

Supplementary Materials:

Isolation and Biological Activity of Iezoside and Iezoside B, SERCA Inhibitors from Floridian Marine Cyanobacteria

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Figure S1. ^1H NMR of iezoside (1) in $\text{DMSO}-d_6$.

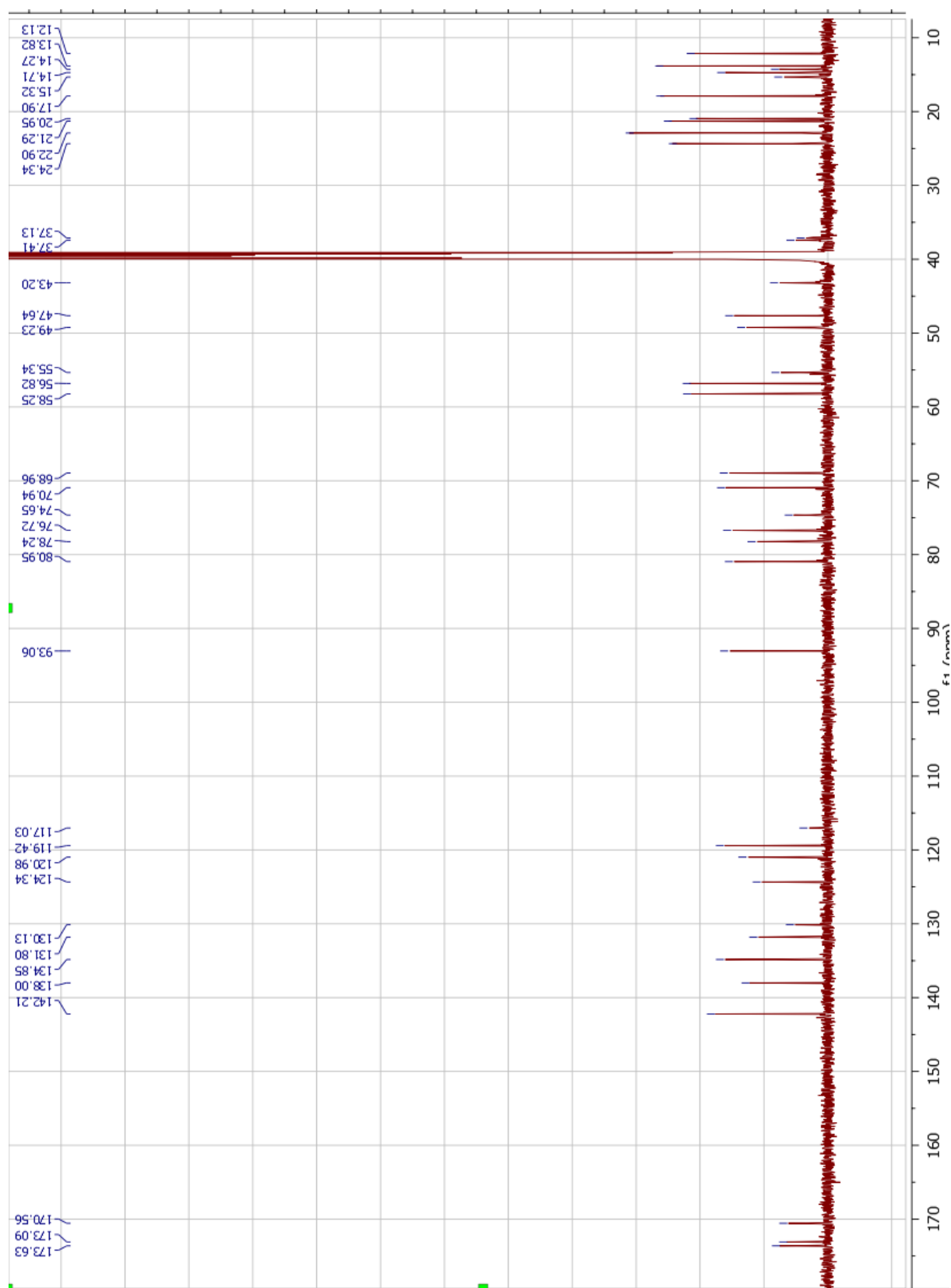


Figure S2. ¹³C NMR of iezoside (1) in DMSO-*d*₆.

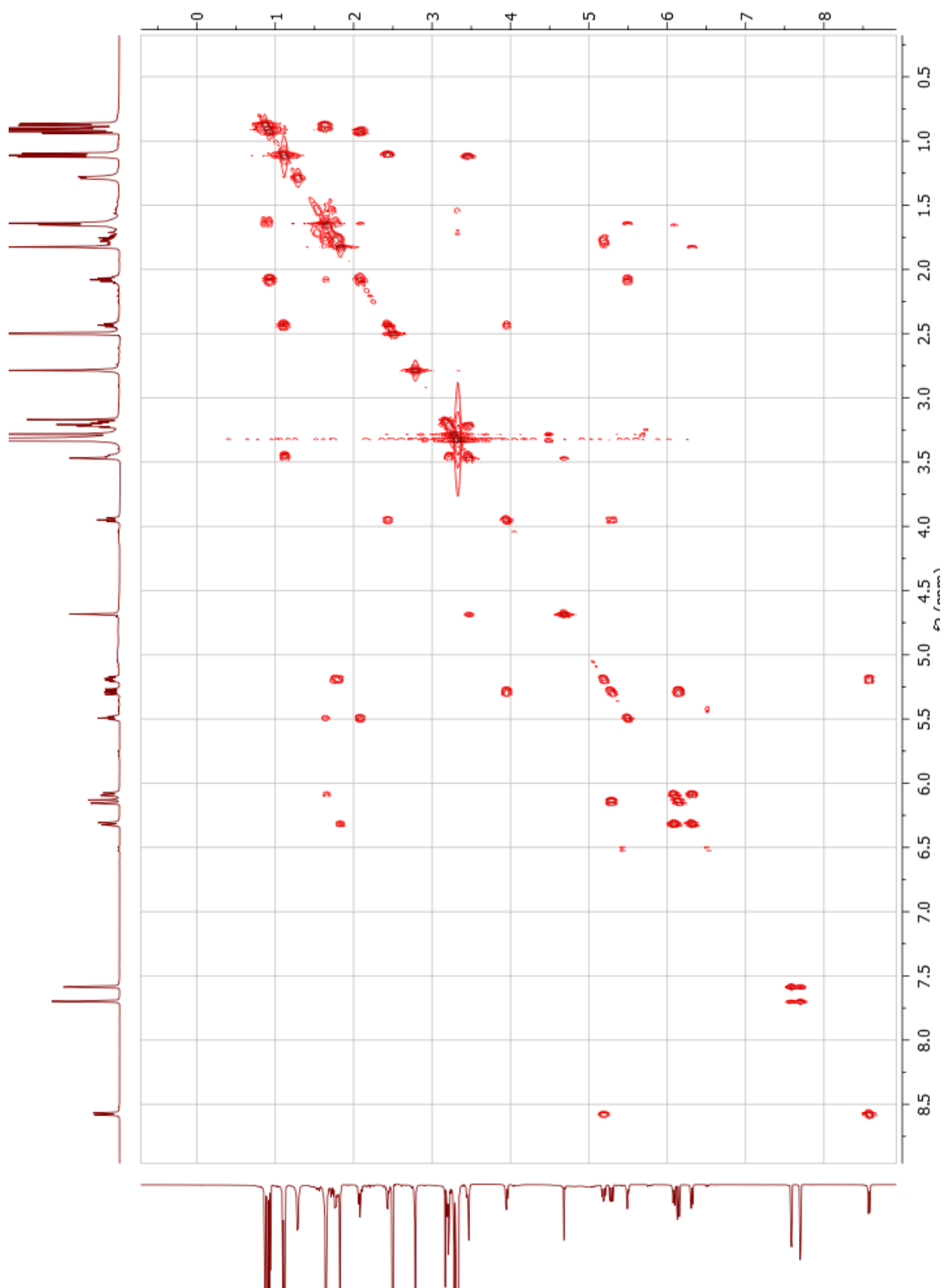


Figure S3. COSY NMR of iezoside (**1**) in DMSO- d_6 .

