

SUPPLEMENTARY MATERIAL

Discovery of Anti-inflammatory Triterpenoid Glucosides from the *Heritiera littoralis* Dryand.

Xiao qin Liang ², Peng Liu¹, Jun Li ², Xinlan Guan ³, Yanjun Zhang ^{1*}, Jian Li ^{3**}

¹ Guangxi Key Laboratory of Green Chemical Materials and Safety Technology, College of Petroleum and Chemical Engineering, Beibu Gulf University, (Qinzhou 535000)

² State Key Laboratory for the Chemistry and Molecular Engineering of Medicinal Resources, School of Chemical & Pharmaceutical Sciences, Guangxi Normal University, Guilin 541004, China

³ Peoples' Hospital of Pubei, Pubei, 535300, China

* Correspondence: zhangyj201608@163.com, Tel: 086-0777-2696809; Lj877138@163.com, Tel: 086-0777-8215818.

Abstract: Two new triterpenoid glucosides, heritiera A (1) and heritiera B (2), and six known triterpenoid analogs (3-8) were isolated from *Heritiera littoralis* Dryand.. Their structures were identified by comprehensive spectroscopic analyses and comparison with literature. Anti-inflammatory activity of the isolates from *H. littoralis* was evaluated using lipopolysaccharide (LPS) stimulated RAW 264.7 cells model. The result showed that four triterpenoids exhibited potent anti-inflammatory activity. Among these compounds, compound 2 substantially inhibit the release of nitric oxide (NO) with IC₅₀ value of 10.33 μ M. The triterpenoids from *H. littoralis* could be used as potential candidates for the development of new anti-inflammatory agents.

Keywords: *Heritiera littoralis* Dryand.; heritiera A; heritiera B; anti-inflammatory

List of supporting information

Figure S1. HRESIMS spectrum of compound 1	1
Figure S2. ¹ H NMR (600 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 1	1
Figure S3. ¹³ C NMR (125 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 1	2
Figure S4. DEPT (125 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 1	2
Figure S5. ¹ H- ¹ H COSY (600 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 1	3
Figure S6. HSQC spectrum of compound 1	3
Figure S7. HMBC spectrum of compound 1	4
Figure S8. ROESY spectrum of compound 1	4
Figure S9. HRESIMS spectrum of compound 2	5
Figure S10. ¹ H NMR (600 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 2	5
Figure S11. ¹³ C NMR (125 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 2	6
Figure S12. DEPT (125 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 2	6
Figure S13. ¹ H- ¹ H COSY (600 MHz, Pyridine- <i>d</i> ₅) spectrum of compound 2	7
Figure S14. HSQC spectrum of compound 2	7
Figure S15. HMBC spectrum of compound 2	8
Figure S16. ROESY spectrum of compound 2	8
Figure S17. The structures of compounds 1-8 from <i>H. littoralis</i>	9
Figure S18. ¹ H- ¹ H COSY (blue bold bonds) and key HMBC (red arrows) correlations of 1 (A) and 2 (B)	9
Figure S19. ROESY (double dashed arrows) correlations of 1 (A) and 2 (B)	9
Figure S20 The flowchart for the isolation procedure of <i>H. littoralis</i>	10

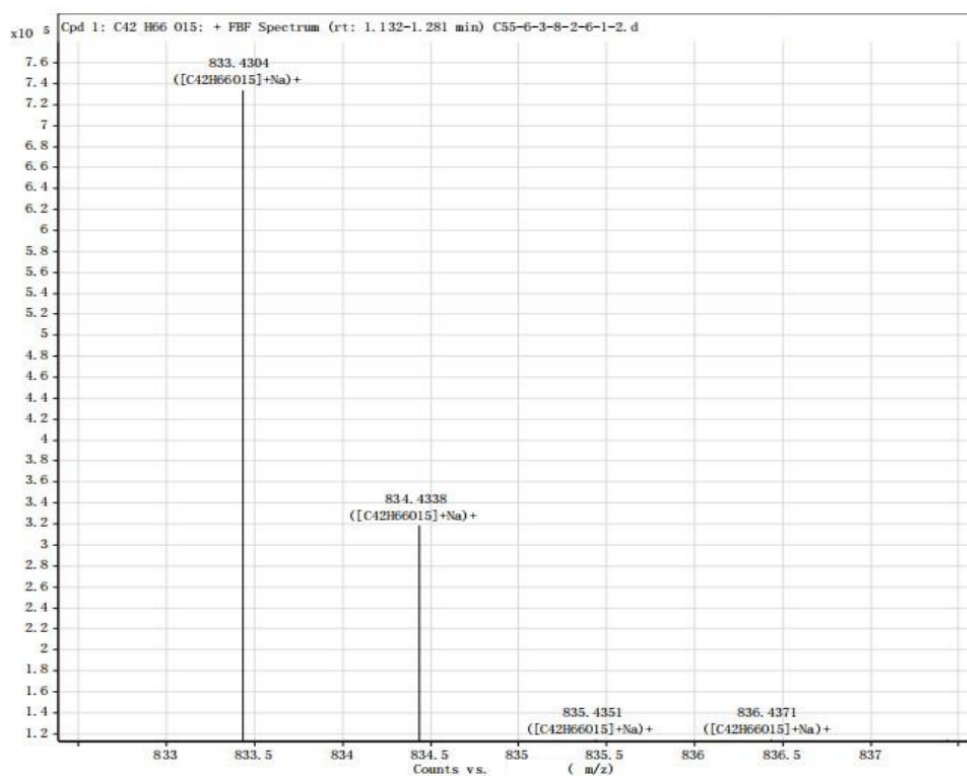


Figure S1. HRESIMS spectrum of compound 1.

