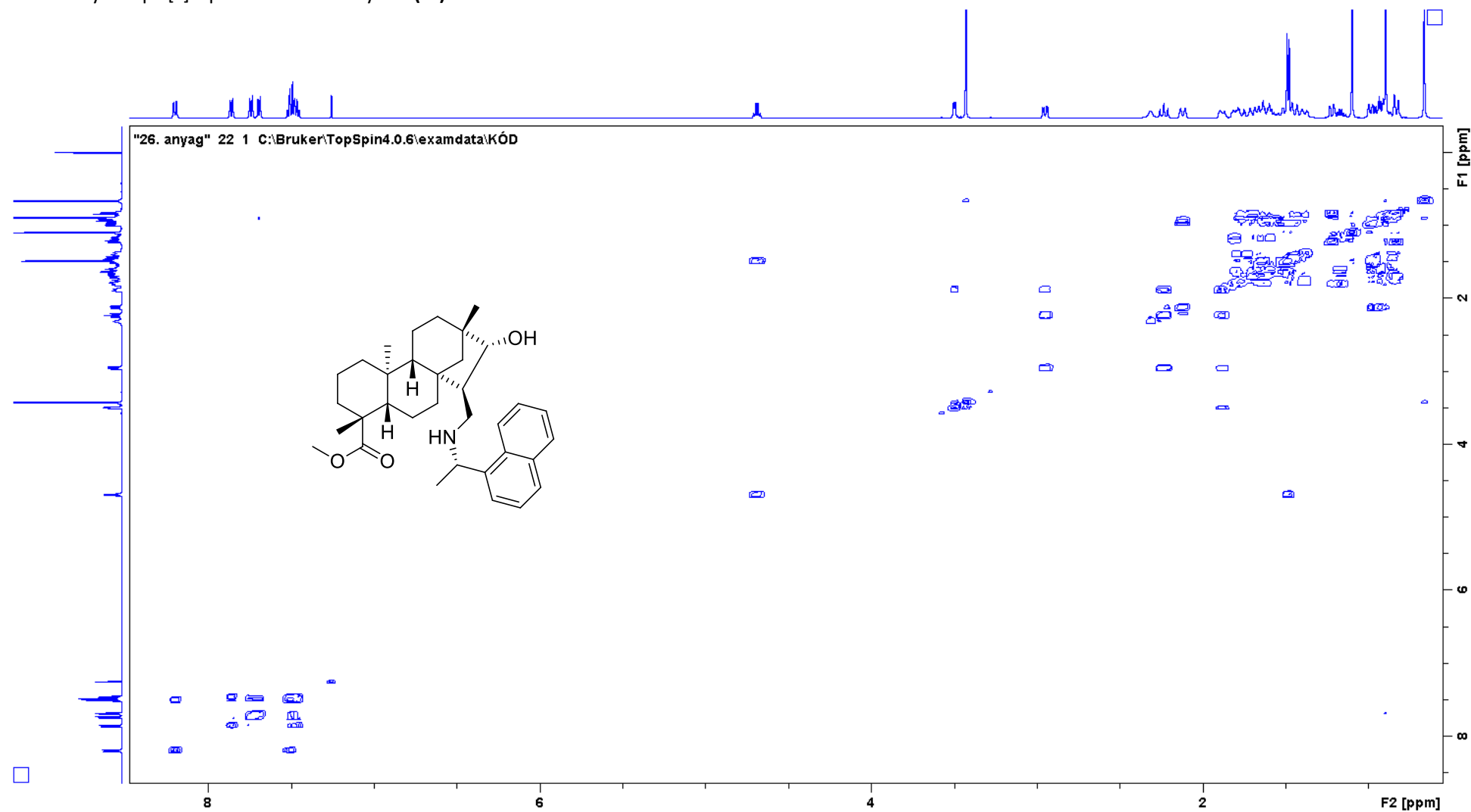


Figure S125

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**26**):

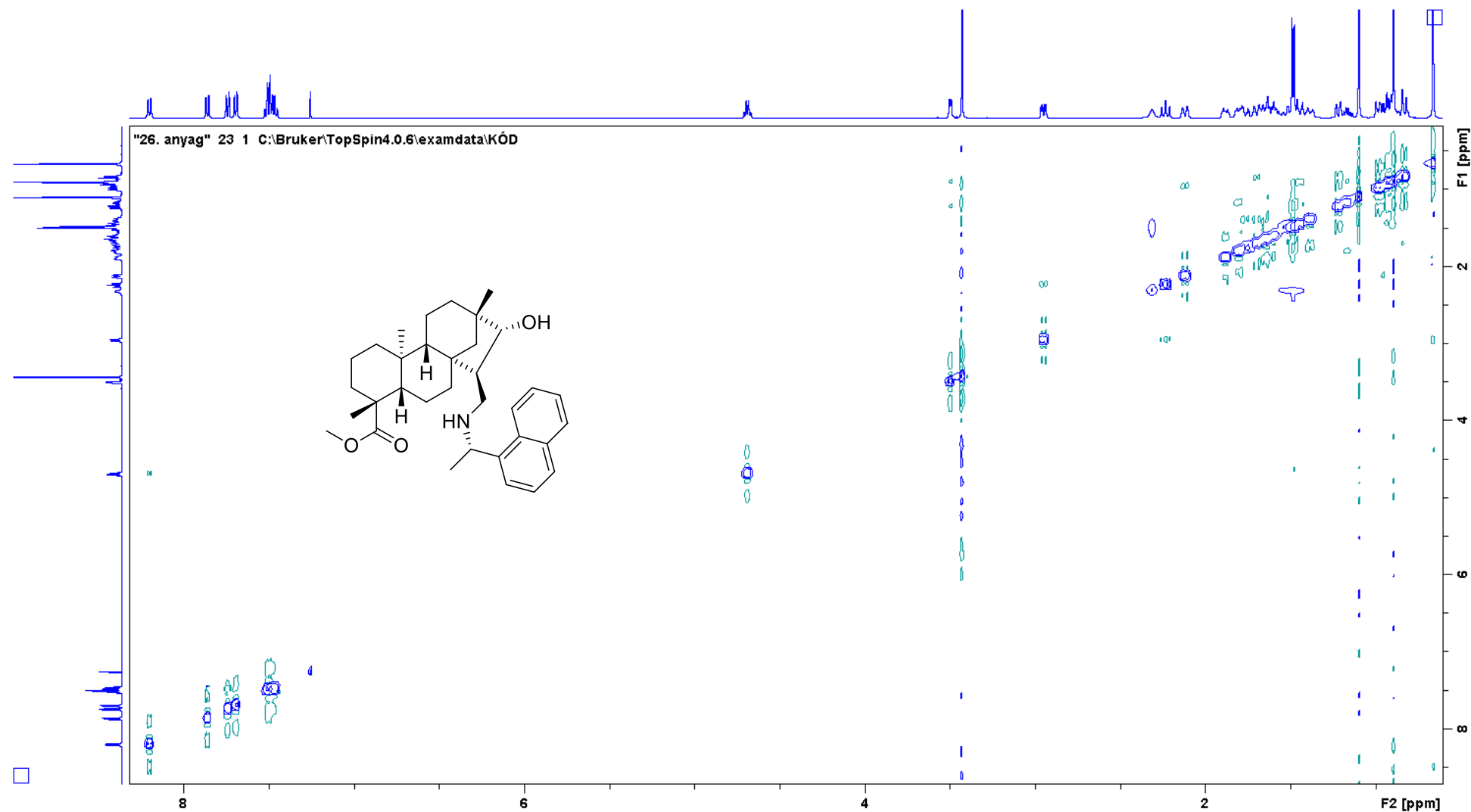


Figure S126

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**26**):

