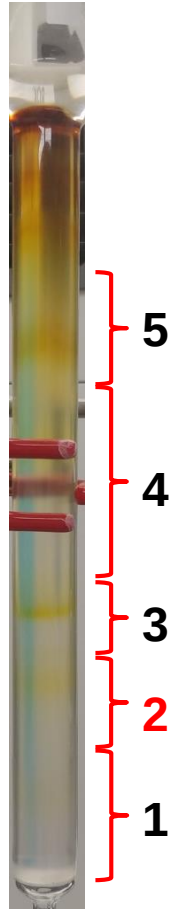


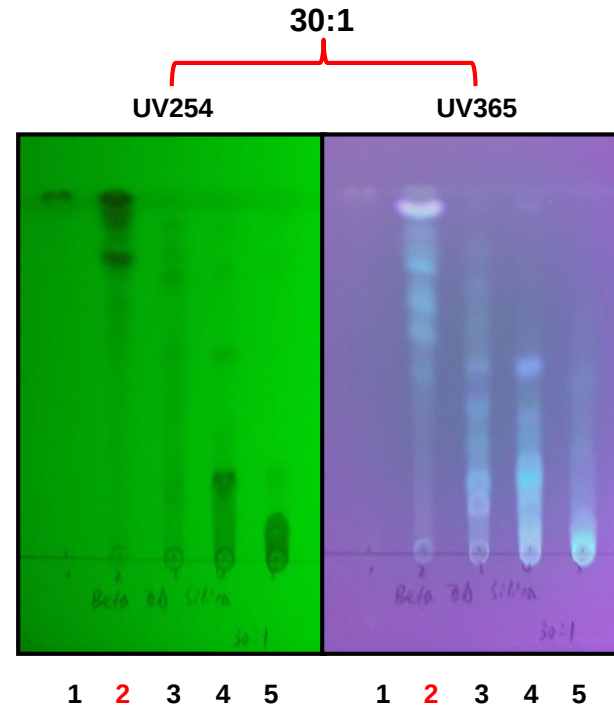
Table S1. Specific Real-time RT-qPCR primer sequences containing *Nanog*, *Sox2*, *Oct4*, *C-myc* and β -actin genes

Genes	Primers
Nanog	Forward: 5'-ATGCCTCACACGGAGACTGT-3' Reverse: 5'-AAGTGGGTTGTTTGCCTTTG-3'
Sox2	Forward: 5'-TTGCTGCCTCTTTAAGACTAGGA-3' Reverse: 5'-CTGGGGCTCAAACCTTCTCTC-3'
Oct4	Forward: 5'-AGCAAAACCCGGAGGAGT-3' Reverse: 5'-CCACATCGGCCTGTGTATATC-3'
C-myc	Forward : 5'-CCTGGTGCTCCATGAGGAGAC-3' Reverse : 5'-CAGACTCTGACCTTTTGCCAGG-3'
β -actin	Forward: 5'-TGTTACCAACTGGGACGACA-3' Reverse: 5'-GGGGTGTTGAAGGTCTCAAA-3

(A)



(B)



(C)

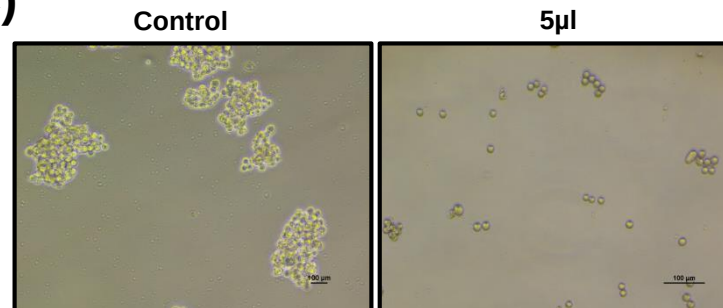


Figure S1. The purification procedure of a mammosphere formation inhibitor derived from beet using silica gel column chromatography. (A) The sample was isolated by silica gel chromatography with a solvent mixture [CHCl₃ : MeOH (10:1)]. (B) TLC plate analysis of the purified sample (CHCl₃ : MeOH = 30:1). Active fraction: #2. (C) Mammosphere formation assay using the purified fraction #2.