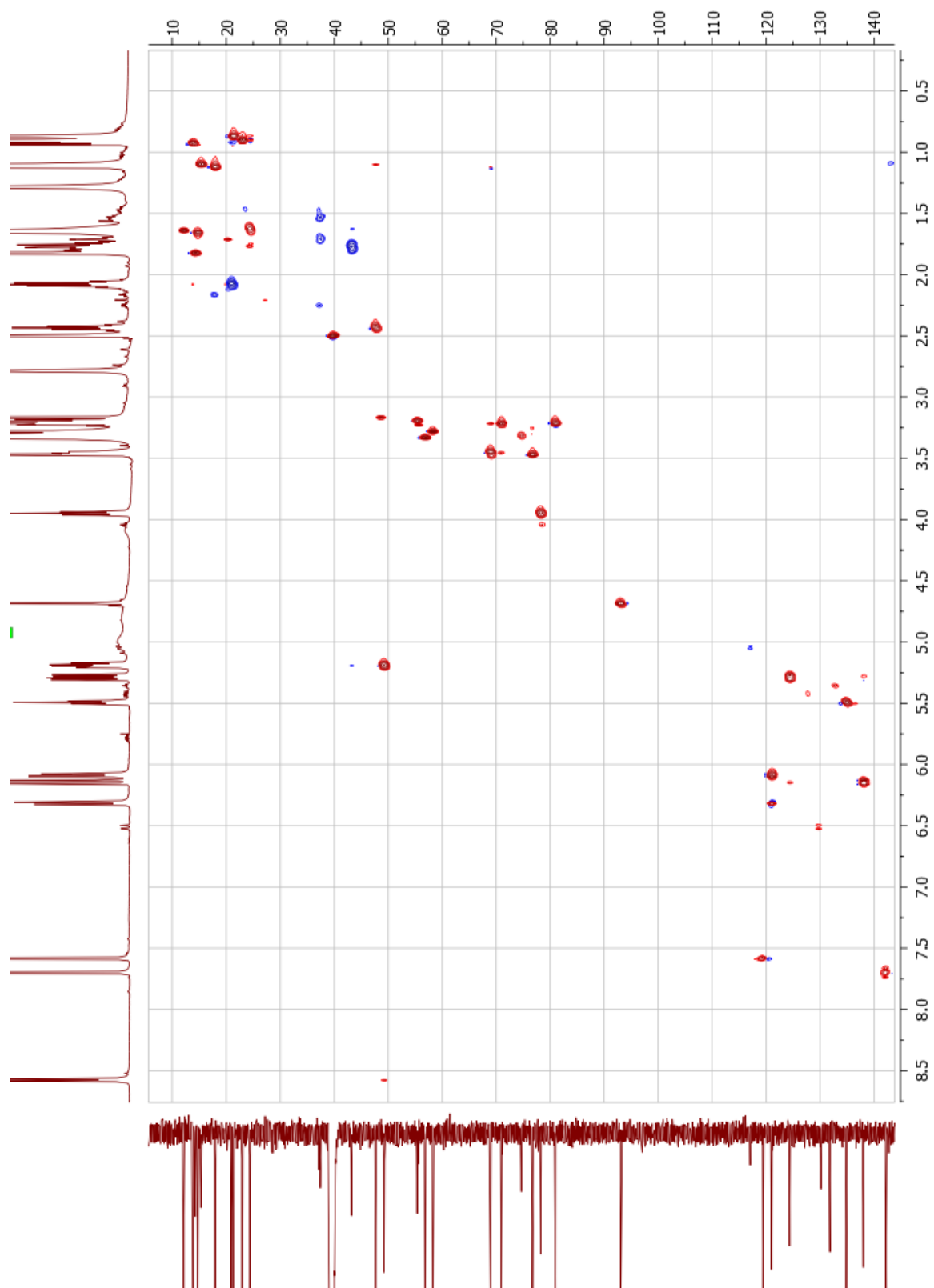


Figure S4. HSQC of iezoside (**1**) in DMSO-*d*₆.