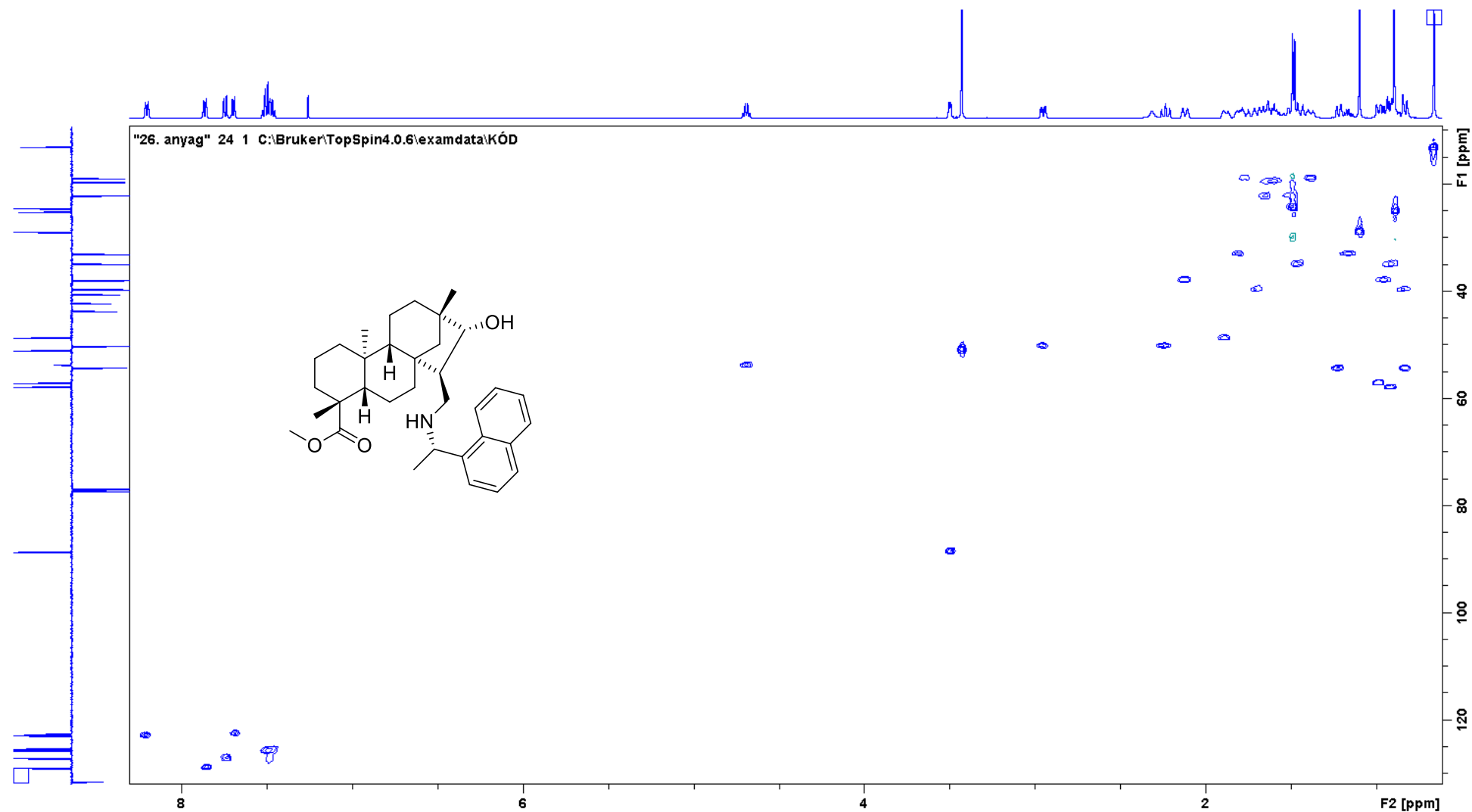


Figure S127

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*S*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**26**):

