

-Supplementary Material-

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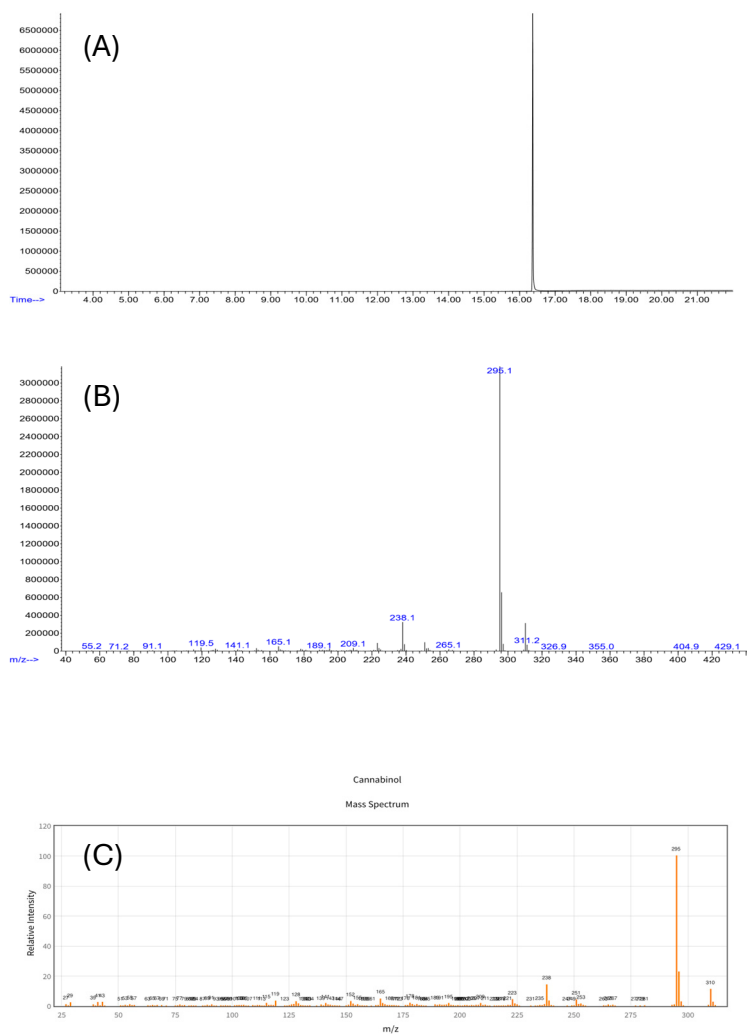


Figure S1. GC–MS analysis of CBN

(A) Total ion chromatogram (TIC) of the CBN sample analyzed in this study.

(B) Experimental electron ionization (EI) mass spectrum (70 eV) corresponding to the peak at RT = 16,370 min.

(C) Reference EI mass spectrum of CBN obtained from the NIST Chemistry WebBook [NIST1].