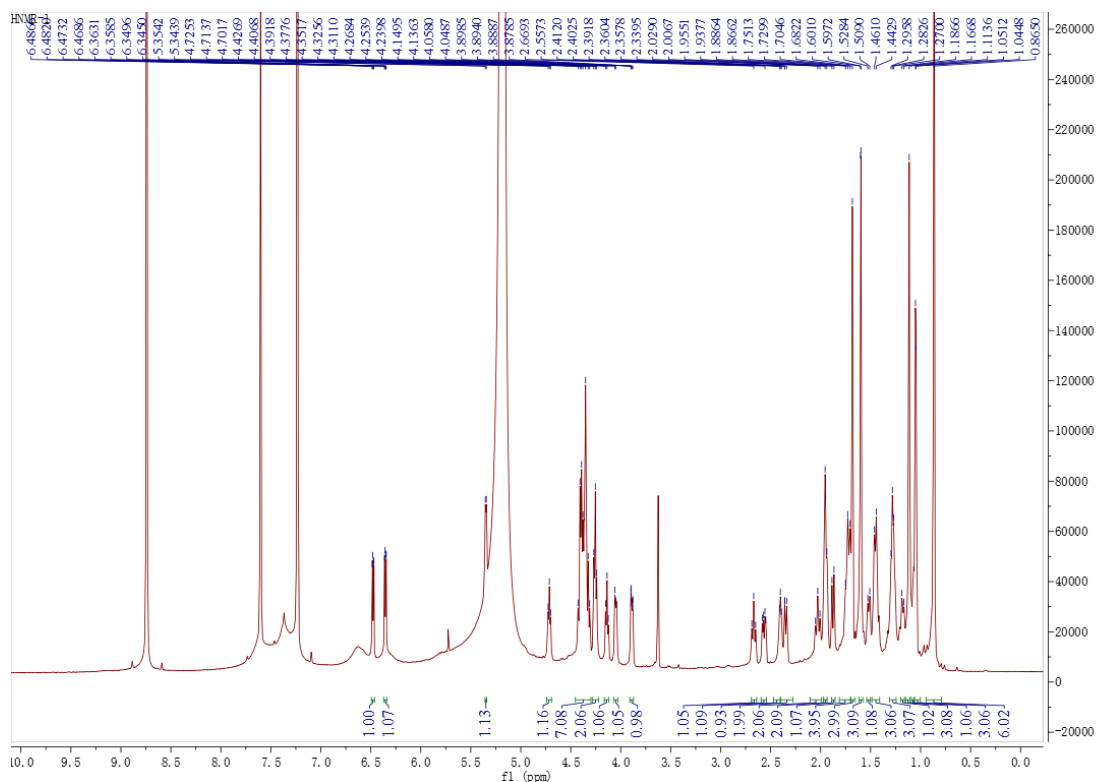


Figure S2. 1H NMR (600 MHz, Pyridine- d_5) spectrum of compound 1.

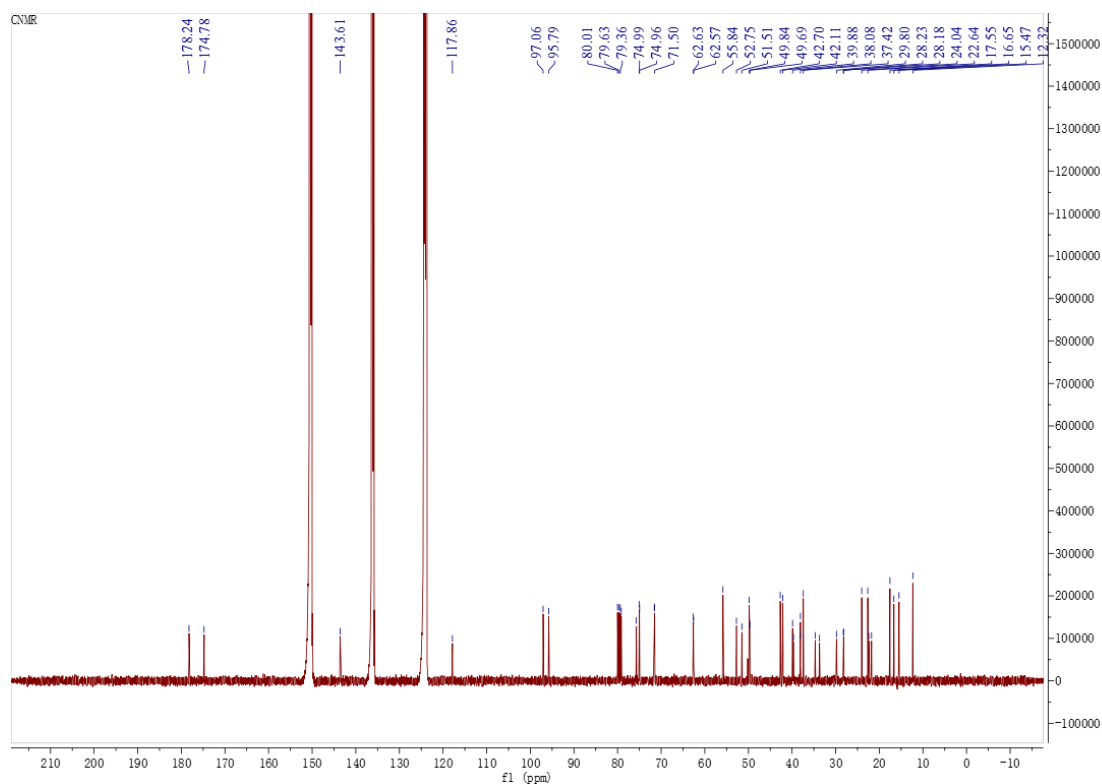


Figure S3. ¹³C NMR (125 MHz, Pyridine-*d*₅) spectrum of compound 1.