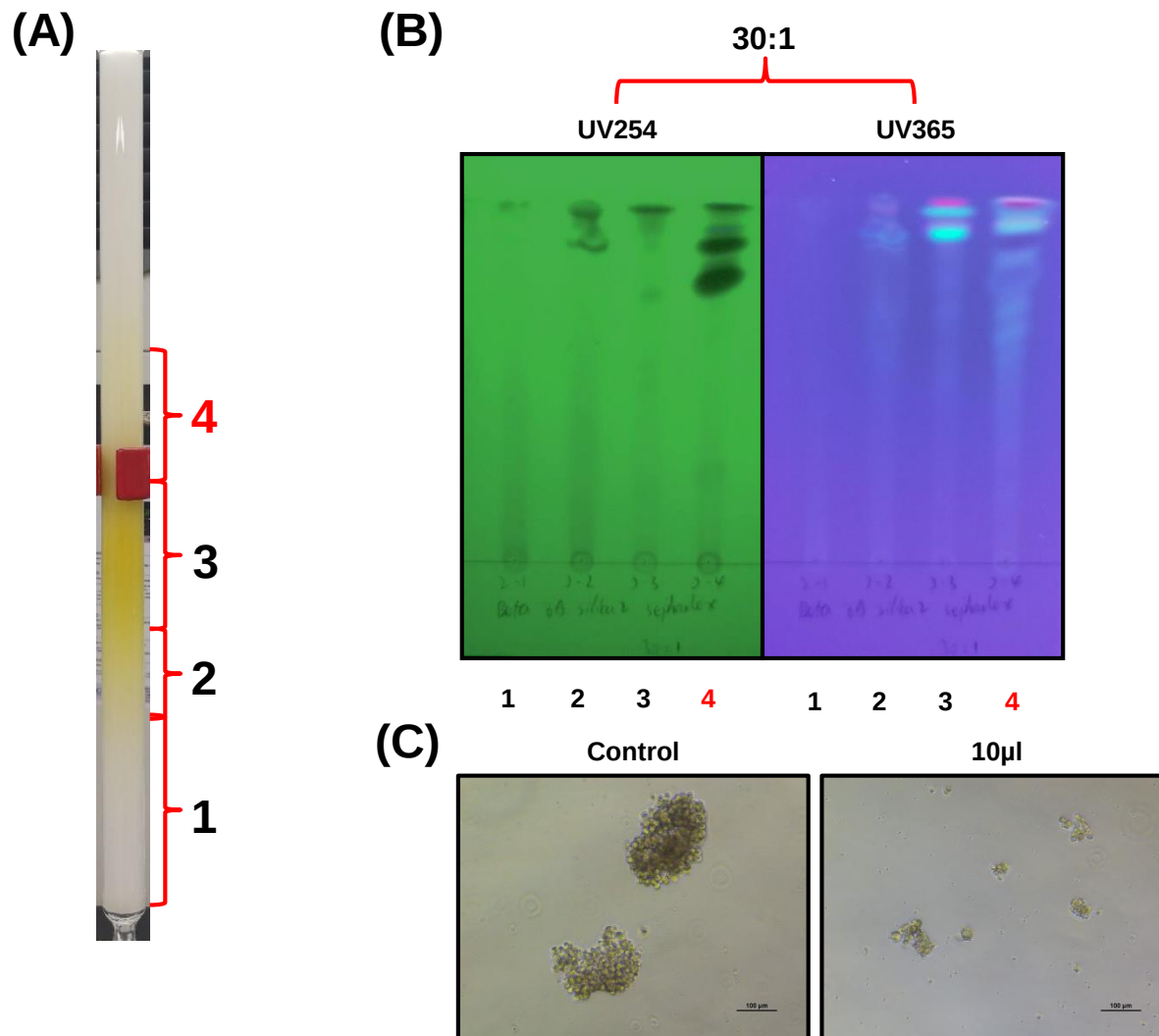


Figure S2. The purification procedure of a mammosphere formation inhibitor derived from beet using Sephadex LH-20 column chromatography. (A) The sample was isolated by Sephadex LH-20 chromatography with MeOH. (B) TLC plate analysis of the purified sample (CHCl_3 : MeOH = 30:1). Active fraction: #4. (C) Mammosphere formation assay using the purified fraction #4.