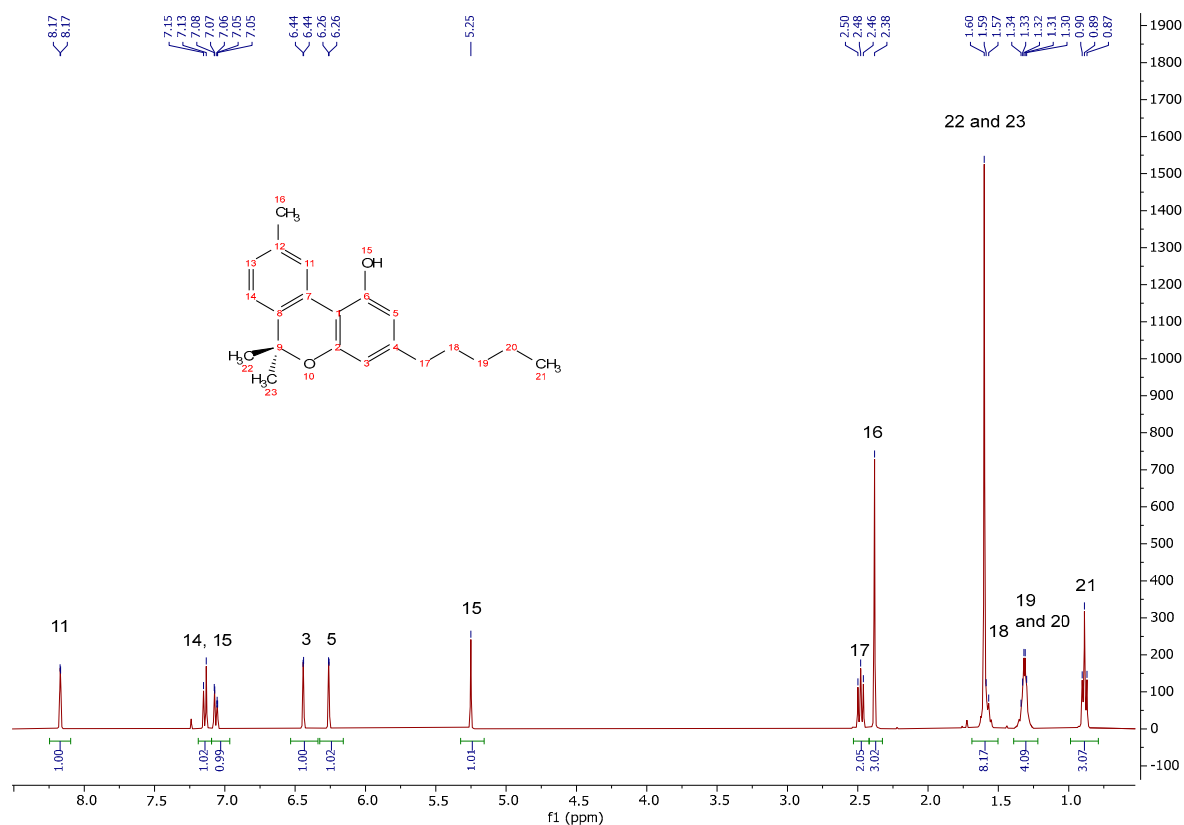


Figure S2. ¹H NMR spectrum of CBN

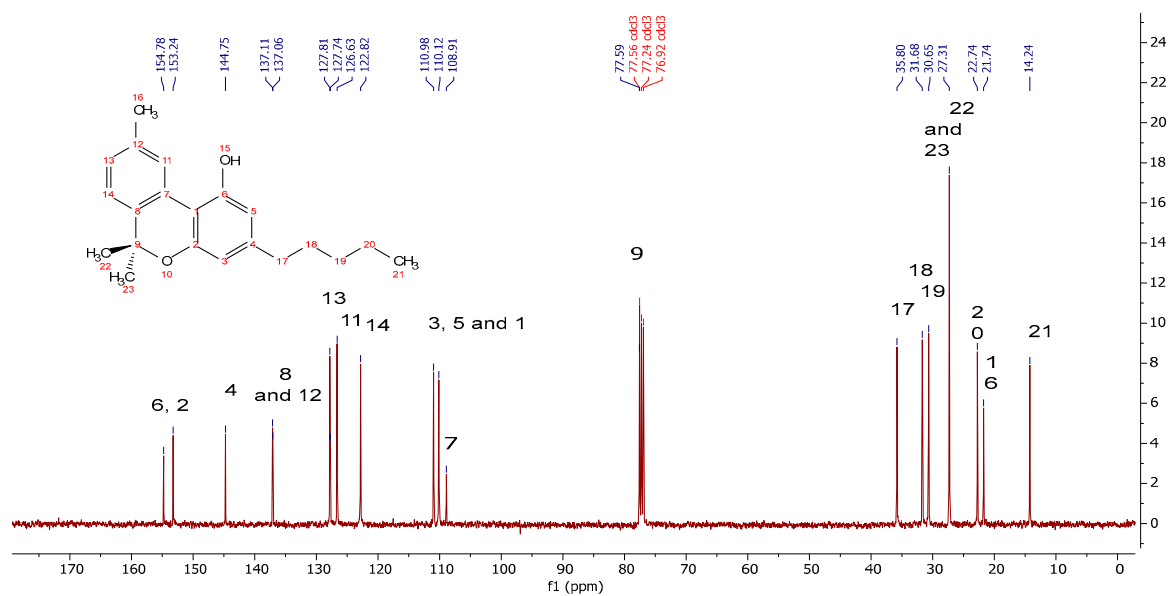


Figure S3. ¹³C NMR spectrum of CBN

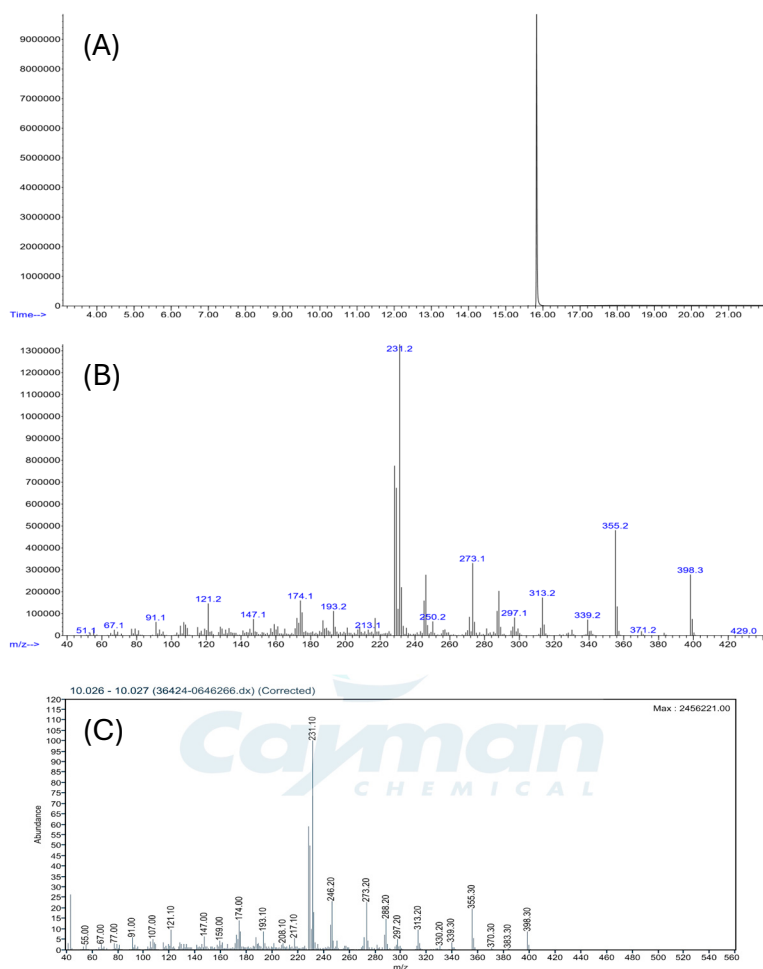


Figure S4. GC–MS analysis of CBD diacetate

(A) Total ion chromatogram (TIC) of the CBD-DOAc sample analyzed in this study.

