Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information

Isolation of cytotoxic cycloartane triterpenoids from *Dysoxylum malabaricum*

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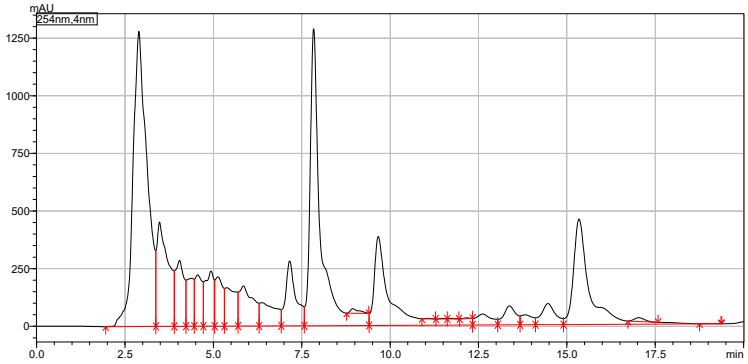
Figure S.1 **A. Chromatogram of crude extract using reverse phase cartridge column at 254nm.**

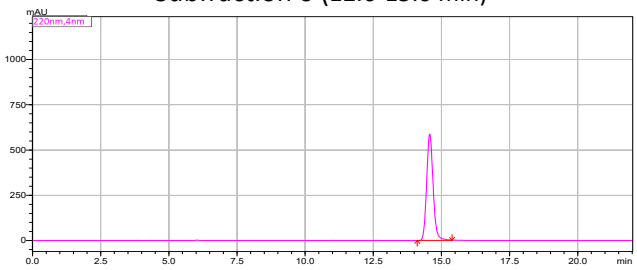


Crude Extract

Fraction 1	2.5-5min
Fraction 2	5.1-7.5min
Fraction 3	7.55-9.5min
Fraction 4	9.55-12min
Fraction 5	12.5-15min
Fraction 6	15.1-18min

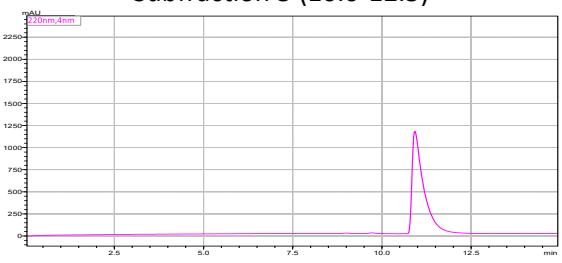
B. HPLC chromatogram of compounds isolated from active fraction 2 using analytical column at 220nm.

Subfraction 6 (12.6-15.0 min)



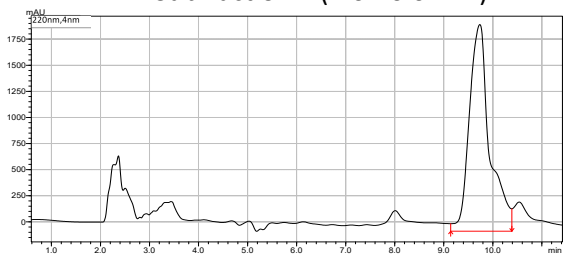
(1) (14.75min)

Subfraction 5 (10.0-12.5)

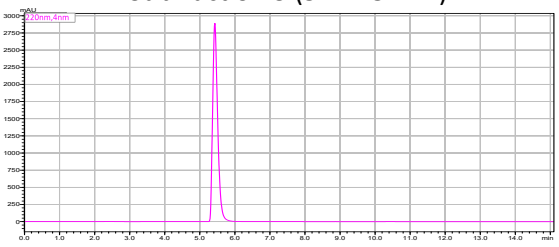


(2) (11.59 min)

Subfraction 4 (7.6-10.0 min)

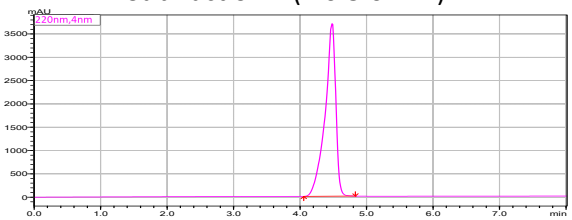


Subfraction 3 (5.1-7.5 min)



(**3**) (5.60 min)

Subfraction 2 (2.6-5.0 min)



(4) (4.85 min)

Subfraction 1 (0-2.5min)

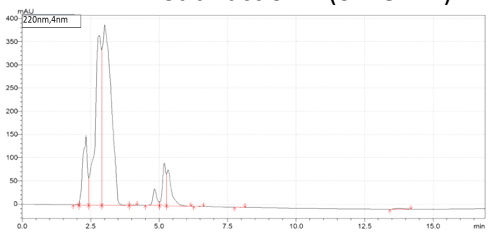


Table S.2. MS/MS fragmentation peak present in crude fraction 2.

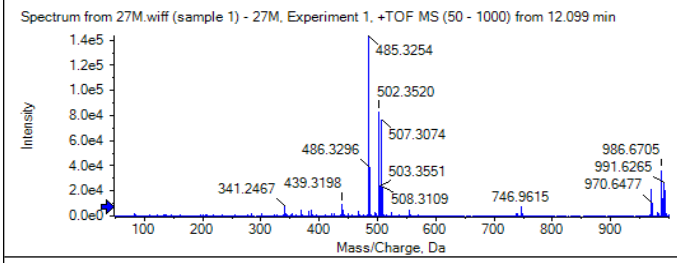
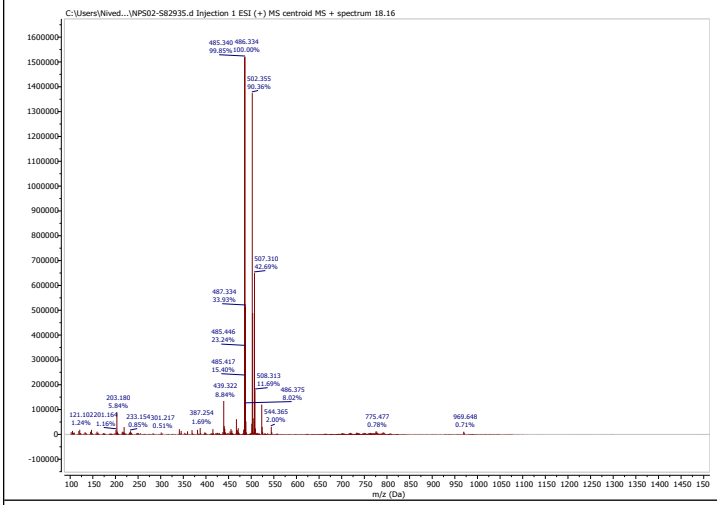
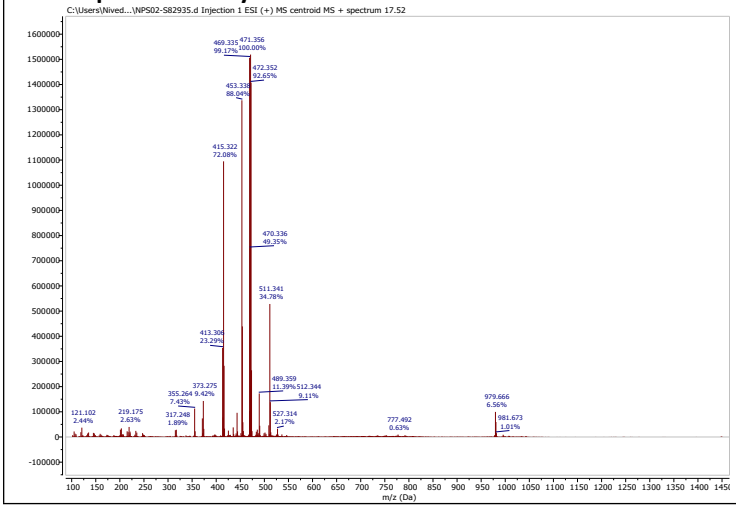
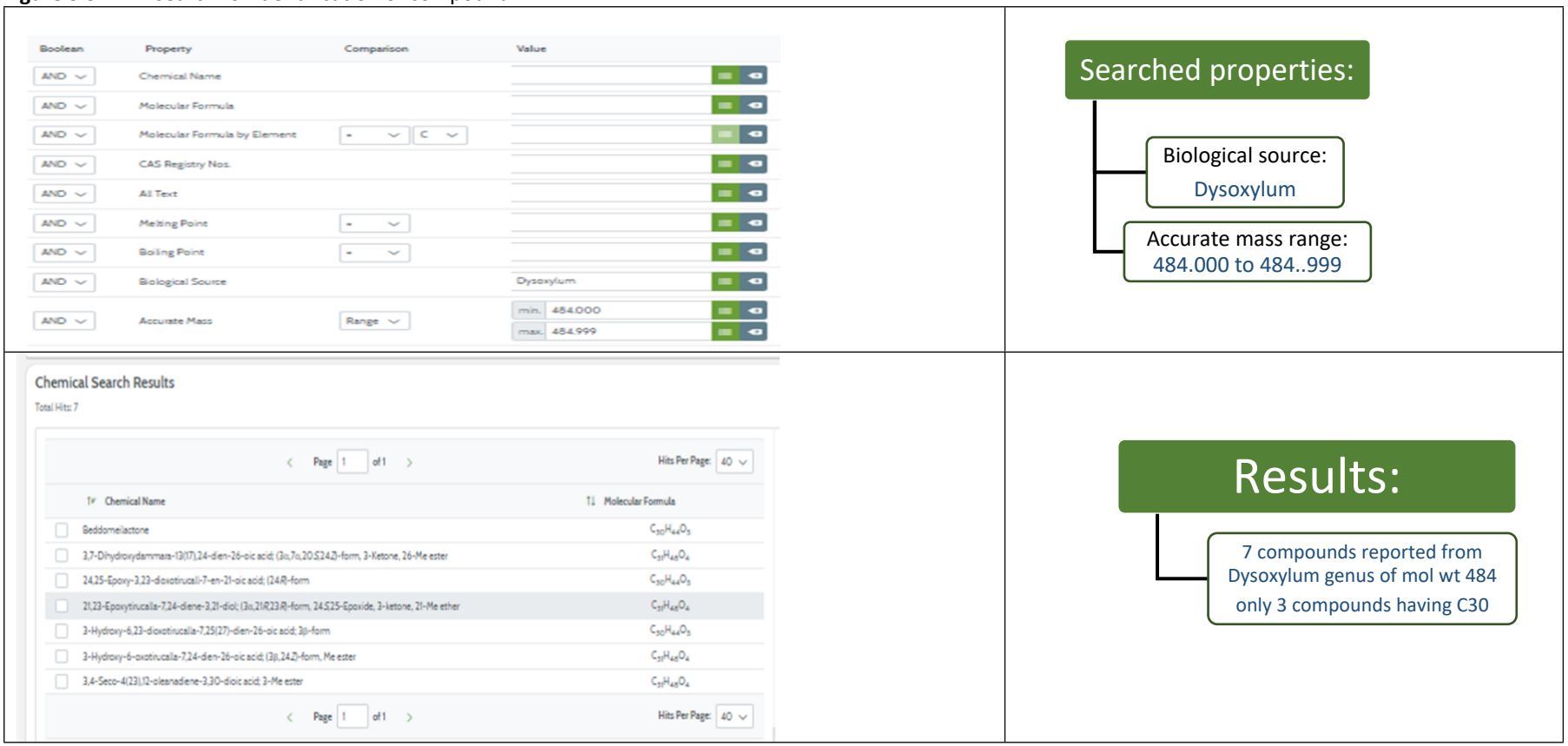
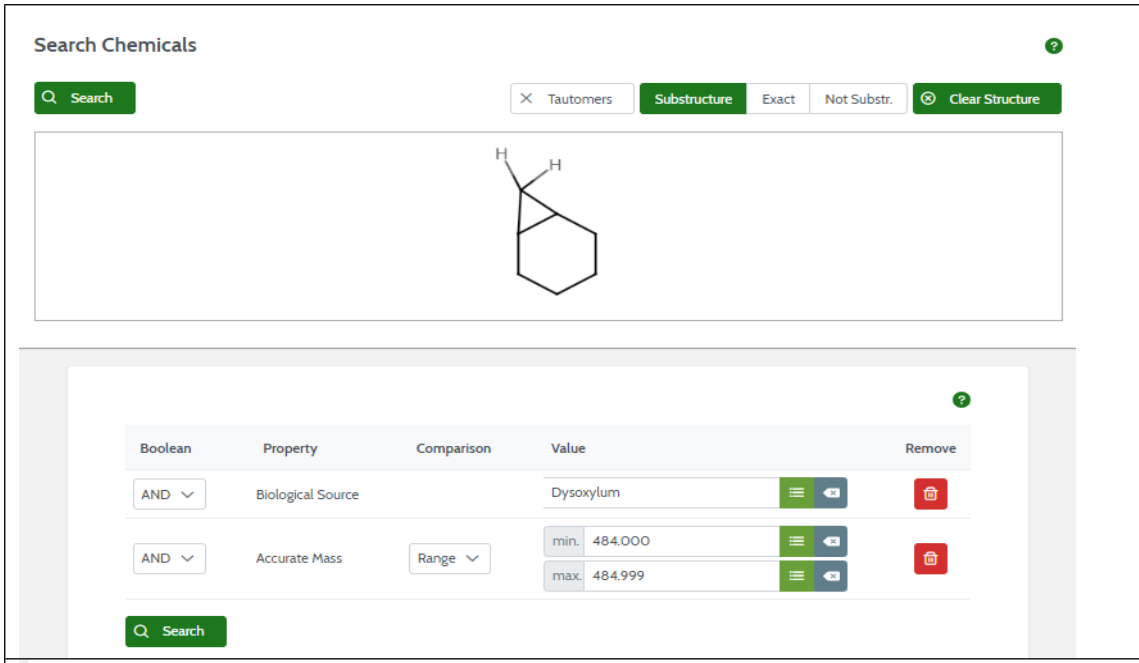
LCMS spectra of cytotoxic fraction 2 at 12.09min	**Abundant m/z Peaks**
	485 486 502
LCMS spectra of fraction 2 at 18.16min	486 502
	
LCMS spectra of ethylacetate fraction at 17.52min	472
	

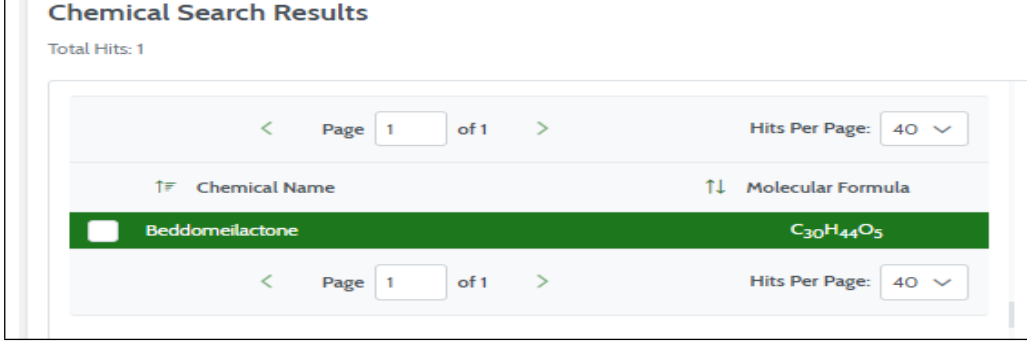
Figure S.3. DNP search for identification of compound 1





Searched properties:

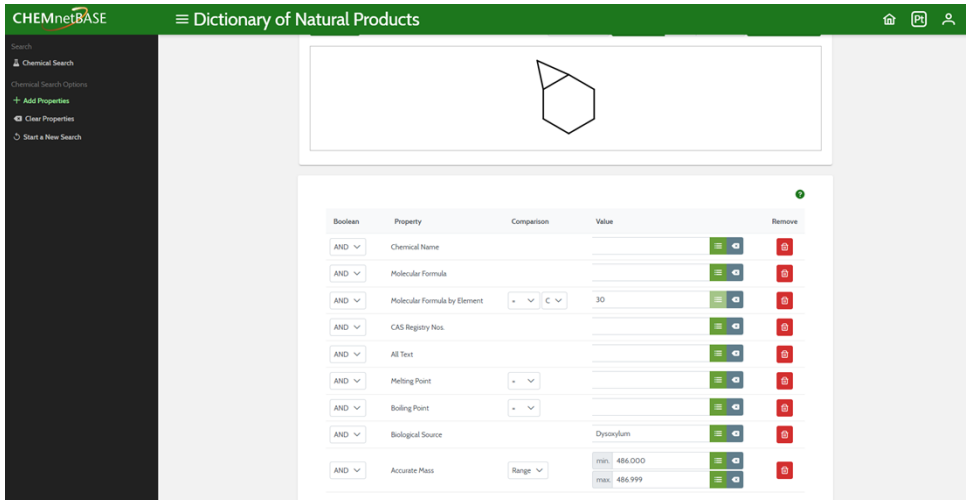
- Biological source: Dysoxylum
- Accurate mass range: 484.000 to 484..999
- Cyclopropane fused ring



Results:

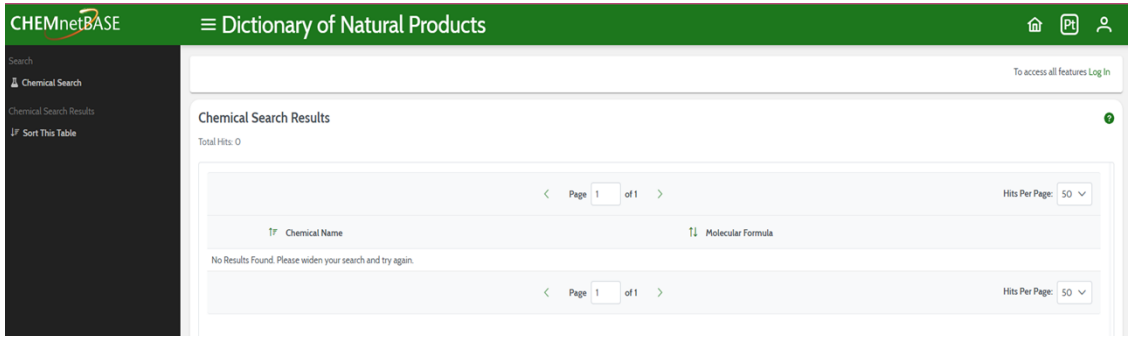
- 1 compound reported from Dysoxylum genus of mol wt 484

Figure S.4. DNP search for identification of compound 2



Searched properties:

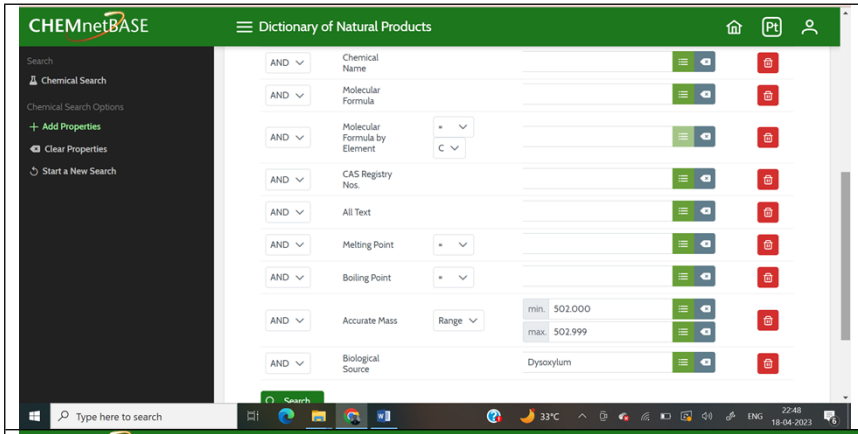
- Biological source: Dysoxylum
- Accurate mass range: 486.000 to 486.999
- Number of carbon=30



Results:

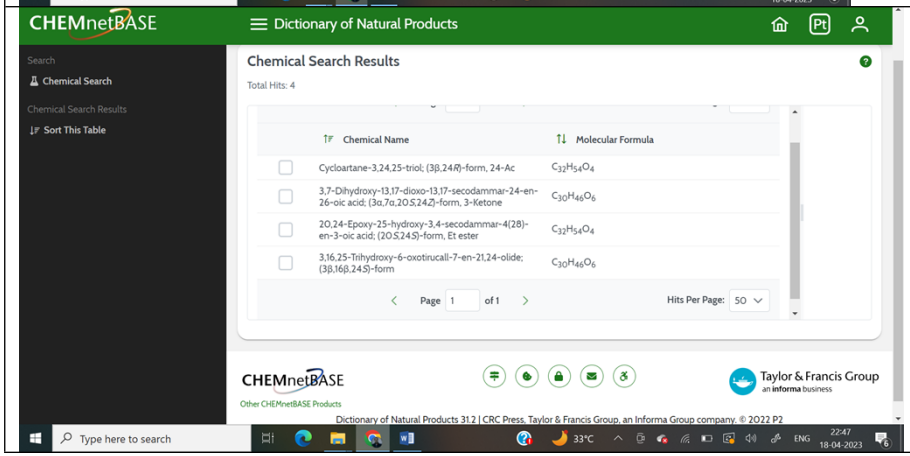
- No compounds reported from Dysoxylum genus of mol wt 486

Figure S.5. DNP search for identification of compound 3



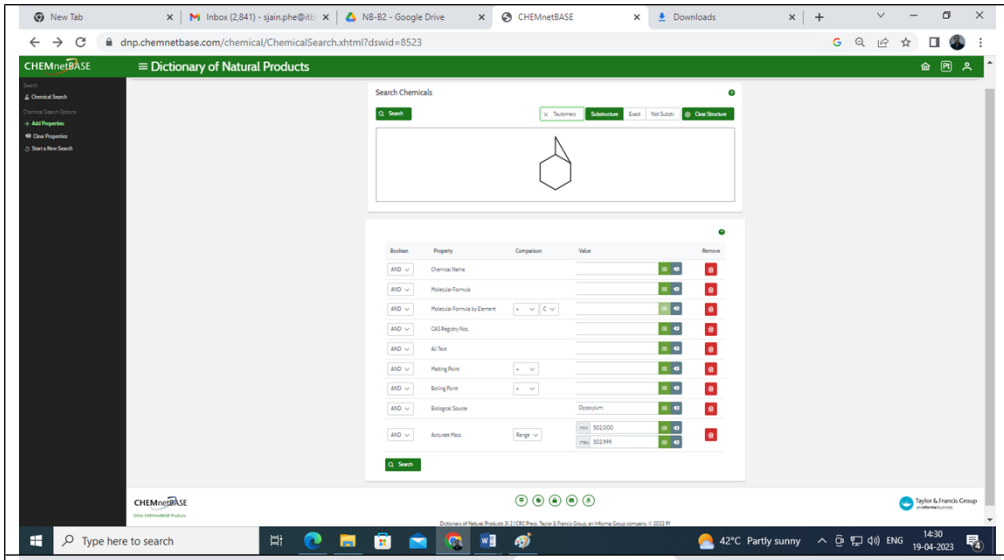
Searched properties:

- Biological source: Dysoxylum
- Accurate mass range: 502.000 to 502.999



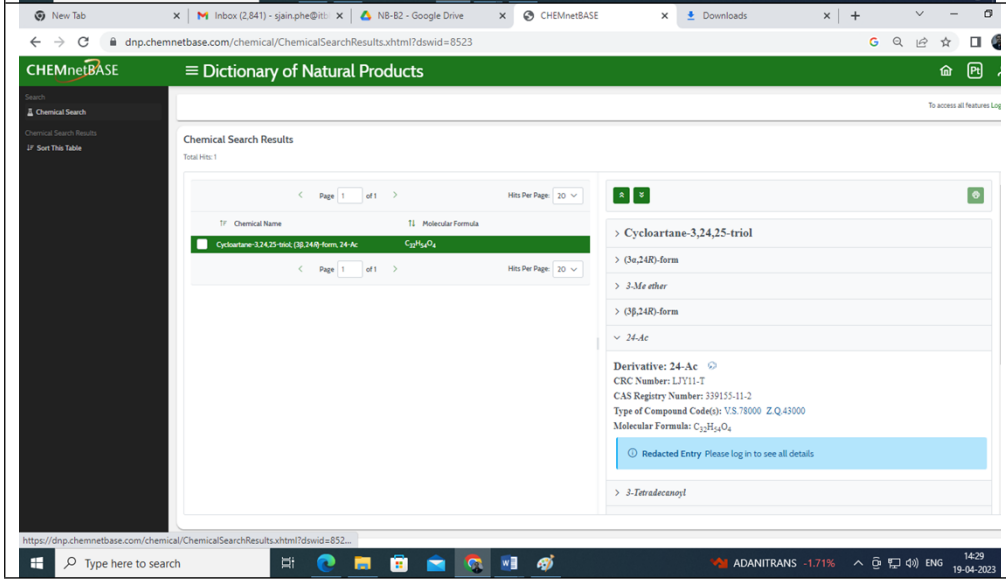
Results:

- 4 compounds reported from Dysoxylum genus of mol wt 502



Searched properties:

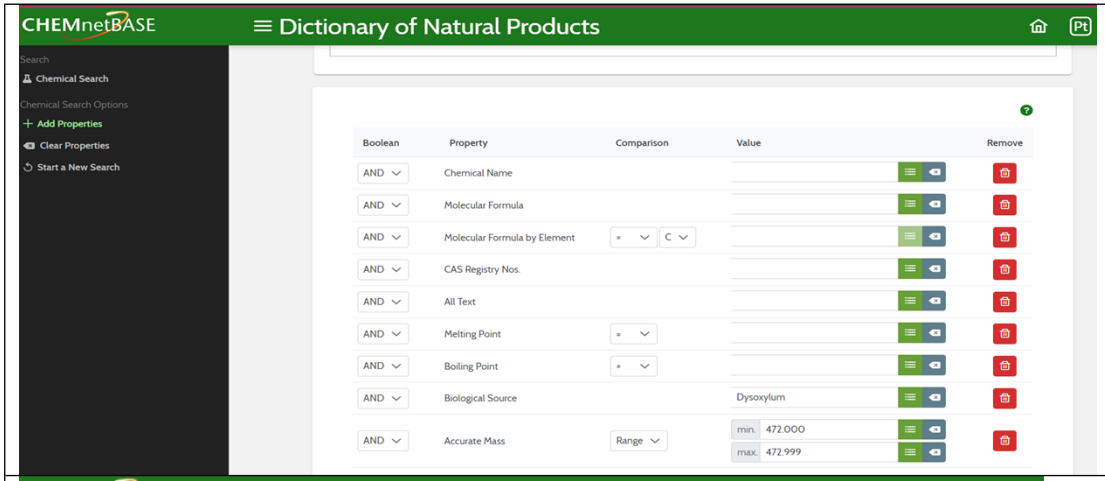
- Biological source: Dysoxylum
- Accurate mass range: 502.000 to 502..999
- Cyclopropane fused ring (cycloartane scaffold)



Results:

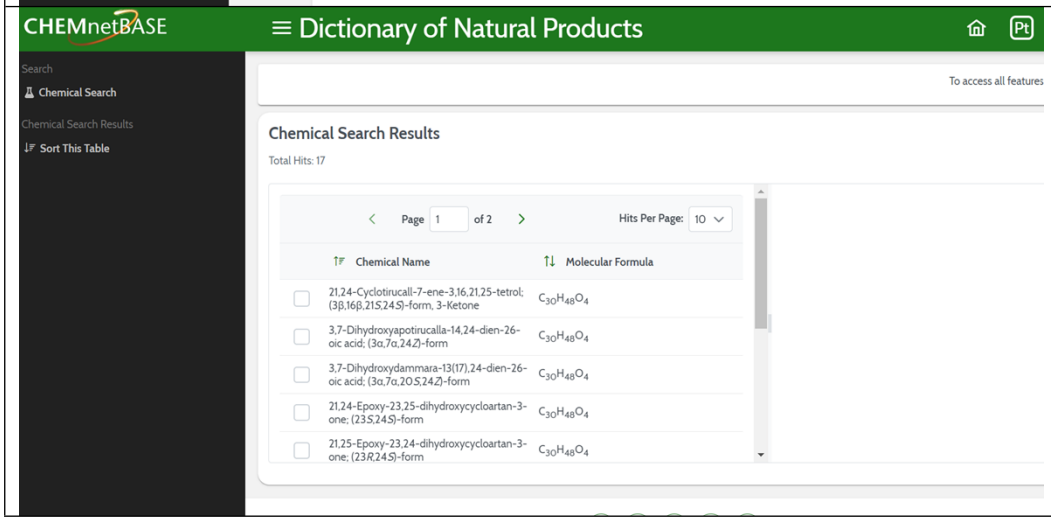
- 1 compound reported from Dysoxylum genus of mol wt 502 but the mol formula is different from the compound we have isolated

Figure S.6. DNP search for identification of compound 4



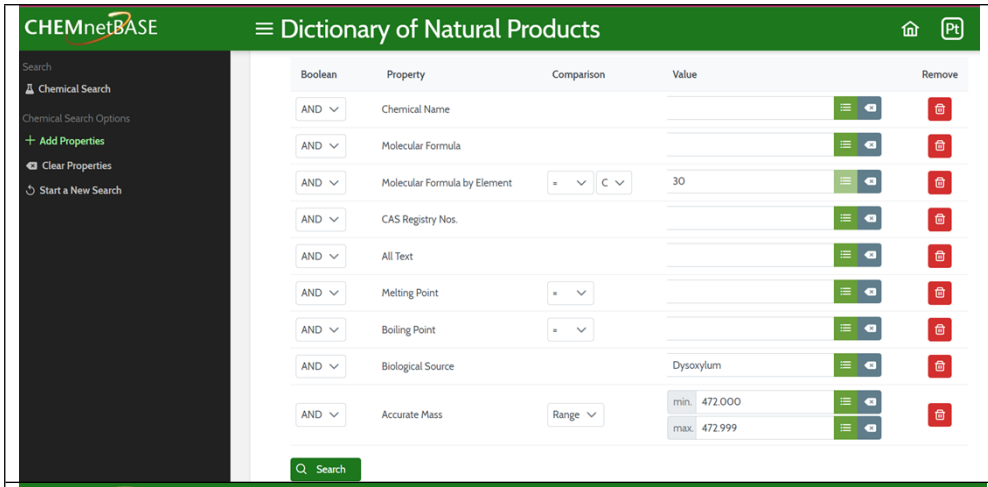
Searched properties:

- Biological source: Dysoxylum
- Accurate mass range: 472.000 to 472.999



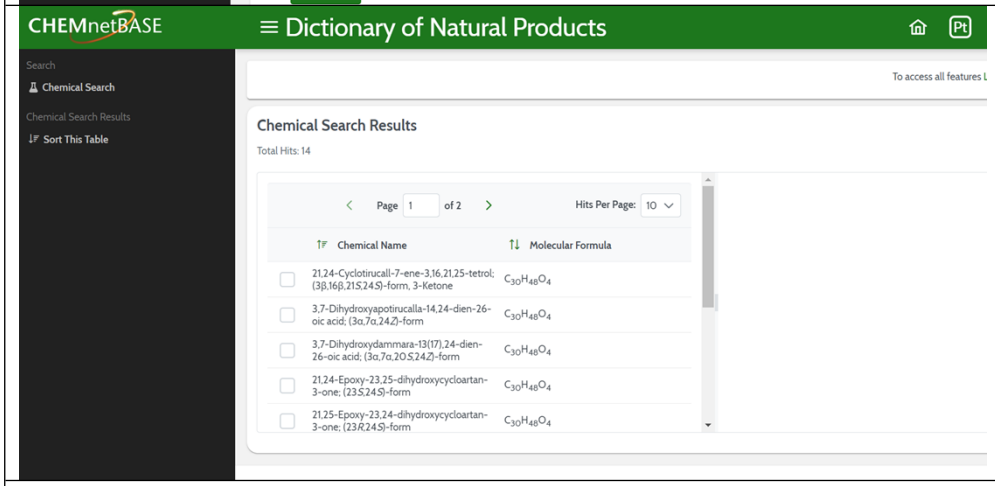
Results:

- 17 compounds reported from Dysoxylum genus of mol wt 472 having different mol formula



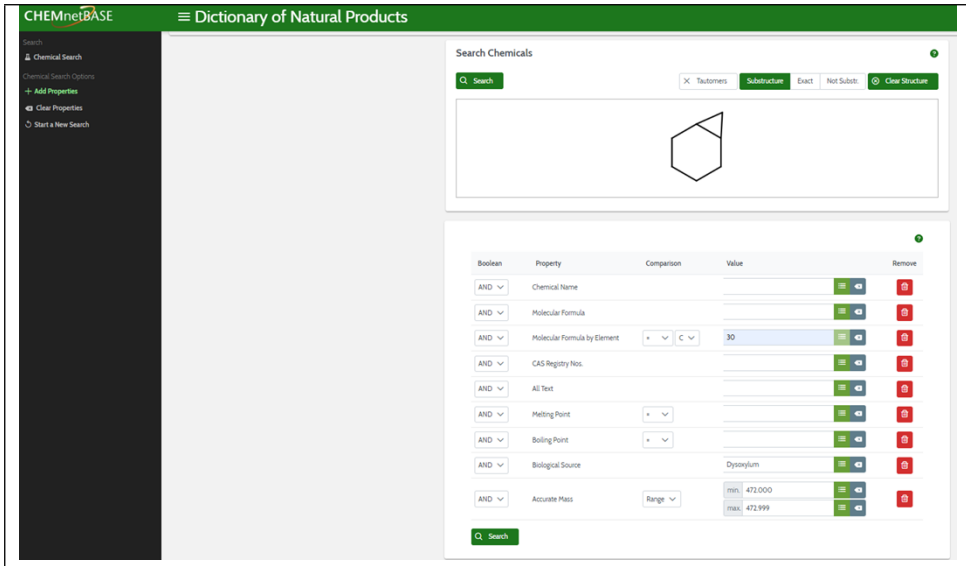
Searched properties:

- Biological source: Dysoxylum
- Accurate mass range: 472.000 to 472.999
- Number of carbon=30