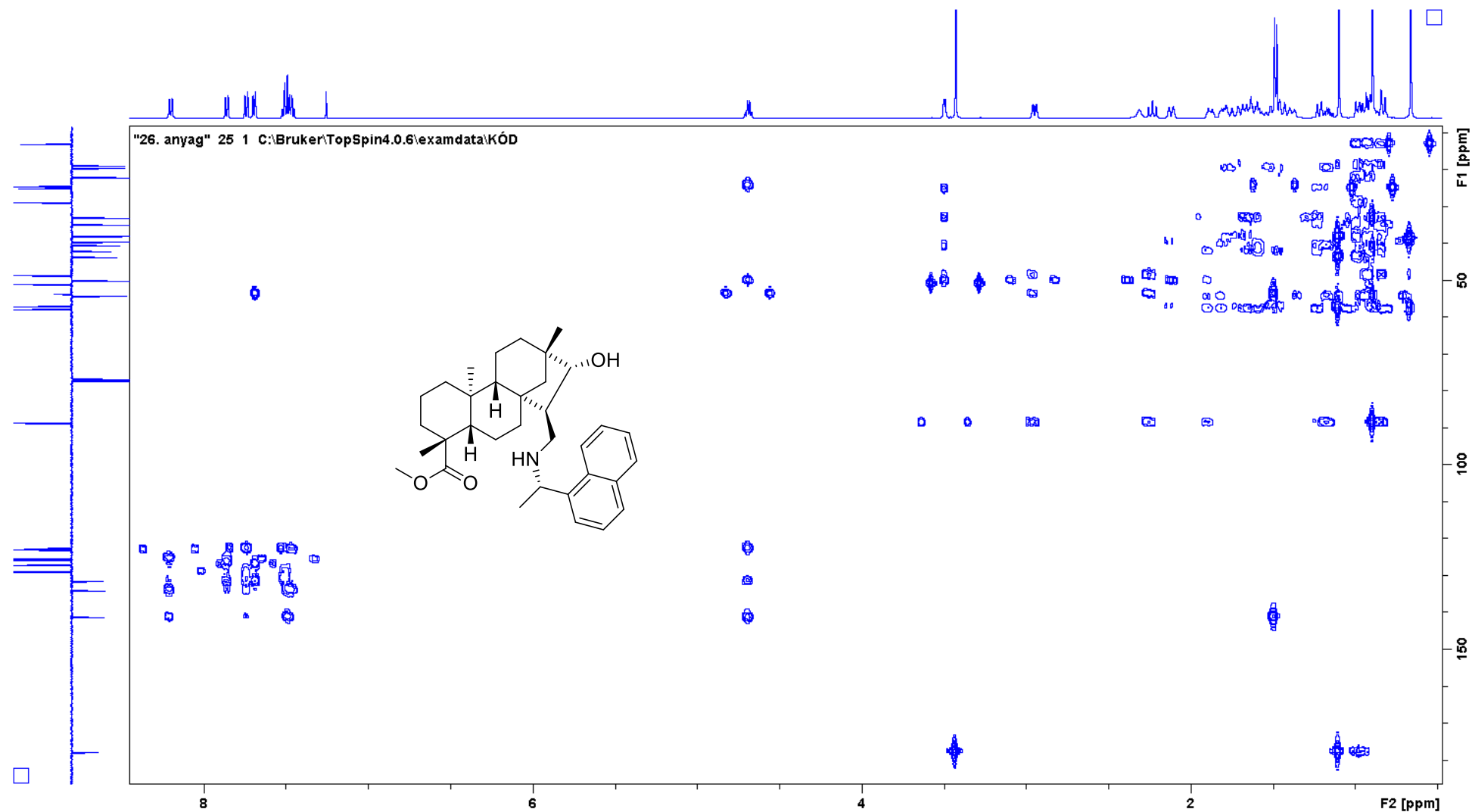


Figure S128

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**27**):

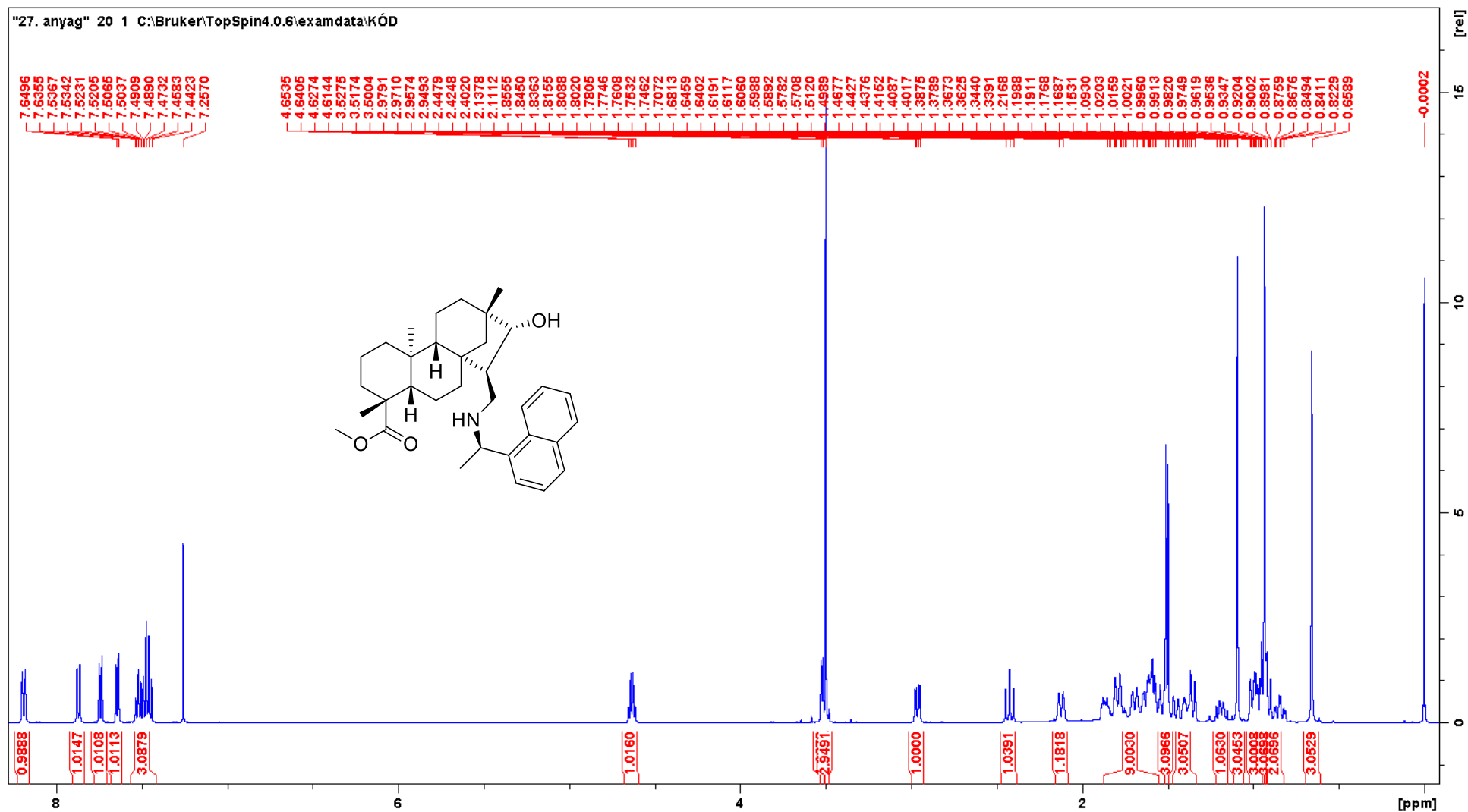


Figure S129

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**27**):

