## Supporting Information

***Rec. Nat. Prod*. 13:6 (2019) 462-467**

# Chemical Compounds from the Twigs and Leaves of *Caesalpinia cucullata* Roxb

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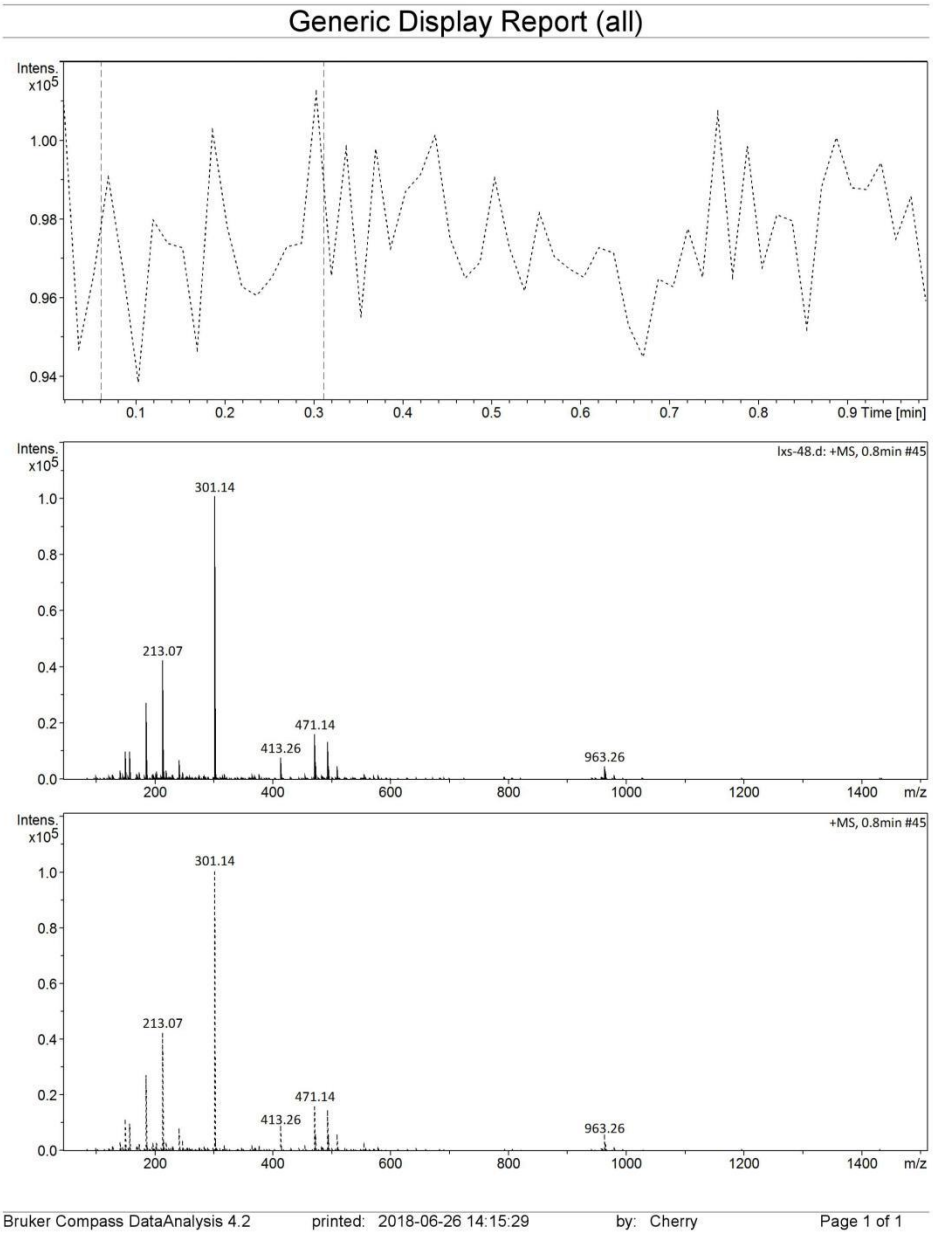



**Figure S1:** MS Spectrum of Compound **1**

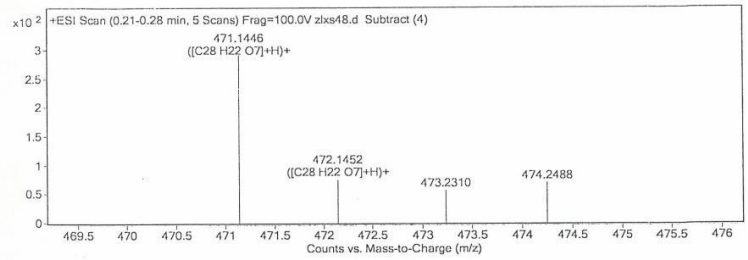
## Qualitative Analysis Report

| | | | |
|---|---|---|---|
| Data Filename | zlxs48.d | Sample Name | zlxs48 |
| Sample Type | Sample | Position | P1-E9 |
| Instrument Name | Instrument 1 | User Name | |
| Acq Method | s.m | Acquired Time | 12/28/2018 2:34:24 PM |
| IRM Calibration Status | Success | DA Method | Default.m |
| Comment | | | |

| | |
|---|---|
| Sample Group | Info. |
| Acquisition SW Version | 6200 series TOF/6500 series Q-TOF B.05.01 (B5125.2) |

### User Spectra

| Fragmentor Voltage | Collision Energy | Ionization Mode |
|---|---|---|
| 100 | 0 | ESI |




Peak List

| m/z | z | Abund | Formula | Ion |
|---|---|---|---|---|
| 60.081 | 1 | 792.74 | | |
| 88.1121 | | 325.79 | | |
| 102.1276 | 1 | 627.75 | | |
| 116.1065 | | 205.63 | | |
| 223.096 | | 215.15 | | |
| 260.1937 | | 281.68 | | |
| 300.158 | | 266.13 | | |
| 314.3424 | | 311.22 | | |
| 374.1328 | | 310.33 | | |
| 471.1446 | 1 | 291.93 | C28 H22 O7 | (M+H)+ |

Formula Calculator Element Limits

| Element | Min | Max |
|---|---|---|
| C | 3 | 60 |
| H | 0 | 120 |
| O | 0 | 30 |
| N | 0 | 3 |

Formula Calculator Results

| Formula | CalculatedMass | CalculatedMz | Mz | Diff. (mDa) | Diff. (ppm) | DBE |
|---|---|---|---|---|---|---|
| C28 H22 O7 | 470.1366 | 471.1438 | 471.1446 | -0.80 | -1.70 | 18.0000 |