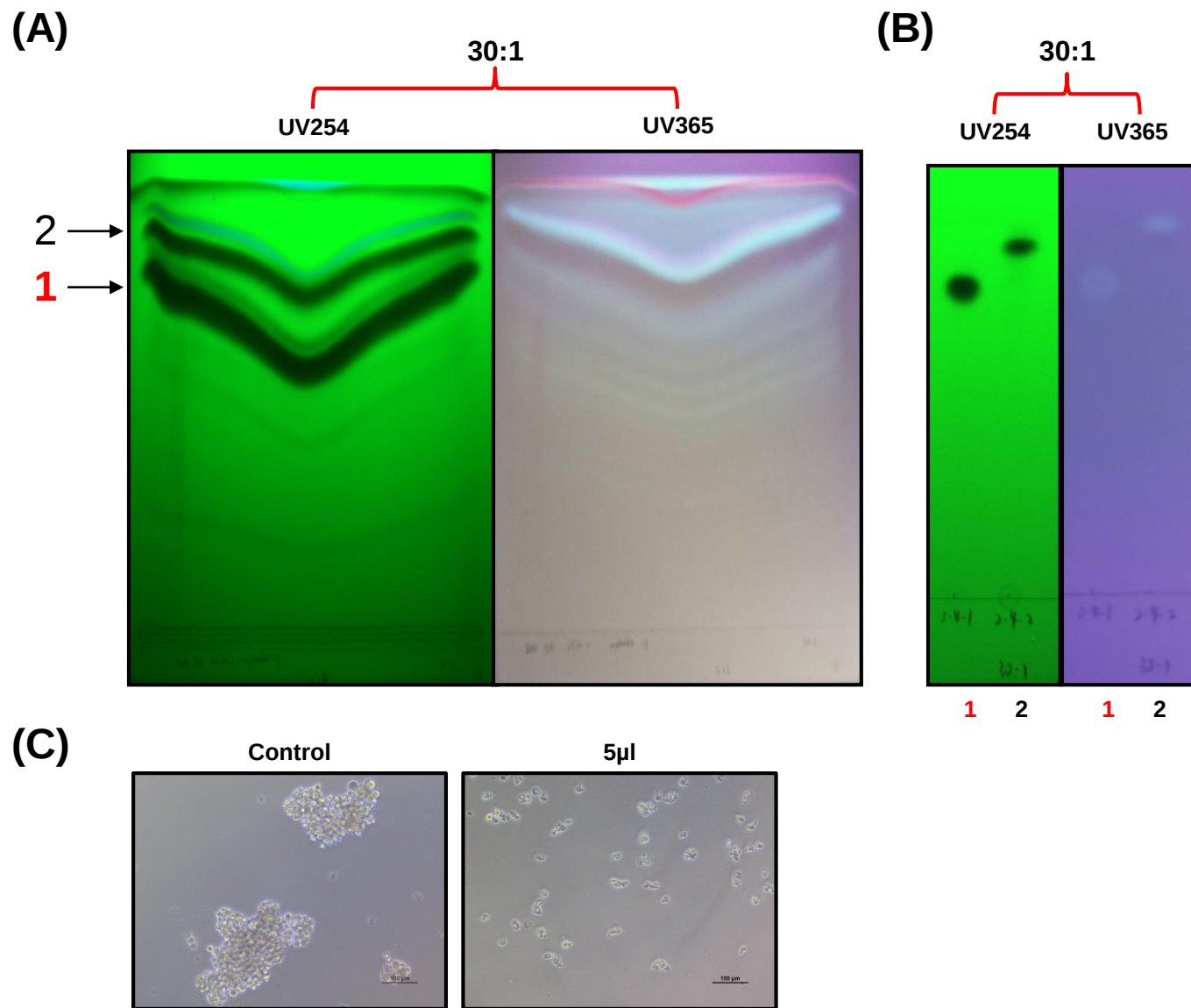


Figure S3. The purification procedure of a mammosphere formation inhibitor derived from beet using preparative thin layer chromatography with CHCl_3 :MeOH (30:1). (A) Preparatory TLC chromatography containing fractions 1 and 2. (B) TLC plate analysis of the prepared TLC bands after the samples were scraped and purified (fractions 1 and 2, CHCl_3 : MeOH = 30:1). Active fraction: #1. (C) Mammosphere formation assay using the purified fraction #1.