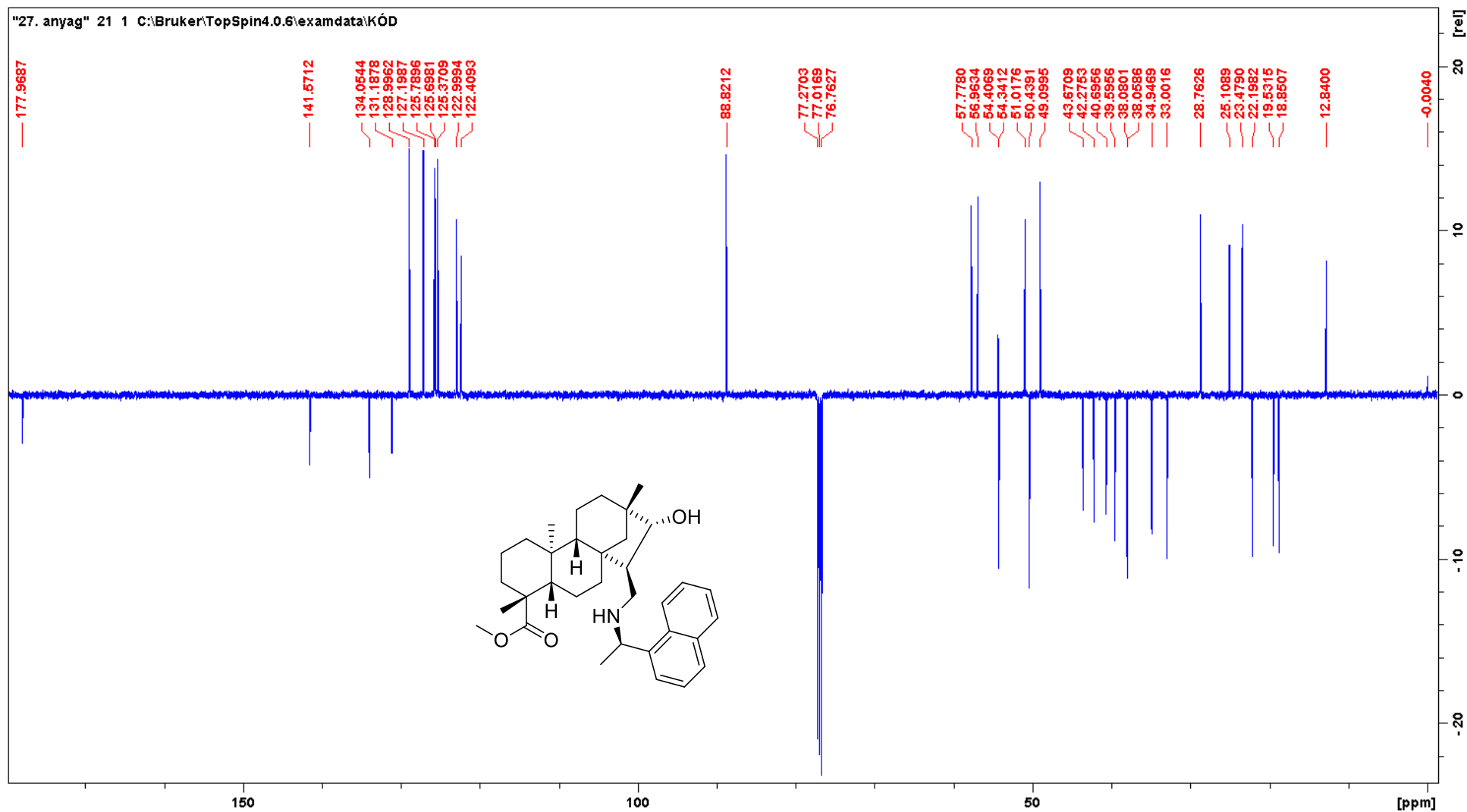


Figure S130

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**27**):

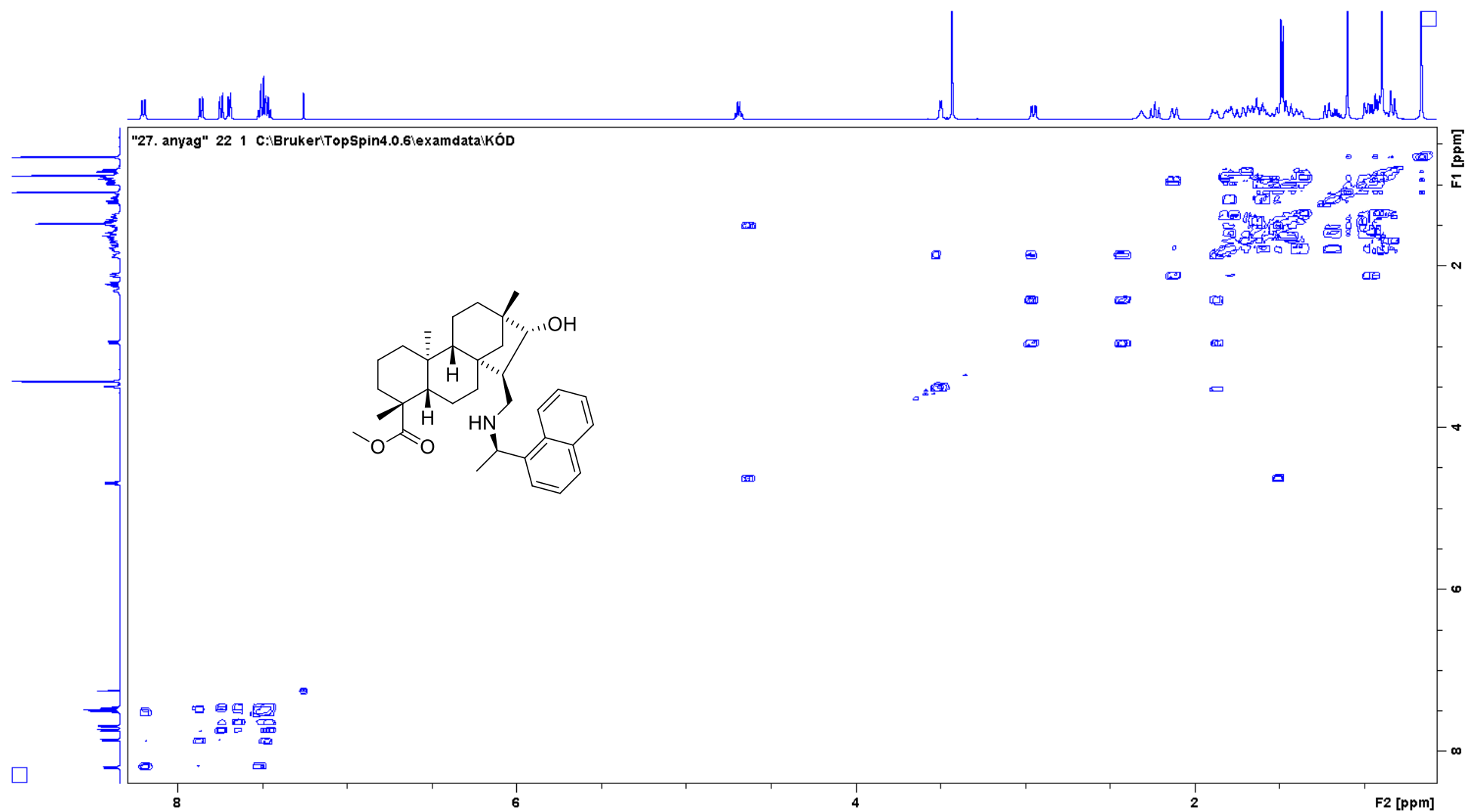


Figure S131

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**27**):