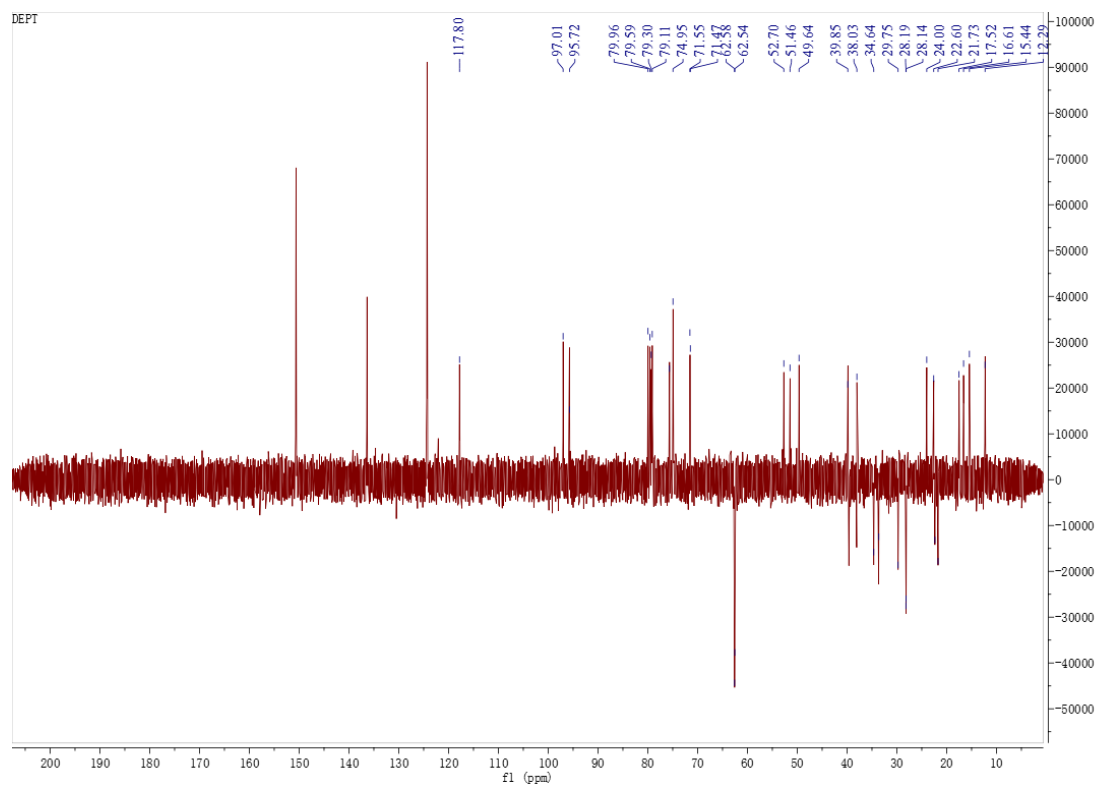


Figure S4. DEPT (125 MHz, Pyridine-*d*₅) spectrum of compound 1.

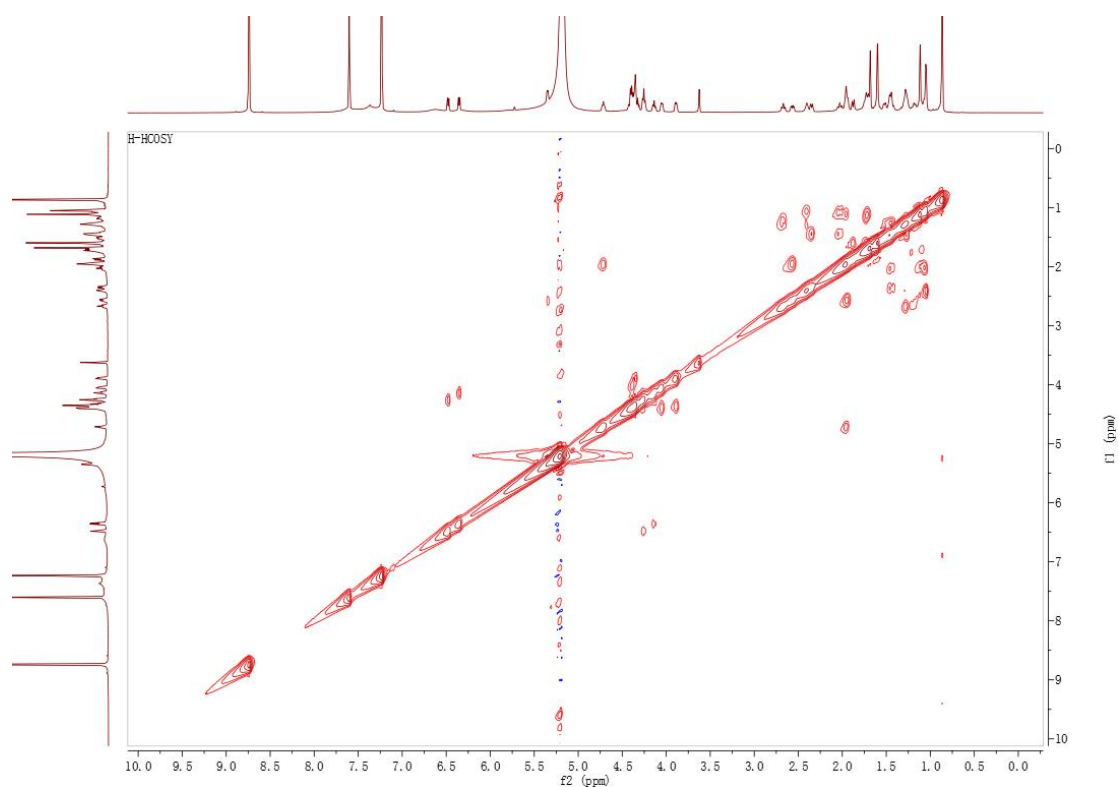


Figure S5. ^1H - ^1H COSY (600 MHz, Pyridine- d_5) spectrum of compound **1**.

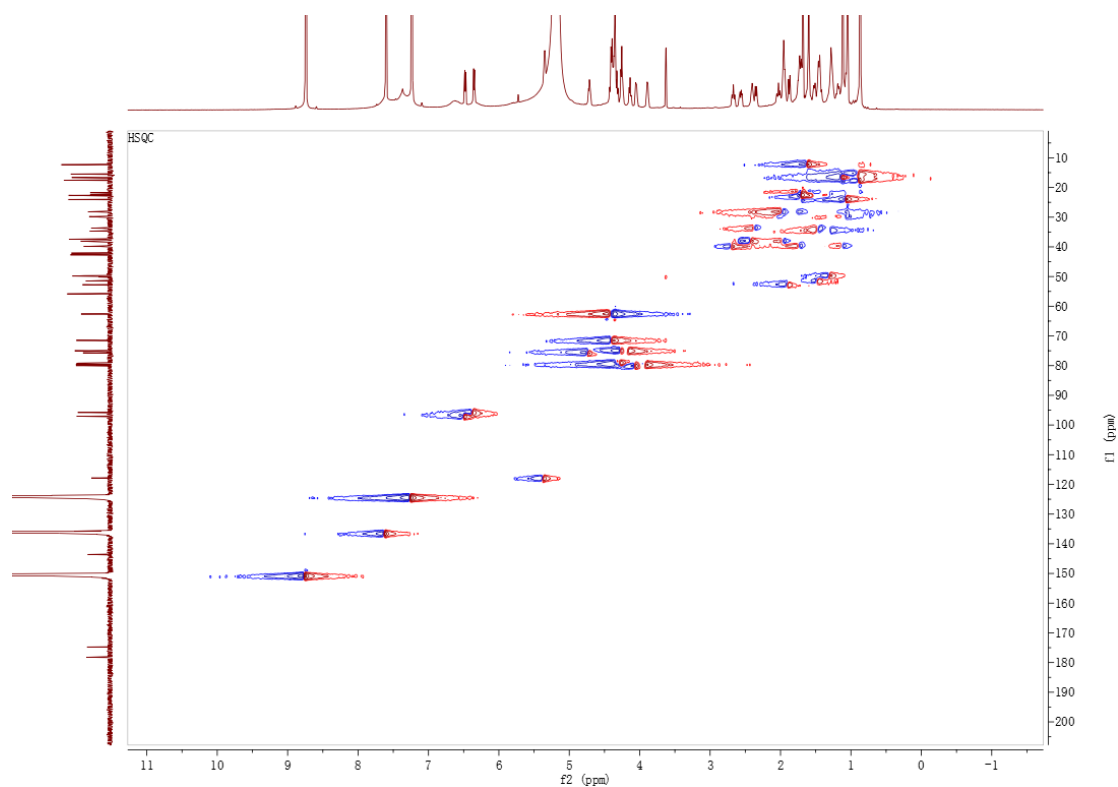


Figure S6. HSQC spectrum of compound **1**.