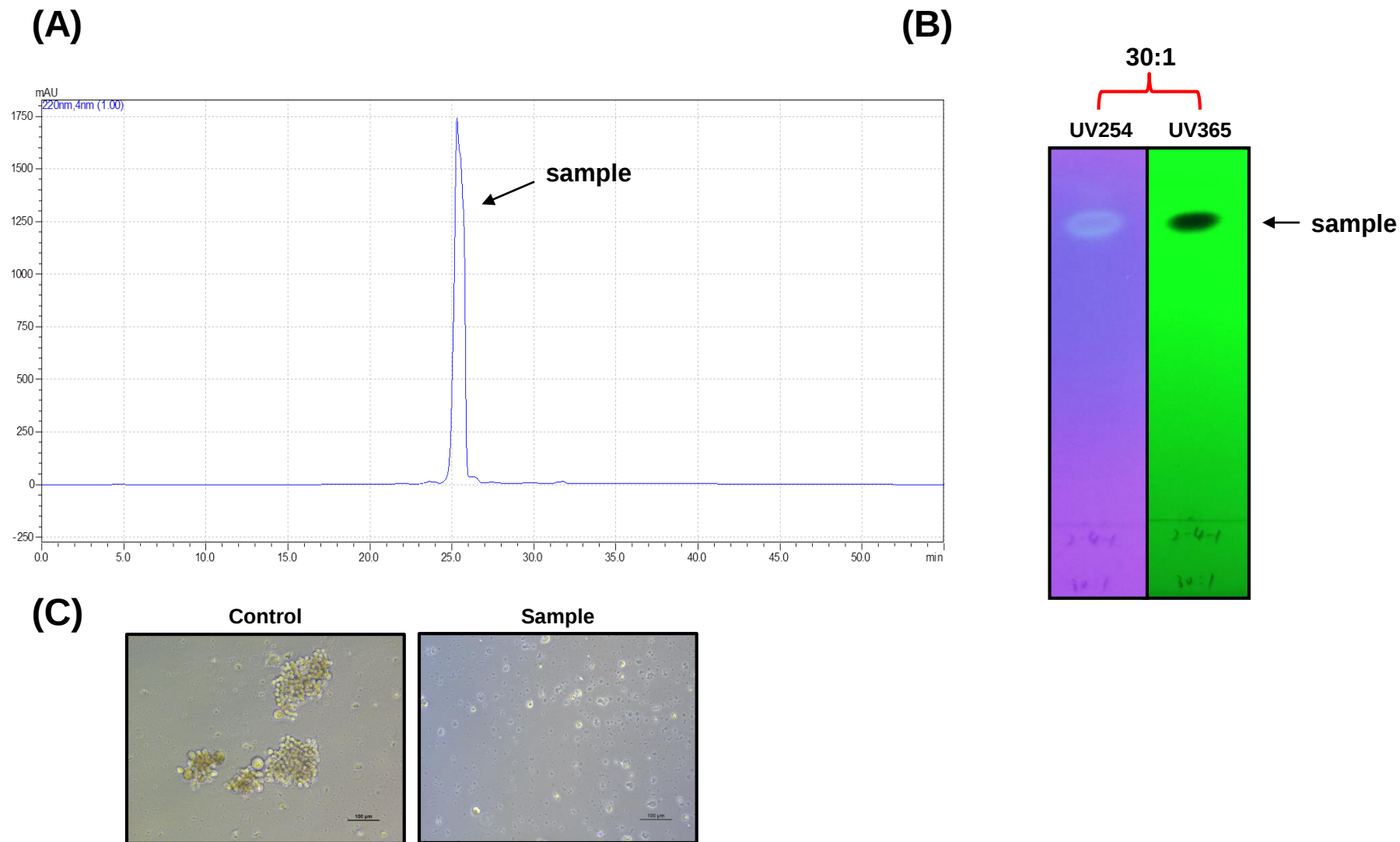


Figure S4. Purification procedure of a mammosphere formation inhibitor derived from beet using HPLC. (A) Assessment of the major fractions using HPLC at two wavelengths. Samples were collected based on the 254 and 220 nm wavelengths. (B) TLC plate analysis of the purified sample (CHCl_3 : MeOH = 30:1). (C) Mammosphere formation assay using the purified sample.