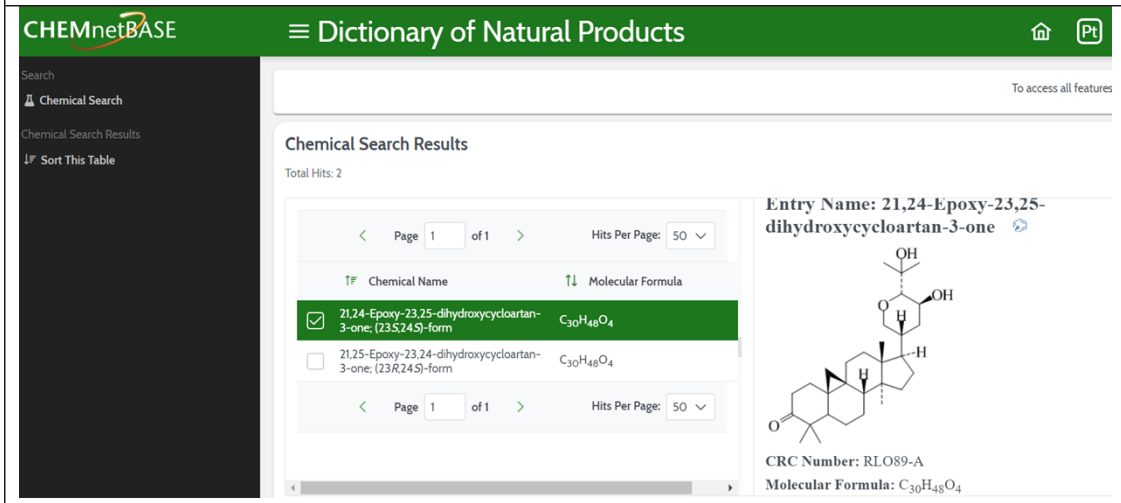
Results:

- 14 compounds reported from Dysoxylum genus of mol wt 472



Searched properties:

- Biological source: Dysoxylum
- Accurate mass range: 472.000 to 472..999
- Number of carbon=30
- Cycloartane ring



Results:

- 2 compounds reported from Dysoxylum genus of mol wt 472 having 30 carbon and cycloartane ring