--- End Of Report ---



**Figure S2:** HRESI-MS Spectrum of Compound **1**

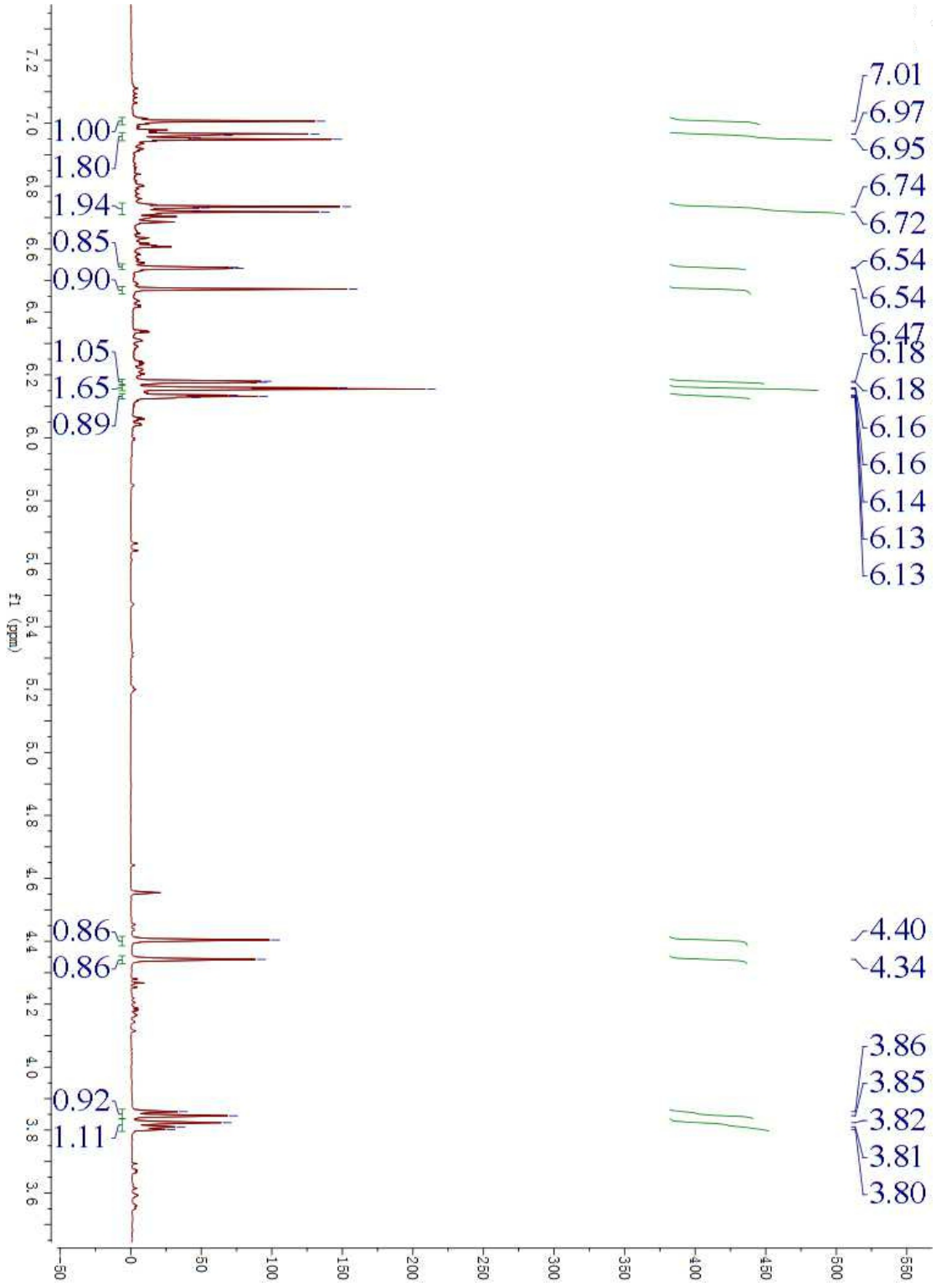



**Figure S3:** [1]H-NMR Spectrum of Compound **1**

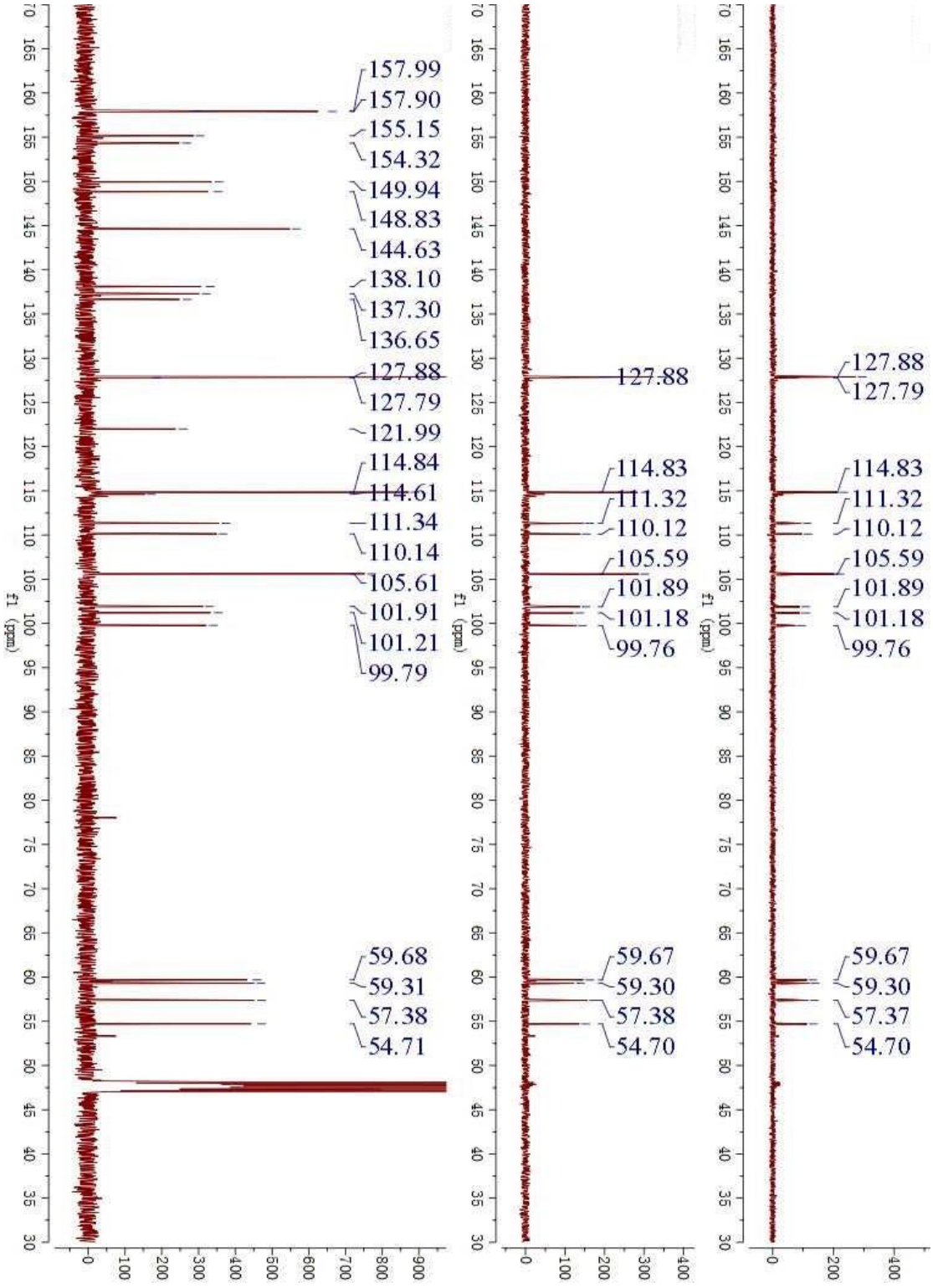