(B) Experimental electron ionization (EI) mass spectrum (70 eV) corresponding to the peak at RT = 15,832 min.

(C) Reference EI mass spectrum of CBD-DOAc obtained from Cayman Chemical GC–MS spectral library [Cayman2].

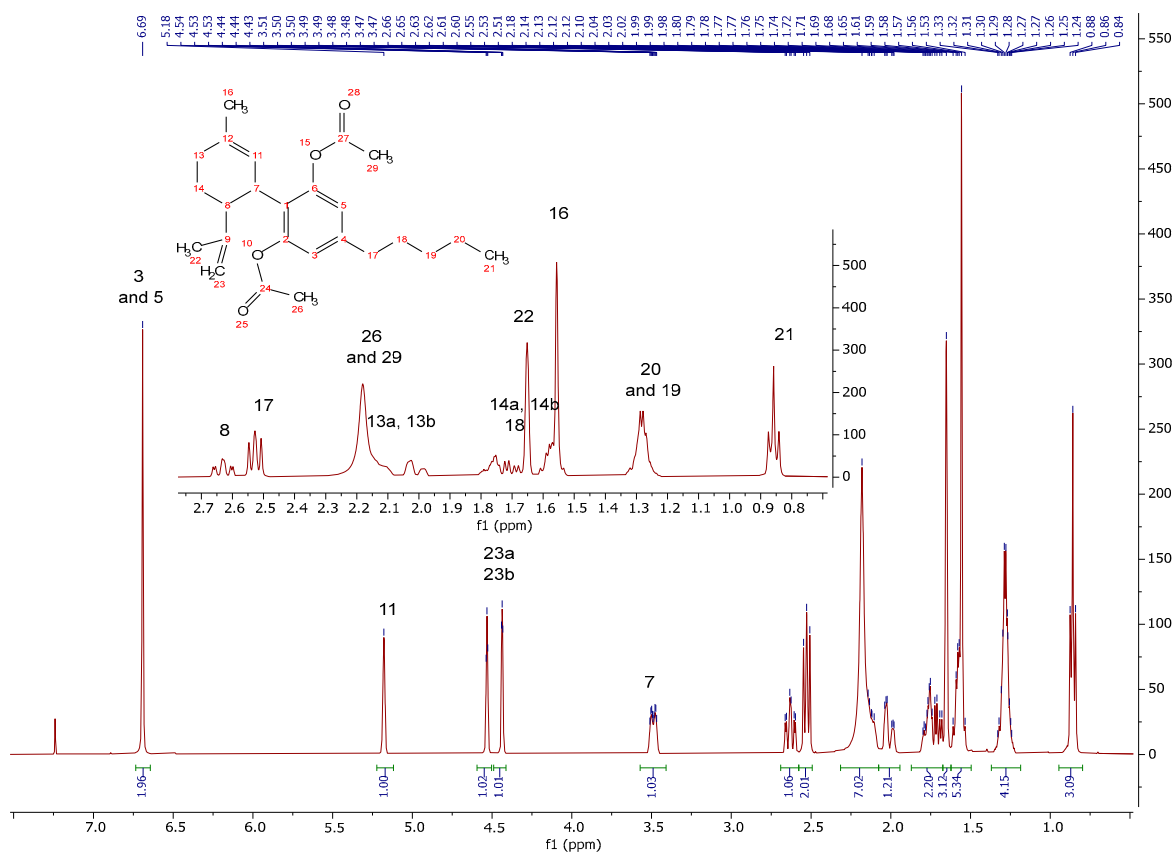


Figure S5. ¹H NMR spectrum of CBD diacetate

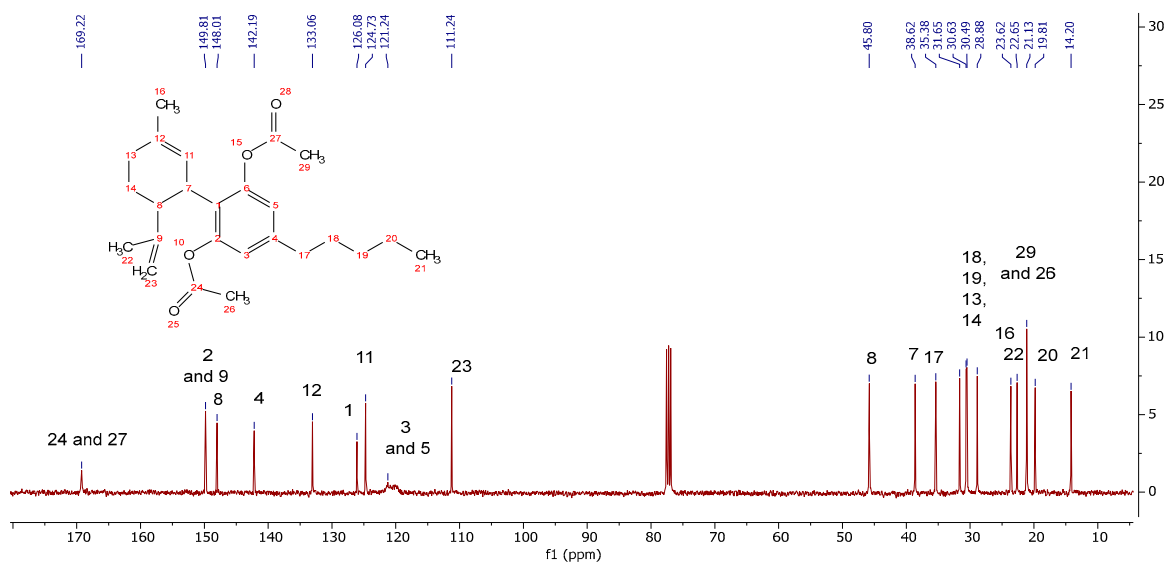


Figure S6. ¹³C NMR spectrum of CBD diacetate