Spectral information of compound 1

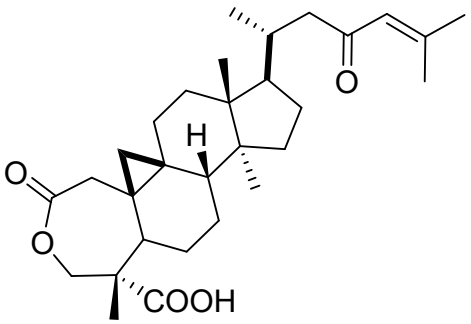


Figure S.7. ^{1}H NMR spectrum of compound 1 in $CDCl_3$

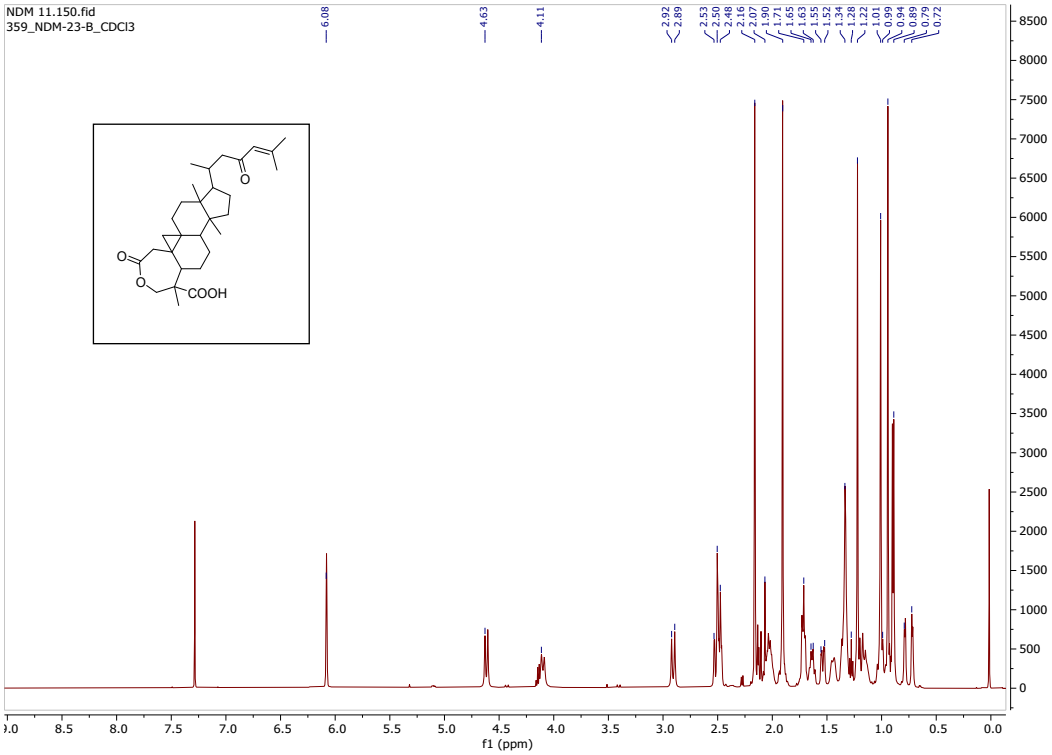


Figure S.8. ^{13}C NMR spectrum of compound 1 in $CDCl_3$

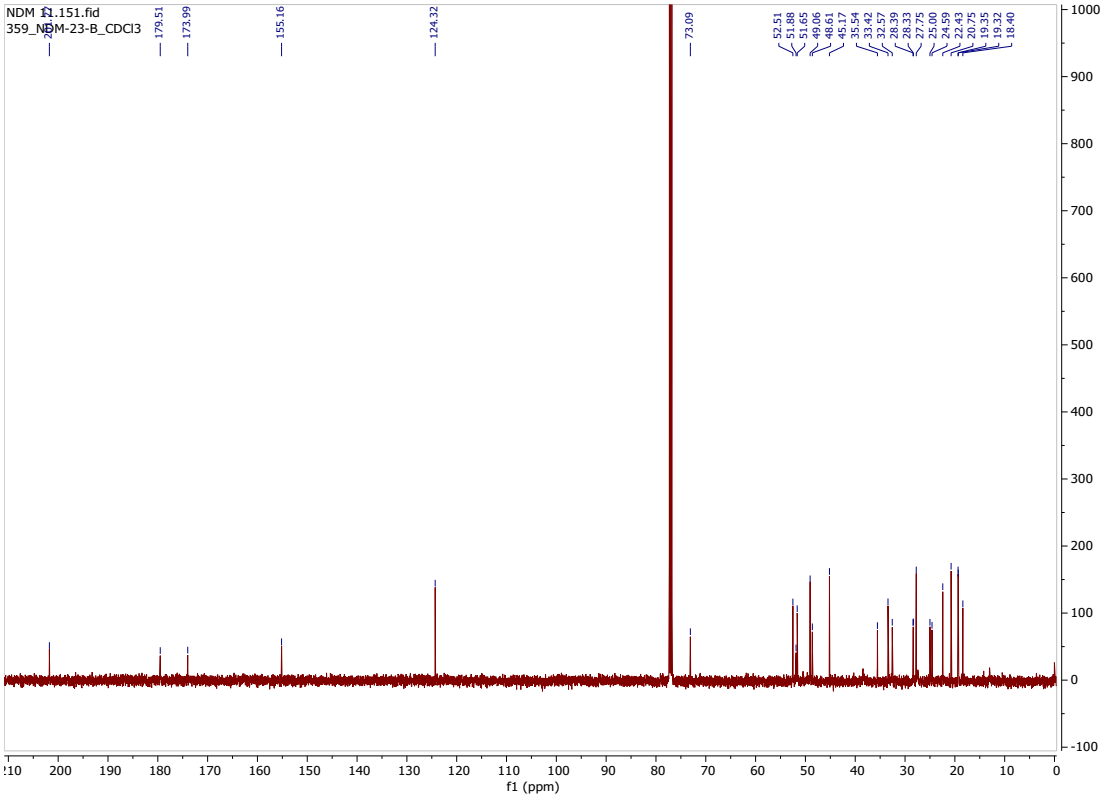


Figure S.9. DEPT-135 NMR spectrum of compound 1 in $CDCl_3$

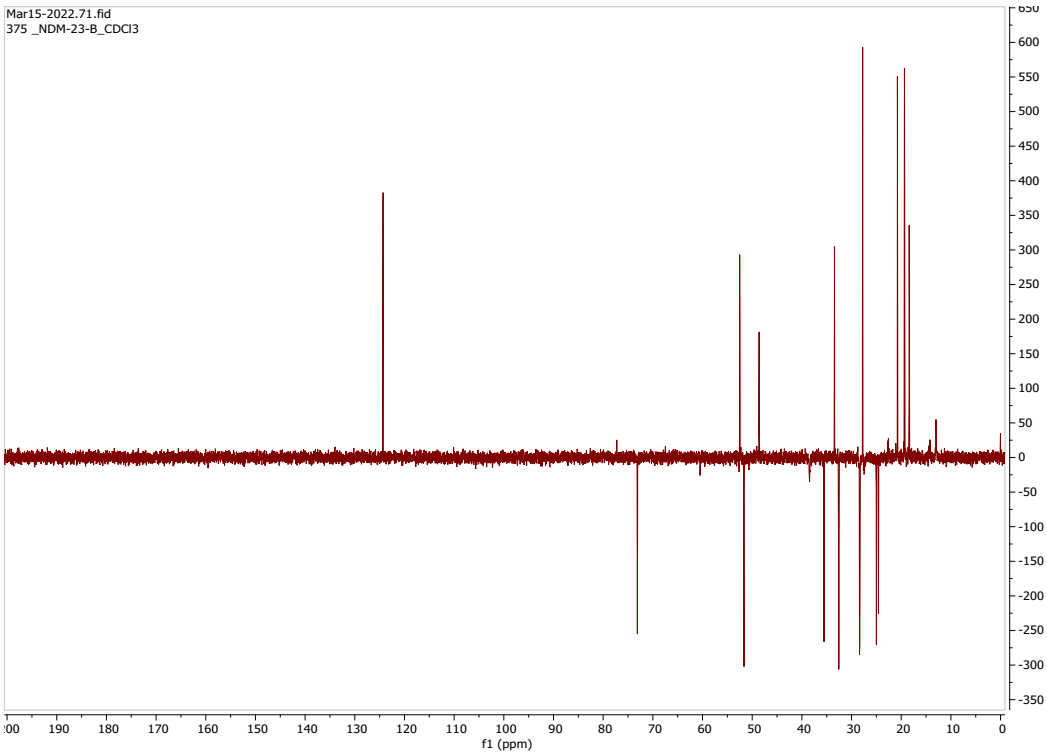


Figure S.10. HSQC spectrum of compound 1 in $CDCl_3$

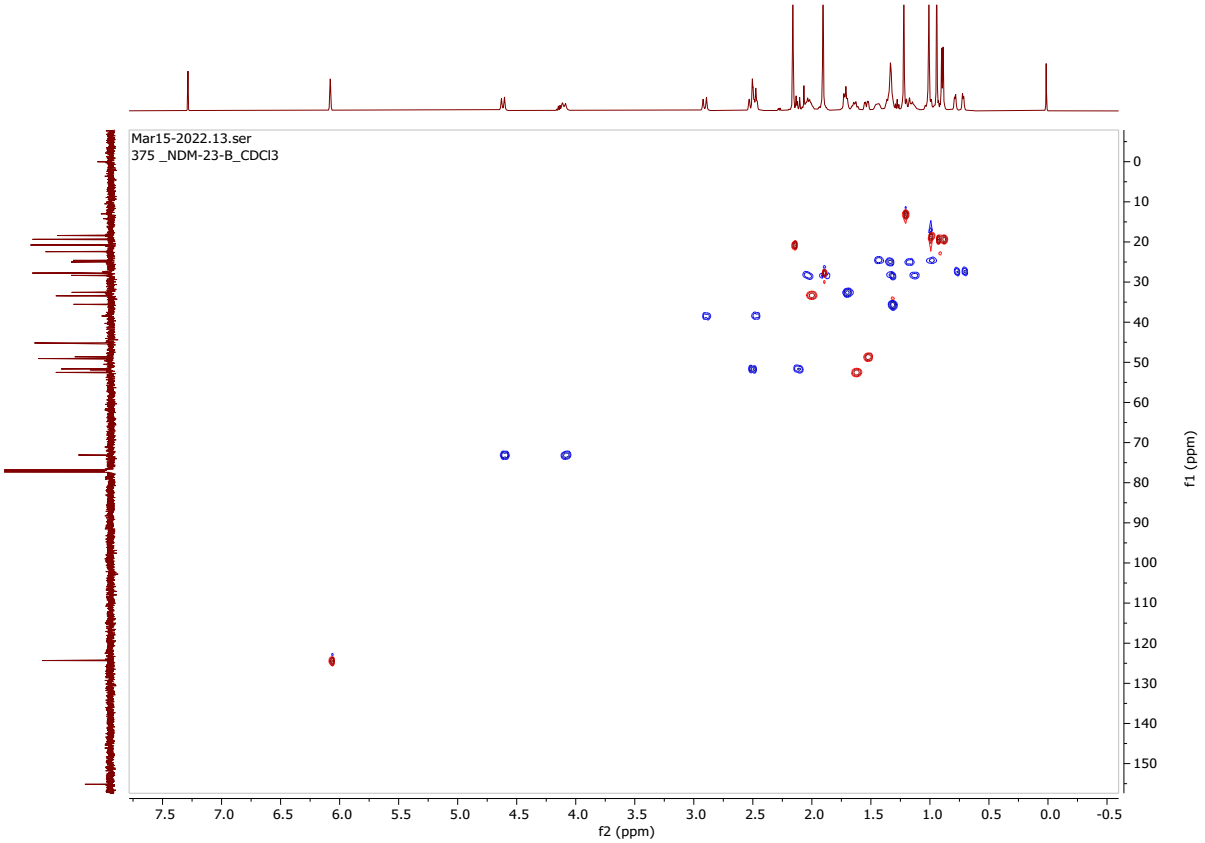


Figure S.11. HMBC spectrum of compound 1 in $CDCl_3$

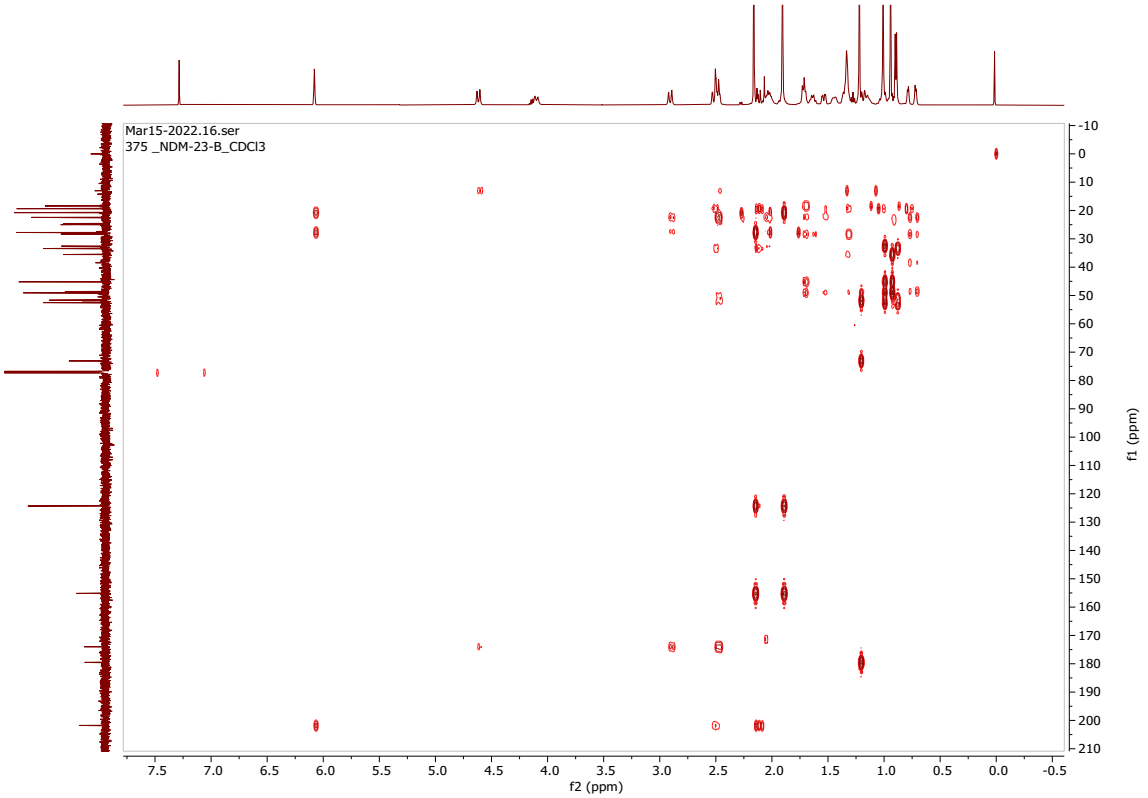


Figure S.12. COSY NMR spectrum of compound 1 in $CDCl_3$

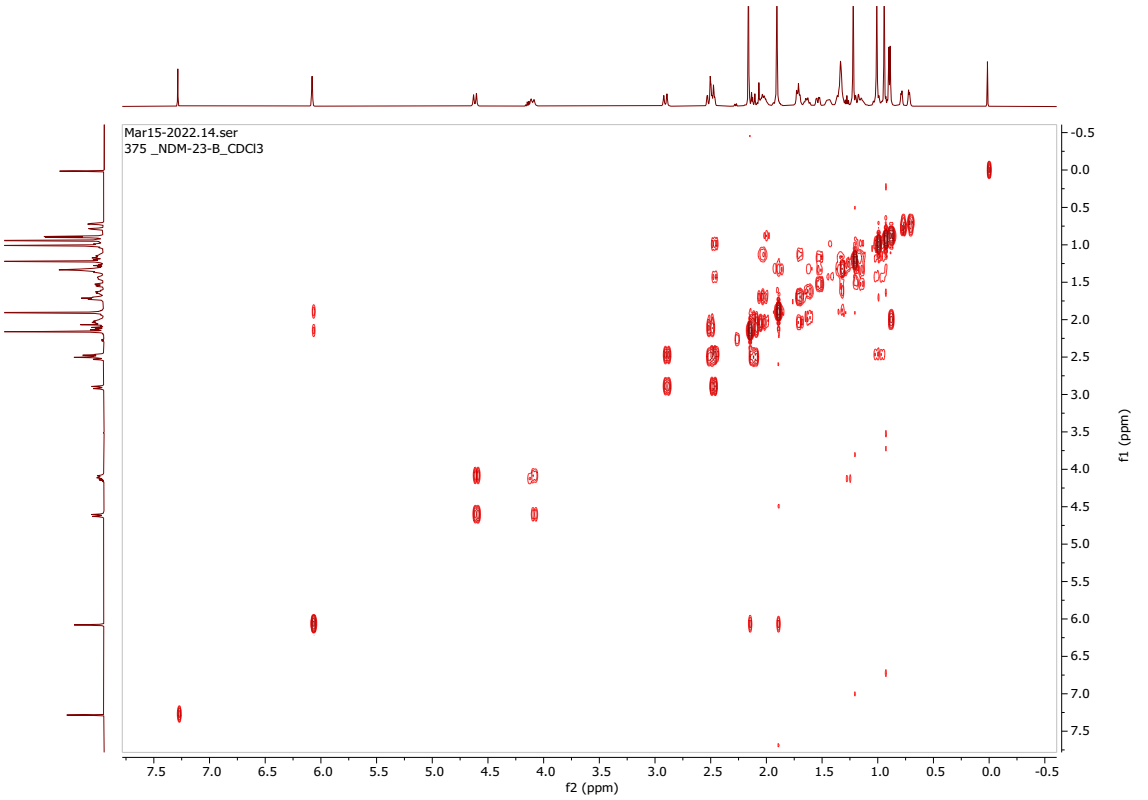


Figure S.13. NOESY spectrum of compound 1 in $CDCl_3$

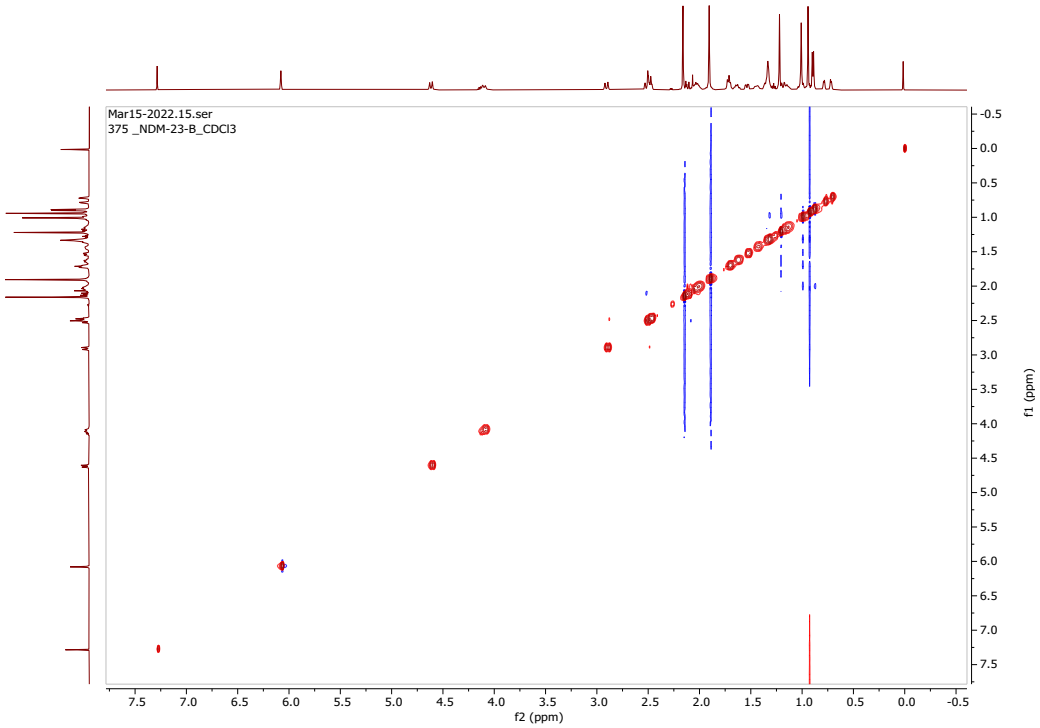


Figure S.14. HRMS spectrum of compound 1

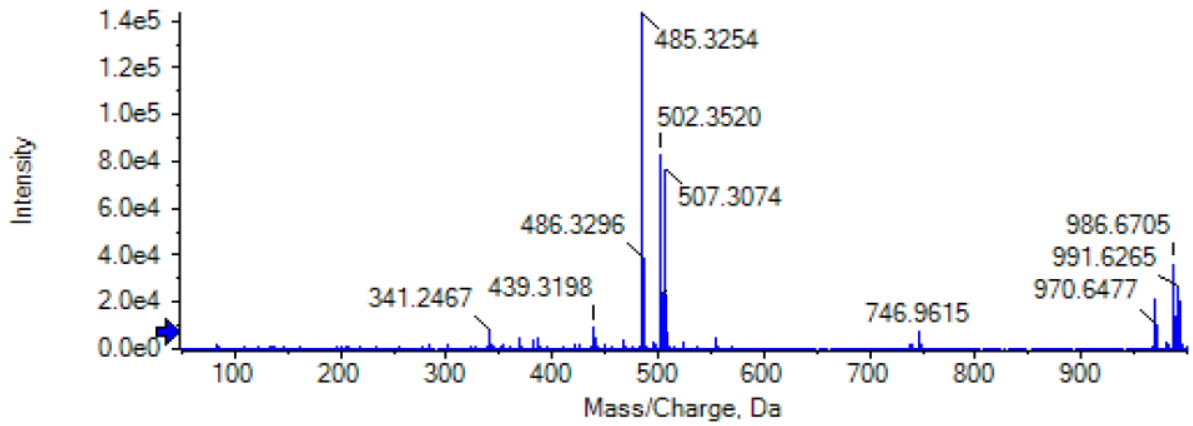


Figure S.15. IR spectrum of compound 1

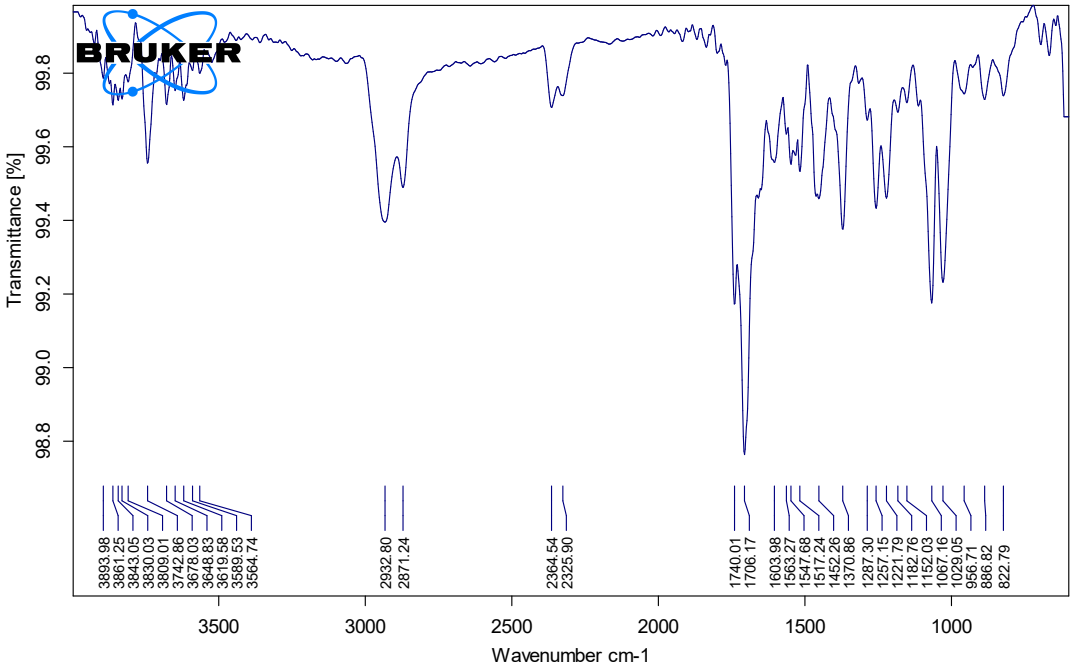
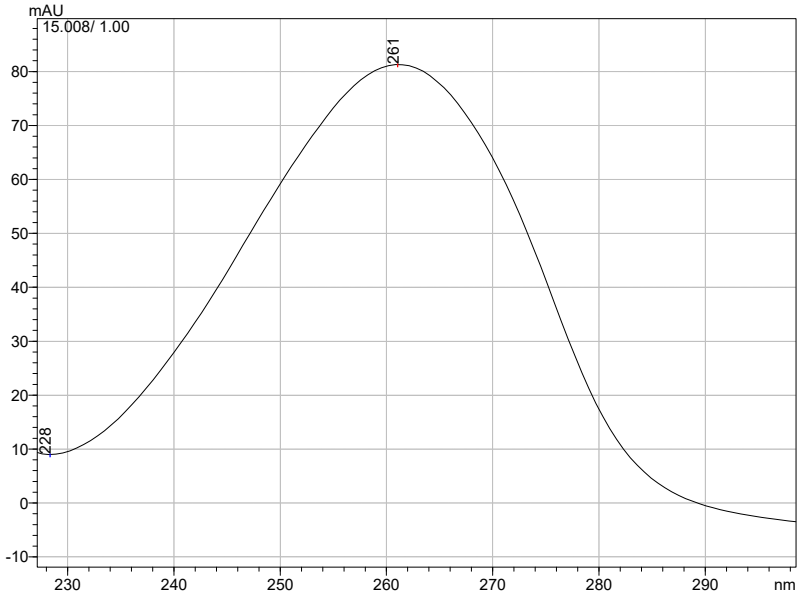