**Figure S4:** $^{13}$C-NMR and DEPT Spectrum of Compound **1**

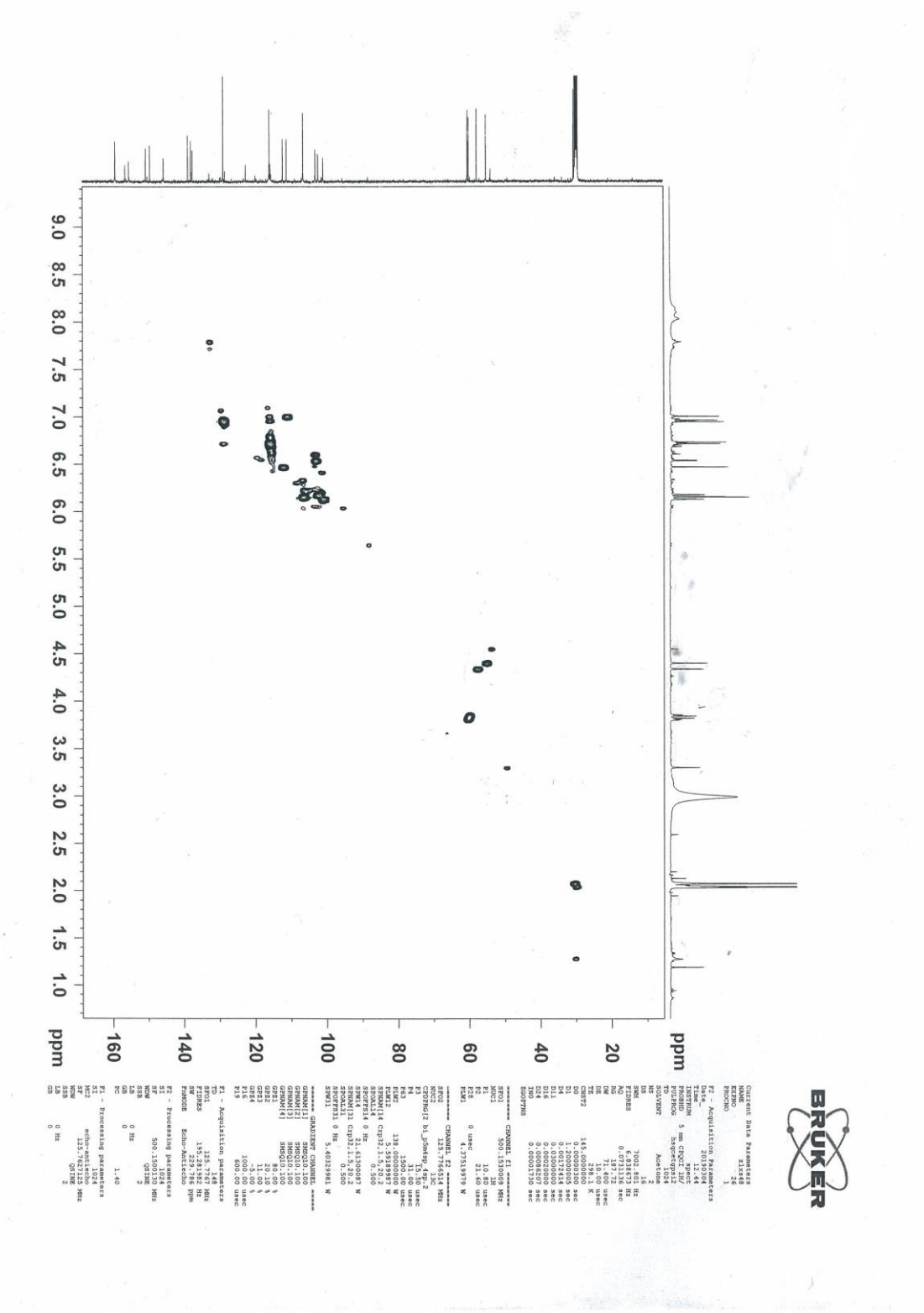


**Figure S5:** HSQC Spectrum of Compound **1**

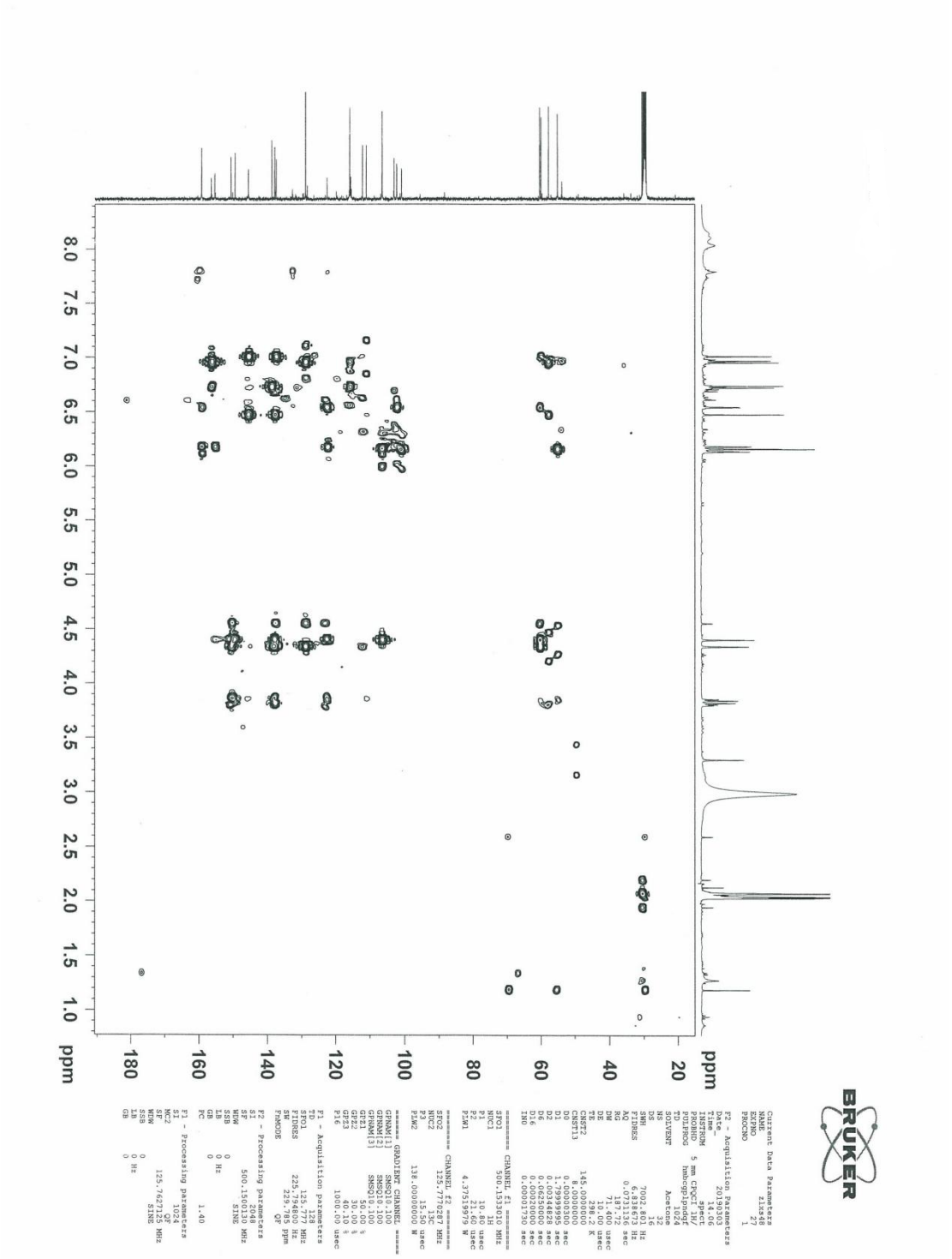



**Figure S6:** HMBC Spectrum of Compound **1**

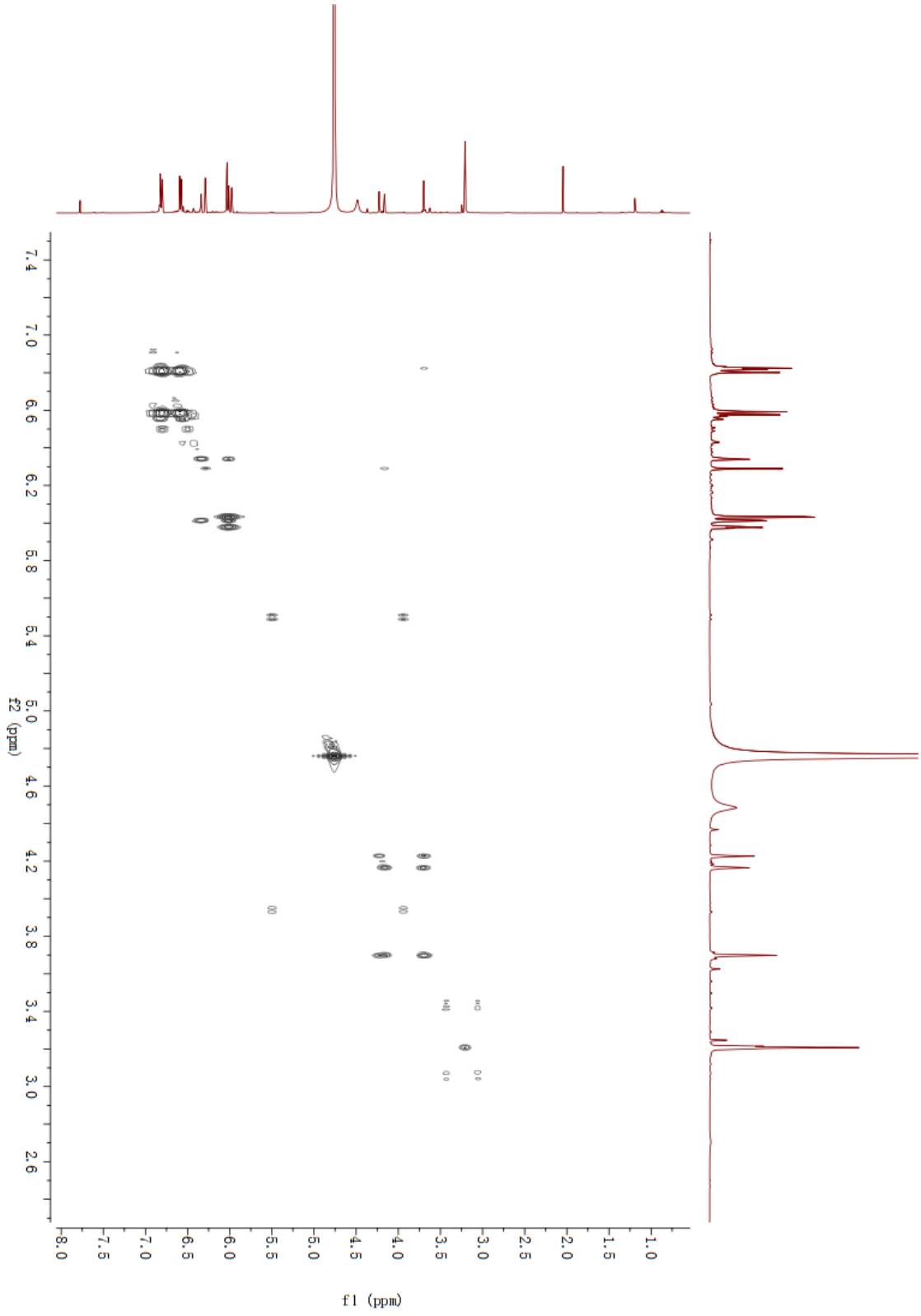