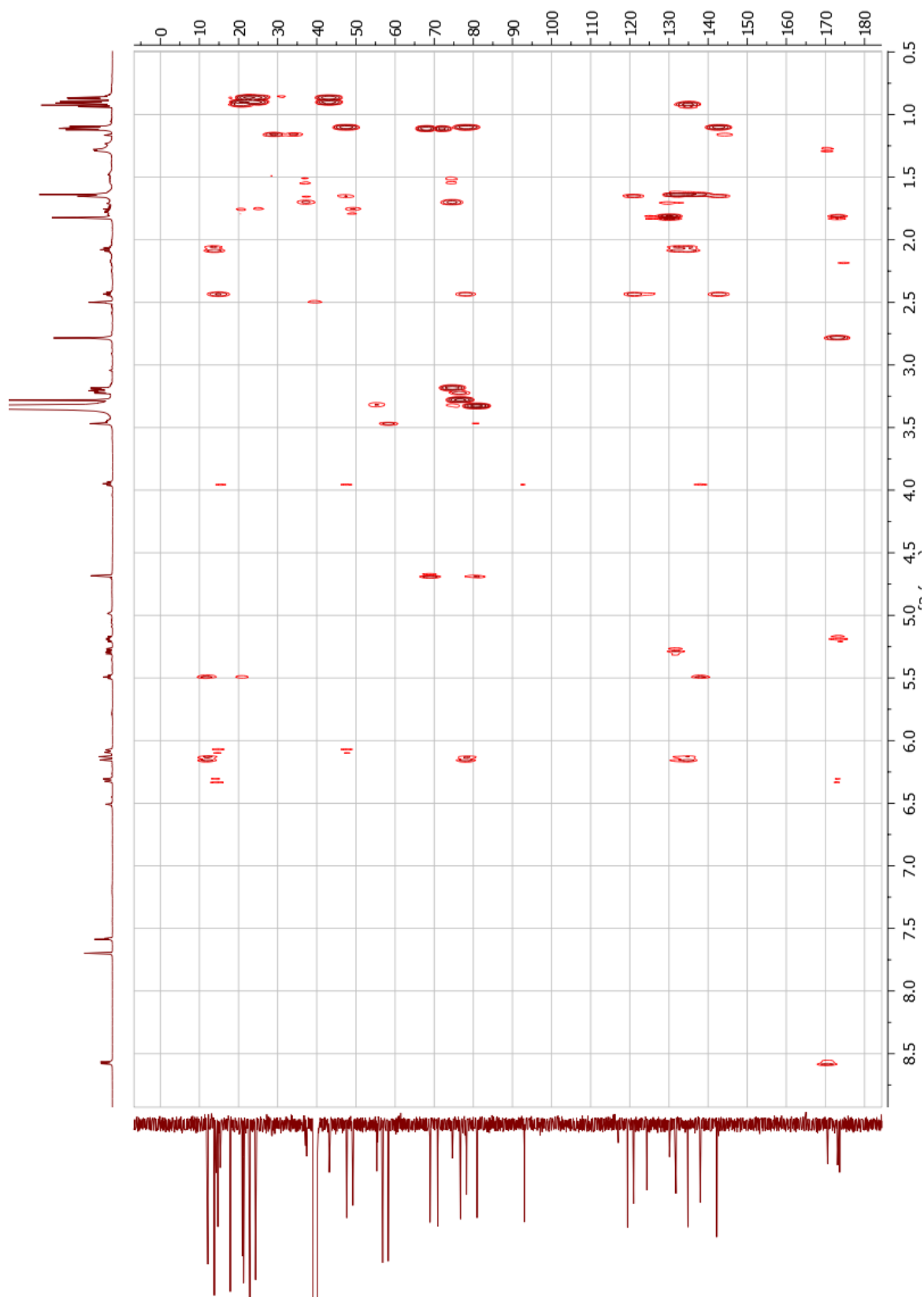


Figure S5. HMBC of iezoside (**1**) in DMSO- d_6 .

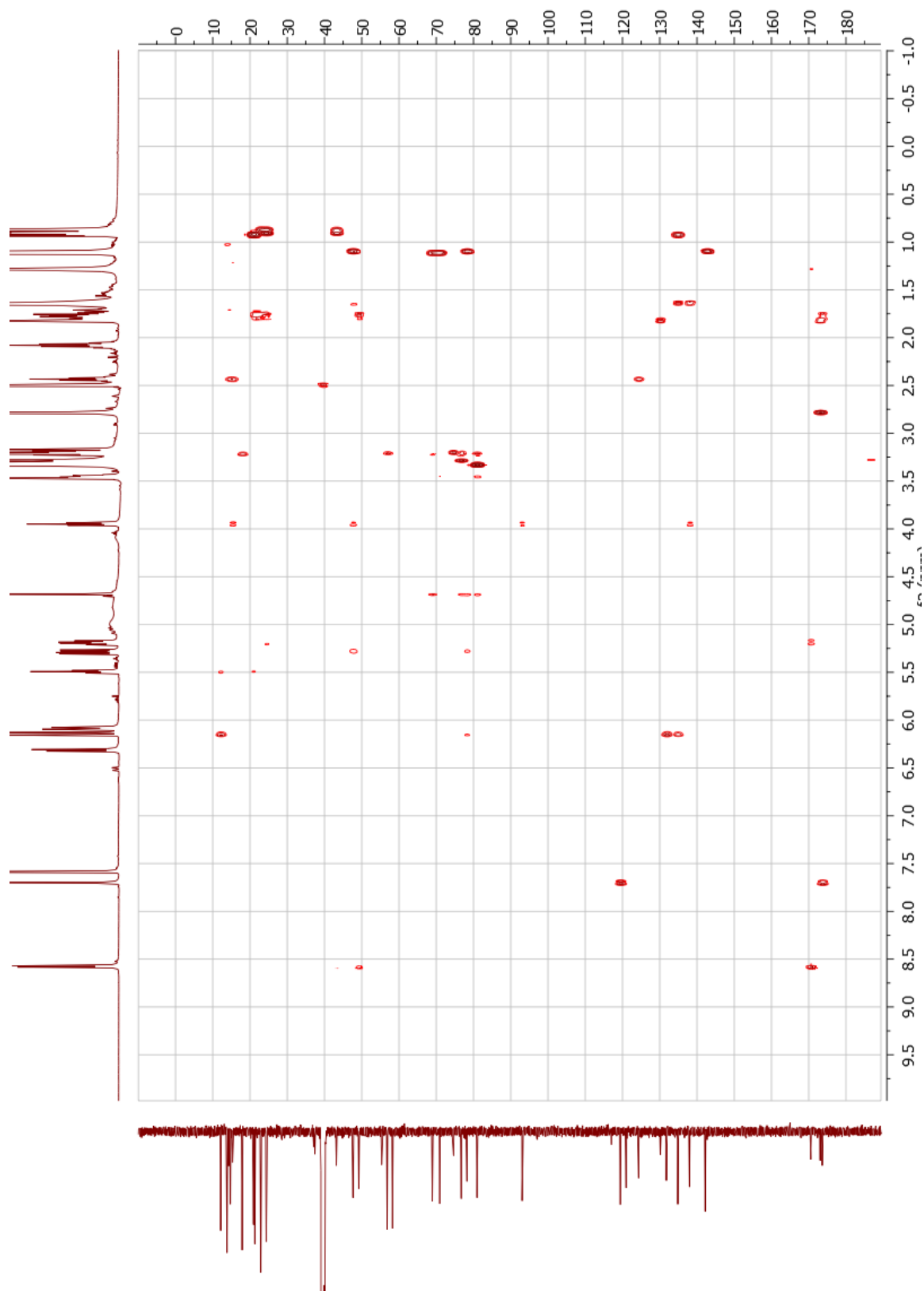


Figure S6. 3Hz HMBC of iezoside (**1**) in DMSO- d_6 .