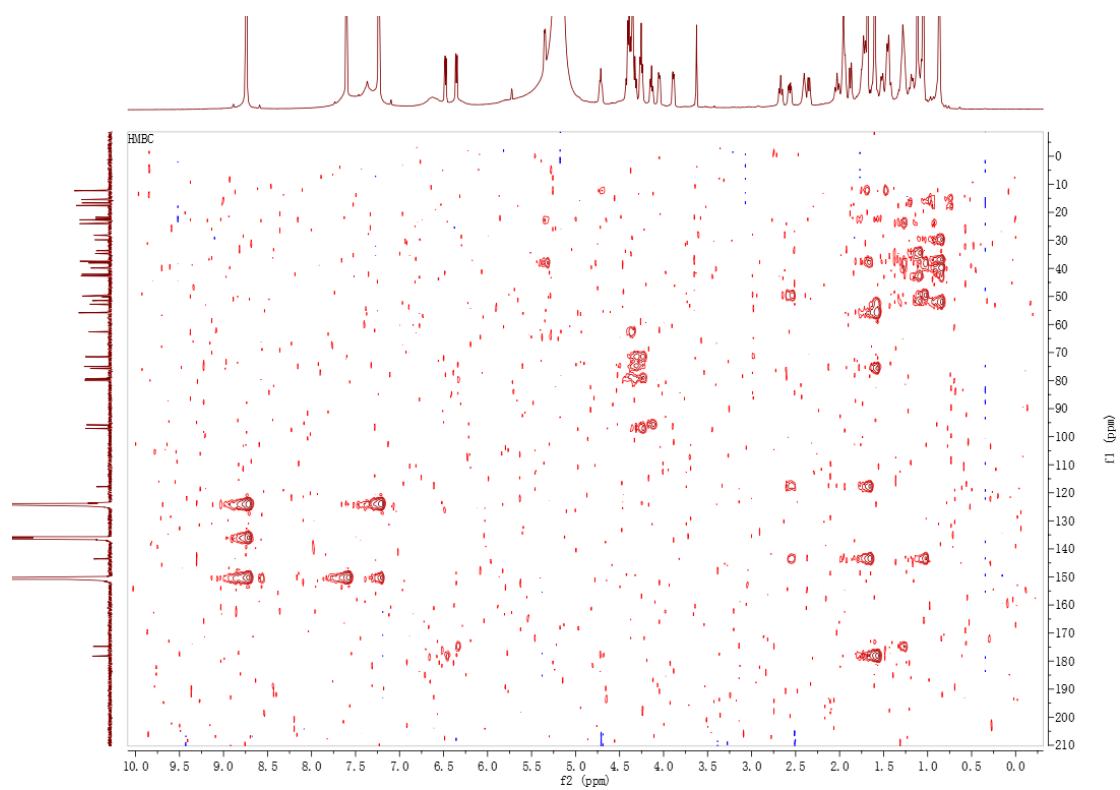


Figure S7. HMBC spectrum of compound 1.

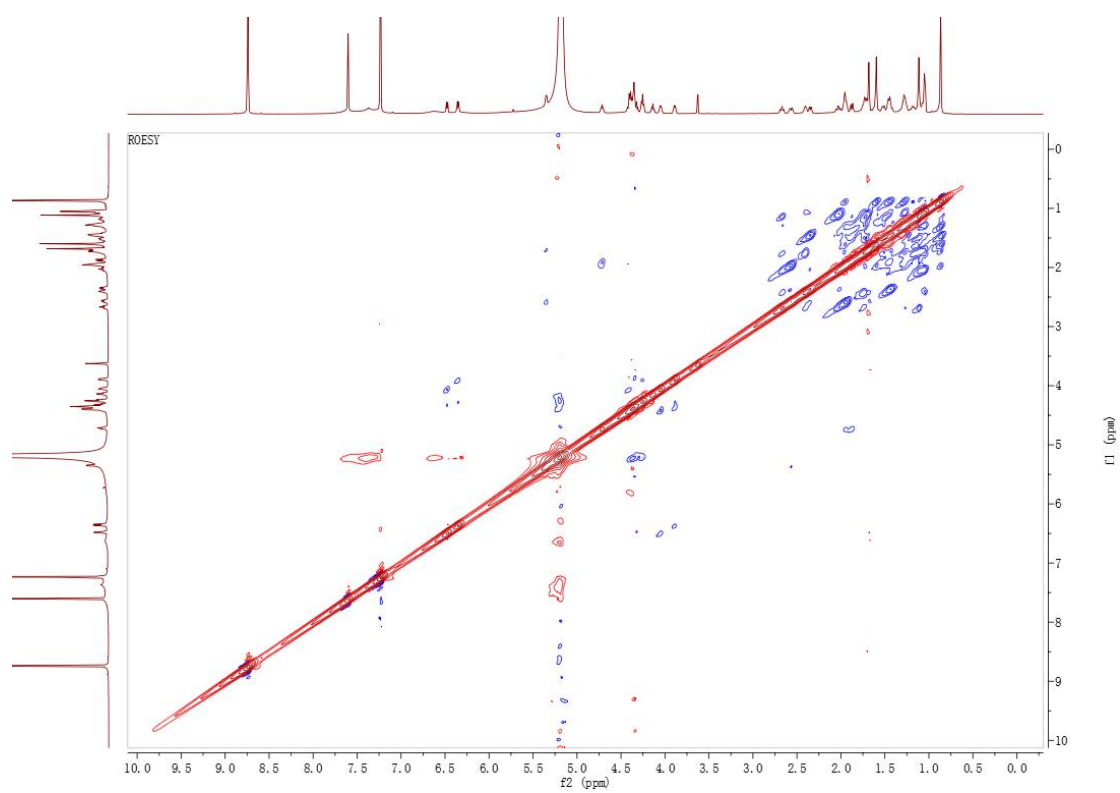


Figure S8. ROESY spectrum of compound 1.