**Figure S7:** $^{1}$H-$^{1}$H COSY Spectrum of Compound **1**

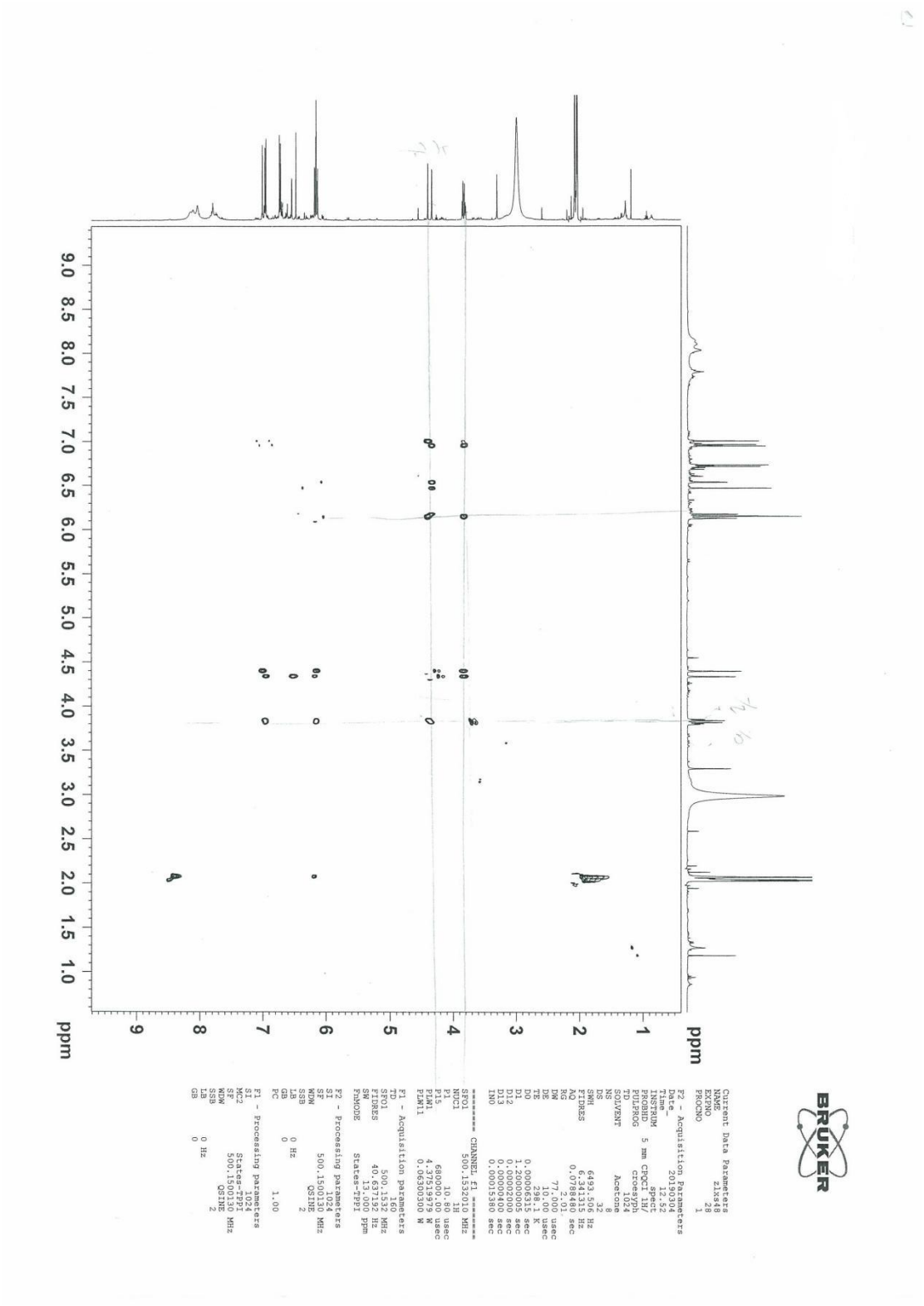



**Figure S8:** ROESY Spectrum of Compound **1**

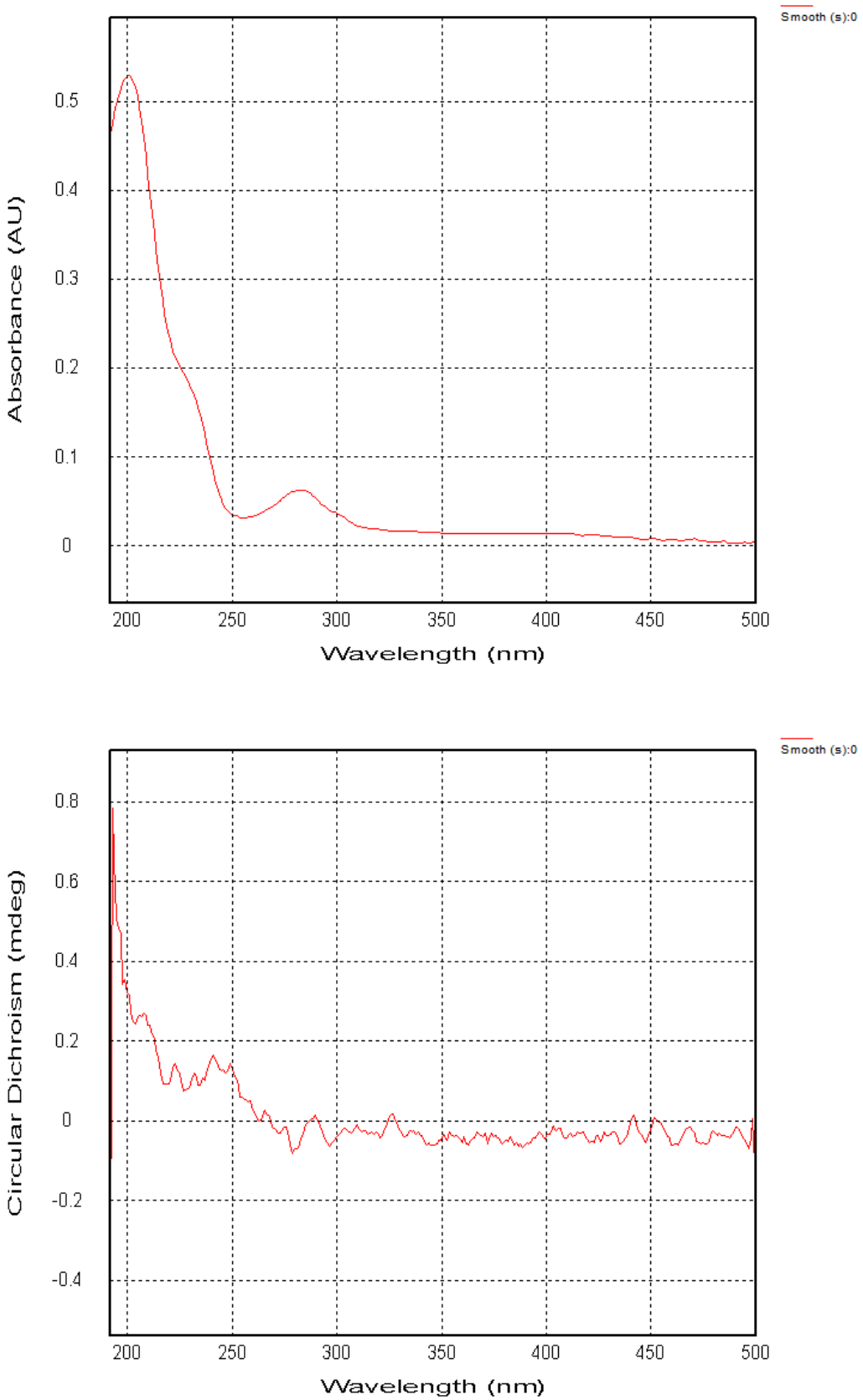



**Figure S9:** Experimental ECD Spectrum