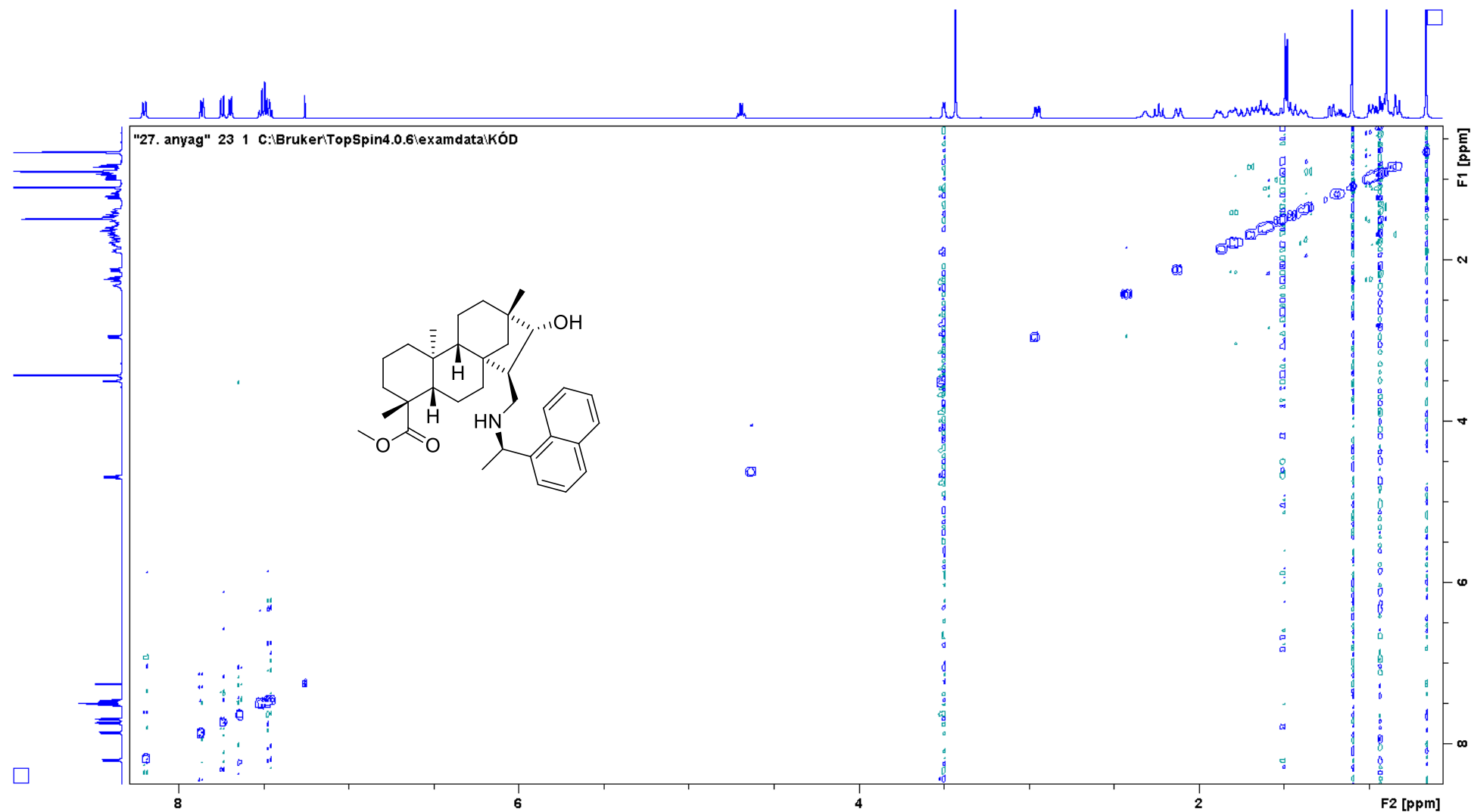


Figure S132

HSQC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**27**):

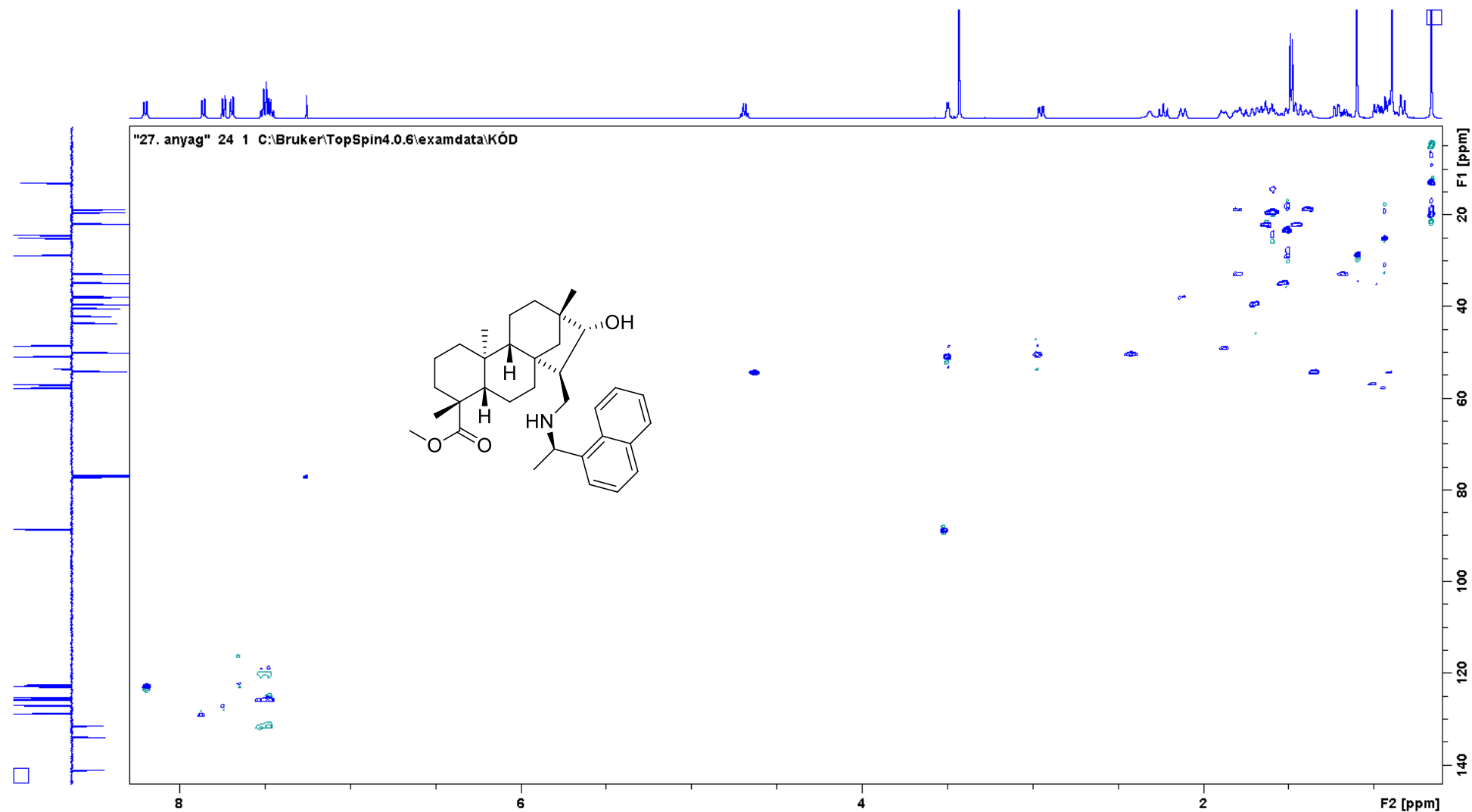


Figure S133

HMBC of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 8-hydroxy-4,9,11*b*-trimethyl-7-(((*R*)-1-(naphthalen-2-yl)ethyl)amino)methyl)tetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**27**):