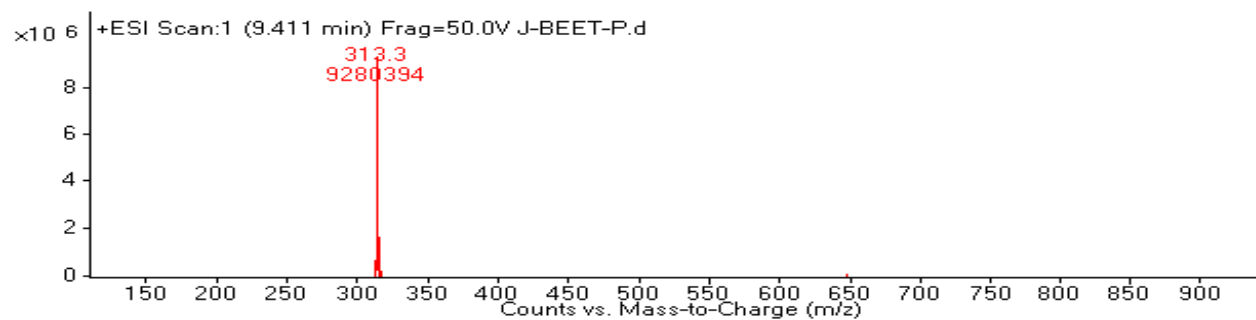
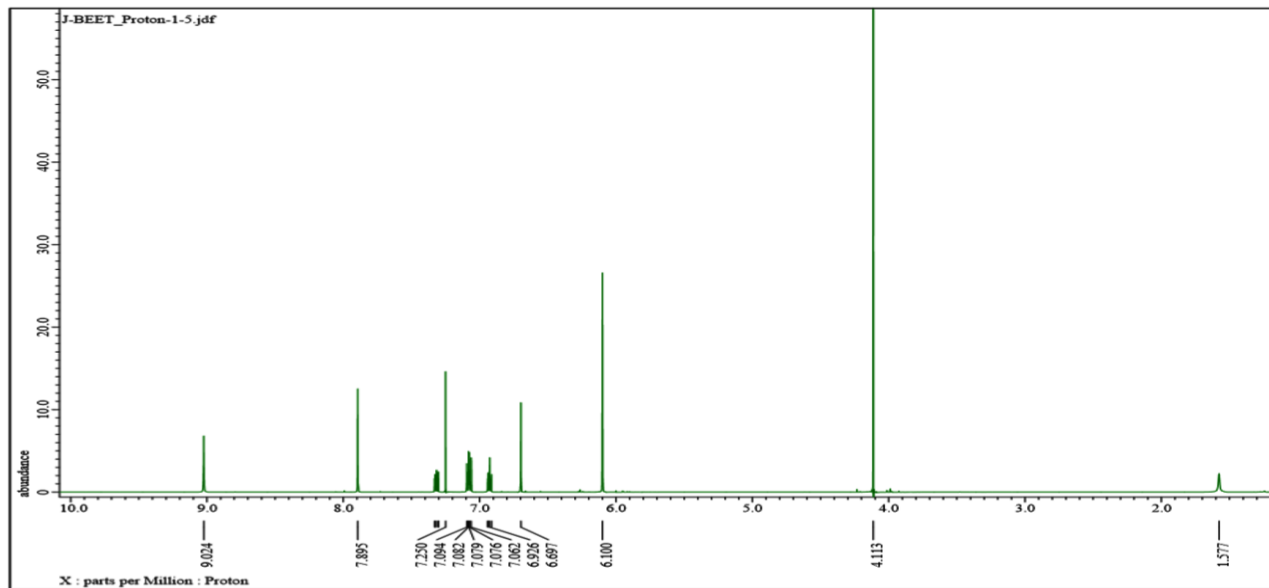


Figure S5. ESI-mass spectrum in positive mode of the purified sample

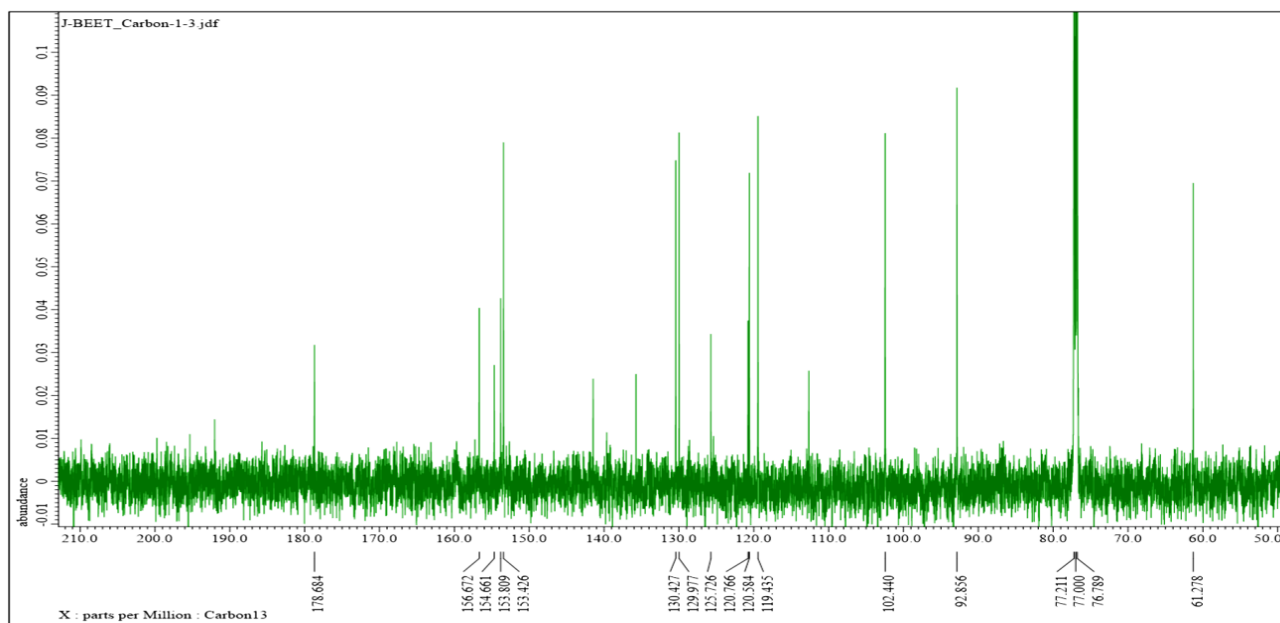
(A)

H-NMR



(B)