Figure S.16: UV spectrum of compound 1 in methanol



Spectral information of Compound 2

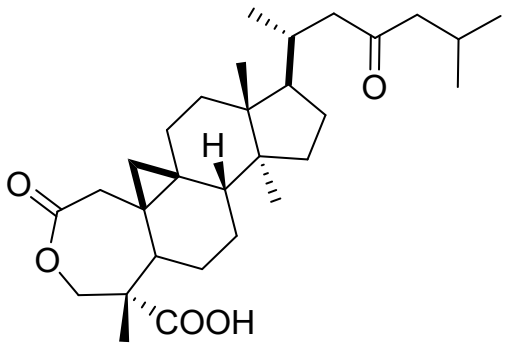


Figure S.17: ^{1}H NMR spectrum of compound 2 in $CDCl_3$

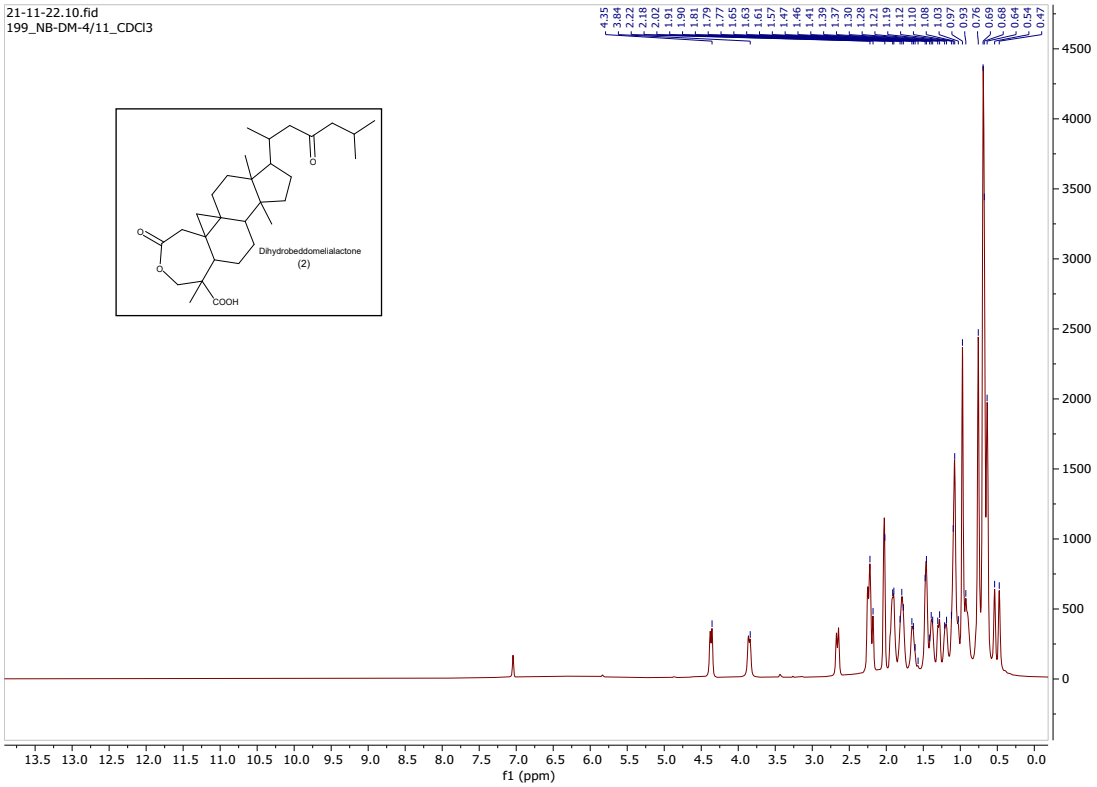


Figure S.18: ^{13}C NMR spectrum of compound 2 in $CDCl_3$

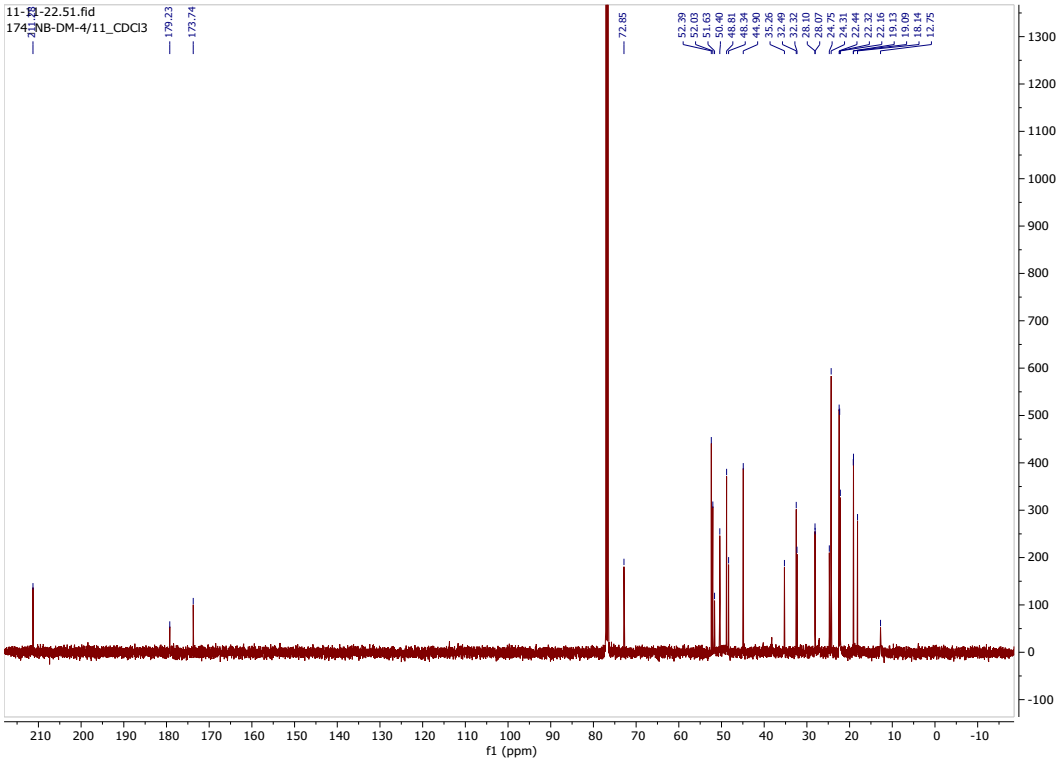


Figure S.19 : DEPT-135 NMR spectrum of compound 2 in $CDCl_3$

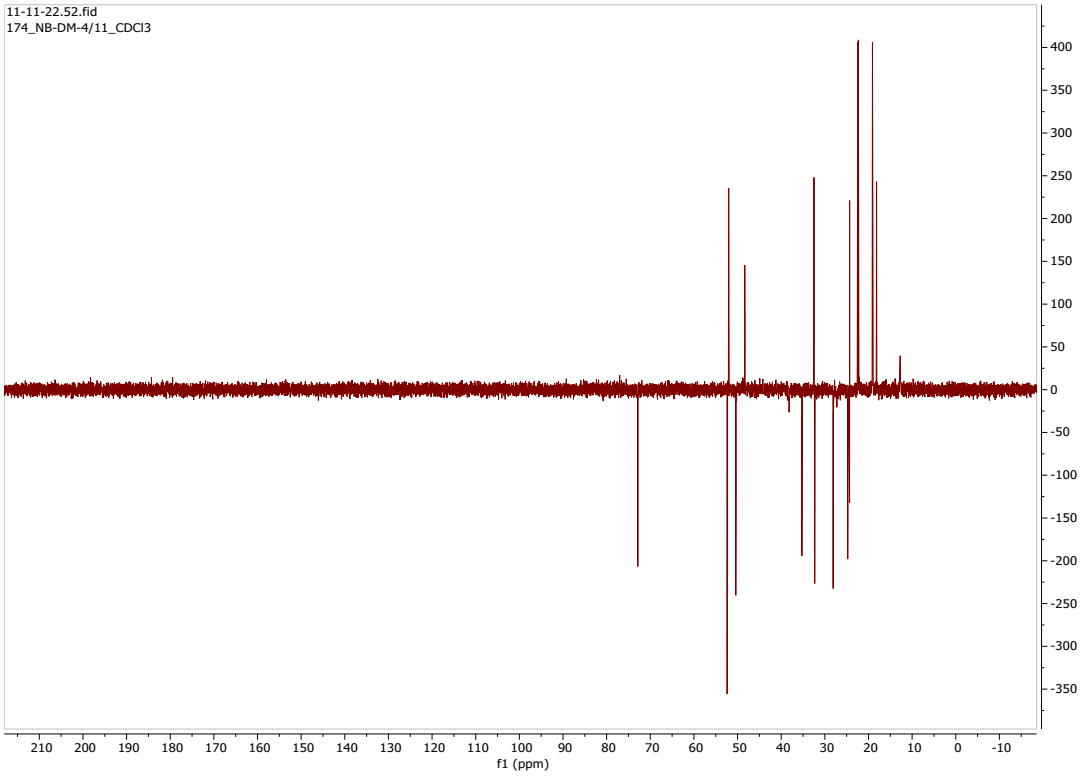


Figure S.20: HSQC NMR spectrum of compound 2 in $CDCl_3$

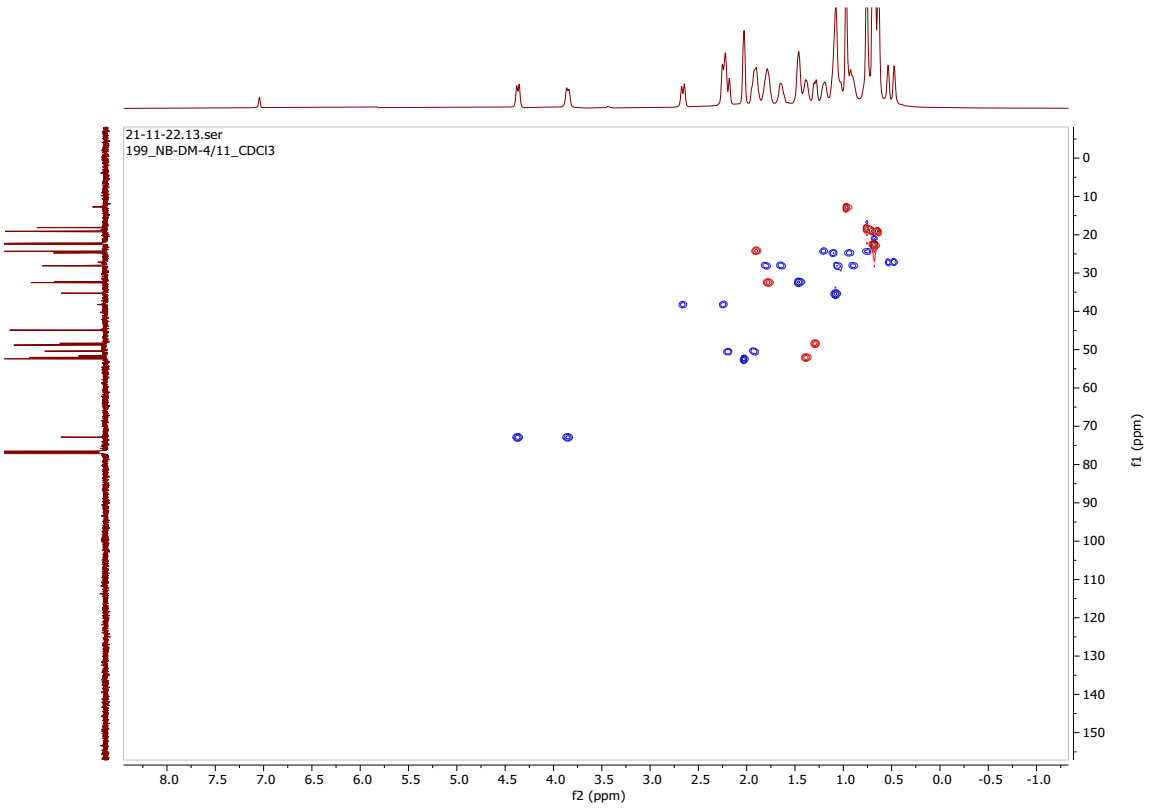