of Compound **1**

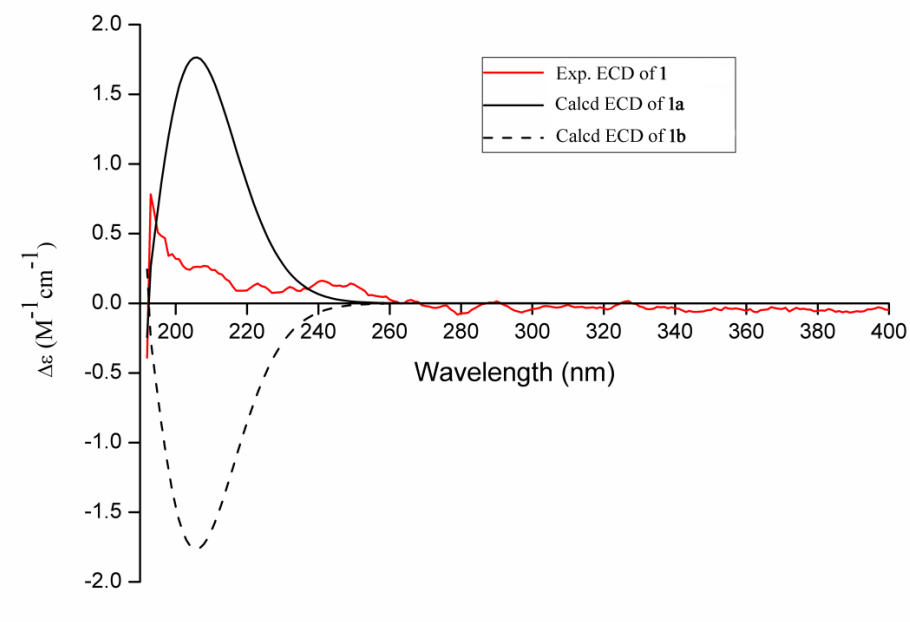



**Figure S10:** Experimental ECD Spectrum (200–400 nm) of Compound **1** in MeOH and the Calculated ECD Spectrum of the Model Molecules of Compound **1** at the B3LYP/6-311+G(d, p) level.