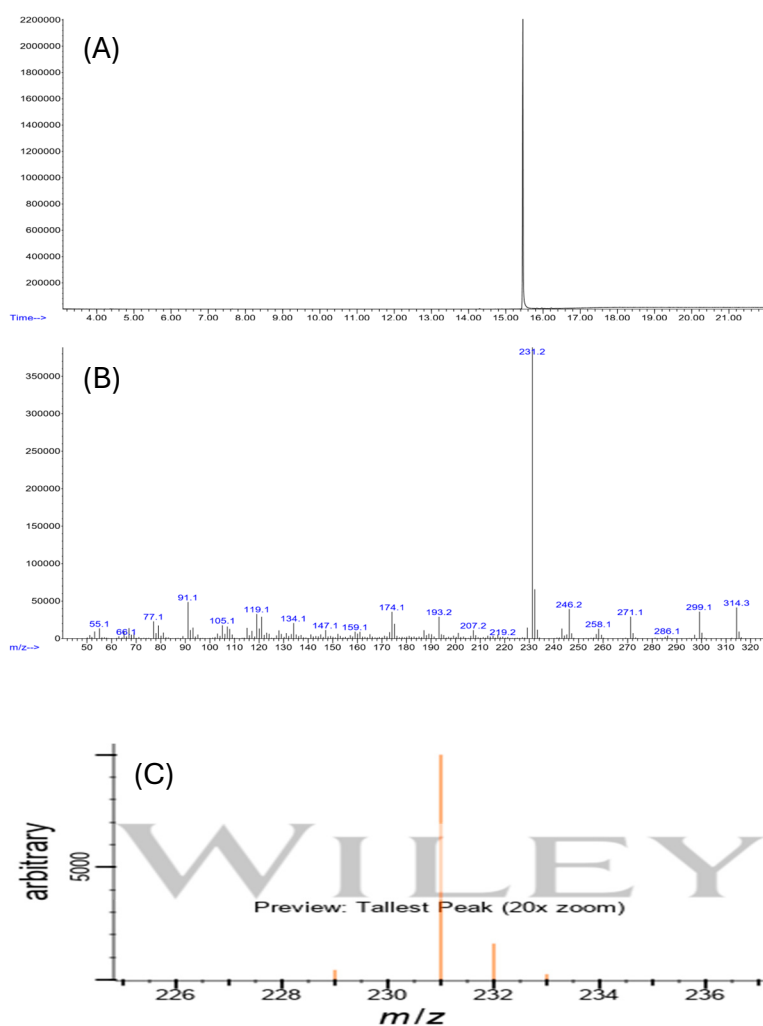


Figure S7. GC–MS analysis of CBDA

(A) Total ion chromatogram (TIC) of the CBDA sample analyzed in this study.

(B) Experimental electron ionization (EI) mass spectrum (70 eV) corresponding to the peak at RT = 15,458 min.

(C) Reference EI mass spectrum of CBDA obtained from the Wiley spectral library via PubChem [PubChem3]