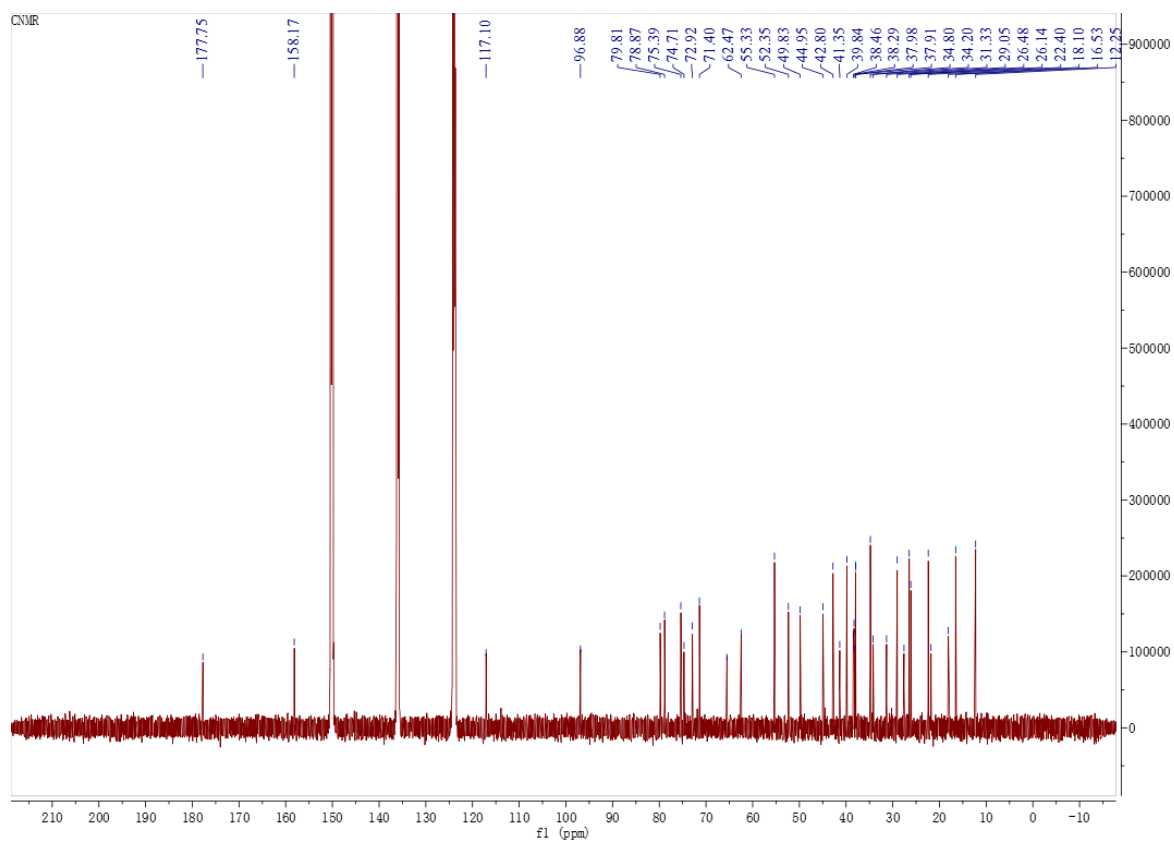


Figure S11. ¹³C NMR (125 MHz, Pyridine-*d*₅) spectrum of compound 2.

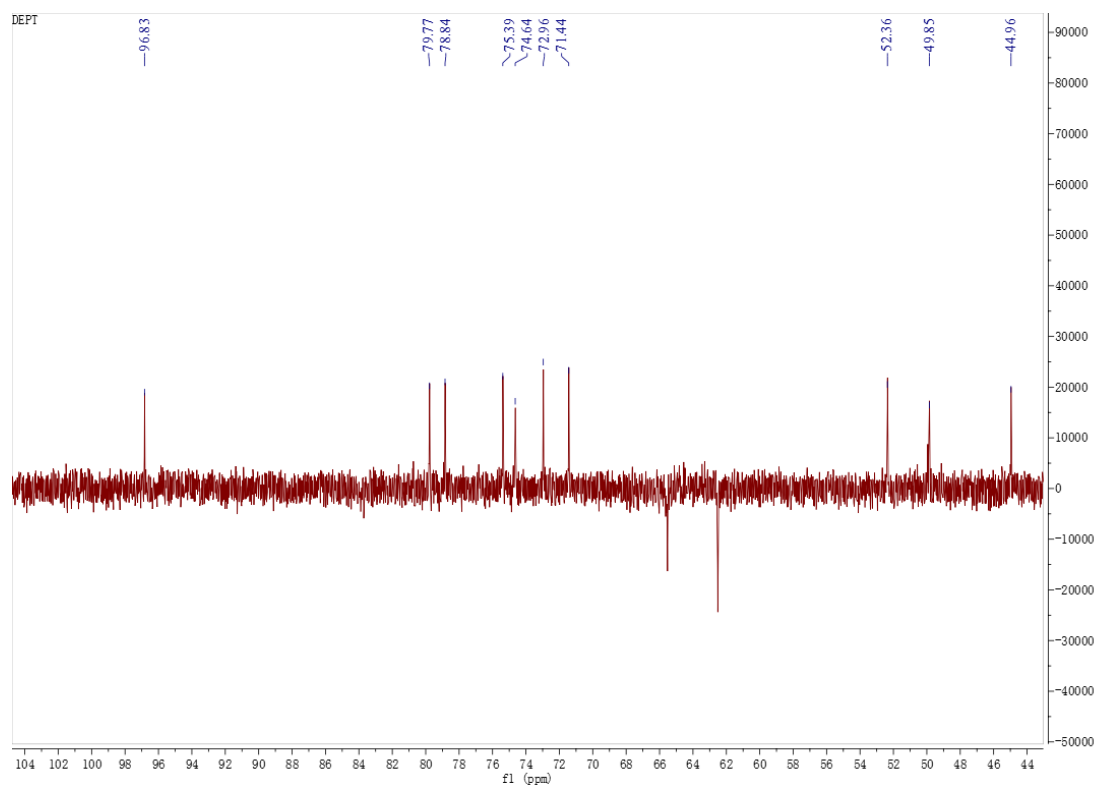


Figure S12. DEPT (125 MHz, Pyridine-*d*₅) spectrum of compound 2.