## S11. ECD Calculation Details

### S11. 1. Methods

Monte Carlo conformational searches were carried out by means of the Spartan's 10 software using Merck Molecular Force Field (MMFF). The conformers with Boltzmann-population of over 5% were chosen for ECD calculations, and then the conformers were initially optimized at B3LYP/6-31+g (d, p) level in MeOH using the CPCM polarizable conductor calculation model. The theoretical calculation of ECD was conducted in MeOH using Time-dependent Density functional theory (TD-DFT) at the B3LYP/6-31+g (d, p) level for all conformers of compounds **1**. Rotatory strengths for a total of 30 excited states were calculated. ECD spectra were generated using the program SpecDis 1.6 (University of Würzburg, Würzburg, Germany) and GraphPad Prism 5 (University of California San Diego, USA) from dipole-length rotational strengths by applying Gaussian band shapes with sigma = 0.3 eV.

### S11. 2. Results

**Table S1.** Gibbs free energies[a] and equilibrium populations[b] of low-energy conformers of compound **1**.

| Conformers | In MeOH | |
|---|---|---|
| | $\Delta G$ | $P$ (%)/100 |
| Compound **1-1** | 0.00 | 0.290 |
| Compound **1-2** | 0.10 | 0.123 |
| Compound **1-3** | 0.23 | 0.098 |
| Compound **1-4** | 0.47 | 0.066 |

[a]B3LYP/6-31+G(d,p), in kcal/mol. [b]From $\Delta G$ values at 298.15K.

**Table S2.** Cartesian coordinates for the low-energy reoptimized MMFF conformers of compound **1** at B3LYP/6-311+G(d,p) level of theory in $CH_3OH$.

| Compound **1-1** | | Standard Orientation (Ångstroms) | | | |
|---|---|---|---|---|---|
| Center number | Atomic number | Atomic Type | X | Y | Z |
| 1. | 6. | 0. | -0.954310 | -3.113766 | 0.169501 |
| 2. | 6. | 0. | -0.223409 | -4.305167 | 0.037068 |
| 3. | 6. | 0. | 1.118439 | -4.288792 | -0.344482 |
| 4. | 6. | 0. | 1.768904 | -3.072523 | -0.603382 |
| 5. | 6. | 0. | 1.068348 | -1.872554 | -0.452778 |
| 6. | 6. | 0. | -0.293698 | -1.920056 | -0.073371 |
| 7. | 6. | 0. | 1.542242 | -0.424167 | -0.688589 |
| 8. | 6. | 0. | 0.467470 | 0.306172 | 0.153761 |
| 9. | 6. | 0. | -0.806137 | -0.503552 | -0.132036 |
| 10. | 6. | 0. | -0.052051 | 1.720127 | 0.092683 |
| 11. | 6. | 0. | -1.412466 | 1.674775 | 0.459947 |

| | | | | | |
|---|---|---|---|---|---|
| 12. | 6. | 0. | -1.886677 | 0.228298 | 0.699295 |
| 13. | 6. | 0. | 0.585810 | 2.934090 | -0.147406 |
| 14. | 6. | 0. | -0.148942 | 4.116184 | -0.037978 |
| 15. | 6. | 0. | -1.505446 | 4.069624 | 0.332079 |
| 16. | 6. | 0. | -2.141325 | 2.855872 | 0.586373 |
| 17. | 6. | 0. | -3.327421 | -0.078096 | 0.344220 |
| 18. | 6. | 0. | 2.978573 | -0.102045 | -0.311028 |
| 19. | 6. | 0. | 3.505983 | -0.521905 | 0.921735 |
| 20. | 6. | 0. | 4.812977 | -0.177573 | 1.273855 |
| 21. | 6. | 0. | 5.611628 | 0.577569 | 0.408959 |
| 22. | 6. | 0. | 5.086309 | 0.983030 | -0.817313 |
| 23. | 6. | 0. | 3.776490 | 0.642790 | -1.183348 |
| 24. | 6. | 0. | -4.150682 | -0.771127 | 1.237925 |
| 25. | 6. | 0. | -5.470120 | -1.092959 | 0.916002 |
| 26. | 6. | 0. | -5.993809 | -0.717355 | -0.323307 |
| 27. | 6. | 0. | -5.189445 | -0.017857 | -1.230534 |
| 28. | 6. | 0. | -3.876926 | 0.294022 | -0.893856 |
| 29. | 8. | 0. | -0.886259 | -5.473224 | 0.297431 |
| 30. | 8. | 0. | 3.074926 | -3.148537 | -0.989404 |
| 31. | 8. | 0. | 5.377523 | -0.556814 | 2.456988 |
| 32. | 8. | 0. | 5.808837 | 1.714826 | -1.713462 |
| 33. | 8. | 0. | -2.124370 | 5.300799 | 0.407274 |
| 34. | 8. | 0. | 0.450901 | 5.315047 | -0.289755 |
| 35. | 8. | 0. | -7.277505 | -0.996682 | -0.703276 |
| 36. | 1. | 0. | -1.071140 | -0.310665 | -1.185801 |
| 37. | 1. | 0. | 0.741439 | 0.105700 | 1.203866 |
| 38. | 1. | 0. | -2.002369 | -3.151792 | 0.443219 |
| 39. | 1. | 0. | 1.685630 | -5.210055 | -0.447031 |
| 40. | 1. | 0. | 1.404316 | -0.160458 | -1.748069 |
| 41. | 1. | 0. | -1.737922 | -0.020920 | 1.761721 |
| 42. | 1. | 0. | 1.633992 | 2.990638 | -0.421703 |
| 43. | 1. | 0. | -3.194603 | 2.836261 | 0.858657 |
| 44. | 1. | 0. | 2.897243 | -1.117898 | 1.597219 |
| 45. | 1. | 0. | 6.626144 | 0.826645 | 0.706039 |
| 46. | 1. | 0. | 3.397867 | 0.974623 | -2.144313 |
| 47. | 1. | 0. | -3.756031 | -1.068987 | 2.206247 |
| 48. | 1. | 0. | -6.089245 | -1.633347 | 1.629243 |
| 49. | 1. | 0. | -5.608988 | 0.270448 | -2.188735 |
| 50. | 1. | 0. | -3.266751 | 0.844559 | -1.604417 |
| 51. | 1. | 0. | -0.285049 | -6.214362 | 0.146823 |
| 52. | 1. | 0. | 3.455087 | -2.257403 | -1.002584 |
| 53. | 1. | 0. | 4.735354 | -1.075060 | 2.959871 |
| 54. | 1. | 0. | 6.684199 | 1.894384 | -1.345745 |

| | | | | | |
|---|---|---|---|---|---|
| 55. | 1. | 0. | -3.052010 | 5.183586 | 0.645967 |
| 56. | 1. | 0. | -0.217767 | 6.005031 | -0.162744 |
| 57. | 1. | 0. | -7.713659 | -1.492610 | 0.001927 |

