### **Supporting Information**

#### New withanolides with TRAIL-sensitizing effect from *Physalis pubescens* L.

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Figure S1. <sup>13</sup>C NMR (75 MHz) spectrum of compound 1 in CDCl<sub>3</sub>



1







Figure S3. HSQC spectrum of compound 1 in CDCl<sub>3</sub>



Figure S4. HMBC spectrum of compound 1 in CDCl<sub>3</sub>



Figure S5. NOESY spectrum of compound 1 in CDCl<sub>3</sub>

Figure S6. HRESIMS data of compound 1



Figure S7. IR spectrum of compound 1



Figure S8. UV spectrum of compound 1

![](_page_8_Figure_1.jpeg)

Figure S9. The HPLC chromatogram for the purity of compound 1

![](_page_8_Figure_3.jpeg)

Figure S10. <sup>13</sup>C NMR (150 MHz) spectrum of compound 2 in CDCl<sub>3</sub>

![](_page_9_Figure_1.jpeg)

![](_page_10_Figure_0.jpeg)

Figure S11. <sup>1</sup>H NMR (600 MHz) spectrum of compound 2 in CDCl<sub>3</sub>

Figure S12. HSQC spectrum of compound 2 in CDCl<sub>3</sub>

![](_page_11_Figure_1.jpeg)

![](_page_12_Figure_0.jpeg)

![](_page_12_Figure_1.jpeg)

![](_page_13_Figure_0.jpeg)

Figure S14. NOESY spectrum of compound 2 in CDCl<sub>3</sub>

Figure S15. HRESIMS data of compound 2

![](_page_14_Figure_1.jpeg)

![](_page_14_Figure_2.jpeg)

![](_page_14_Figure_3.jpeg)

![](_page_15_Figure_0.jpeg)

![](_page_15_Figure_1.jpeg)

Figure S18. The HPLC chromatogram for the purity of compound 2

![](_page_15_Figure_3.jpeg)

Figure S19. <sup>13</sup>C NMR (150 MHz) spectrum of compound 3 in Pyridine- $d_5$ 

![](_page_16_Figure_1.jpeg)

15

511 008 019 338 31 31 #463a 2 5 5 44005 OH •OH O ...OCH₃ Ο 0 ŌΗ O 00. 16.0 2.00 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 ppm

Figure S20. <sup>1</sup>H NMR (600 MHz) spectrum of compound 3 in Pyridine- $d_5$ 

**Figure S21.** HSQC spectrum of compound **3** in Pyridine- $d_5$ 

![](_page_18_Figure_1.jpeg)

**Figure S22.** HMBC spectrum of compound **3** in Pyridine- $d_5$ 

![](_page_19_Figure_1.jpeg)

**Figure S23.** NOESY spectrum of compound **3** in Pyridine- $d_5$ 

![](_page_20_Figure_1.jpeg)

![](_page_21_Figure_0.jpeg)

Figure S24. HRESIMS data of compound 3

![](_page_21_Figure_2.jpeg)

![](_page_21_Figure_3.jpeg)

Figure S26. UV spectrum of compound 3

![](_page_22_Figure_1.jpeg)

Figure S27. The HPLC chromatogram for the purity of compound 3

![](_page_22_Figure_3.jpeg)

## Figure S28. The UPLC-QTOF-MS chromatogram and MS/MS spectra for compound 3

![](_page_23_Figure_1.jpeg)

Figure S29. <sup>13</sup>C NMR (150 MHz) spectrum of compound 4 in Pyridine- $d_5$ 

![](_page_24_Figure_1.jpeg)

23

MNO 10 10 5000009 100 LLL LLLI OH ΟH  $\cap$ HO OF 89 64 90 88 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 ppm

Figure S30. <sup>1</sup>H NMR (600 MHz) spectrum of compound 4 in Pyridine- $d_5$ 

![](_page_26_Figure_0.jpeg)

**Figure S31.** HSQC spectrum of compound **4** in Pyridine- $d_5$ 

![](_page_27_Figure_0.jpeg)

**Figure S32.** HMBC spectrum of compound **4** in Pyridine- $d_5$ 

## Figure S33. HRESIMS data of compound 4

![](_page_28_Figure_1.jpeg)

Figure S34. IR spectrum of compound 4

![](_page_28_Figure_3.jpeg)

Figure S35. The HPLC chromatogram for the purity of compound 4

(refractive index detector)

![](_page_29_Figure_2.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_30_Figure_1.jpeg)