C-NMR



Chemical shift (ppm)

Figure S6. ¹H NMR and ¹³C NMR spectra of purified sample

HMQC

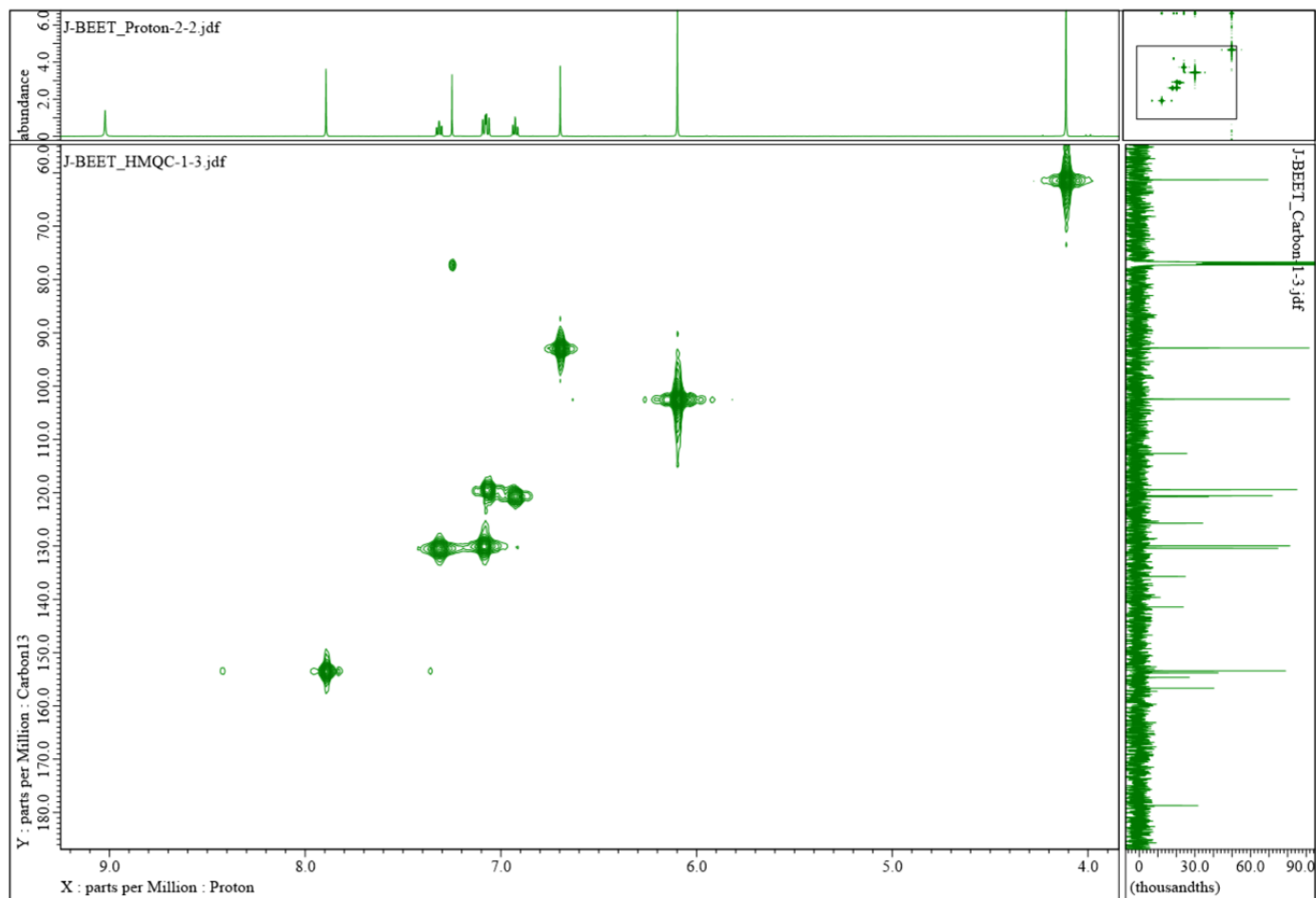


Figure S7. HMQC spectrum of the purified sample.