| Compound **1-2** | | Standard Orientation (Ångstroms) | | | |
|---|---|---|---|---|---|
| Center number | Atom number | Type | X | Y | Z |
| 1. | 6. | 0. | -1.000317 | -3.106253 | 0.172643 |
| 2. | 6. | 0. | -0.286605 | -4.307776 | 0.035826 |
| 3. | 6. | 0. | 1.054329 | -4.309630 | -0.349625 |
| 4. | 6. | 0. | 1.720839 | -3.102179 | -0.608125 |
| 5. | 6. | 0. | 1.038113 | -1.892684 | -0.453222 |
| 6. | 6. | 0. | -0.323975 | -1.921571 | -0.069673 |
| 7. | 6. | 0. | 1.528878 | -0.450451 | -0.690941 |
| 8. | 6. | 0. | 0.467725 | 0.292671 | 0.157609 |
| 9. | 6. | 0. | -0.817650 | -0.497972 | -0.124858 |
| 10. | 6. | 0. | -0.033085 | 1.711989 | 0.098025 |
| 11. | 6. | 0. | -1.393296 | 1.691862 | 0.468497 |
| 12. | 6. | 0. | -1.886804 | 0.250306 | 0.707201 |
| 13. | 6. | 0. | 0.619491 | 2.919910 | -0.137852 |
| 14. | 6. | 0. | -0.104809 | 4.105239 | -0.020102 |
| 15. | 6. | 0. | -1.461163 | 4.092945 | 0.352553 |
| 16. | 6. | 0. | -2.106615 | 2.880637 | 0.601941 |
| 17. | 6. | 0. | -3.330722 | -0.041726 | 0.353394 |
| 18. | 6. | 0. | 2.968464 | -0.137114 | -0.319310 |
| 19. | 6. | 0. | 3.509778 | -0.589001 | 0.895618 |
| 20. | 6. | 0. | 4.818483 | -0.247535 | 1.246019 |
| 21. | 6. | 0. | 5.603928 | 0.539441 | 0.397481 |
| 22. | 6. | 0. | 5.064097 | 0.978207 | -0.811010 |
| 23. | 6. | 0. | 3.753886 | 0.639787 | -1.175768 |
| 24. | 6. | 0. | -3.881173 | 0.350418 | -0.874076 |
| 25. | 6. | 0. | -5.199216 | 0.044908 | -1.207208 |
| 26. | 6. | 0. | -6.001603 | -0.665560 | -0.308069 |
| 27. | 6. | 0. | -5.473846 | -1.062009 | 0.923713 |
| 28. | 6. | 0. | -4.154986 | -0.747490 | 1.241001 |
| 29. | 8. | 0. | -0.965140 | -5.466189 | 0.295535 |
| 30. | 8. | 0. | 3.025199 | -3.196334 | -0.998447 |
| 31. | 8. | 0. | 5.395963 | -0.657797 | 2.411618 |
| 32. | 8. | 0. | 5.773073 | 1.745999 | -1.689289 |
| 33. | 8. | 0. | -2.151529 | 5.265076 | 0.463495 |
| 34. | 8. | 0. | 0.419611 | 5.360328 | -0.248587 |

| | | | | | |
|---|---|---|---|---|---|
| 35. | 8. | 0. | -7.302018 | -0.993677 | -0.576100 |
| 36. | 1. | 0. | -1.082341 | -0.301032 | -1.178060 |
| 37. | 1. | 0. | 0.744045 | 0.085504 | 1.205919 |
| 38. | 1. | 0. | -2.047959 | -3.130015 | 0.449532 |
| 39. | 1. | 0. | 1.608231 | -5.238551 | -0.455426 |
| 40. | 1. | 0. | 1.388003 | -0.184288 | -1.749604 |
| 41. | 1. | 0. | -1.740000 | 0.002017 | 1.769868 |
| 42. | 1. | 0. | 1.671843 | 2.945250 | -0.412421 |
| 43. | 1. | 0. | -3.155966 | 2.893162 | 0.878024 |
| 44. | 1. | 0. | 2.909610 | -1.206384 | 1.559406 |
| 45. | 1. | 0. | 6.619643 | 0.786033 | 0.692612 |
| 46. | 1. | 0. | 3.366093 | 0.991290 | -2.126176 |
| 47. | 1. | 0. | -3.275574 | 0.912996 | -1.578915 |
| 48. | 1. | 0. | -5.605991 | 0.362002 | -2.165505 |
| 49. | 1. | 0. | -6.105779 | -1.608036 | 1.616125 |
| 50. | 1. | 0. | -3.755766 | -1.058580 | 2.203364 |
| 51. | 1. | 0. | -0.375115 | -6.216132 | 0.144302 |
| 52. | 1. | 0. | 3.419041 | -2.311418 | -1.006235 |
| 53. | 1. | 0. | 4.764378 | -1.199744 | 2.902962 |
| 54. | 1. | 0. | 6.660571 | 1.894310 | -1.336894 |
| 55. | 1. | 0. | -1.536490 | 5.983812 | 0.253005 |
| 56. | 1. | 0. | 1.351070 | 5.283660 | -0.489145 |
| 57. | 1. | 0. | -7.535689 | -0.661334 | -1.452642 |

| Compound **1-3** | | Standard Orientation (Ångstroms) | | | |
|---|---|---|---|---|---|
| Center number | Atom number | Type | X | Y | Z |
| 1. | 6. | 0. | -1.005548 | -3.103273 | 0.170659 |
| 2. | 6. | 0. | -0.293792 | -4.306069 | 0.035912 |
| 3. | 6. | 0. | 1.047690 | -4.310564 | -0.347395 |
| 4. | 6. | 0. | 1.716632 | -3.104416 | -0.606017 |
| 5. | 6. | 0. | 1.035742 | -1.893613 | -0.453136 |
| 6. | 6. | 0. | -0.326912 | -1.919890 | -0.071682 |
| 7. | 6. | 0. | 1.529135 | -0.452224 | -0.691035 |
| 8. | 6. | 0. | 0.468172 | 0.292931 | 0.156087 |
| 9. | 6. | 0. | -0.818116 | -0.495577 | -0.128198 |
| 10. | 6. | 0. | -0.030410 | 1.713071 | 0.096439 |
| 11. | 6. | 0. | -1.390990 | 1.694858 | 0.465621 |
| 12. | 6. | 0. | -1.886946 | 0.253931 | 0.702866 |
| 13. | 6. | 0. | 0.624206 | 2.920184 | -0.137849 |
| 14. | 6. | 0. | -0.098439 | 4.106493 | -0.019834 |