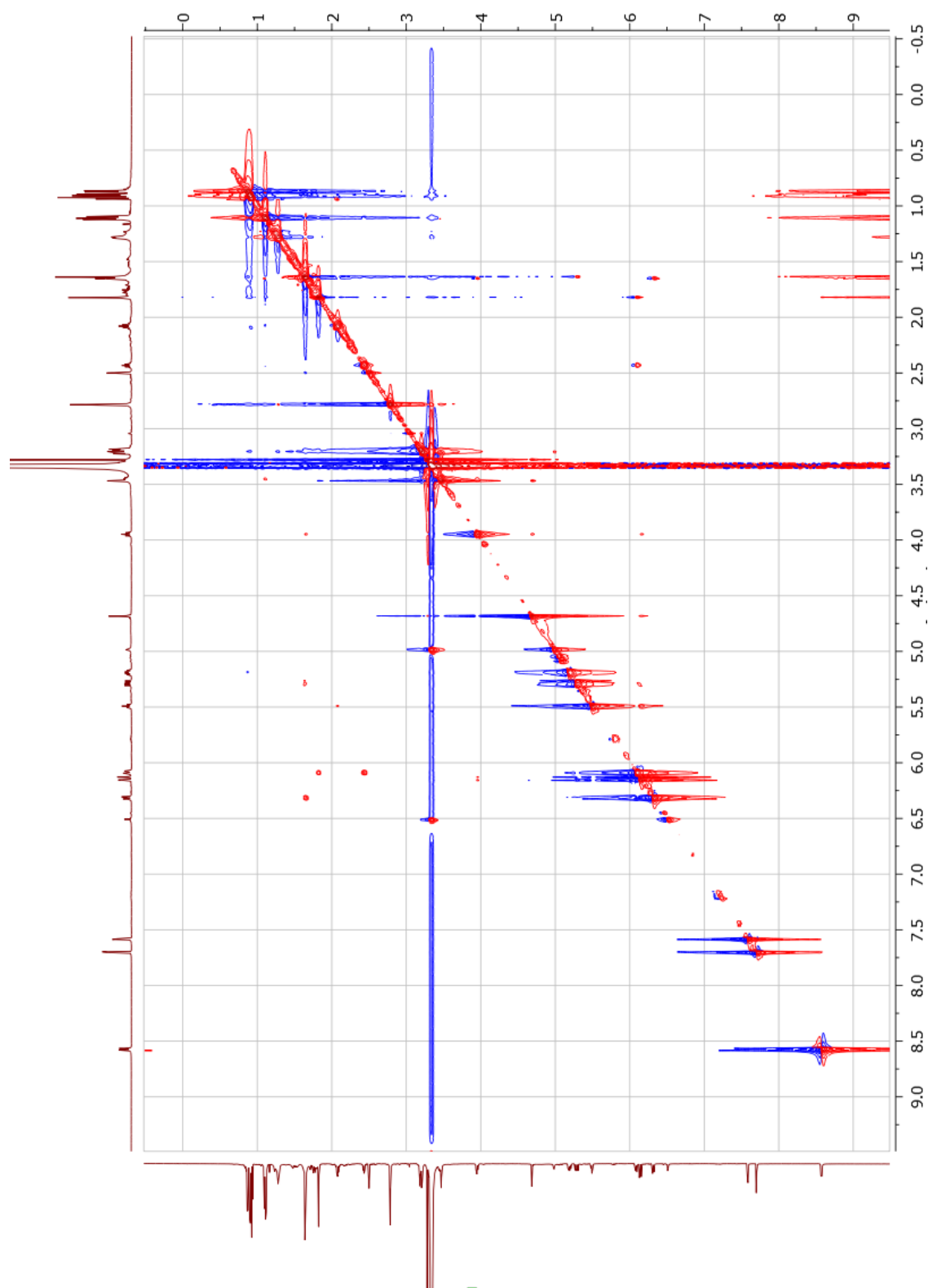


Figure S7. NOESY of iezoside (**1**) in DMSO- d_6 .

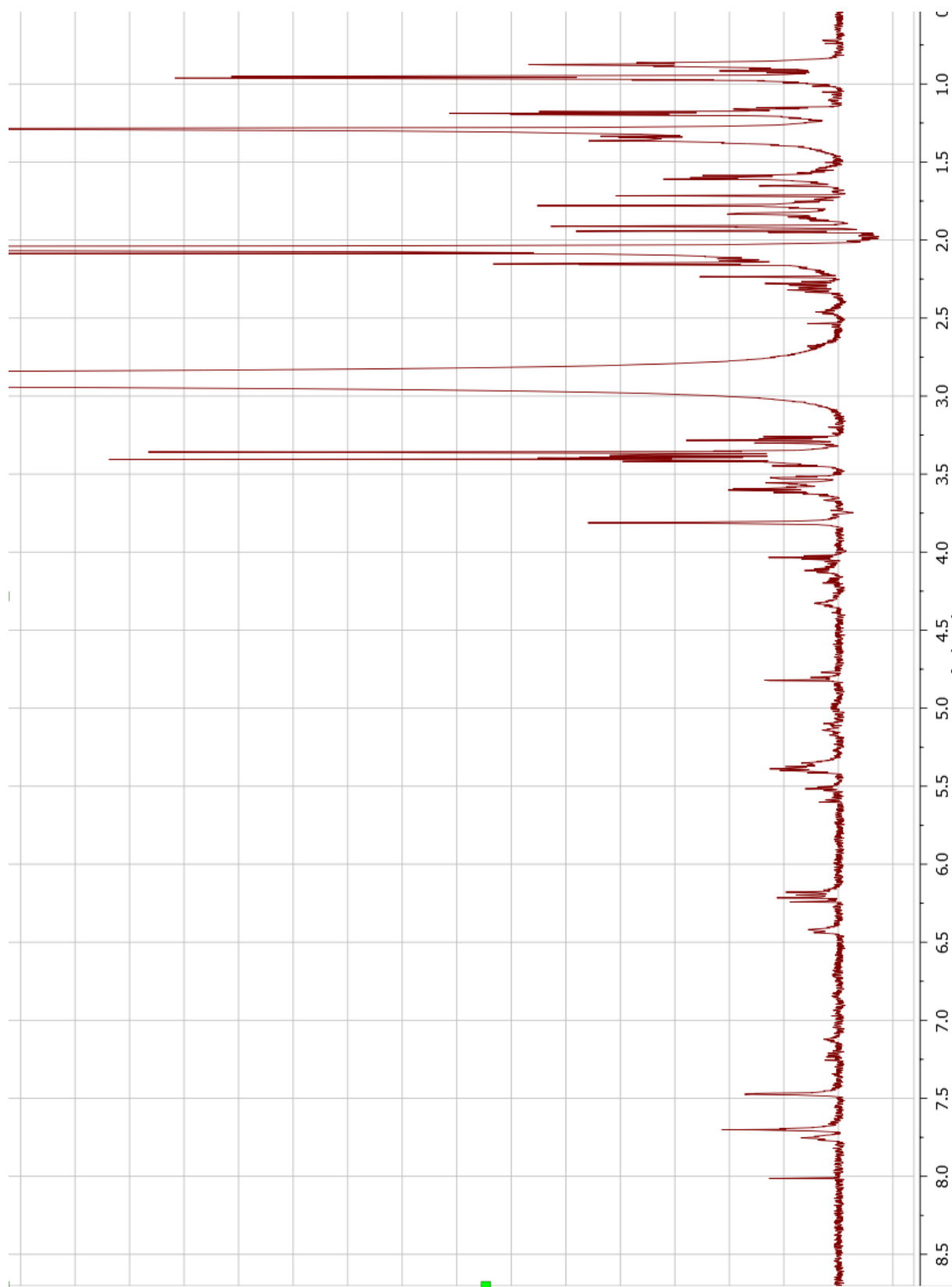


Figure S8. ^1H NMR of iezoside (1) in acetone- d_6 .

Table S1. ¹H NMR comparison of lezoside (**1**) in Acetone-*d*₆

| | Reported ¹ | Experimental |
|----------|---|---|
| Position | δ _H , mult., J (Hz) ^a | δ _H , mult., J (Hz) ^a |
| 1 | 7.70, d (3.2) | 7.70, d (3.3) |
| 2 | 7.48, d (3.2) | 7.47, d (3.3) |
| 3 | | |
| 4 | 5.40, m | 5.40, m |
| 5 | 1.85, m | 1.85, m |
| 6 | 1.77, m | 1.77, m |
| 7 | 0.96, d (6.4) | 0.96, d (6.4) |
| 8 | 0.96, d (6.4) | 0.96, d (6.4) |
| NH | 7.74, d (8.5) | |
| 9 | | |
| 10 | 4.99, br | 4.99, br |
| 11 | 1.35, d (6.7) | 1.35, d (6.1) |
| 12 | 2.86, s | 2.79, s |
| 13 | | |
| 14 | | |
| 15 | 6.43, d (11.3) | 6.43, d (11.6) |
| 16 | 6.19, d (11.3) | 6.19, d (11.8) |
| 17 | | |
| 18 | 2.46, dq (6.5, 6.9) | 2.46, m |
| 19 | 4.12 dd (6.5, 8.6) | 4.12 dd (6.5, 8.7) |
| 20 | 5.40, dd (8.6, 16.0) | 5.40, m |
| 21 | 6.23, d (16.0) | 6.23, d (15.7) |
| 22 | | |
| 23 | 5.52, t (7.7) | 5.52, t (7.6) |
| 24 | 2.14, dq (7.7, 7.5) | 2.14, m |
| 25 | 0.96, t (7.5) | 0.96, m |
| 26 | 1.91, d (0.9) | 1.91, d (1.0) |
| 27 | 1.78, s | 1.78, s |
| 28 | 1.18, d (6.9) | 1.18, d (6.8) |
| 29 | 1.72, s | 1.72, s |
| 30 | 4.82, d (1.7) | 4.82, d (1.8) |
| 31 | 3.56, dd (1.7, 2.9) | 3.60, m |
| 32 | 3.37, dd (2.9, 8.8) | 3.37, m |
| 33 | 3.44, dd (8.8, 9.3) | 3.45, m |
| 34 | 3.60, qd (6.3, 9.3) | 3.60, m |
| 35 | 1.19, d (6.3) | 1.19, d (6.2) |
| 36 | 3.36, s | 3.36, s |
| 37 | 3.40, s | 3.40, s |