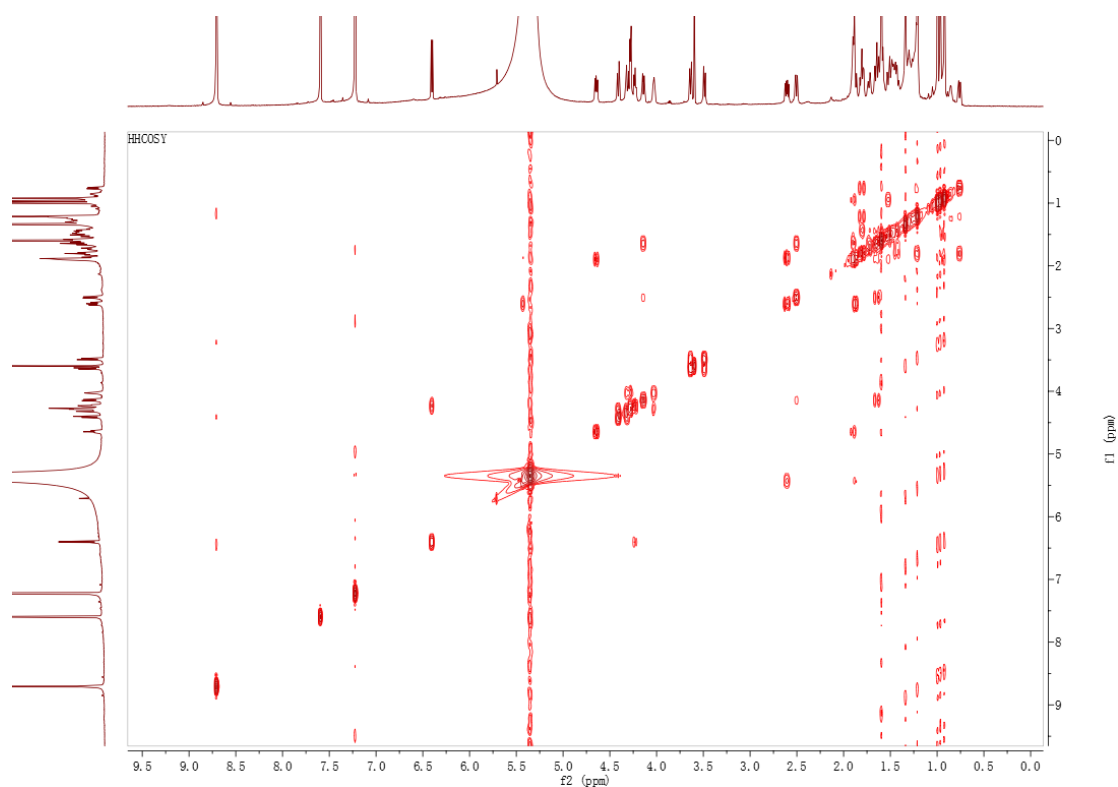


Figure S13. ^1H - ^1H COSY (600 MHz, Pyridine- d_5) spectrum of compound 2.

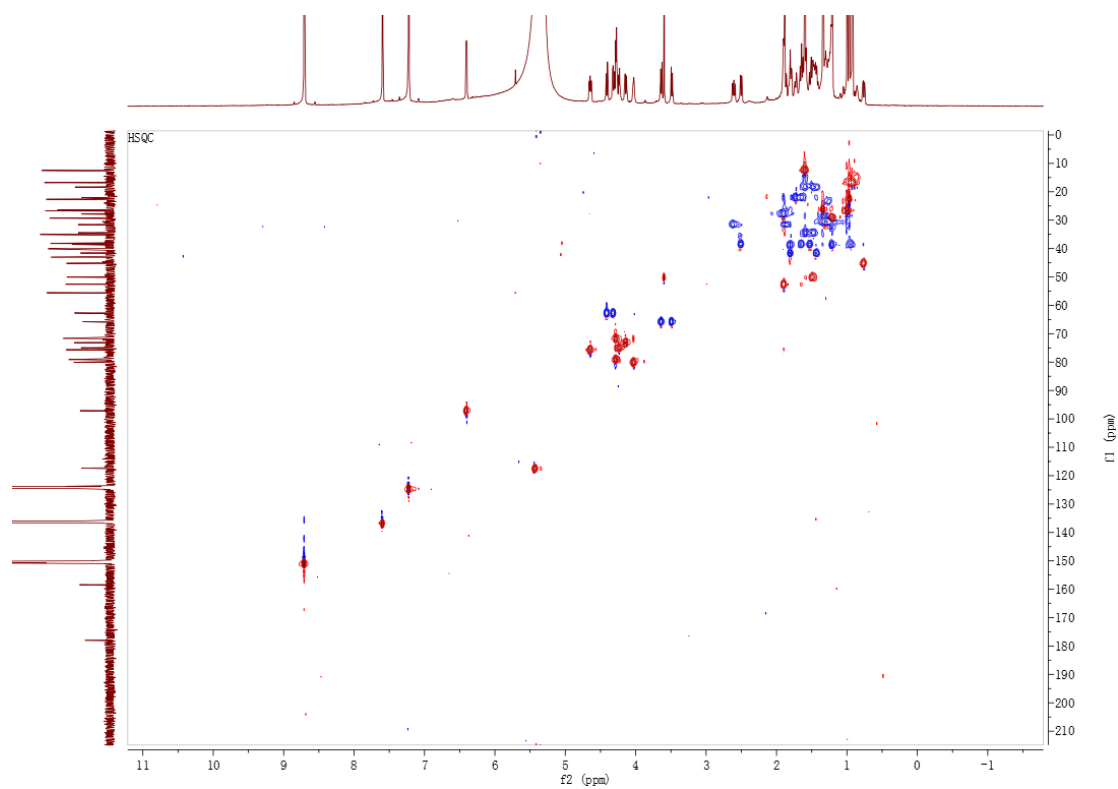


Figure S14. HSQC spectrum of compound 2.