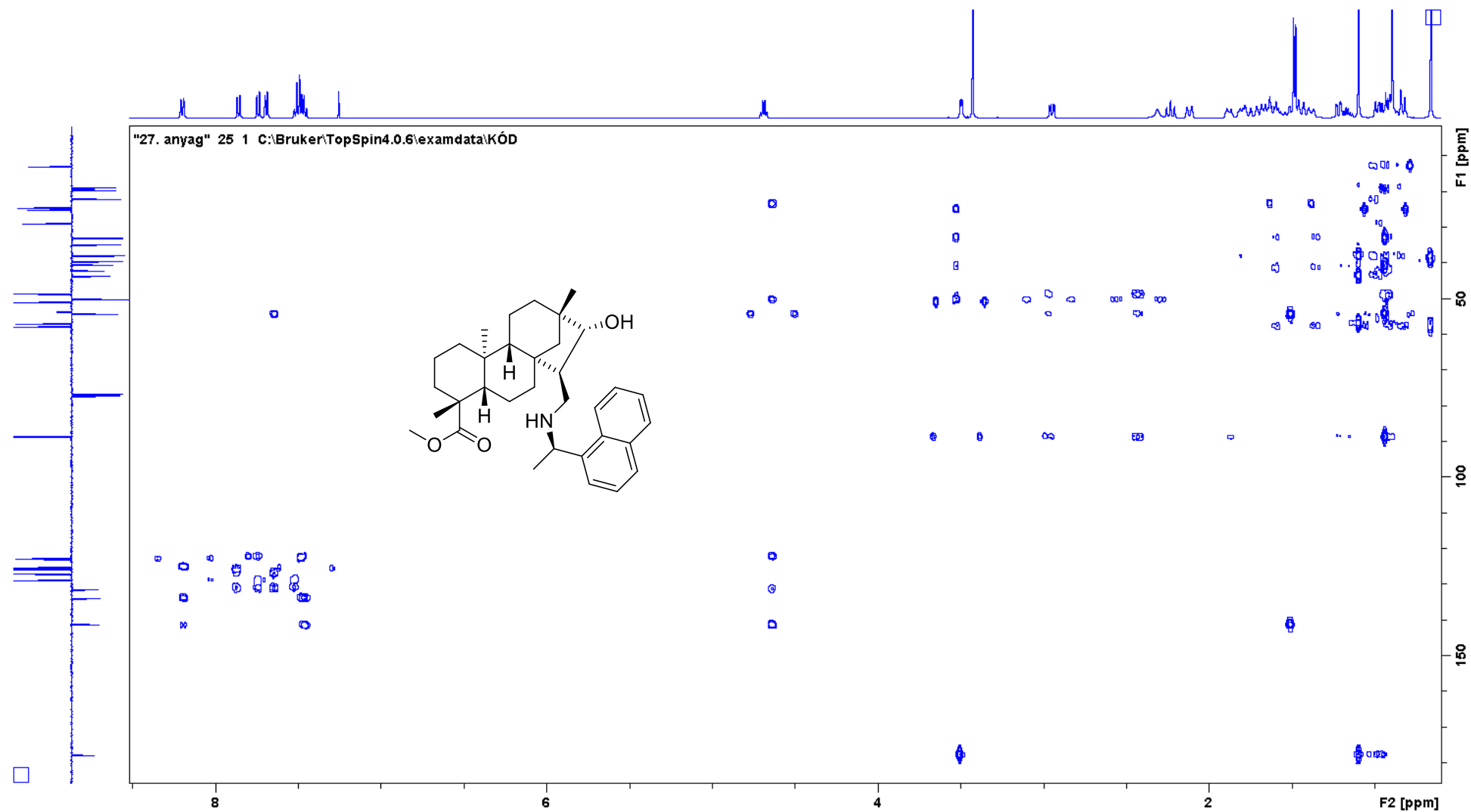


Figure S134

¹H-NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**28**):