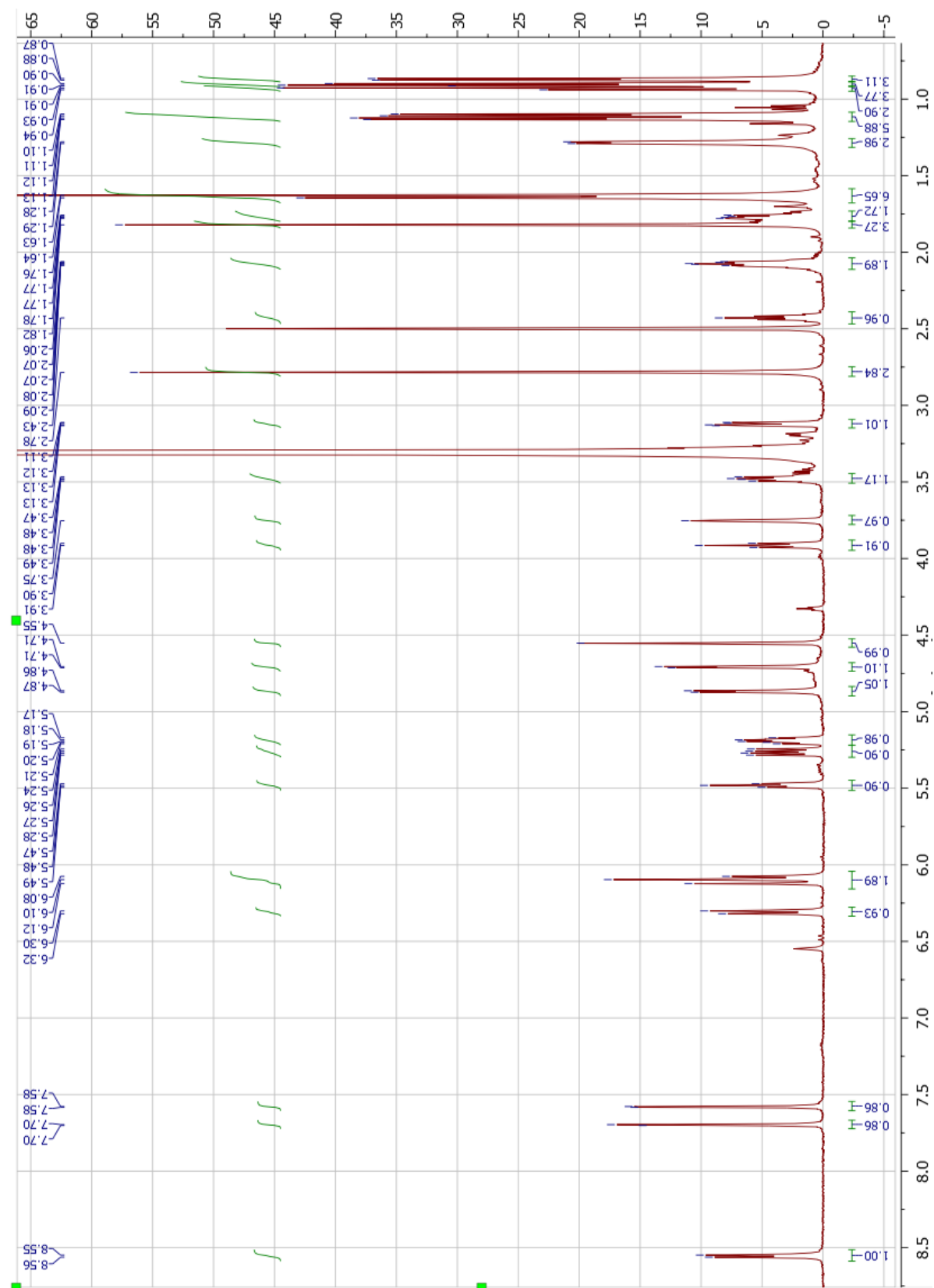


Figure S9. ^1H NMR of iezoside B (**2**) in $\text{DMSO}-d_6$.