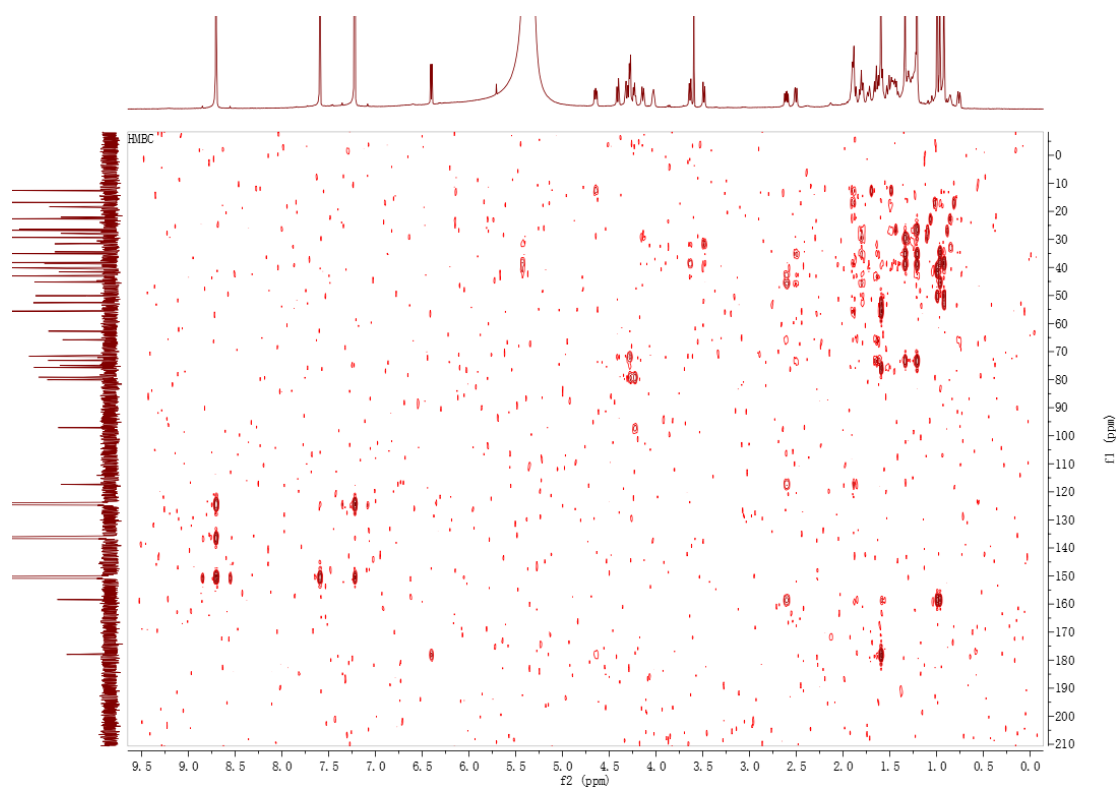


Figure S15. HMBC spectrum of compound 2.

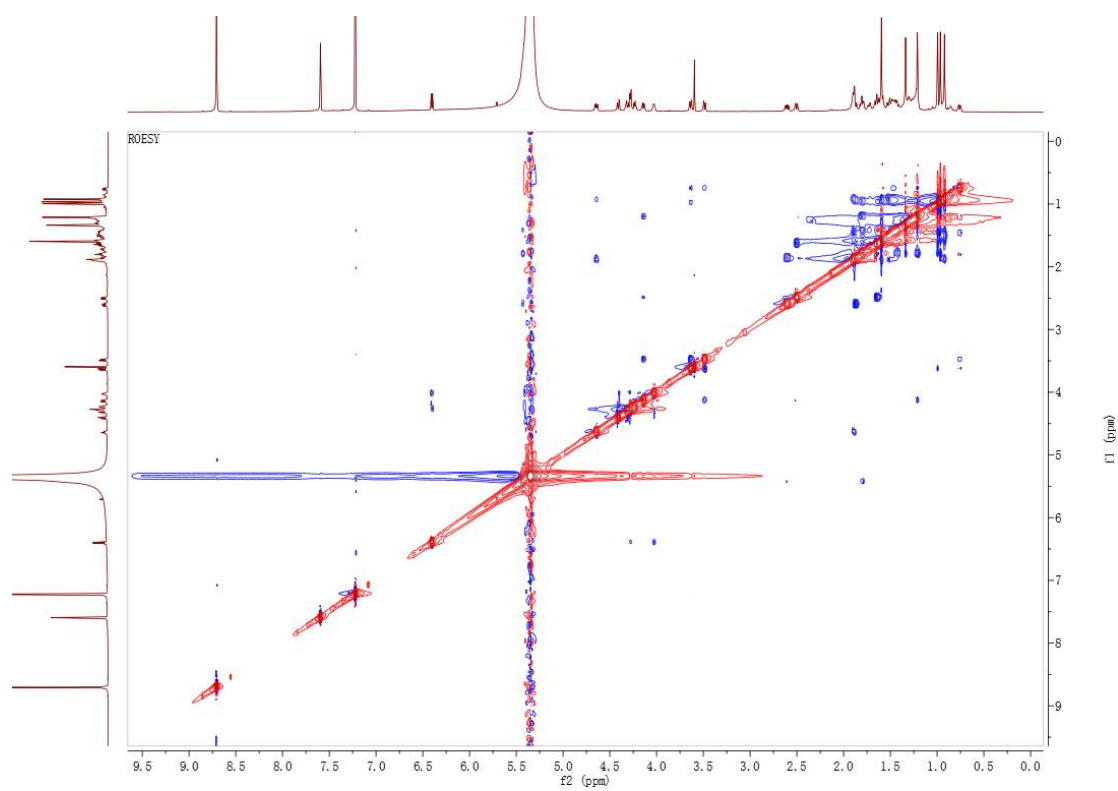


Figure S16. ROESY spectrum of compound 2.

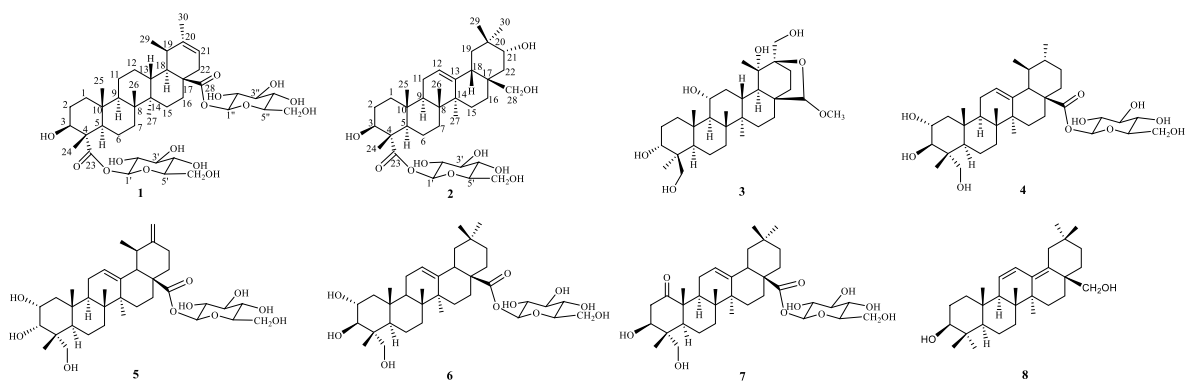


Figure S17. The structures of compounds 1-8 from *H. littoralis*.