| | | | | | |
|---|---|---|---|---|---|
| 15. | 6. | 0. | -1.455200 | 4.096027 | 0.351516 |
| 16. | 6. | 0. | -2.102763 | 2.884490 | 0.599174 |
| 17. | 6. | 0. | -3.330694 | -0.035466 | 0.346807 |
| 18. | 6. | 0. | 2.968828 | -0.141093 | -0.318037 |
| 19. | 6. | 0. | 3.508189 | -0.593249 | 0.897683 |
| 20. | 6. | 0. | 4.817053 | -0.253689 | 1.249268 |
| 21. | 6. | 0. | 5.604620 | 0.531656 | 0.401222 |
| 22. | 6. | 0. | 5.066728 | 0.970703 | -0.808053 |
| 23. | 6. | 0. | 3.756375 | 0.634130 | -1.174038 |
| 24. | 6. | 0. | -4.157471 | -0.731774 | 1.234498 |
| 25. | 6. | 0. | -5.478696 | -1.042921 | 0.909907 |
| 26. | 6. | 0. | -6.000289 | -0.652468 | -0.325658 |
| 27. | 6. | 0. | -5.192238 | 0.050895 | -1.226410 |
| 28. | 6. | 0. | -3.877949 | 0.351876 | -0.887317 |
| 29. | 8. | 0. | -0.974685 | -5.463380 | 0.295833 |
| 30. | 8. | 0. | 3.021397 | -3.201190 | -0.994050 |
| 31. | 8. | 0. | 5.392652 | -0.664392 | 2.415728 |
| 32. | 8. | 0. | 5.777781 | 1.736951 | -1.685926 |
| 33. | 8. | 0. | -2.143719 | 5.269013 | 0.463219 |
| 34. | 8. | 0. | 0.428259 | 5.360958 | -0.246240 |
| 35. | 8. | 0. | -7.285425 | -0.921790 | -0.708163 |
| 36. | 1. | 0. | -1.080921 | -0.298518 | -1.181762 |
| 37. | 1. | 0. | 0.742891 | 0.085053 | 1.204723 |
| 38. | 1. | 0. | -2.053800 | -3.124688 | 0.445322 |
| 39. | 1. | 0. | 1.600187 | -5.240500 | -0.451646 |
| 40. | 1. | 0. | 1.389694 | -0.186508 | -1.749962 |
| 41. | 1. | 0. | -1.741640 | 0.004699 | 1.765606 |
| 42. | 1. | 0. | 1.676888 | 2.944226 | -0.411255 |
| 43. | 1. | 0. | -3.152696 | 2.898402 | 0.872959 |
| 44. | 1. | 0. | 2.906361 | -1.209322 | 1.561193 |
| 45. | 1. | 0. | 6.620411 | 0.776803 | 0.697292 |
| 46. | 1. | 0. | 3.370116 | 0.985852 | -2.124983 |
| 47. | 1. | 0. | -3.764798 | -1.039783 | 2.200454 |
| 48. | 1. | 0. | -6.101218 | -1.585382 | 1.618593 |
| 49. | 1. | 0. | -5.611260 | 0.353747 | -2.180268 |
| 50. | 1. | 0. | -3.266181 | 0.908409 | -1.591710 |
| 51. | 1. | 0. | -0.386287 | -6.214262 | 0.142897 |
| 52. | 1. | 0. | 3.416426 | -2.316809 | -1.003334 |
| 53. | 1. | 0. | 4.759660 | -1.205295 | 2.906391 |
| 54. | 1. | 0. | 6.665098 | 1.884251 | -1.332658 |
| 55. | 1. | 0. | -1.529027 | 5.986771 | 0.248452 |
| 56. | 1. | 0. | 1.356977 | 5.282372 | -0.496553 |
| 57. | 1. | 0. | -7.728460 | -1.408647 | -0.000965 |

| Compound **1-4** | | Standard Orientation (Ångstroms) | | | |
|---|---|---|---|---|---|
| Center number | Atom number | Type | X | Y | Z |
| 1. | 6. | 0. | -1.019599 | -3.097782 | 0.155293 |
| 2. | 6. | 0. | -0.318041 | -4.306178 | 0.013645 |
| 3. | 6. | 0. | 1.023430 | -4.319963 | -0.367947 |
| 4. | 6. | 0. | 1.698479 | -3.118433 | -0.617553 |
| 5. | 6. | 0. | 1.027369 | -1.899098 | -0.457288 |
| 6. | 6. | 0. | -0.332455 | -1.914898 | -0.077620 |
| 7. | 6. | 0. | 1.531322 | -0.460599 | -0.693119 |
| 8. | 6. | 0. | 0.474489 | 0.292179 | 0.152645 |
| 9. | 6. | 0. | -0.816415 | -0.488546 | -0.130020 |
| 10. | 6. | 0. | -0.017291 | 1.715017 | 0.092222 |
| 11. | 6. | 0. | -1.377540 | 1.703978 | 0.463544 |
| 12. | 6. | 0. | -1.878240 | 0.265616 | 0.705785 |
| 13. | 6. | 0. | 0.642306 | 2.918703 | -0.145370 |
| 14. | 6. | 0. | -0.074888 | 4.108550 | -0.028916 |
| 15. | 6. | 0. | -1.431200 | 4.105050 | 0.344169 |
| 16. | 6. | 0. | -2.083818 | 2.897023 | 0.595768 |
| 17. | 6. | 0. | -3.324489 | -0.022277 | 0.358693 |
| 18. | 6. | 0. | 2.971732 | -0.157054 | -0.316564 |
| 19. | 6. | 0. | 3.512409 | -0.630771 | 0.890109 |
| 20. | 6. | 0. | 4.821744 | -0.297046 | 1.246304 |
| 21. | 6. | 0. | 5.607065 | 0.505514 | 0.412532 |
| 22. | 6. | 0. | 5.067303 | 0.966613 | -0.787747 |
| 23. | 6. | 0. | 3.757321 | 0.634947 | -1.158897 |
| 24. | 6. | 0. | -3.877544 | 0.362371 | -0.870100 |
| 25. | 6. | 0. | -5.197034 | 0.057252 | -1.197821 |
| 26. | 6. | 0. | -5.999012 | -0.644972 | -0.291732 |
| 27. | 6. | 0. | -5.469271 | -1.032886 | 0.942020 |
| 28. | 6. | 0. | -4.148723 | -0.718812 | 1.253770 |
| 29. | 8. | 0. | -0.910424 | -5.517923 | 0.240375 |
| 30. | 8. | 0. | 3.002005 | -3.217470 | -1.007730 |
| 31. | 8. | 0. | 5.399238 | -0.729507 | 2.403628 |
| 32. | 8. | 0. | 5.776571 | 1.750354 | -1.651647 |
| 33. | 8. | 0. | -2.114532 | 5.281323 | 0.453770 |
| 34. | 8. | 0. | 0.456783 | 5.359989 | -0.259177 |
| 35. | 8. | 0. | -7.300159 | -0.973781 | -0.554424 |
| 36. | 1. | 0. | -1.081752 | -0.287174 | -1.182224 |
| 37. | 1. | 0. | 0.748135 | 0.083807 | 1.201374 |

| | | | | | |
|---|---|---|---|---|---|
| 38. | 1. | 0. | -2.071510 | -3.091458 | 0.429132 |
| 39. | 1. | 0. | 1.547883 | -5.262350 | -0.473647 |
| 40. | 1. | 0. | 1.395786 | -0.193500 | -1.752284 |
| 41. | 1. | 0. | -1.727810 | 0.017770 | 1.768130 |
| 42. | 1. | 0. | 1.694756 | 2.937266 | -0.419938 |
| 43. | 1. | 0. | -3.132759 | 2.916517 | 0.873096 |
| 44. | 1. | 0. | 2.911787 | -1.259399 | 1.542821 |
| 45. | 1. | 0. | 6.623174 | 0.745590 | 0.711646 |
| 46. | 1. | 0. | 3.370225 | 1.002462 | -2.103517 |
| 47. | 1. | 0. | -3.272437 | 0.918551 | -1.580346 |
| 48. | 1. | 0. | -5.605287 | 0.368413 | -2.157385 |
| 49. | 1. | 0. | -6.102190 | -1.569062 | 1.641346 |
| 50. | 1. | 0. | -3.748613 | -1.020229 | 2.218981 |
| 51. | 1. | 0. | -1.834349 | -5.371305 | 0.481545 |
| 52. | 1. | 0. | 3.401940 | -2.335459 | -1.010056 |
| 53. | 1. | 0. | 4.771407 | -1.288982 | 2.879939 |
| 54. | 1. | 0. | 6.664932 | 1.889615 | -1.297739 |
| 55. | 1. | 0. | -1.495194 | 5.996263 | 0.242873 |
| 56. | 1. | 0. | 1.388333 | 5.278029 | -0.497725 |
| 57. | 1. | 0. | -7.538765 | -0.640241 | -1.429223 |