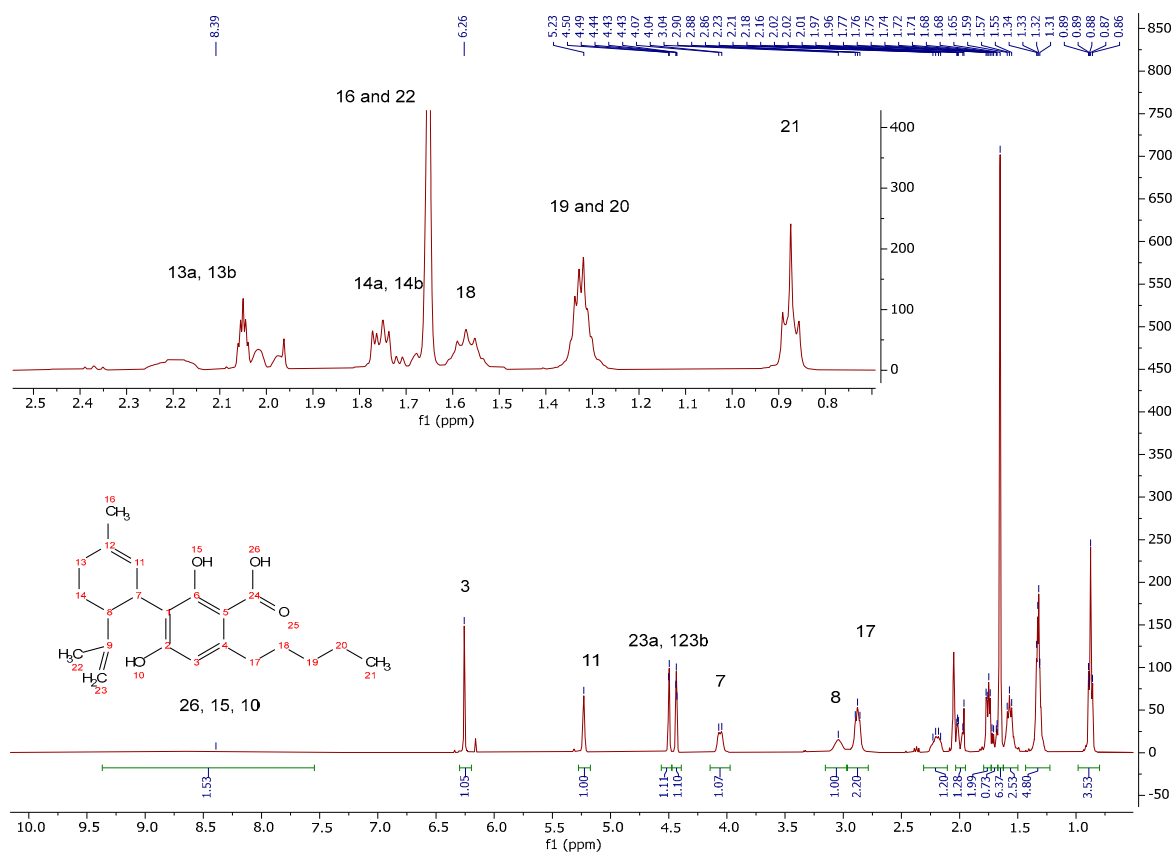


Figure S8. ¹H NMR spectrum of CBDA

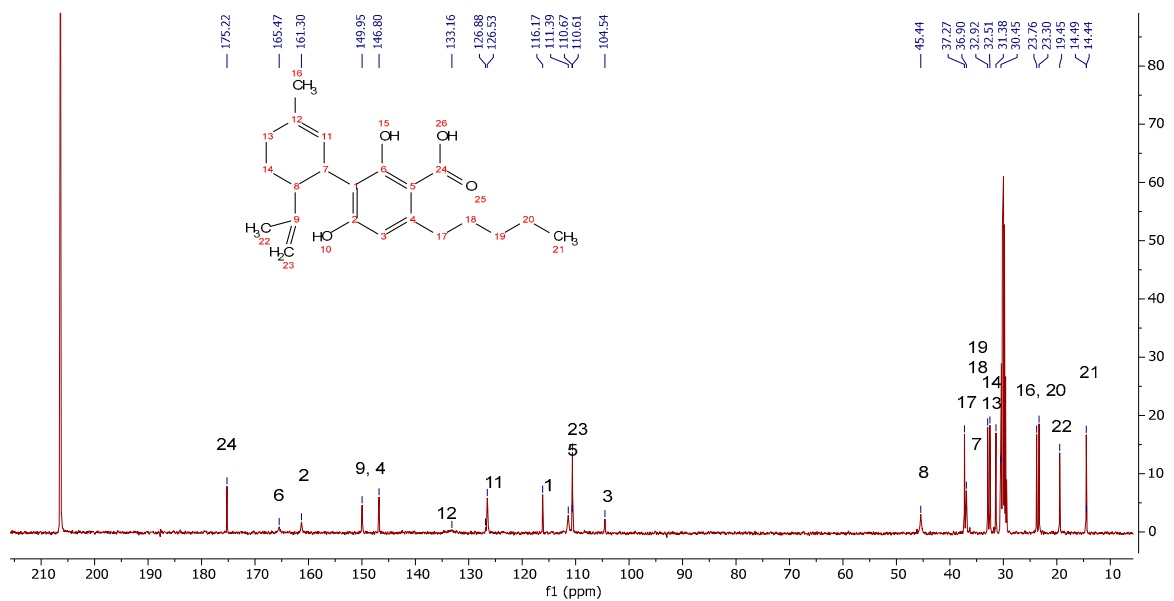


Figure S9. ¹³C NMR spectrum of CBDA

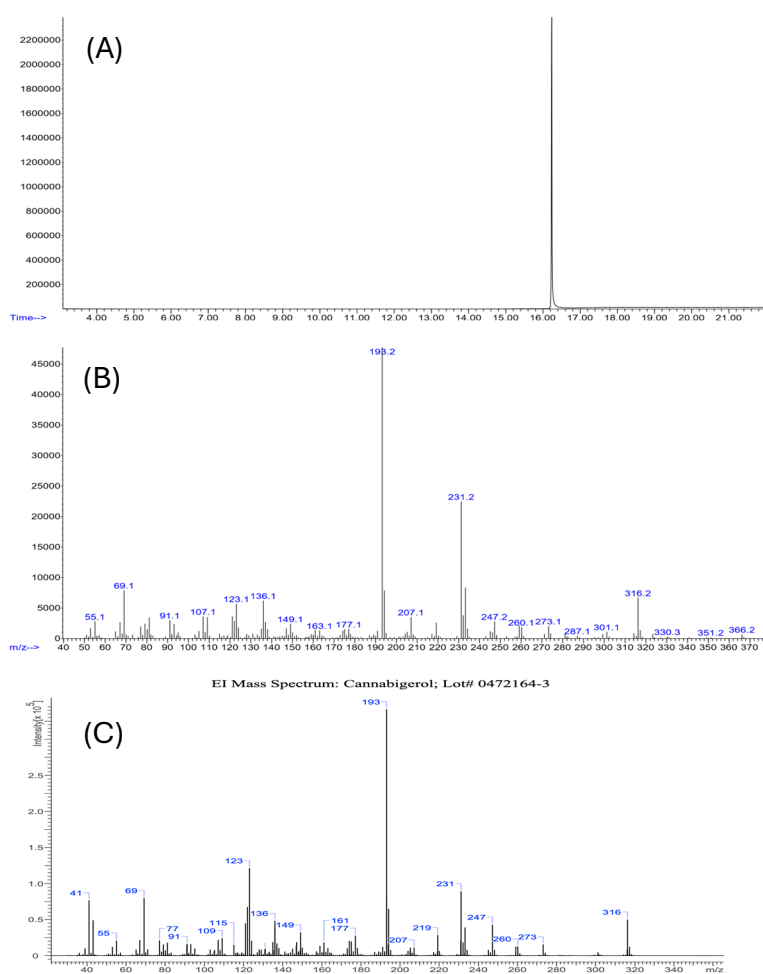


Figure S10. GC–MS analysis of CBG

(A) Total ion chromatogram (TIC) of the CBG sample analyzed in this study.

(B) Experimental electron ionization (EI) mass spectrum (70 eV) corresponding to the peak at RT = 16,236 min.

(C) Reference EI mass spectrum of CBG obtained from the SWGDRUG Monograph [SWGDRUG4].