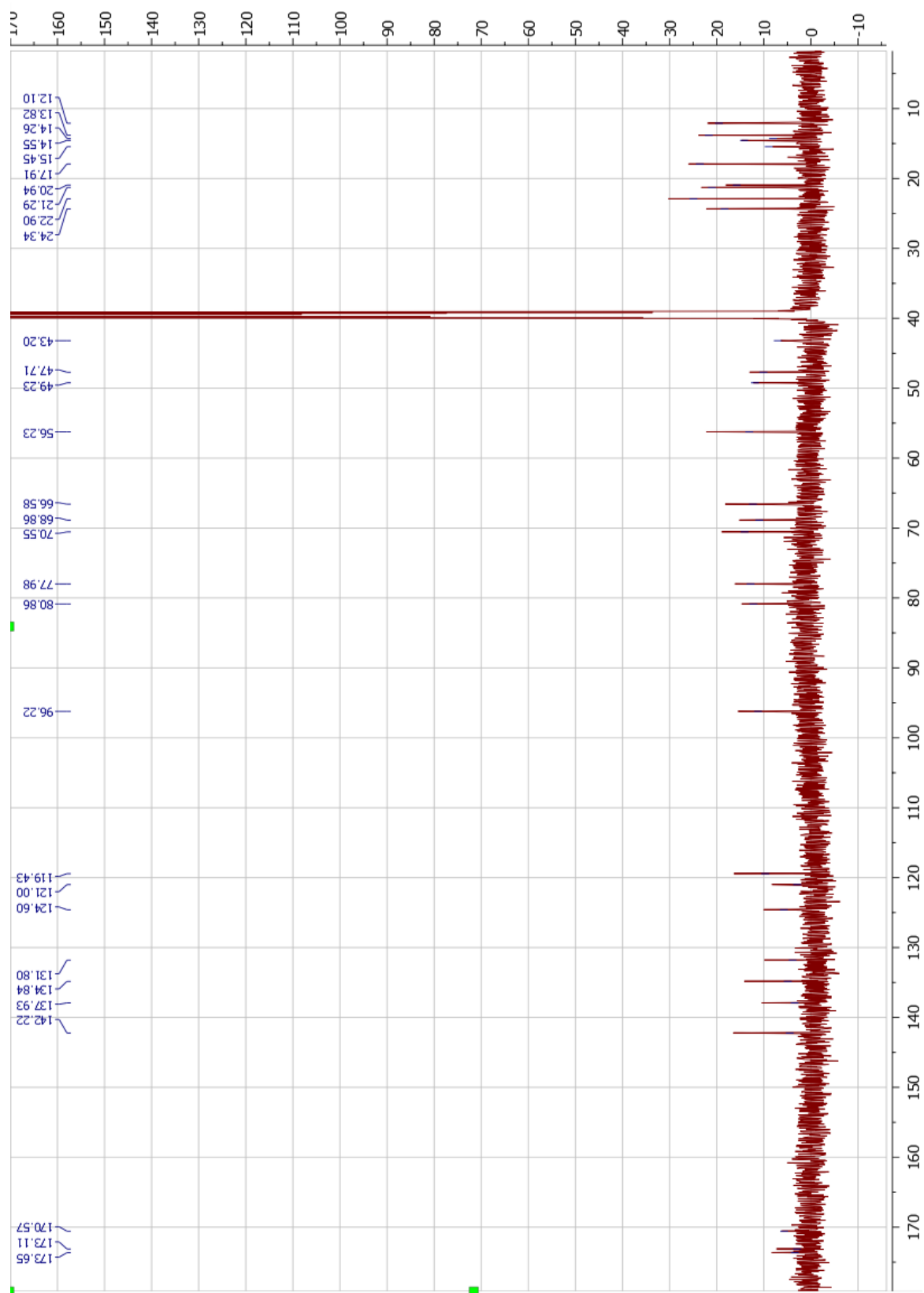


Figure S10. ¹³C NMR of iezoside B (2) in DMSO-*d*₆.

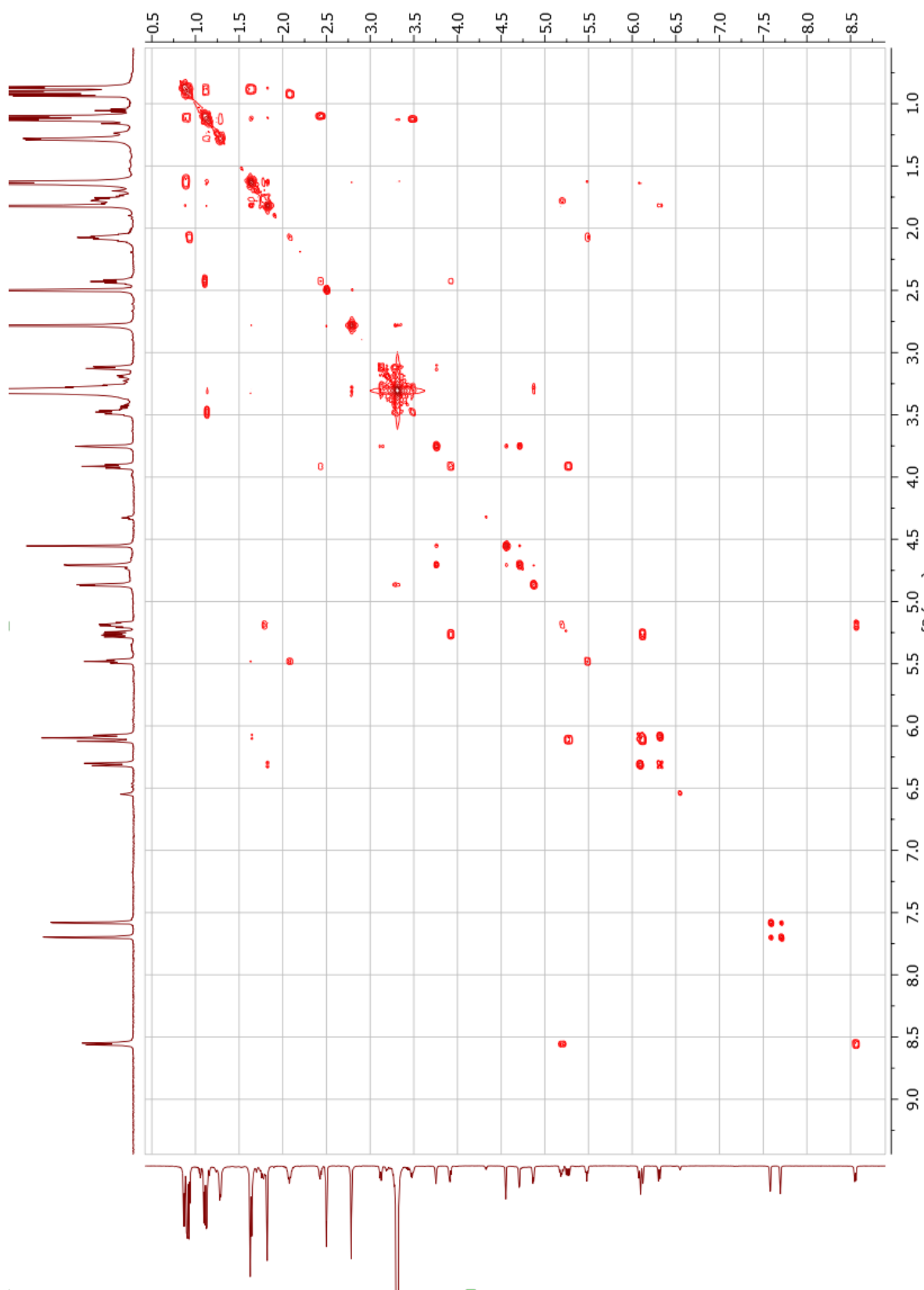


Figure S11. COSY of uezoside B (2) in DMSO- d_6 .