Figure S.21 : HMBC NMR spectrum of compound 2 in $CDCl_3$

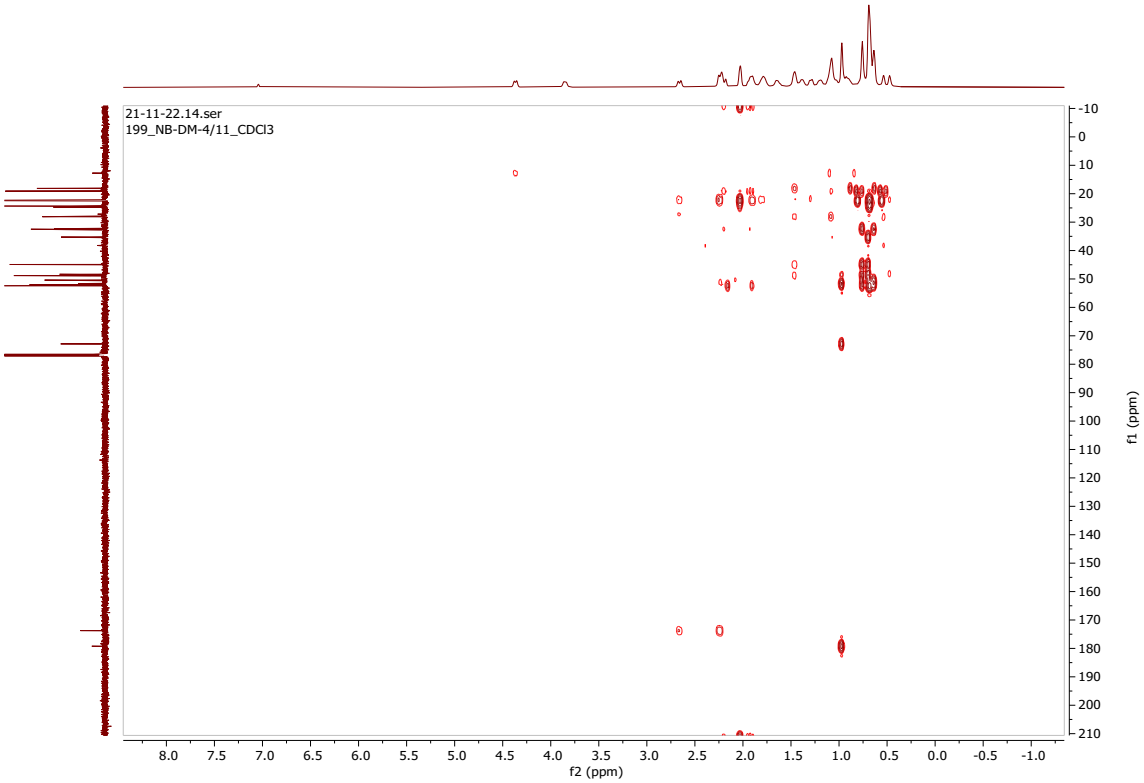


Figure S.22: ^{1}H-^{1}H COSY NMR spectrum of compound 2 in $CDCl_3$

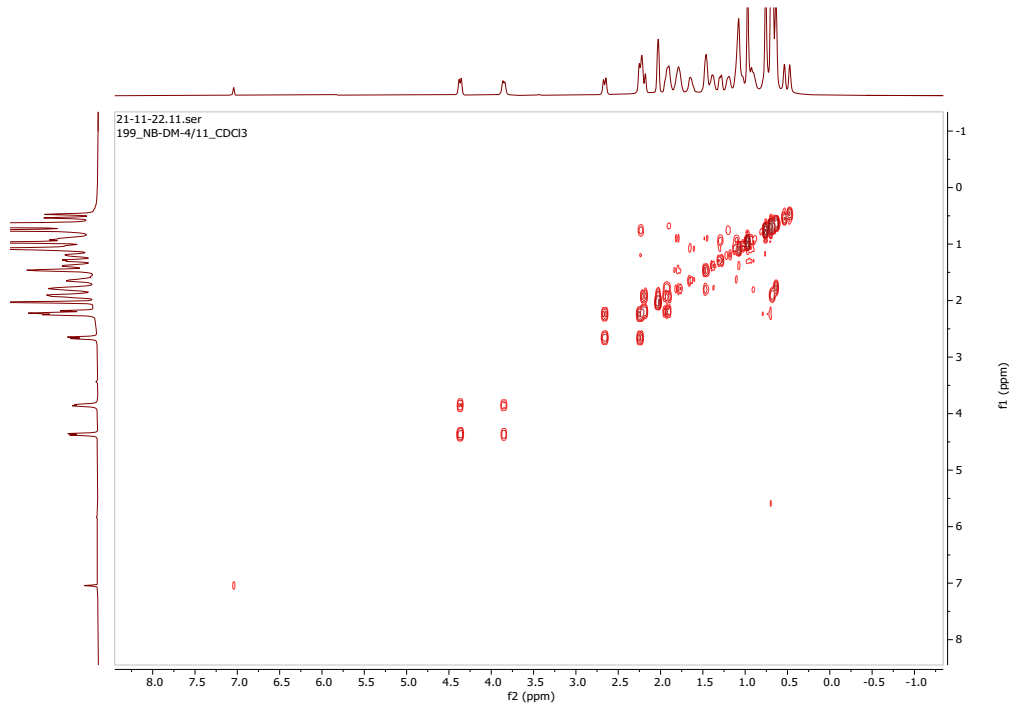


Figure S.23: NOESY NMR spectrum of compound 2 in $CDCl_3$

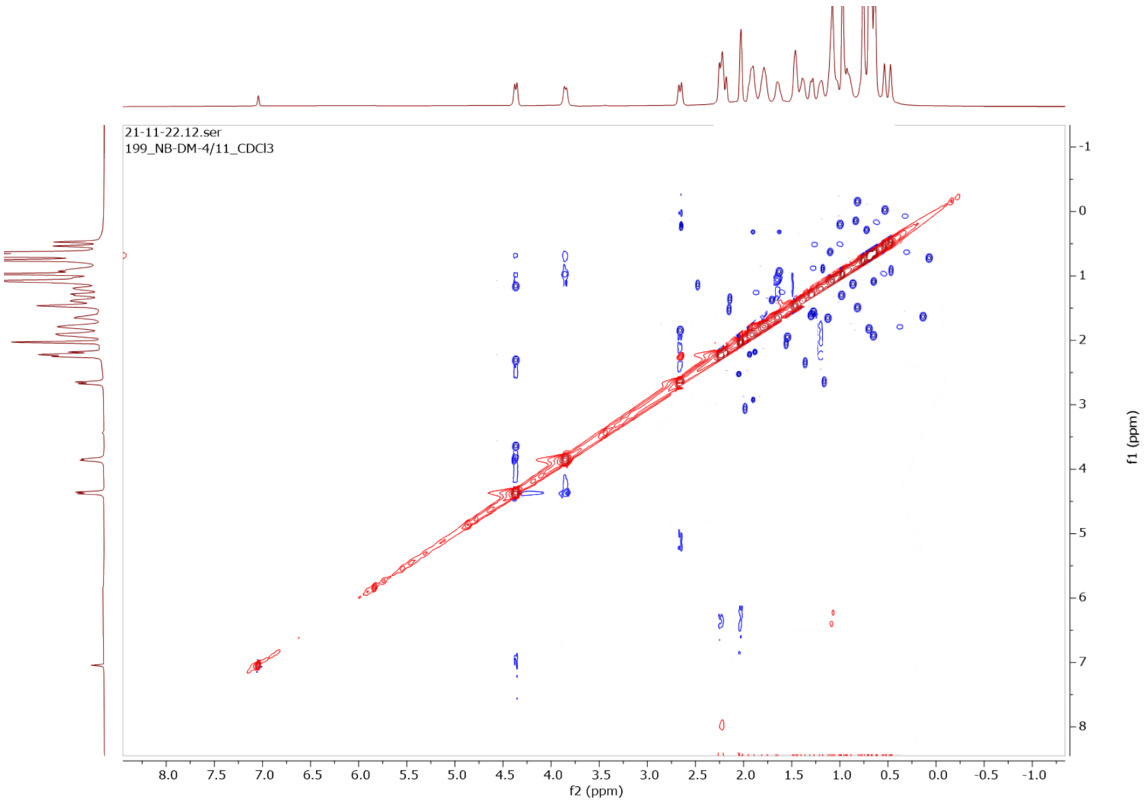


Figure S.24: HRESIMS spectrum of compound 2

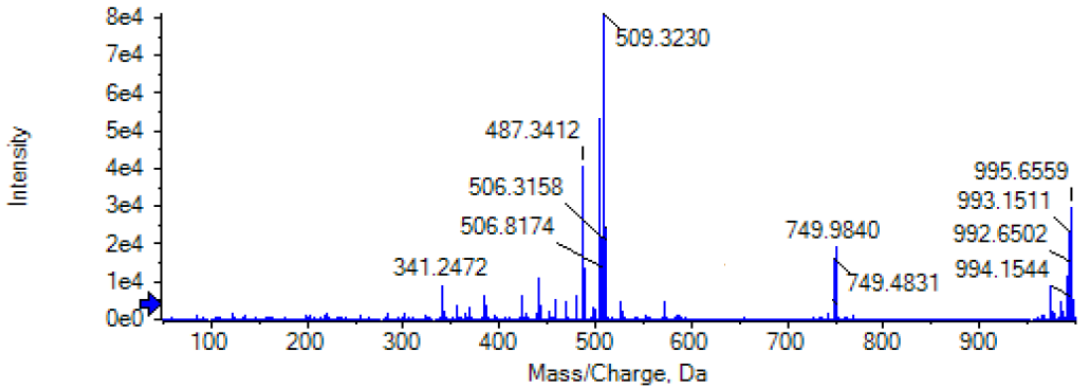


Figure S.25: IR spectrum of compound 2

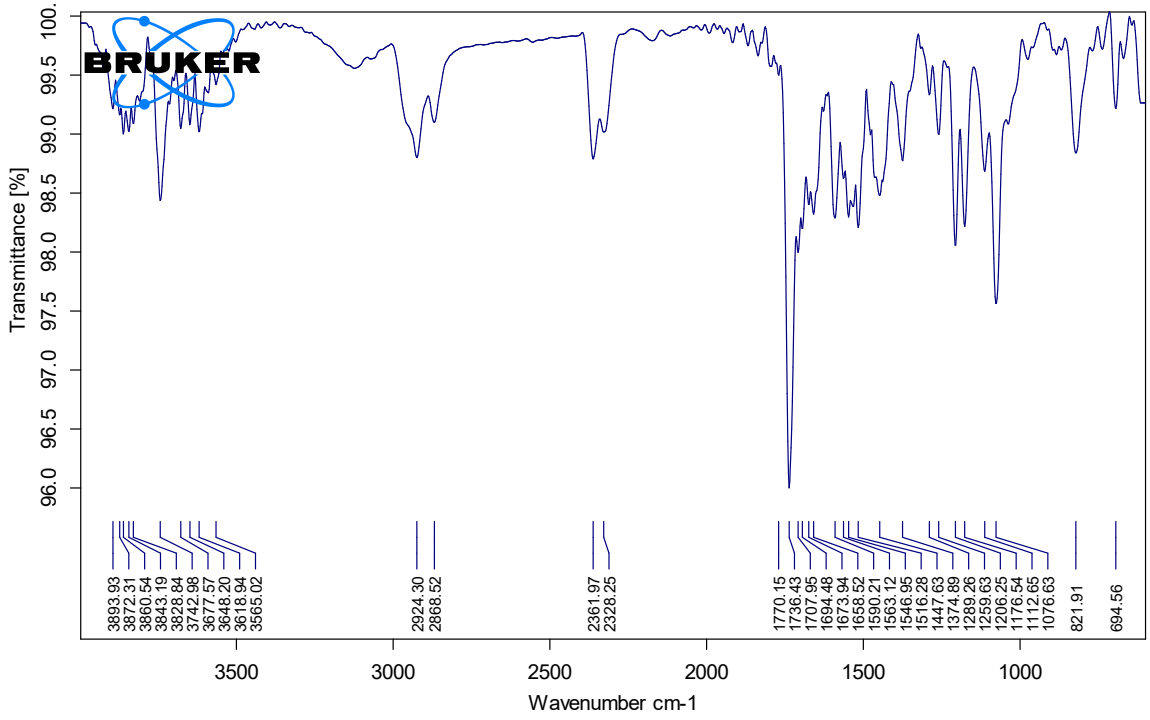
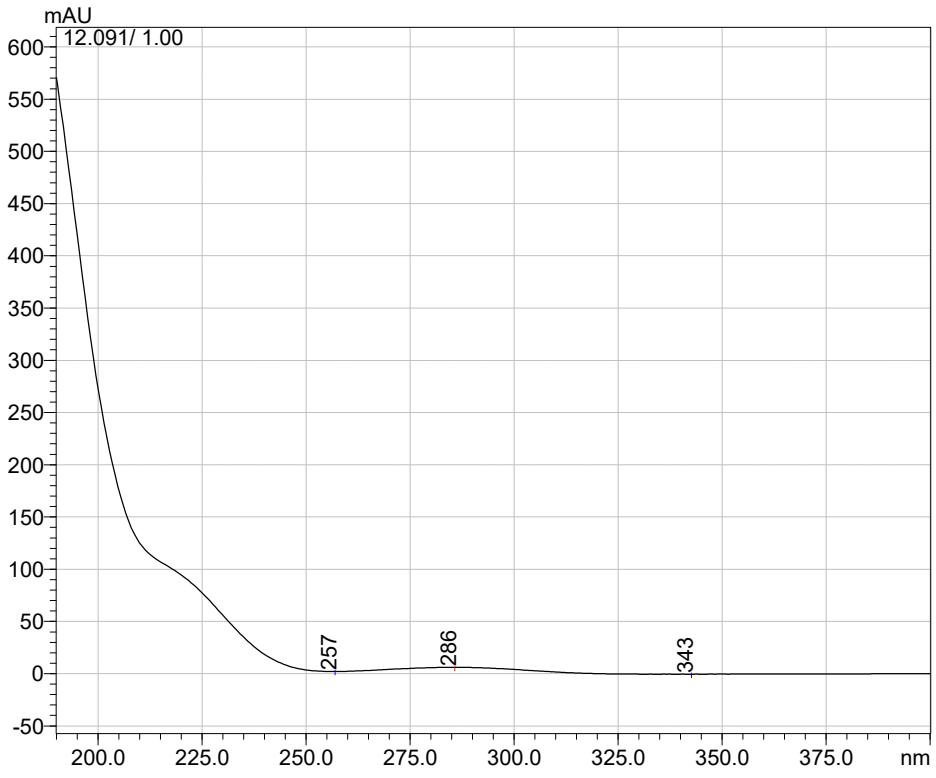