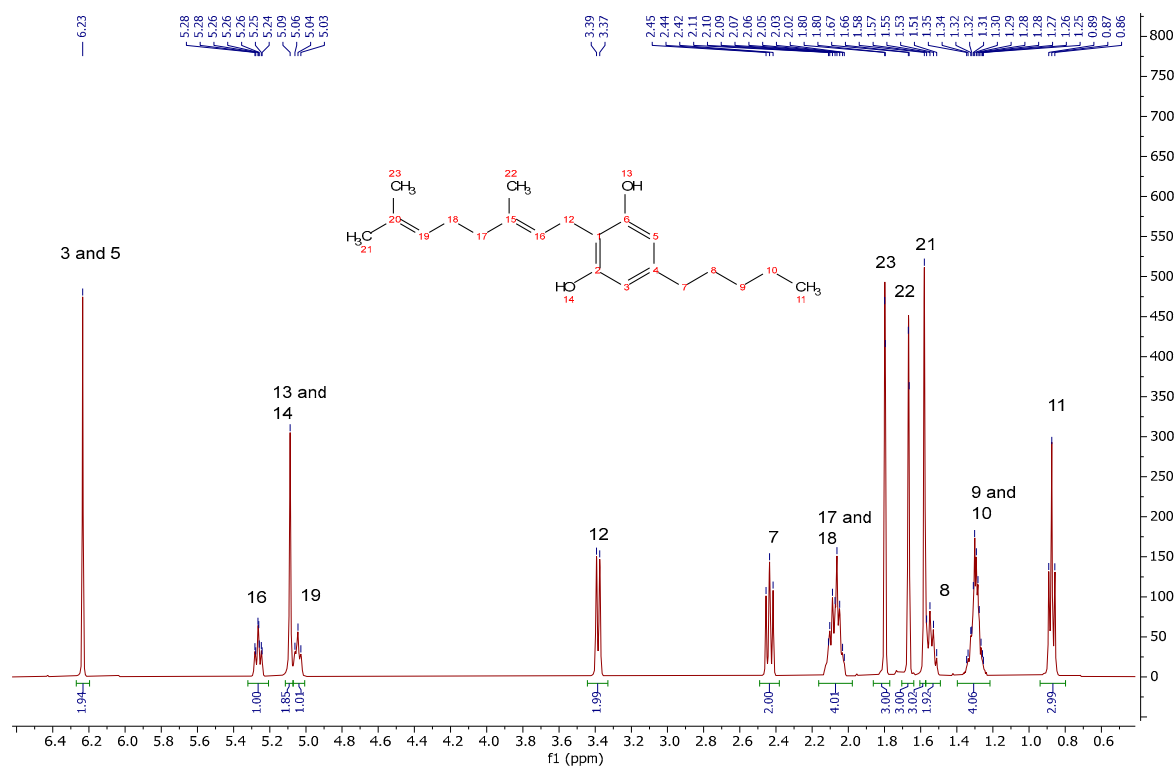


Figure S11. ^1H NMR spectrum of CBG

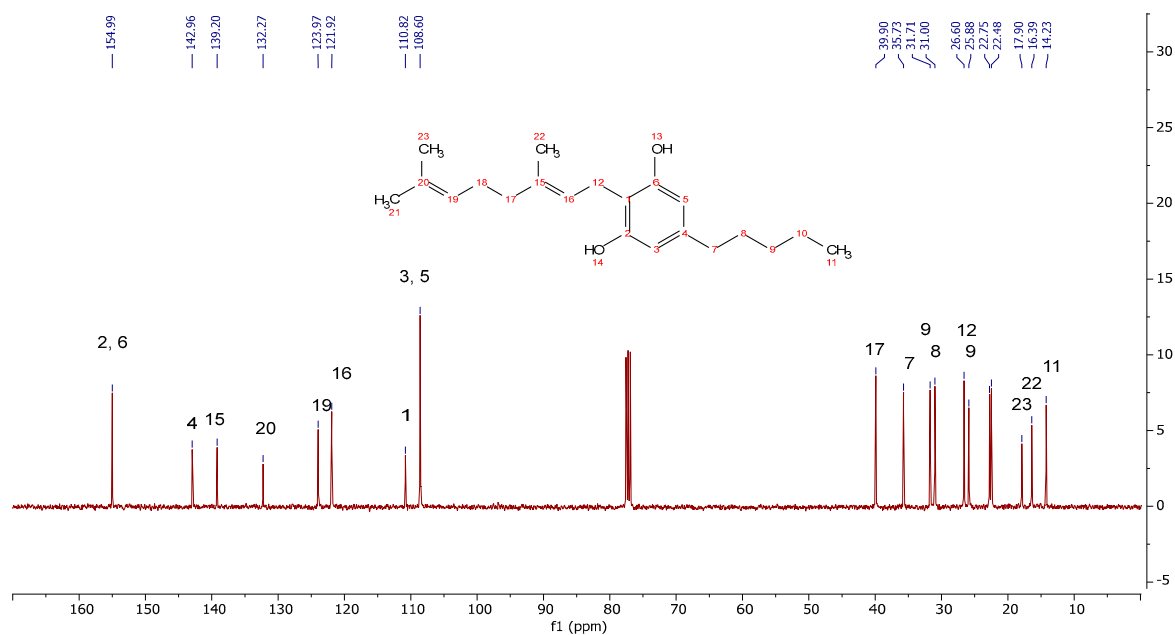


Figure S12. ^{13}C NMR spectrum of CBG

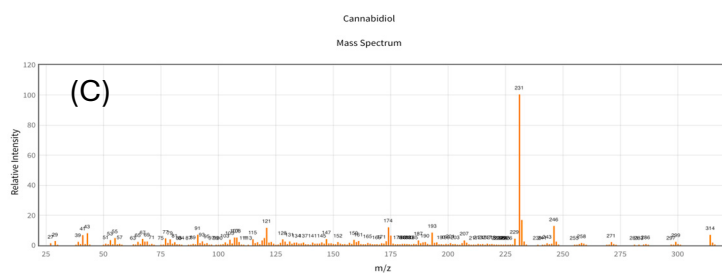
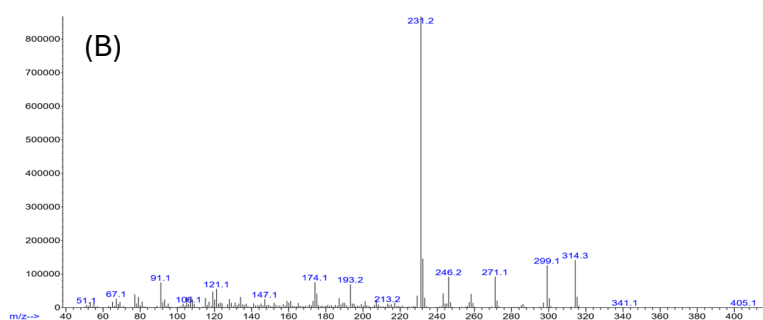
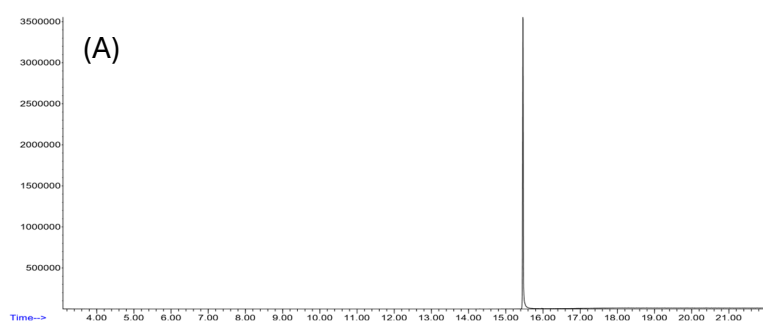


Figure S13. GC–MS analysis of CBD

(A) Total ion chromatogram (TIC) of the CBD sample analyzed in this study.

(B) Experimental electron ionization (EI) mass spectrum (70 eV) corresponding to the peak at RT = 15,458 min.

(C) Reference EI mass spectrum of CBD obtained from the NIST Chemistry WebBook [NIST2].

