SUPPLEMENTARY MATERIAL

Pyrrolizidine alkaloids from *Solenanthus lanatus* DC. with acetylcholinesterase inhibitory activity

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Abstract

The whole plant ethanolic extract of *Solenanthus lanatus* was used for the isolation of acetylcholinesterase inhibitors. A new pyrrolizidine alkaloid, 7-*O*-angeloylechinate *N*-oxide, **1**, was isolated together with three known compounds of the same class (3'-*O*-acetylheliosupine *N*-oxide, **2**, heliosupine *N*-oxide, **3**, and heliosupine, **4**), by bioassay-guided approach. Their structures were elucidated by spectroscopic methods. All the isolated compounds showed to inhibit the AChE, with IC₅₀ 0.57-0.60 mM.

Keywords: Boraginaceae; *Solenanthus lanatus*; pyrrolizidine alkaloids; 7-*O*-angeloylechinate *N*-oxide; anti-AChE activity.

Compound **1** – ^1H NMR spectrum.

Compound **1** – ^{13}C NMR spectrum.

Compound **1** – ^1H - ^1H COSY NMR spectrum.

Compound **1** – NOESY NMR spectrum.

Figure S1.

Compound **1** – NOESY correlations.

Compound **1** – ^1H - ^{13}C HMBC NMR spectrum.

Figure S2.

Bioautography of ethanolic extract, fractions and compounds from *S. lanatus*. Mobile phase: CH_2Cl_2 -MeOH- NH_4OH (85:15:02, v/v). Tracks: 1 - ethanolic extract, 2 - fraction C, 3 - fraction D, 4 - compound 2, 5 - compound 1, 6 - compound 3, 7 - compound 4, 8 - galanthamine. The applied amounts: plant extracts - 15 μg , galanthamine - 1 μg .