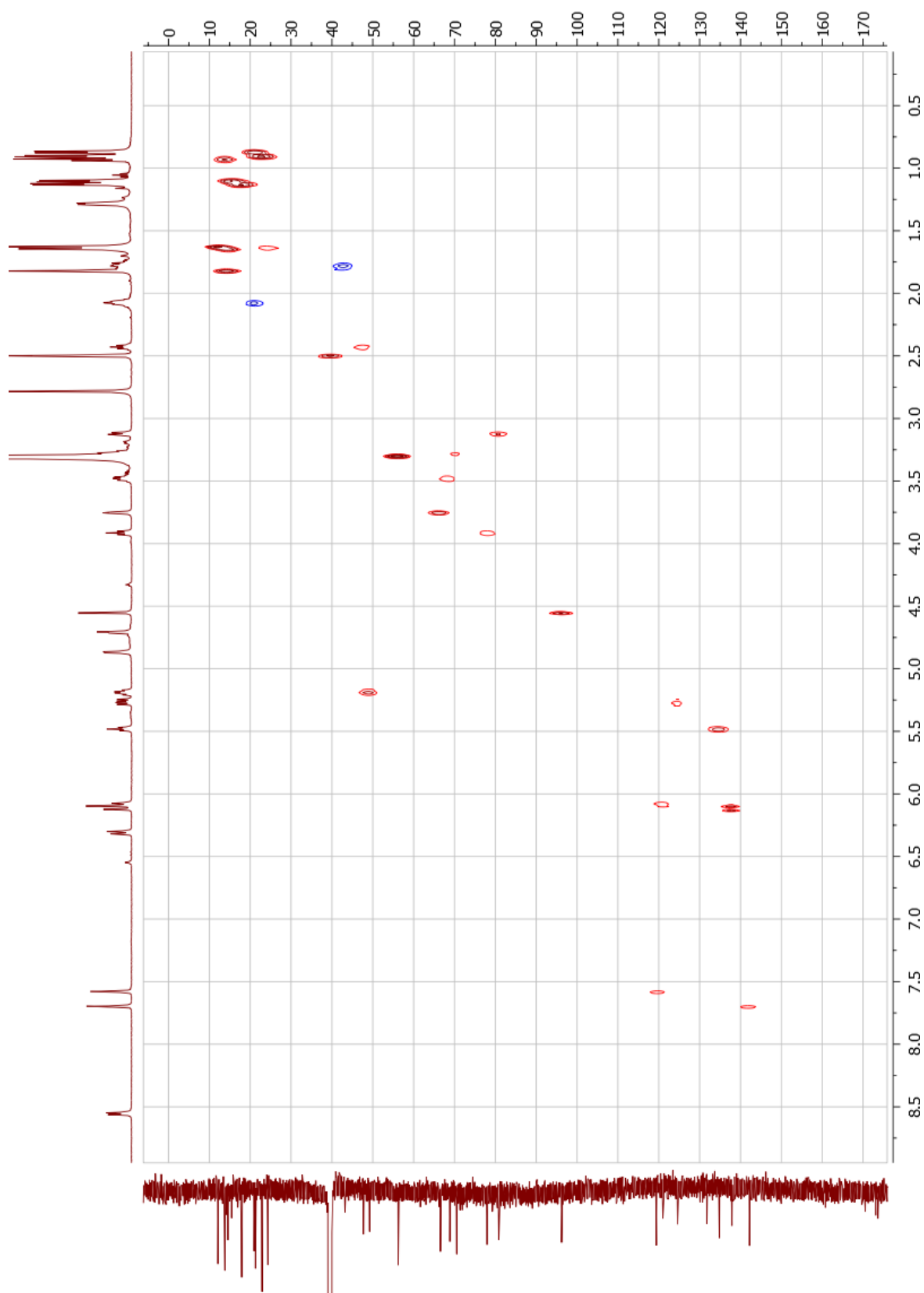


Figure S12. HSQC of iezoside B (**2**) in DMSO- d_6 .

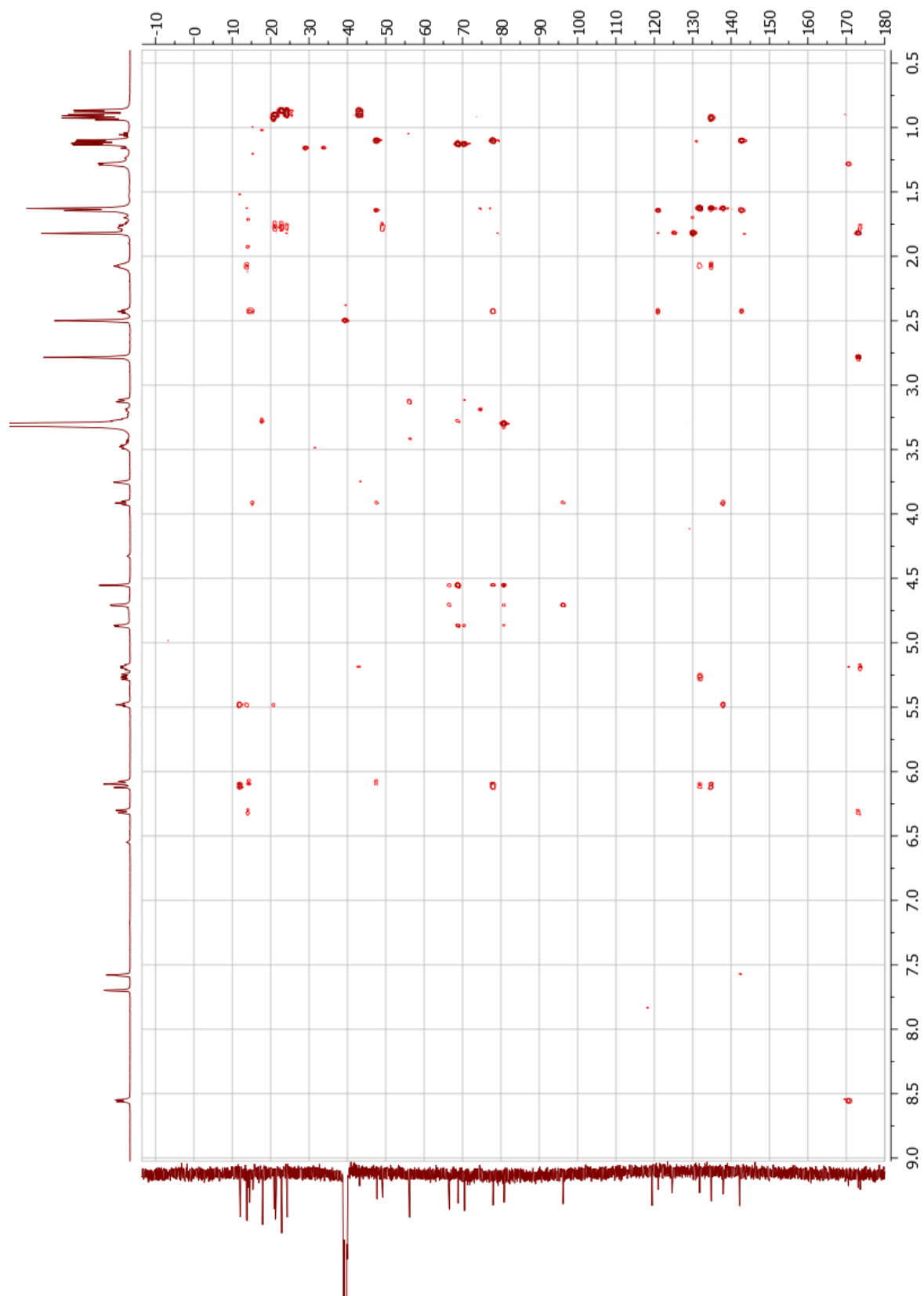


Figure S13. HMBC of iezoside B (**2**) in DMSO- d_6 .