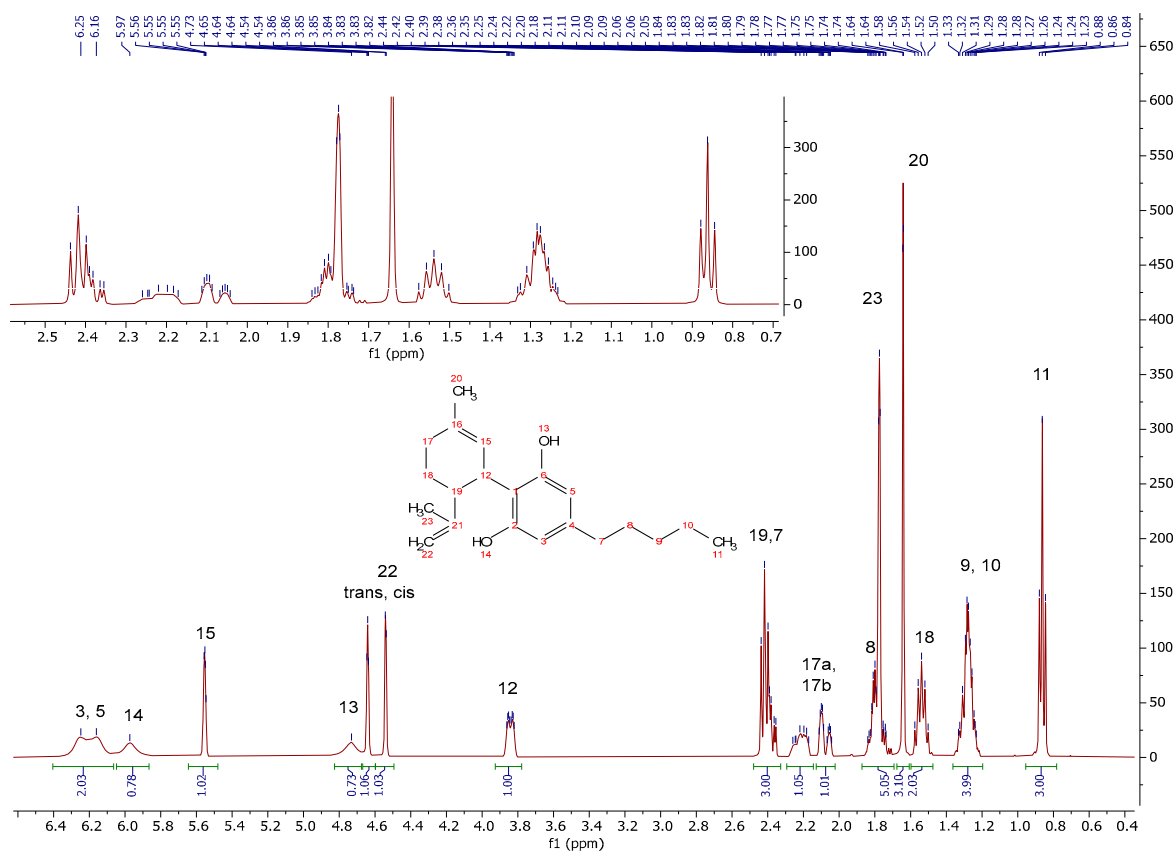


Figure S14. ¹H NMR spectrum of CBD

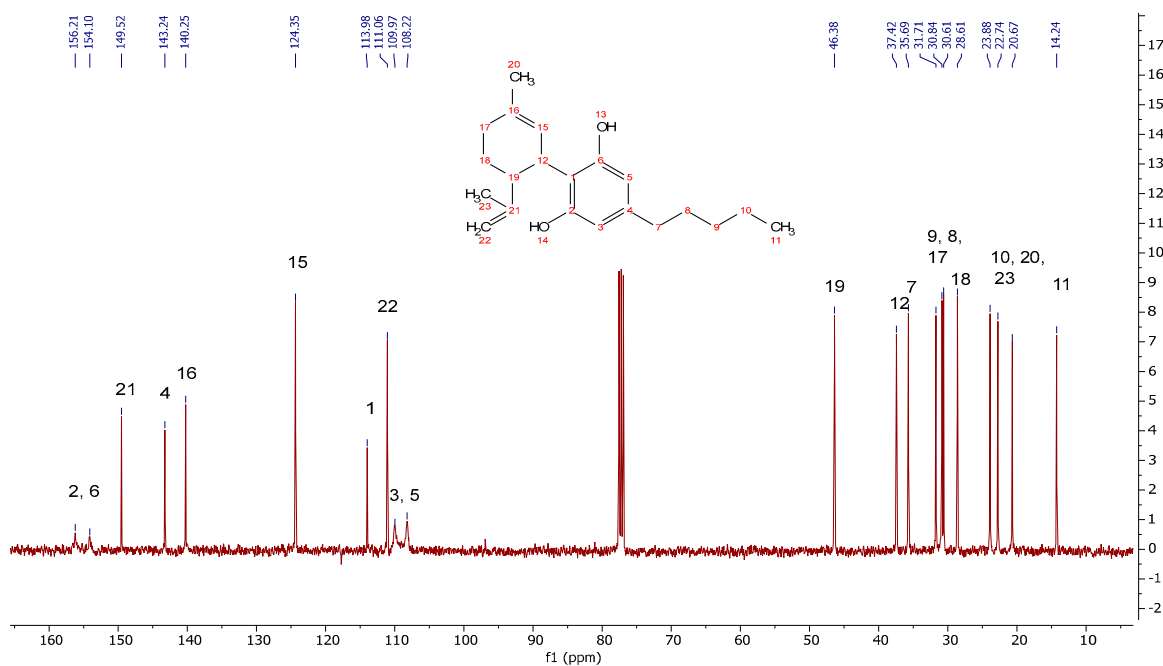


Figure S15. ¹³C NMR spectrum of CBD

Table S1. Comparative antiradical activities of pure CBN and CBN-loaded liposomes against DPPH, hydroxyl, and superoxide radicals. Data are presented as mean $\pm$ SD (n = 3 independent experiments).

	DPPH	Hydroxyl	Superoxide
CBN	90.5 $\pm$ 2.9	82.0 $\pm$ 2.8	86.8 $\pm$ 2.9
CBN-containing liposomes	69.9 $\pm$ 3.4	49.9 $\pm$ 2.4	61.9 $\pm$ 3.1

References

59. NIST Chemistry WebBook, SRD 69; National Institute of Standards and Technology: Gaithersburg, MD, USA.
60. Cayman Chemical. GC–MS Spectral Data Sheet for Cannabidiol Diacetate (CAS 58452-86-9).
61. PubChem. Cannabidiolic Acid (CBDA); CID: 6440999. Spectral Information (Wiley Registry of Mass Spectral Data).
62. Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG). Monograph: Cannabigerol (CBG).
63. NIST Chemistry WebBook, SRD 69; National Institute of Standards and Technology: Gaithersburg, MD, USA. Cannabidiol (CAS 13956-29-1).