COSY

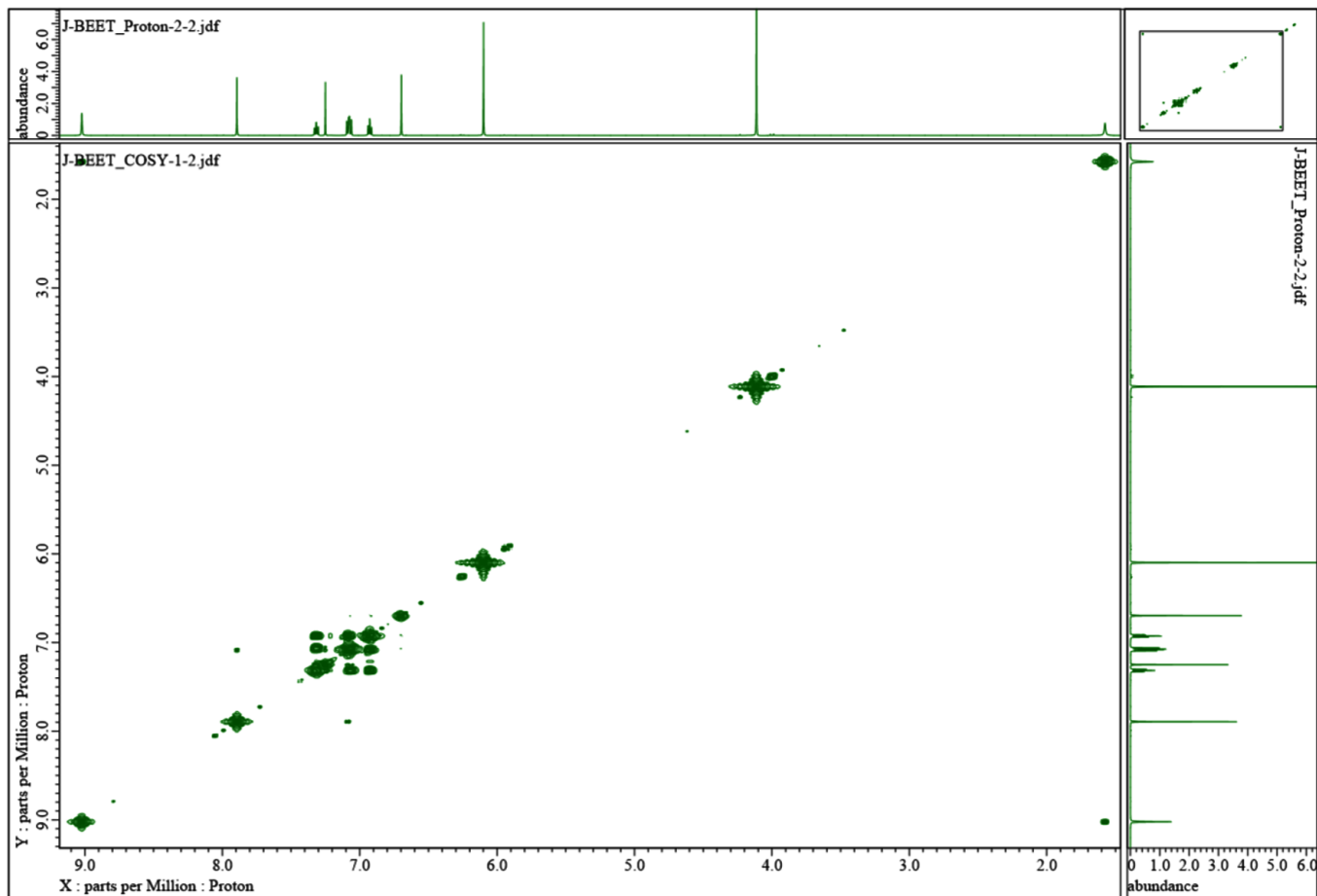


Figure S8. ^1H - ^1H COSY spectrum of the purified sample.