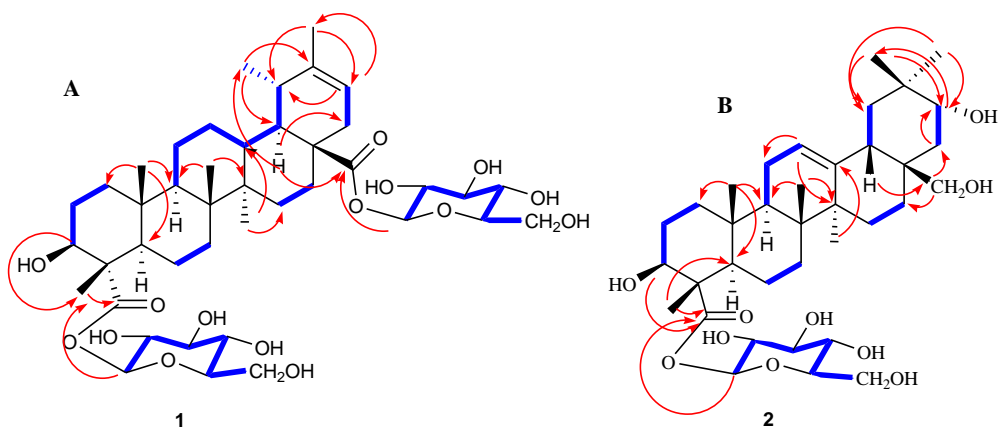


Figure S18. ^1H - ^1H COSY (blue bold bonds) and key HMBC (red arrows) correlations of 1 (A) and 2 (B).

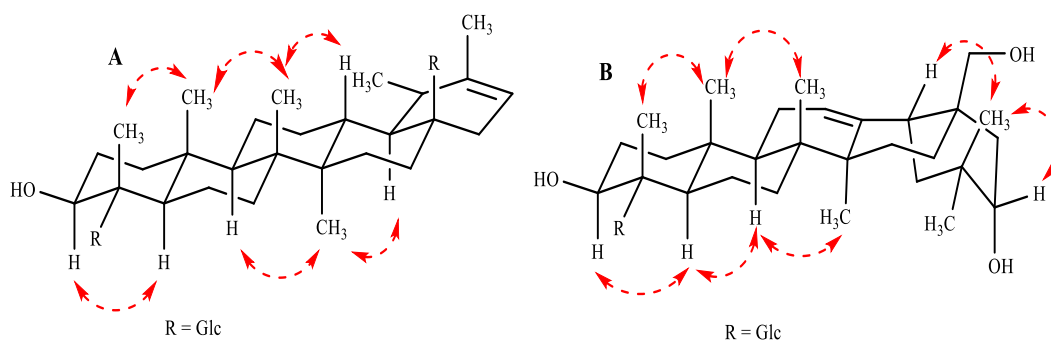


Figure S19. ROESY (double dashed arrows) correlations of 1 (A) and 2 (B).

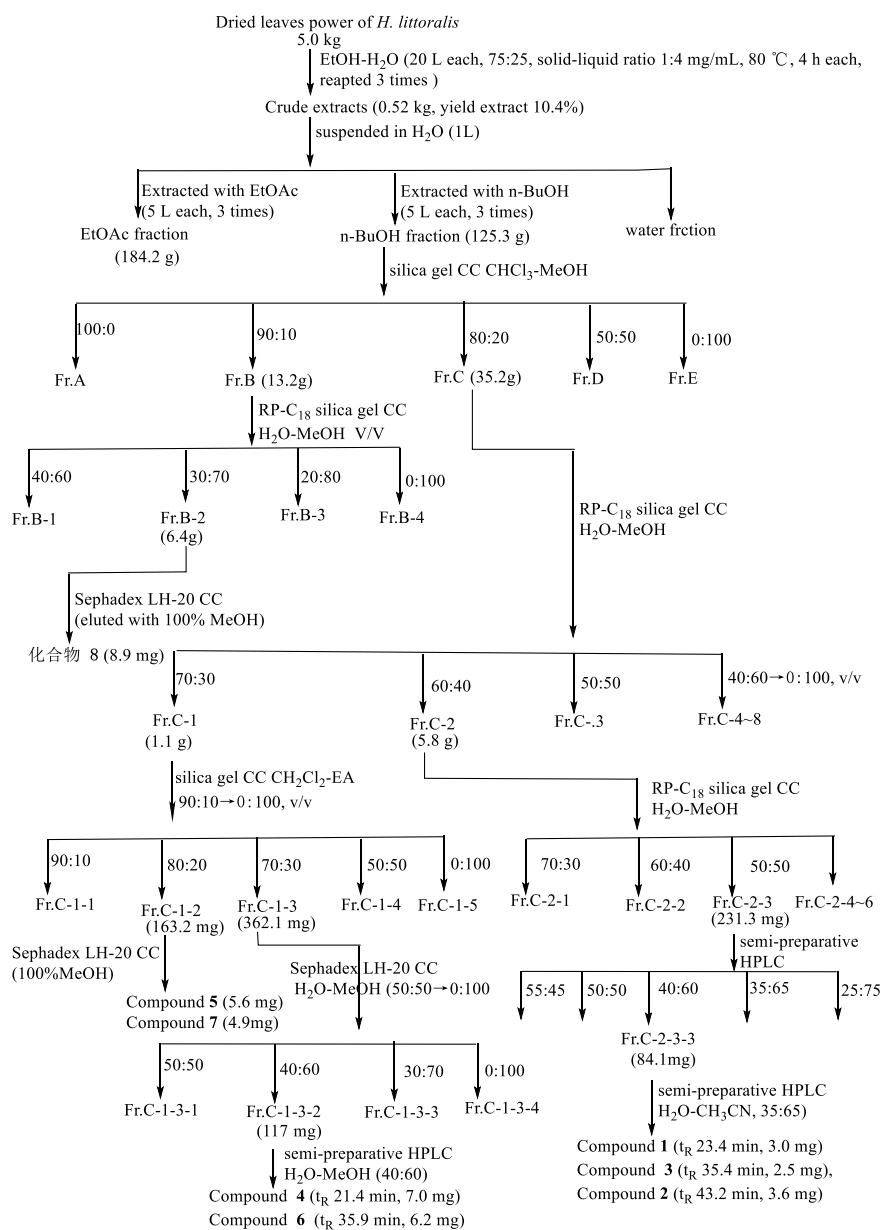


Figure S20. The flowchart for the isolation procedure of *H. littoralis*.