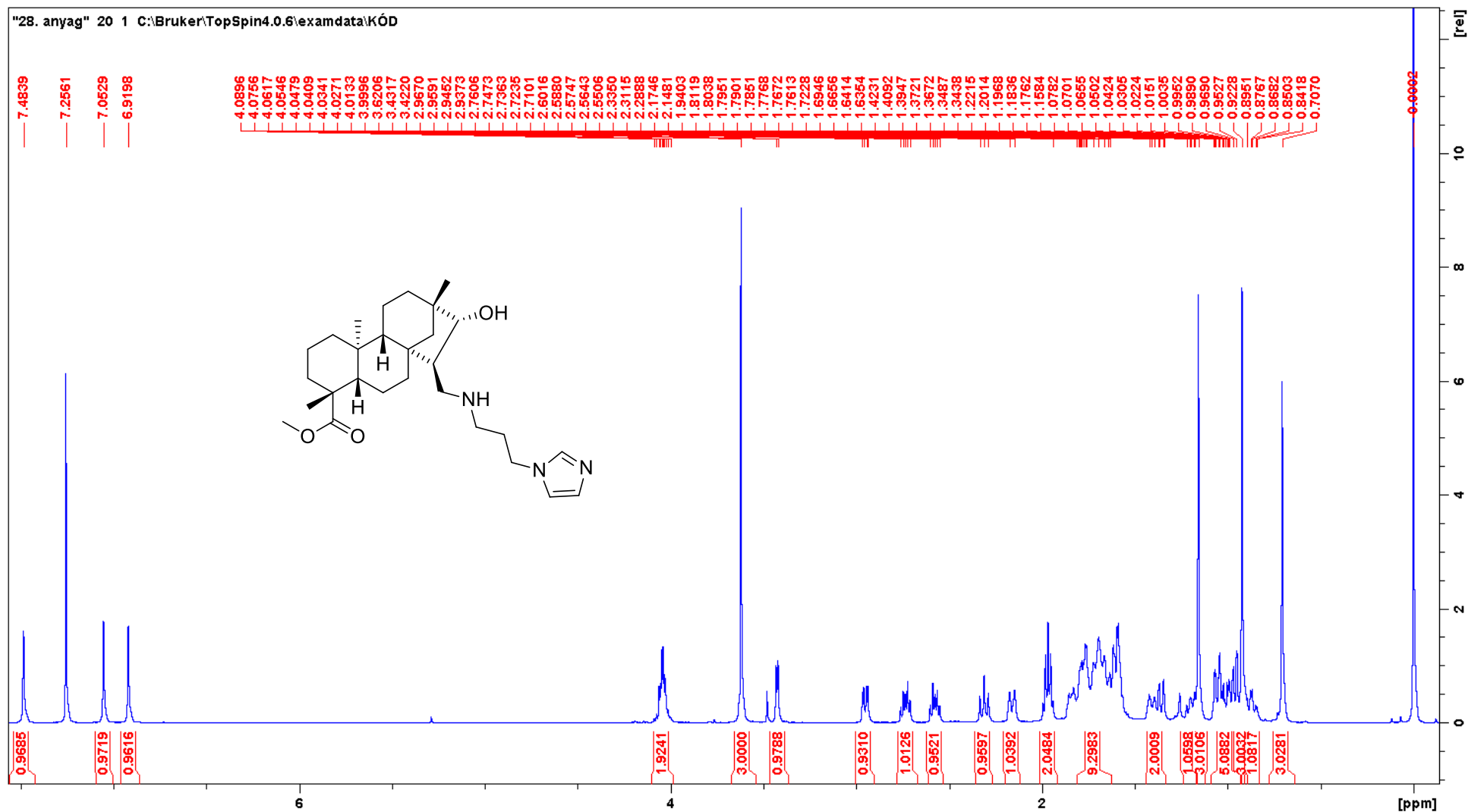


Figure S135

^{13}C -NMR of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**28**):

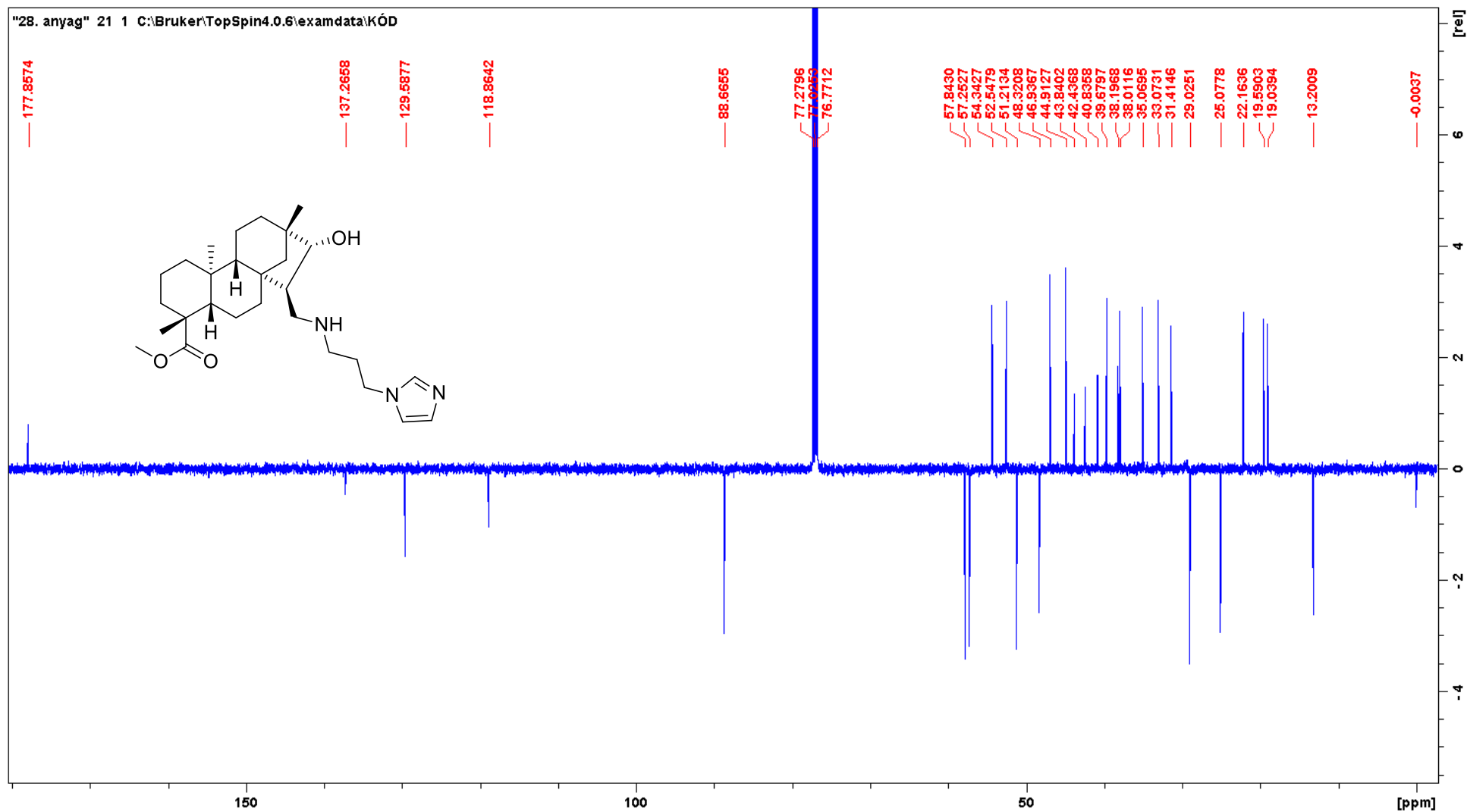


Figure S136

COSY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**28**):