HMBC

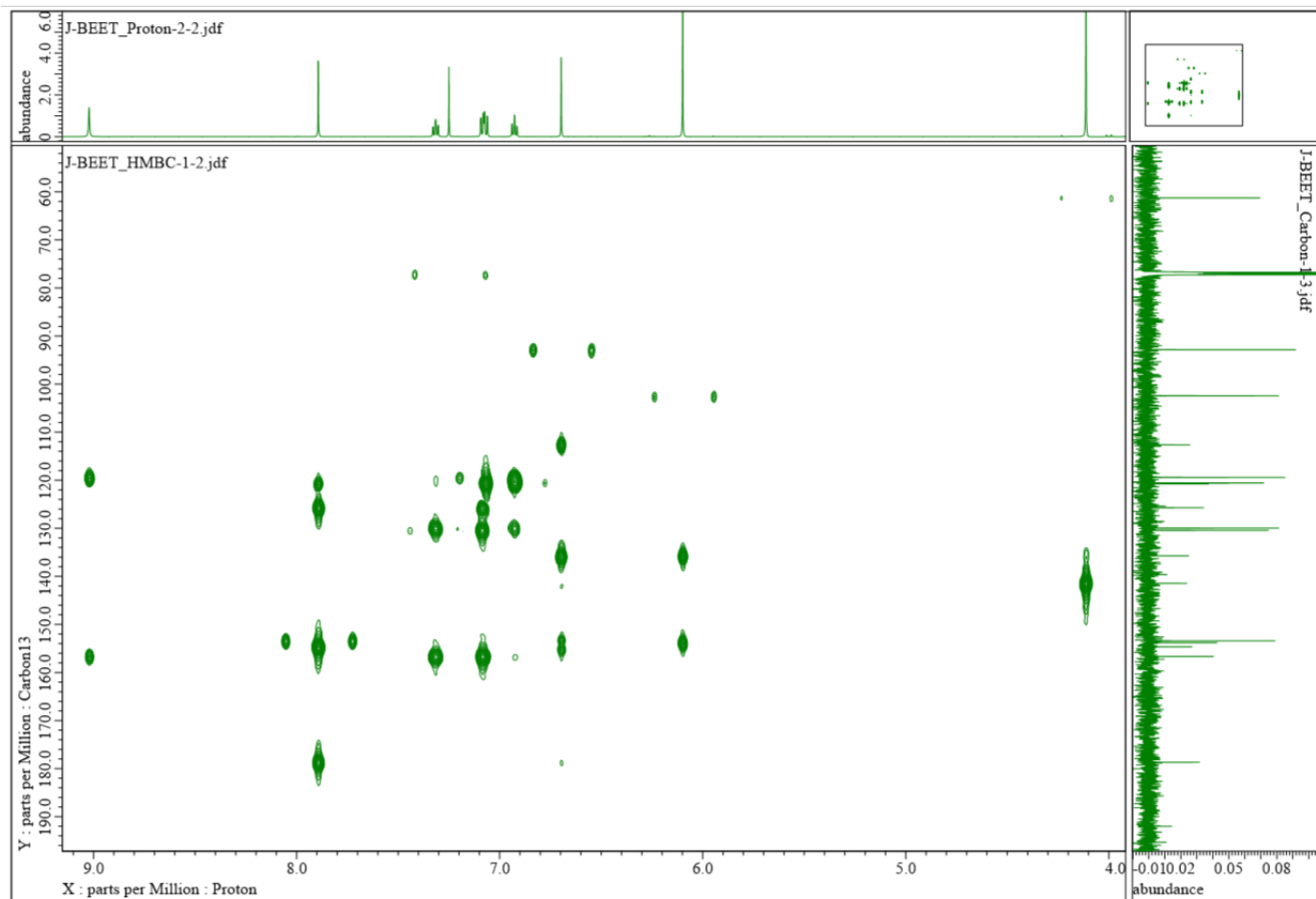
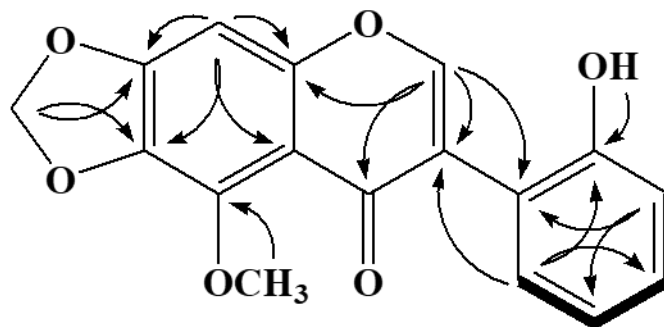


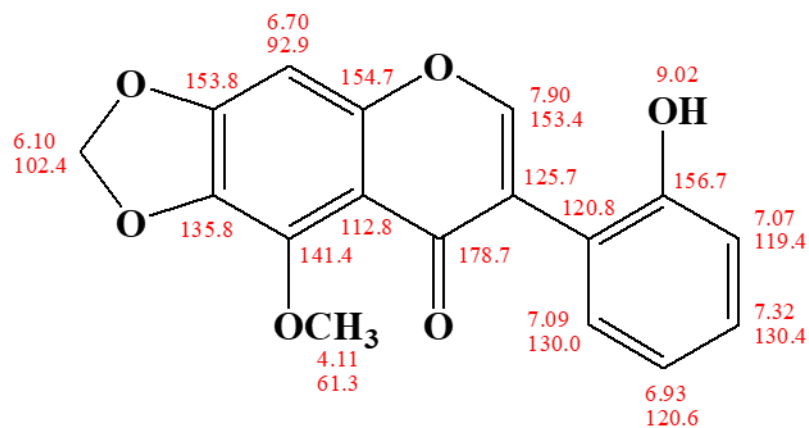
Figure S9. HMBC spectrum of the purified sample.

(A)



— : ¹H-¹H COSY
↷ : HMBC

(B)



Betavulgarin: C₁₇H₁₂O₆, Molecular weight: 312

Figure S10. Two-dimensional NMR data (A) and ¹H and ¹³C peaks assignments (B) of the purified sample