Figure S.26: UV spectrum of compound 2 in methanol



(Note: Compound 2 is UV inactive)

Spectral information of Compound 3

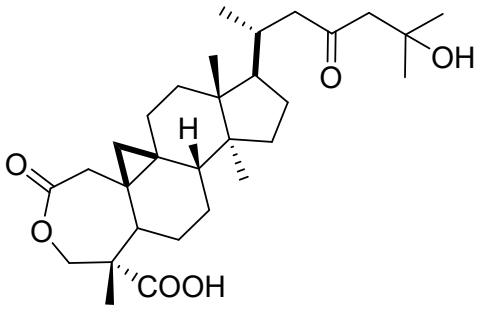


Figure S.27: ^{1}H NMR spectrum of compound 3 in CD_3OD

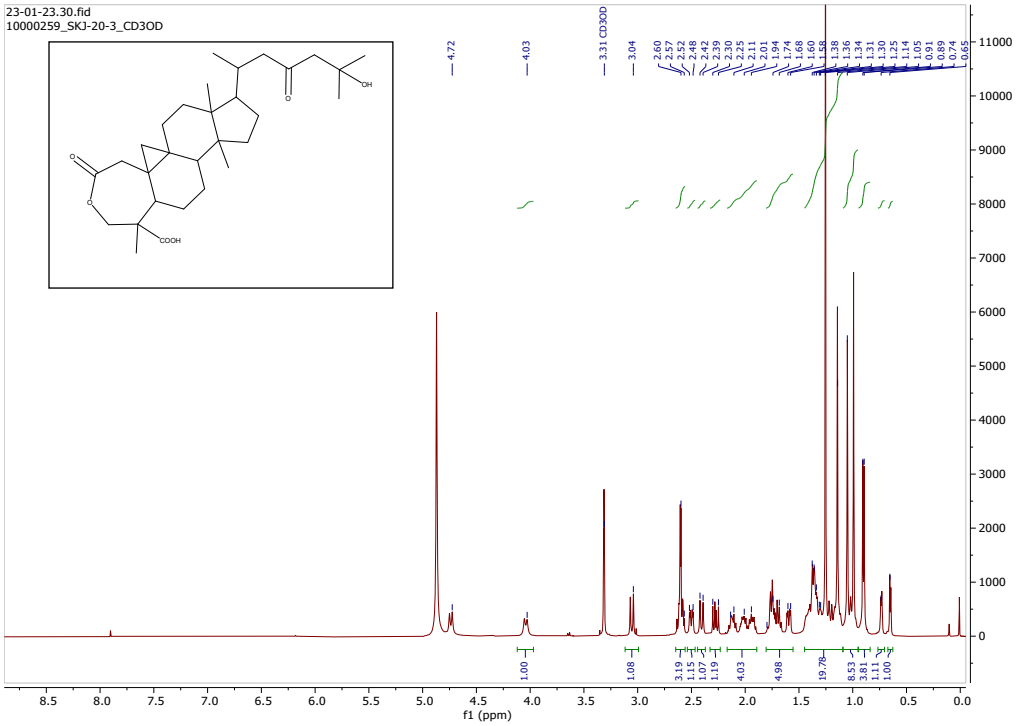


Figure S.28: ^{13}C NMR spectrum of compound 3 in CD_3OD

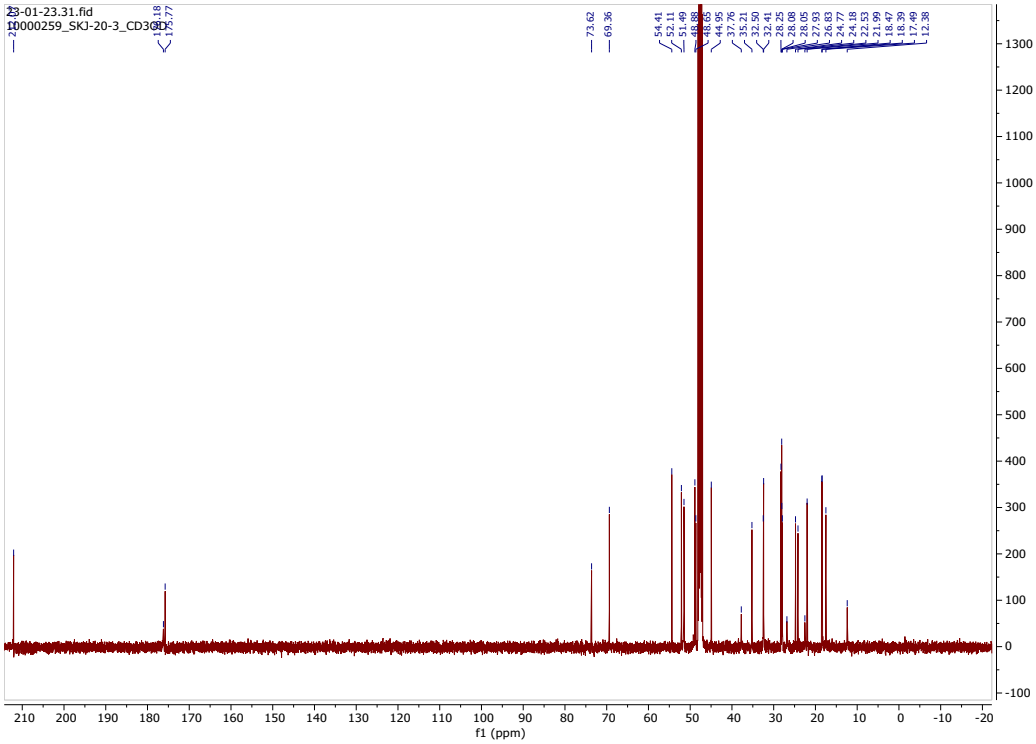


Figure S.29: DEPT-135 NMR spectrum of compound 3 in CD_3OD

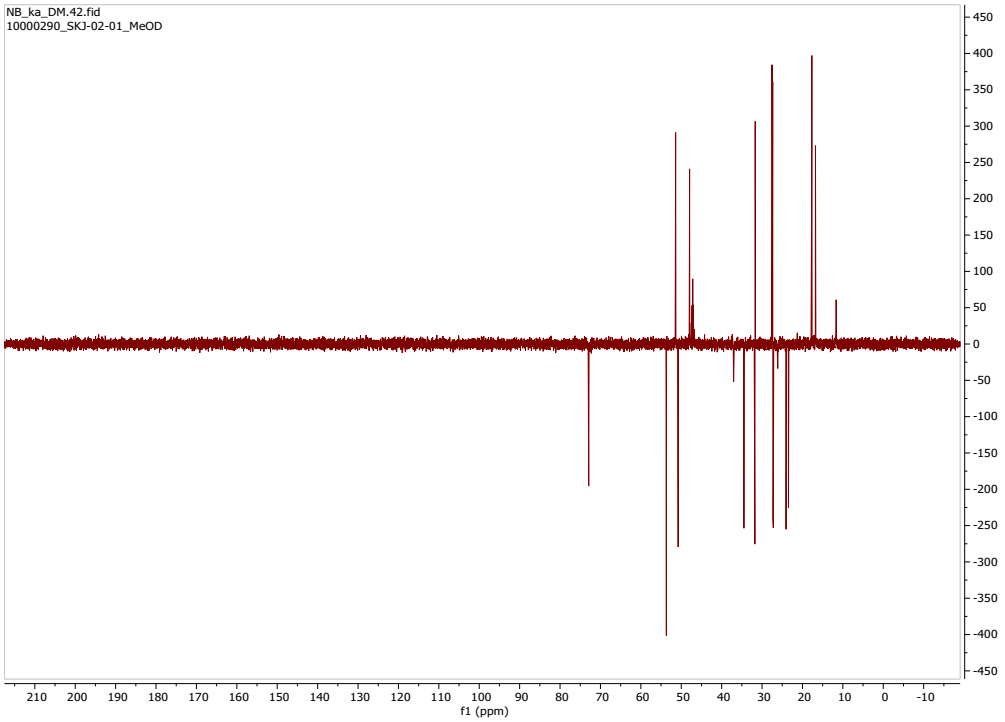


Figure S.30: HSQC NMR spectrum of compound 3 in CD_3OD

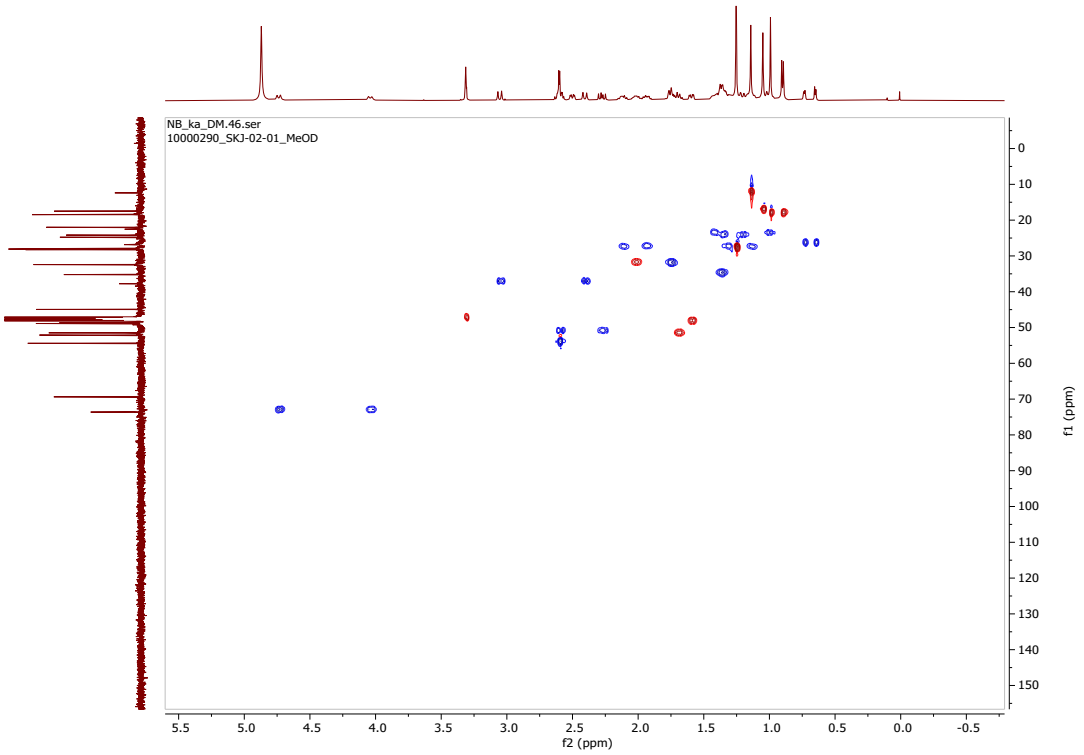


Figure S.31: HMBC NMR spectrum of compound 3 in CD_3OD

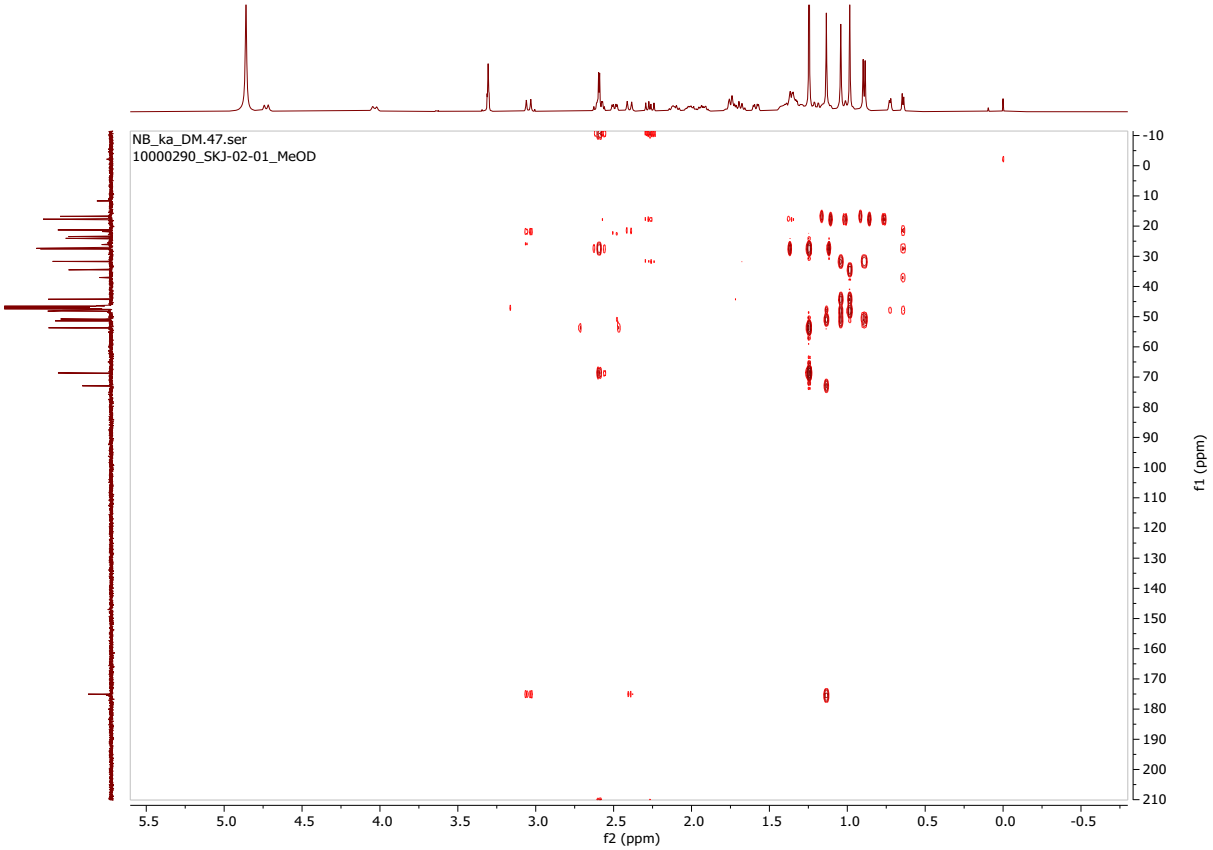


Figure S.32: ^1H-^1H COSY NMR spectrum of compound 3 in CD_3OD

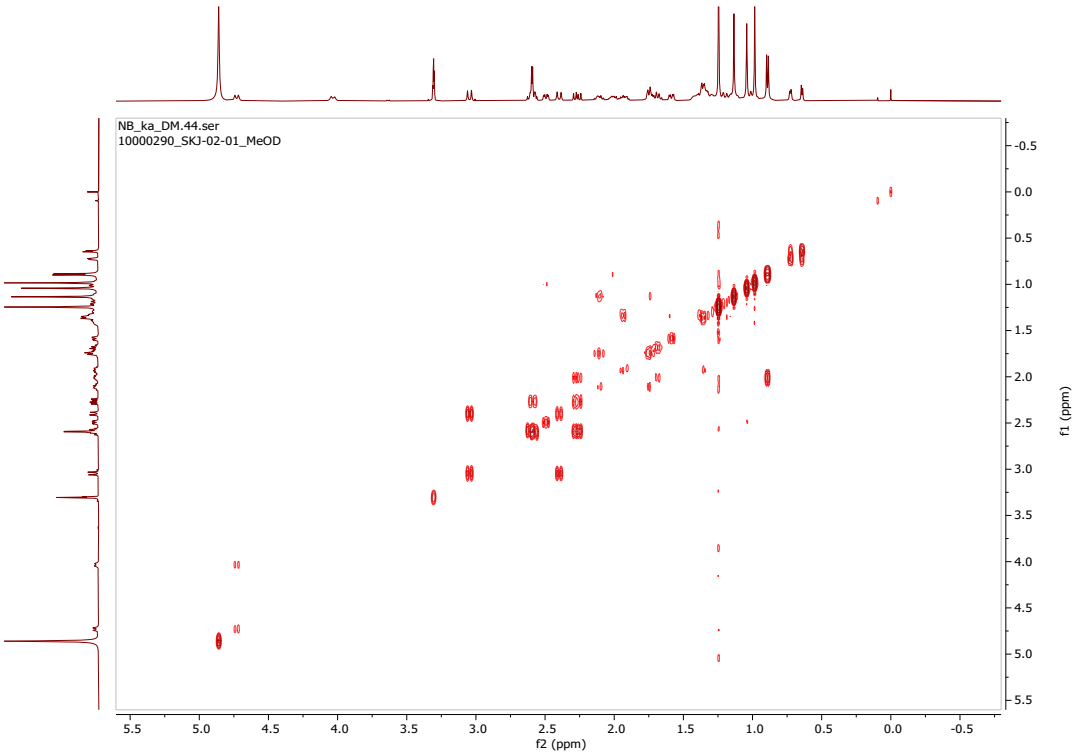


Figure S.33: NOESY NMR spectrum of compound 3 in CD_3OD

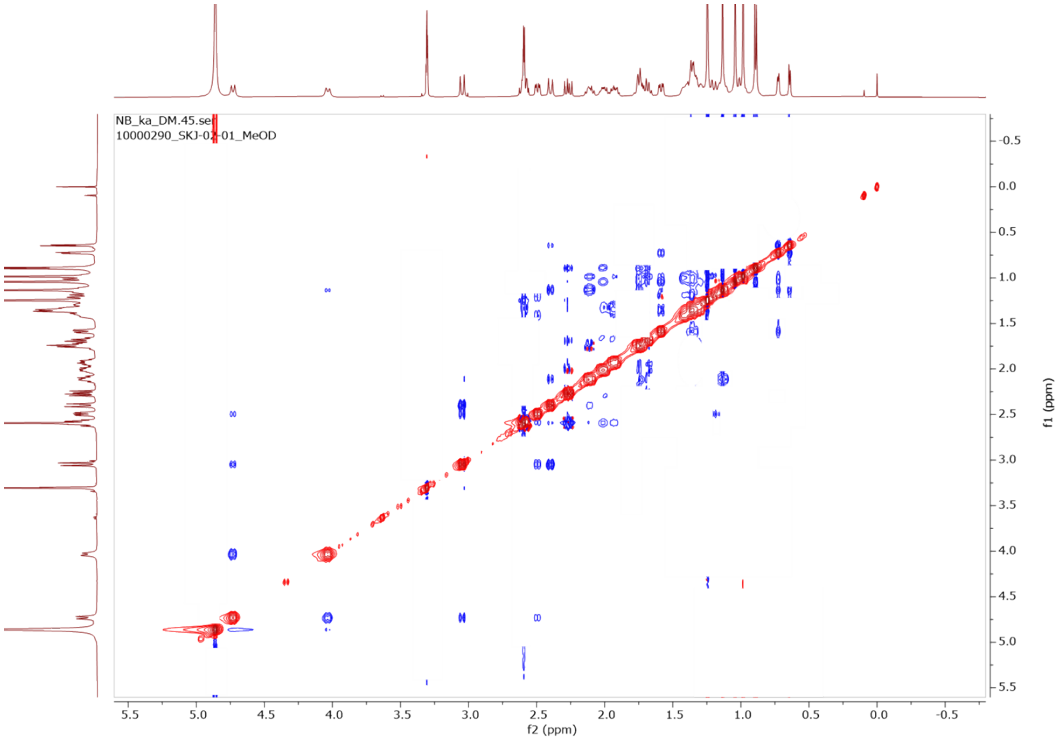


Figure S.34: HRMS mass spectrum of compound 3

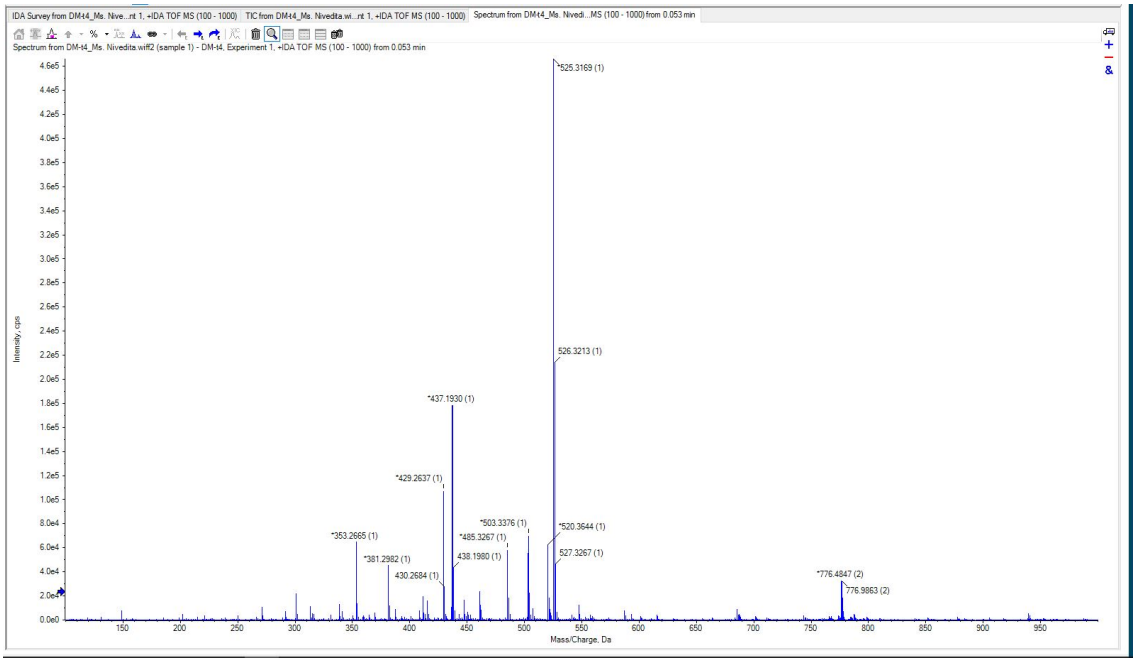


Figure S.35: IR spectrum of compound 3

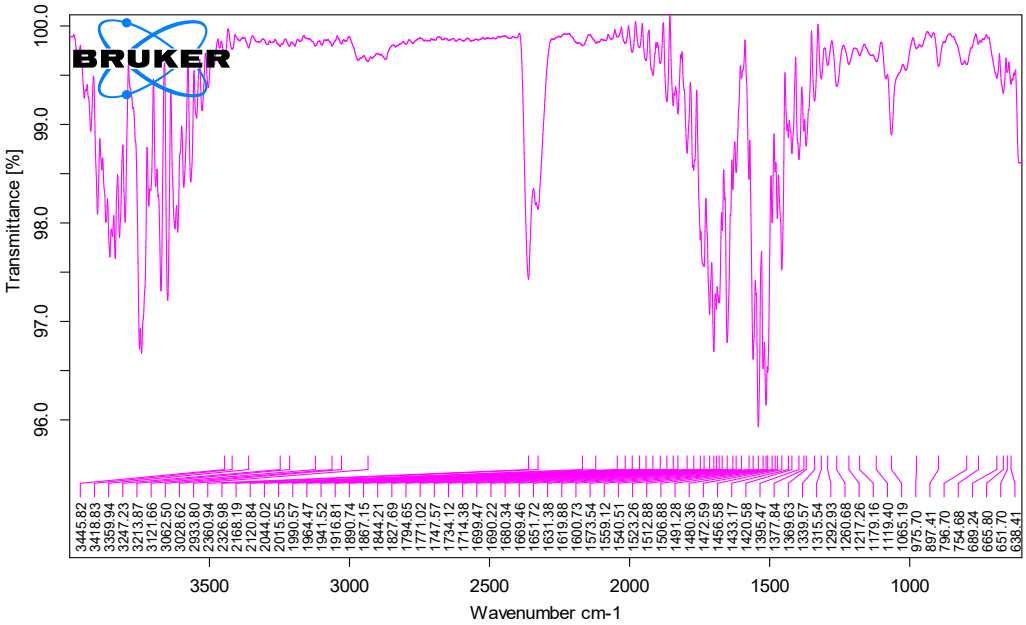
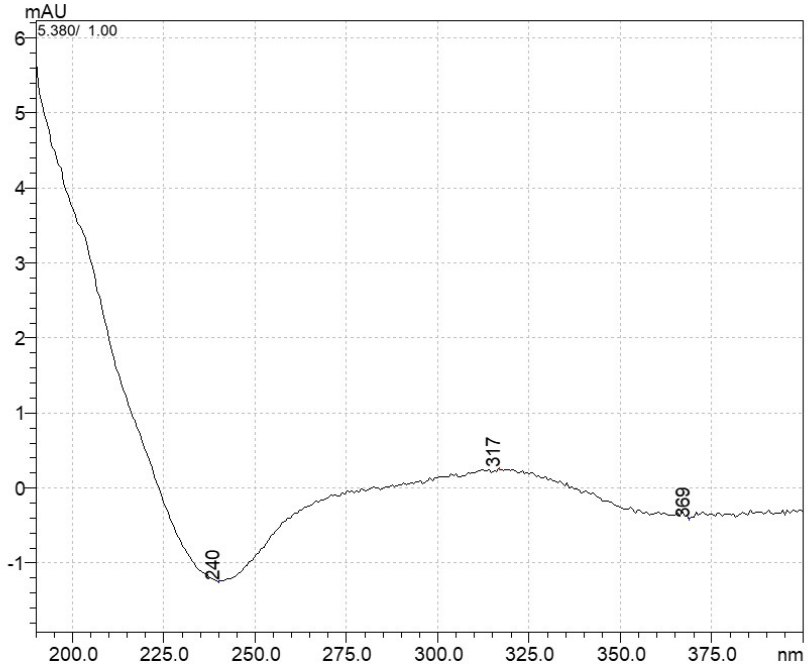


Figure S.36: UV spectrum of compound 3



(Note: Compound 3 is UV inactive)