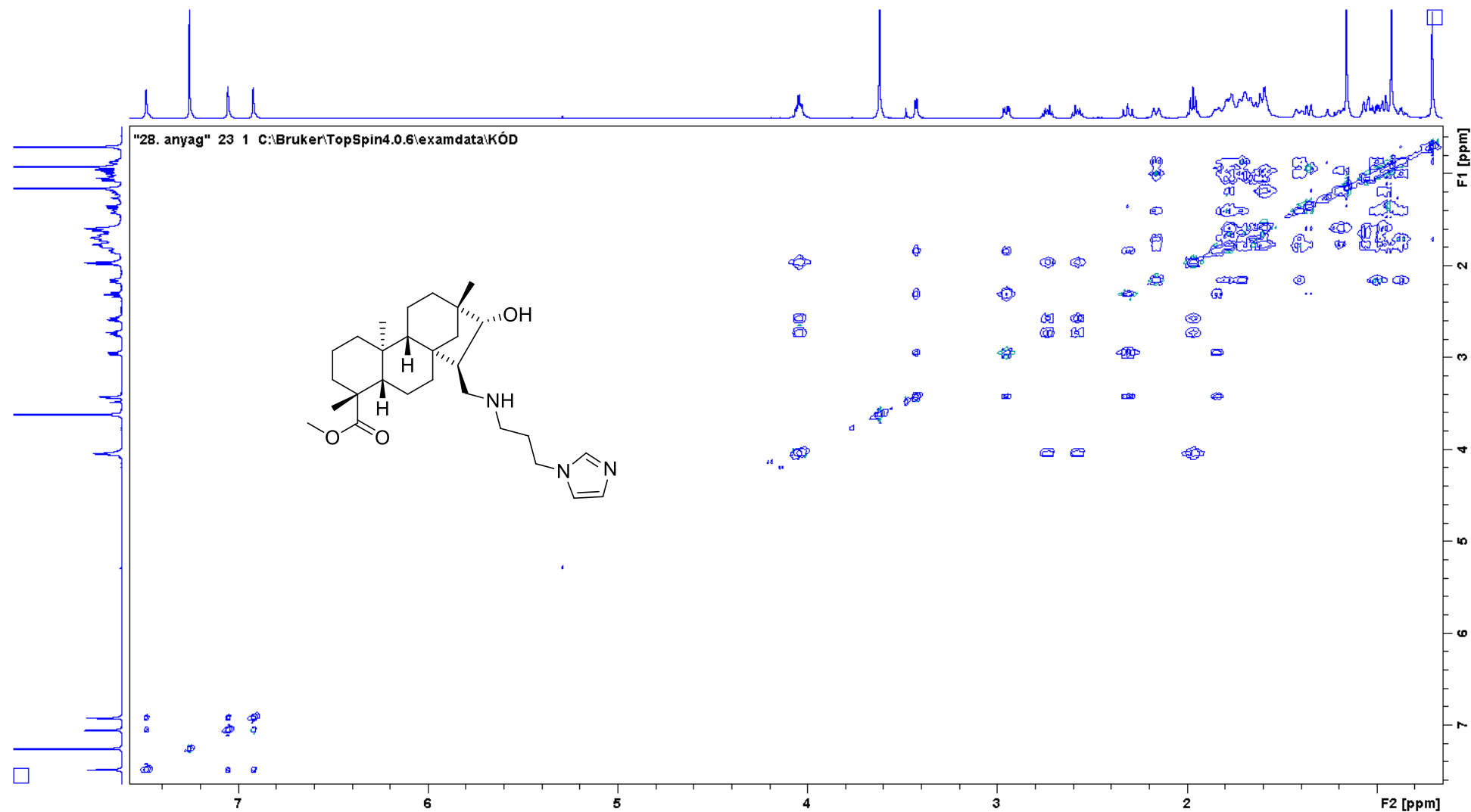
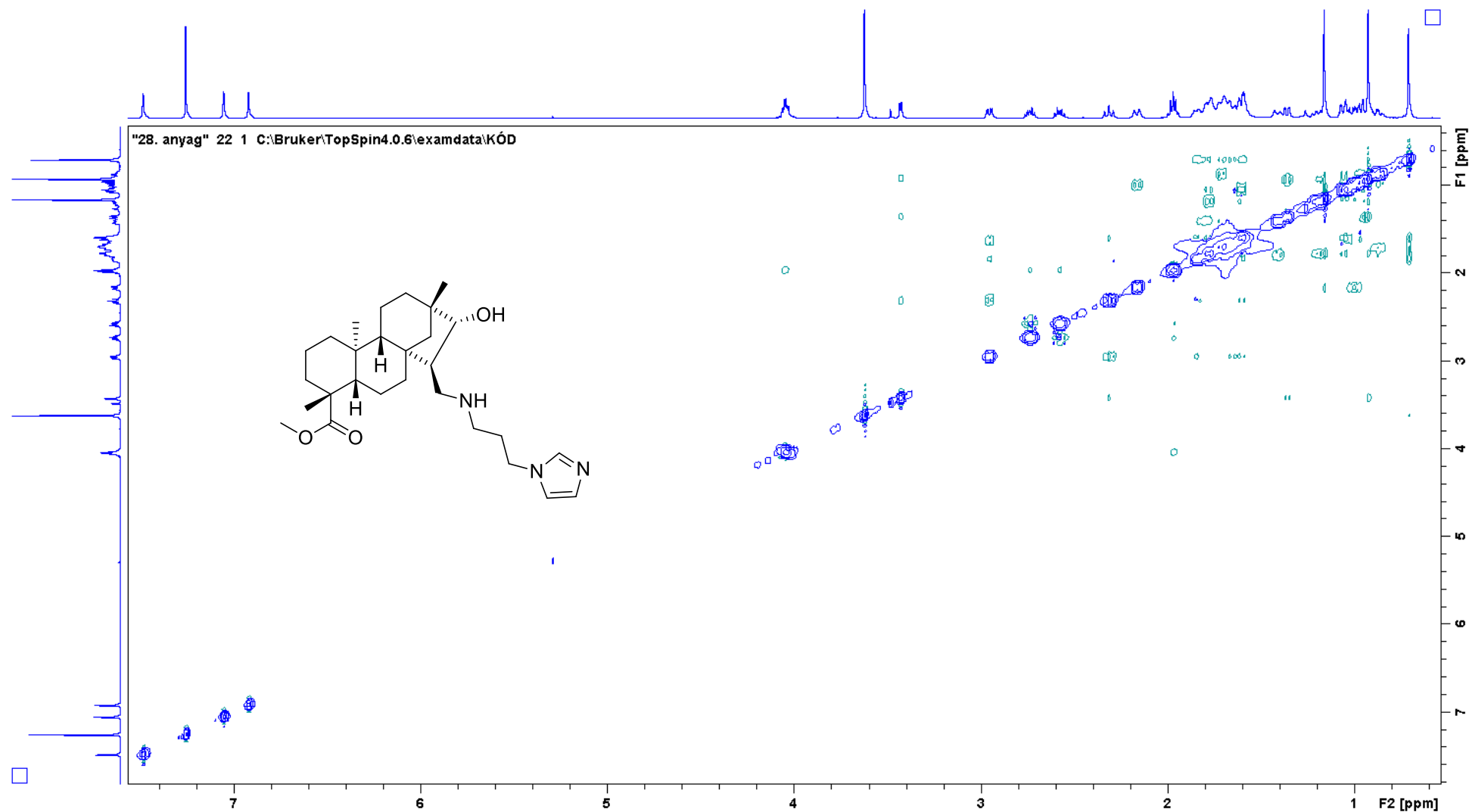


Figure S137

NOESY of compound (4*R*,4*aS*,6*aS*,7*R*,8*R*,9*S*,11*bS*)-Methyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**28**):



HSQC of compound (4*R*,4*a**S*,6*a**S*,7*R*,8*R*,9*S*,11*b**S*)-Methyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**28**):



Figure S139

HMBC of compound (4*R*,4*a**S*,6*a**S*,7*R*,8*R*,9*S*,11*b**S*)-Methyl 7-(((3-(1*H*-imidazol-1-yl)propyl)amino)methyl)-8-hydroxy-4,9,11*b*-trimethyltetradecahydro-6*a*,9-methanocyclohepta[*a*]naphthalene-4-carboxylate (**28**):