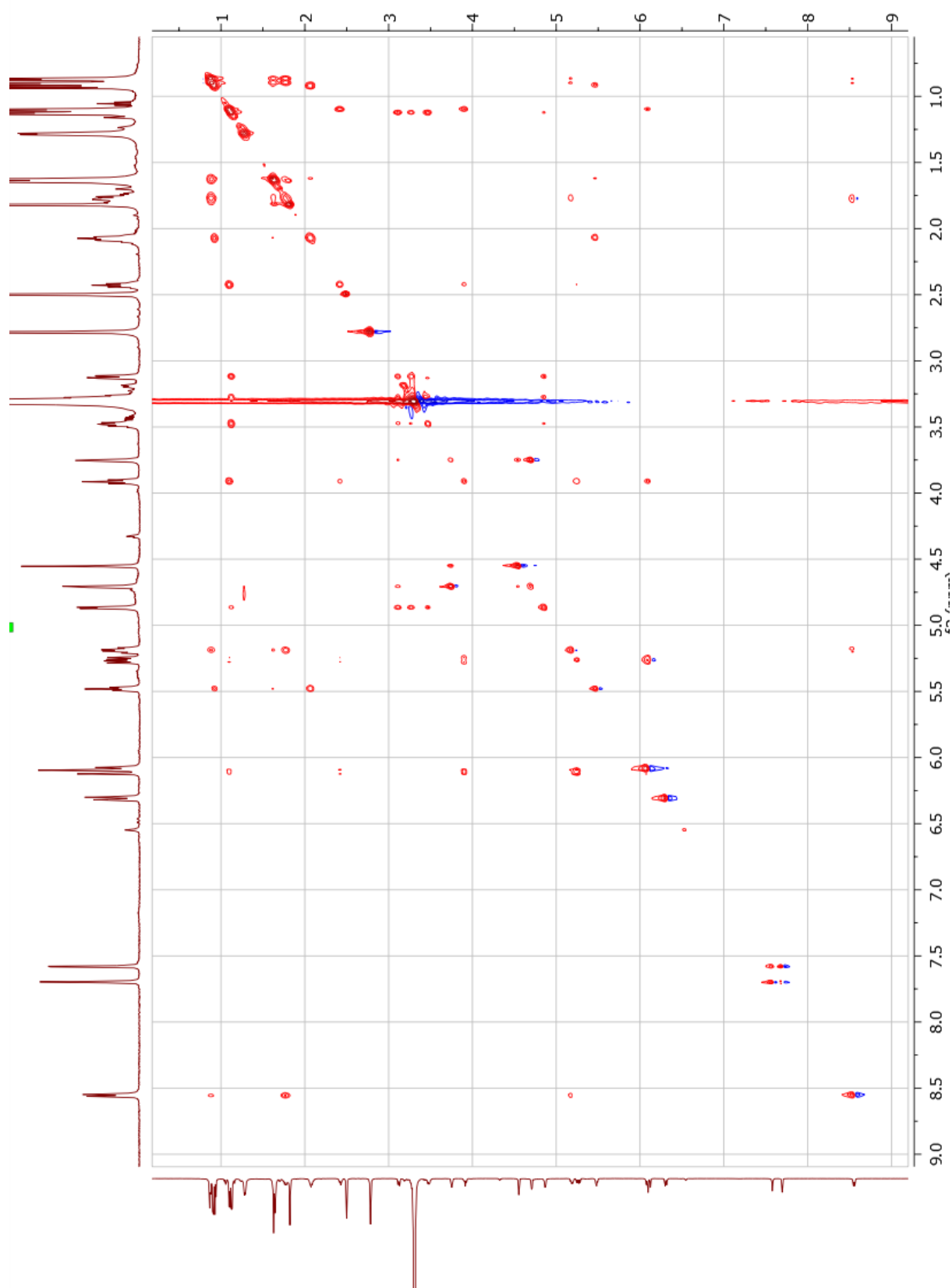


Figure S14. TOCSY of iezoside B (2) in DMSO- d_6 .



Figure S15. NOESY of iezoside B (**2**) in DMSO- d_6 .

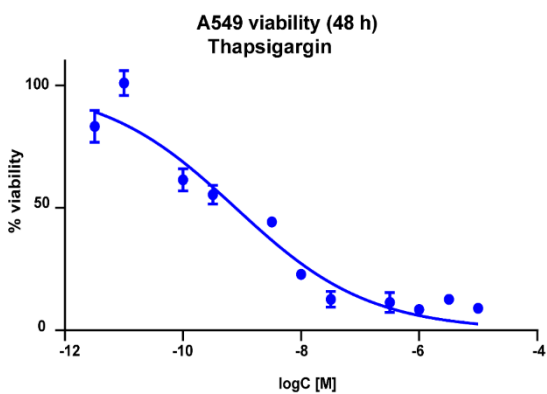


Figure S16. Dose-response curve (cell viability) for thapsigargin in A549 cells at 48 h.

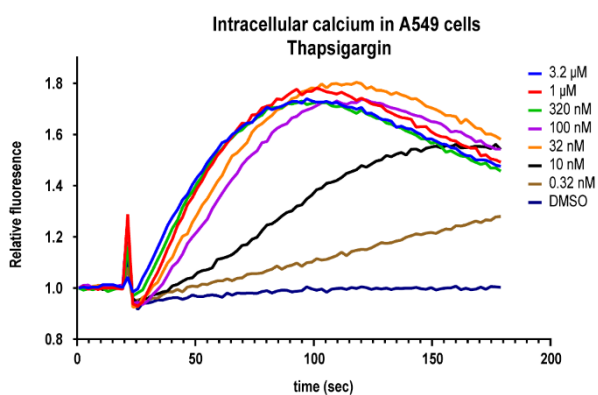


Figure S17. Effect of thapsigargin on cytosolic calcium in A549 cells.

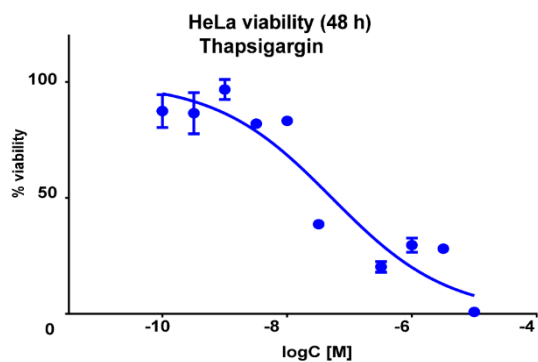


Figure S18. Dose-response curve (cell viability) for thapsigargin in HeLa cells at 48 h.

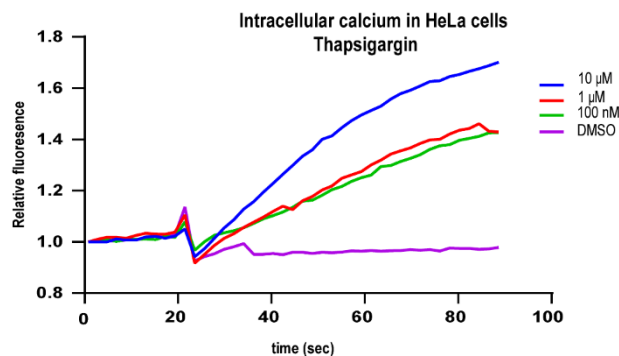


Figure S19. Effect of thapsigargin on cytosolic calcium in HeLa cells.

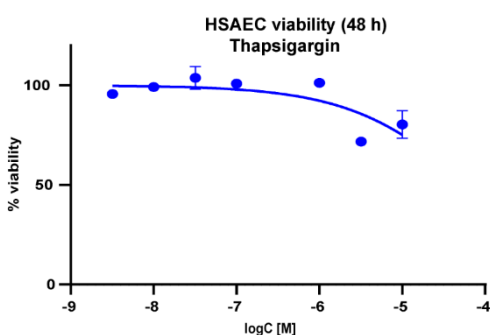


Figure S20. Dose-response curve (cell viability) for thapsigargin in HSAEC cells at 48 h.

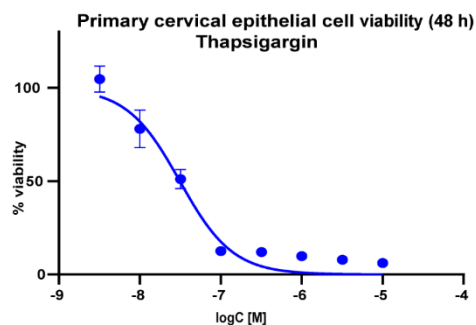


Figure S21. Dose-response curve (cell viability) for thapsigargin in primary cervical epithelial cells at 48 h.

Reference

- (1) Kurisawa, N.; Iwasaki, A.; Teranuma, K.; Dan, S.; Toyoshima, C.; Hashimoto, M.; Suenaga, K. Structural Determination, Total Synthesis, and Biological Activity of lezoside, a Highly Potent Ca^{2+} -ATPase Inhibitor from the Marine Cyanobacterium *Leptochromothrix valapuliae*. *J. Am. Chem. Soc.* **2022**, *144*, 11019–11032. <https://doi.org/10.1021/jacs.2c04459>.