Spectral information of Compound 4

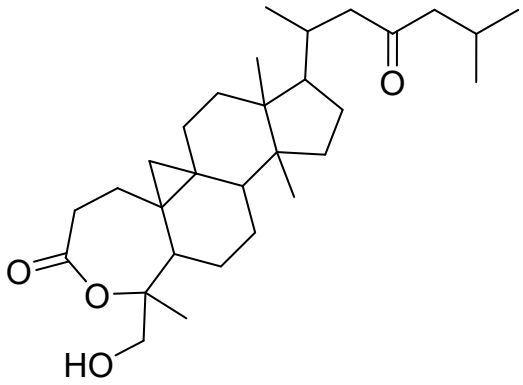


Figure S.37: ^{1}H NMR spectrum of compound 4 in CD_3OD

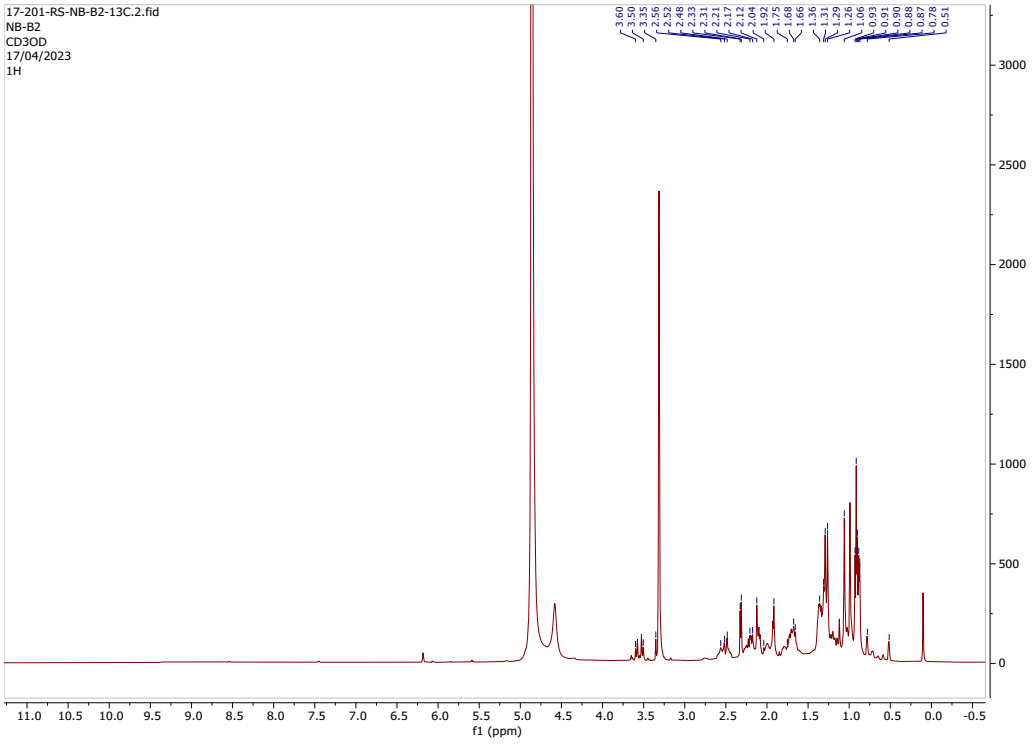


Figure S.38: ^{13}C NMR spectrum of compound 4 in CD_3OD

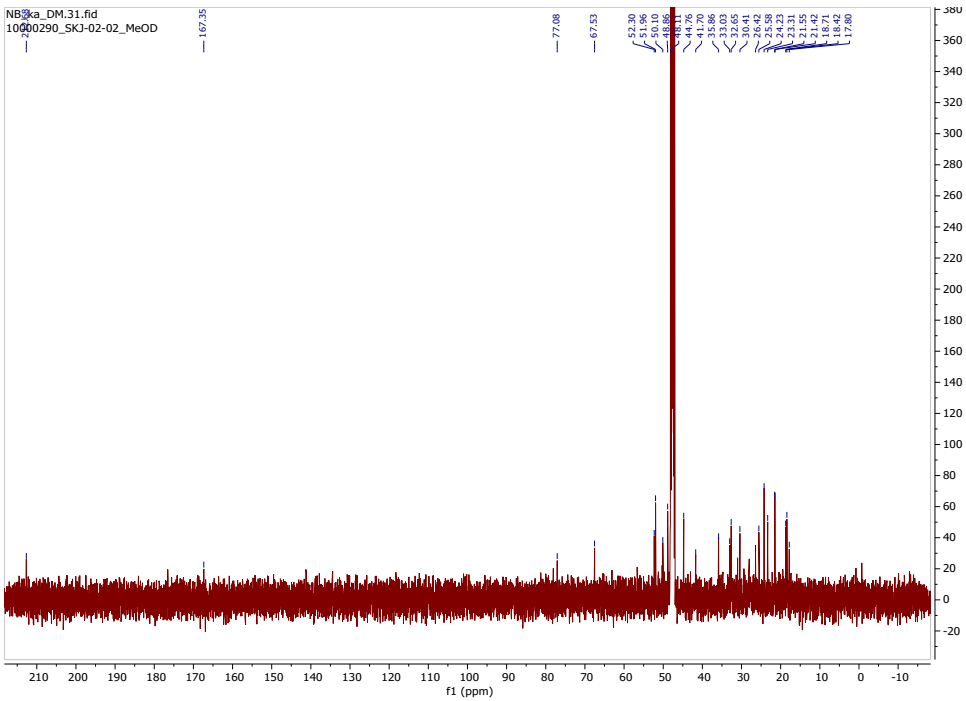


Figure S.39: DEPT-135 NMR spectrum of compound 4 in CD_3OD

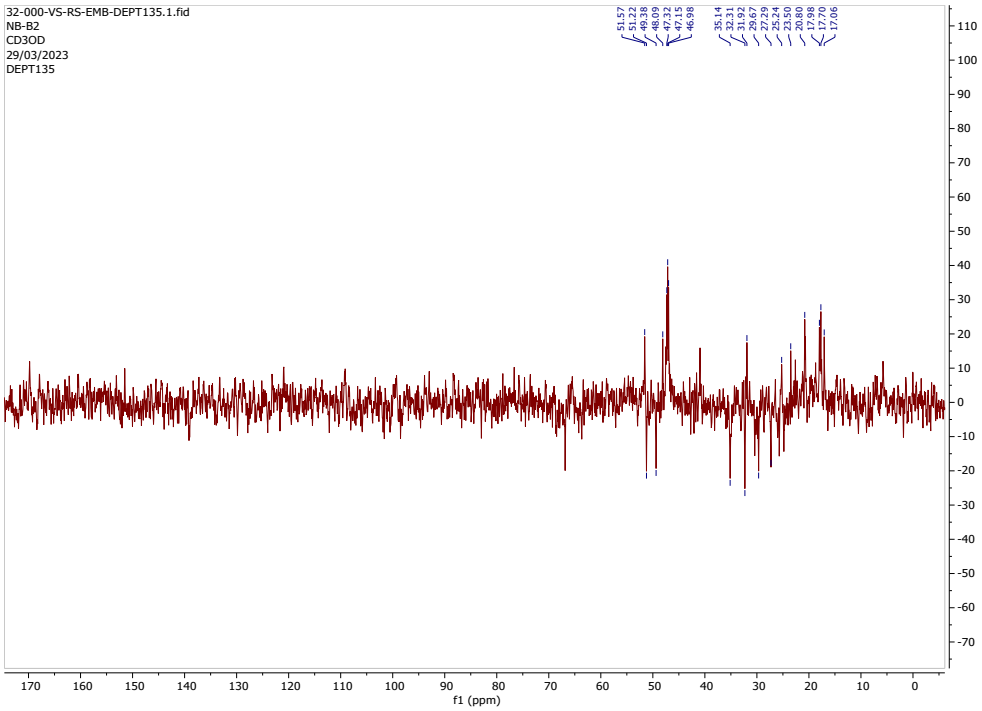


Figure S.40: HSQC NMR spectrum of compound 4 in CD_3OD

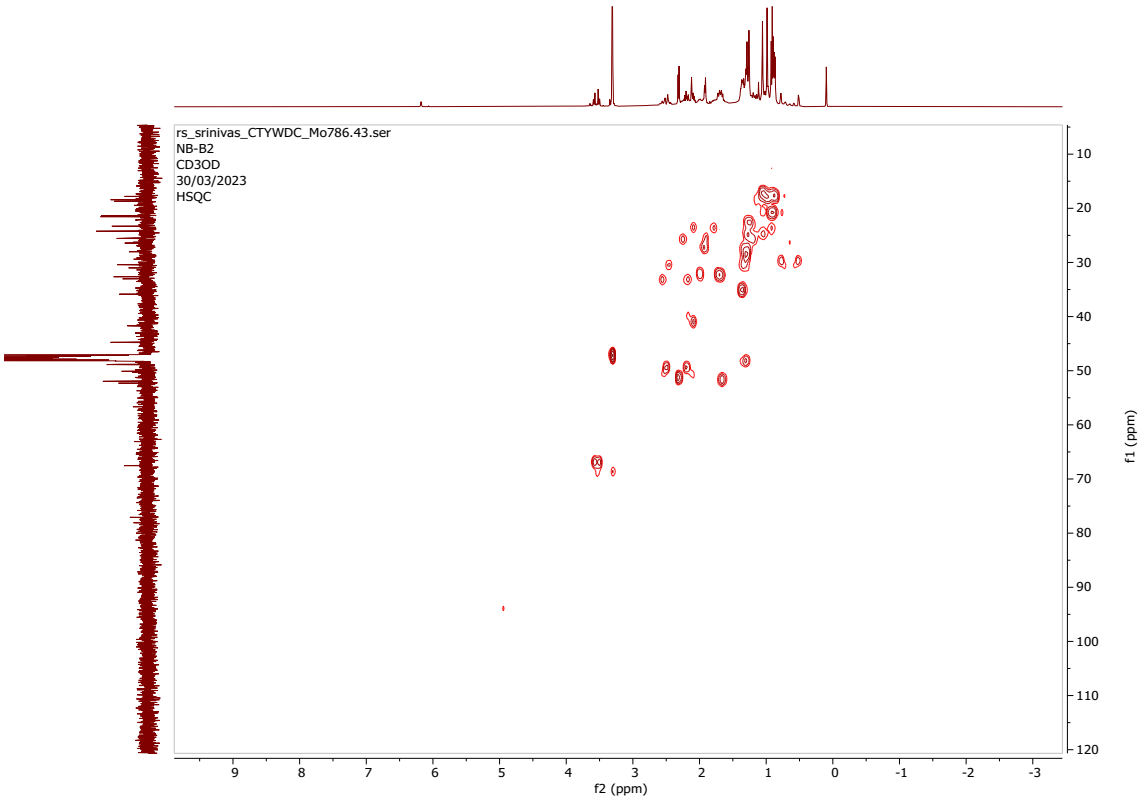


Figure S.41: HMBC NMR spectrum of compound 4 in CD_3OD

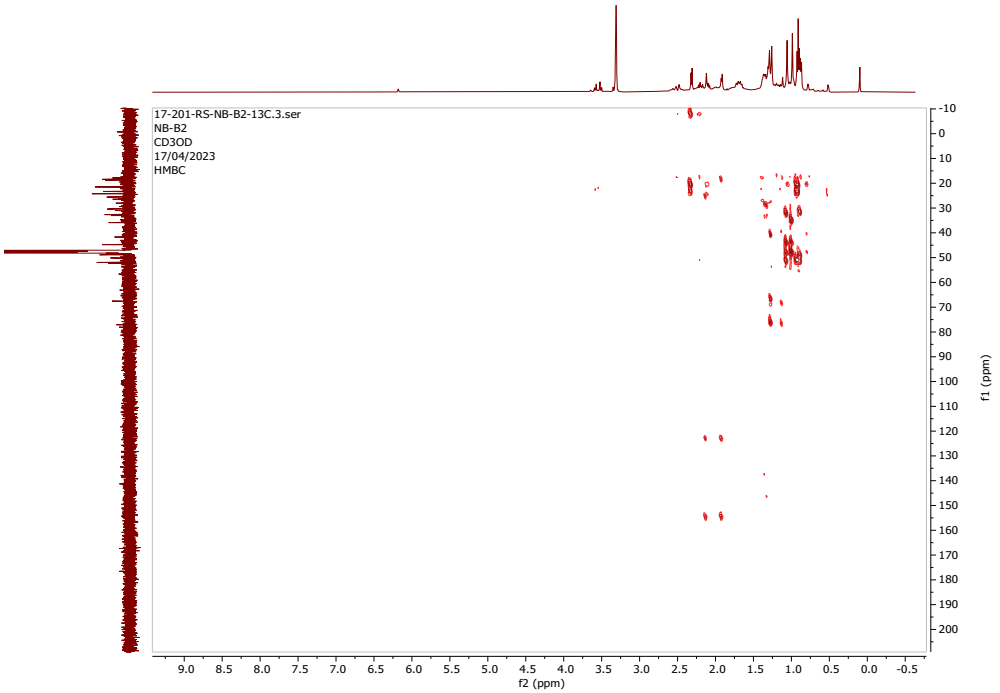


Figure S.42: ^{1}H-^{1}H COSY NMR spectrum of compound 4 in CD_3OD

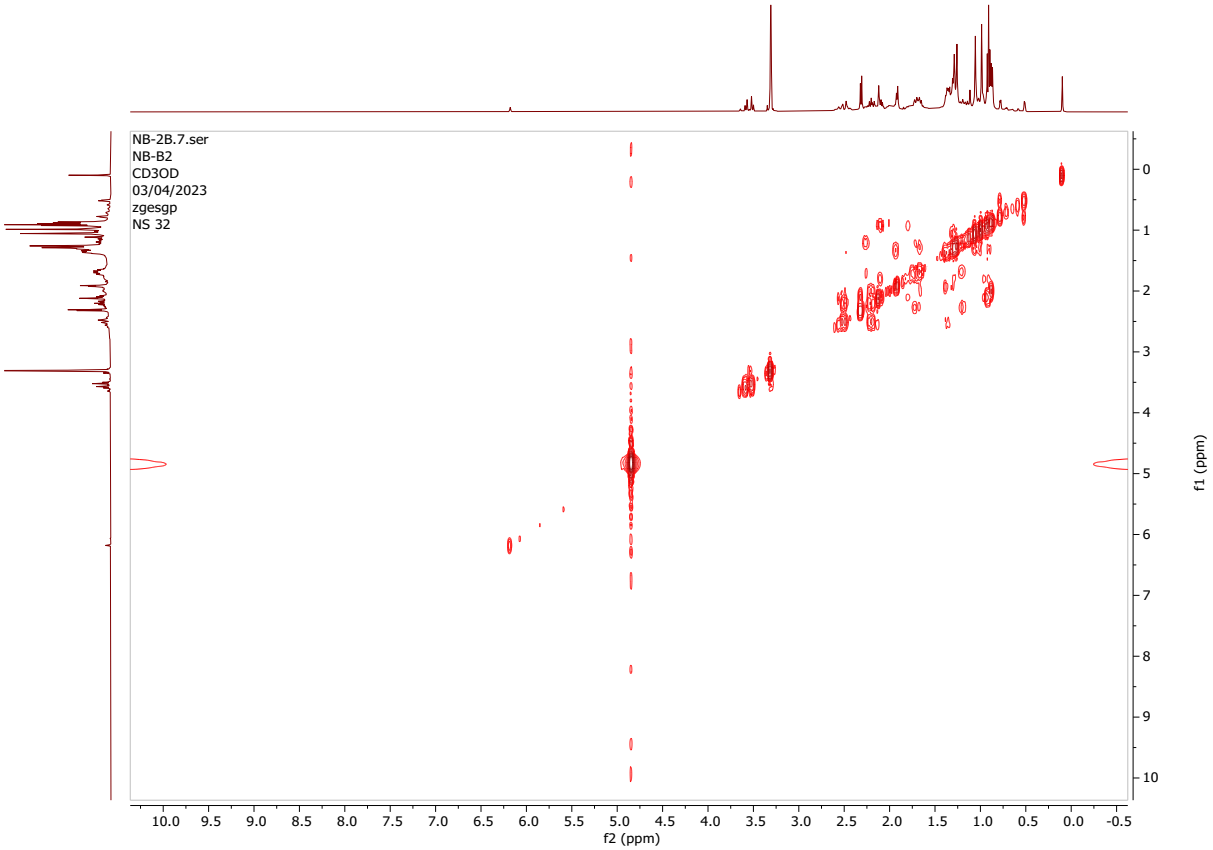


Figure S.43: NOESY NMR spectrum of compound 4 in CD_3OD

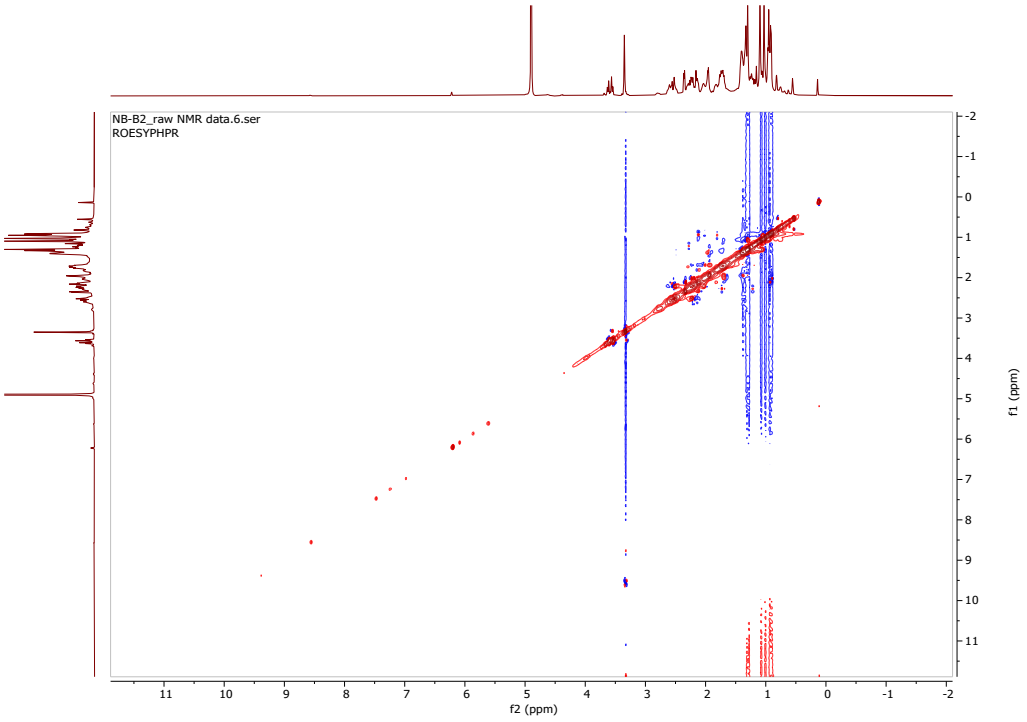


Figure S.44: HRESIMS spectrum of compound 4

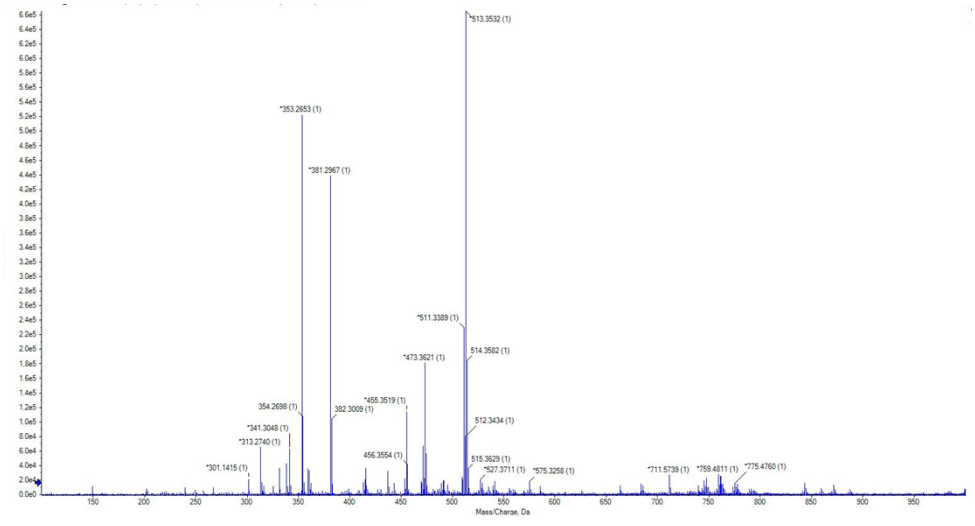


Figure S.45: IR spectrum of compound 4

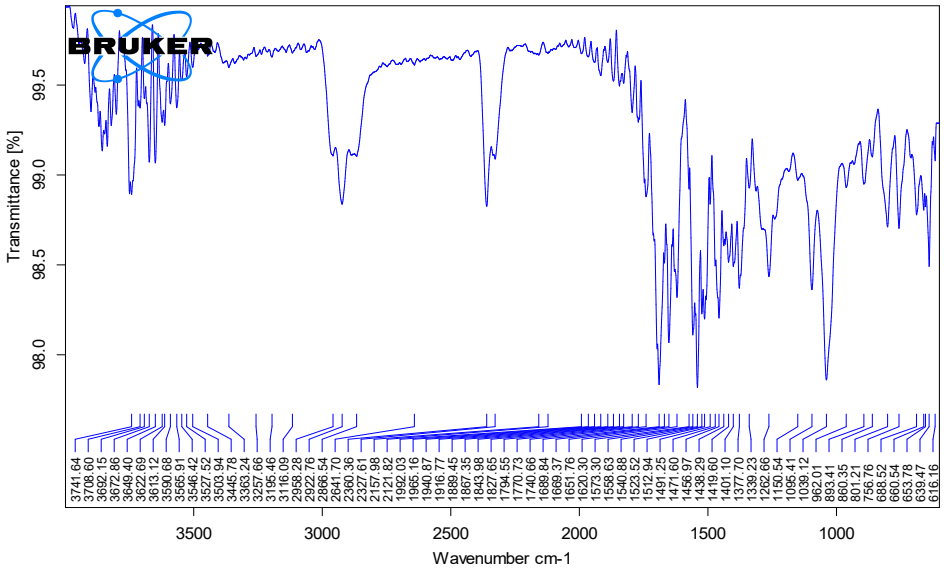


Figure S.46: UV spectrum of compound 4

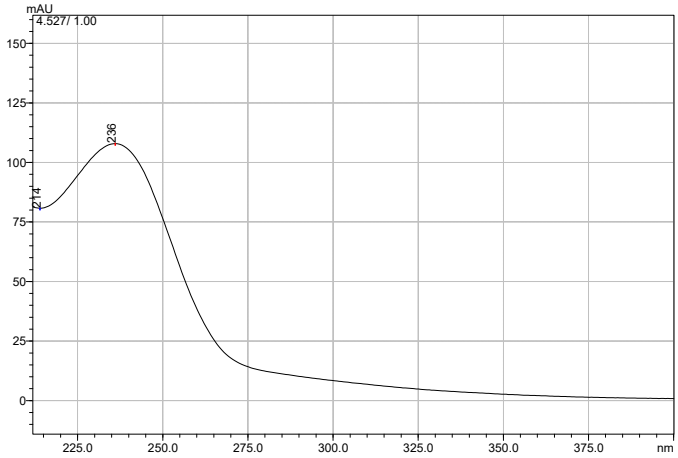


Figure S.47: Table representing MTT assay after 24 hours.

Compounds	T47D	MCF-7	MDAMB-231	HEK-293
1	20.07±1.16	24.20±1.68	66.13±1.23	-
2	18.42±1.09	22.39±1.21	40.20±2.29	-
3	36.31±1.31	42.22±1.97	-	-
4	76.40±2.09	88.43±2.14	-	-