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Saluenolide A, A Novel Eremophilanolide from *Senecio saluenensis*

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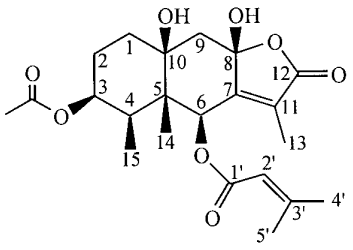
Abstract: From *Senecio saluenensis*, a novel eremophilanolide Saluenolide A was isolated. Its structure was elucidated by 2D-NMR technique and X-ray diffraction.

Keywords: Sesquiterpene, eremophilanolide, *Senecio*, X-ray, cytotoxicity.

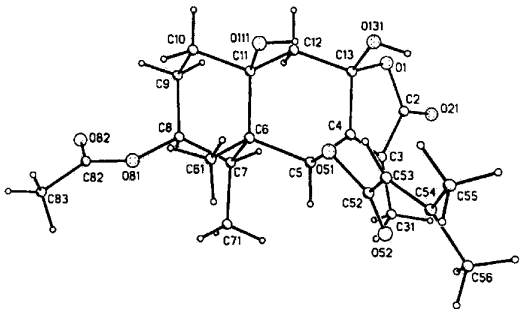
The crude petroleum ether extract of *S. saluenensis* showed 78% inhibition to KB cell on 100 μmol/L[1]. Nine known compounds and a new eremophilanolide, saluenolide A (**1**) was isolated from this extract.

Saluenolide A (**1**) showed 22 carbon resonances, combined by DEPT data and the molecular ion peak exhibited at *m/z* 340, the molecular formula of **1** could be deduced as $C_{22}H_{30}O_8$. Three typical methyl signals at δ 1.92 (br s), 1.24 (s) and 0.95 (d, J=6.8 Hz) suggested that this compound is an eremophilanolide[2,3]. Considering the presence of three esteric carboxylic resonances at δ 170.9, 170.3 and 165.4, two ester moieties exist in the molecule. Scrutiny on the ^{1}H and ^{13}C-NMR spectra disclosed the existence of an acetoxy group as well as a senecioyl in the molecule. Two hydroxyls appeared at δ 5.09 and 3.86 could be exchanged by D_2O. One olefinic proton appeared at δ 5.67 (br s) could be assigned as H-2 in the senecioyl moiety. Two oxygen-bearing methines exhibited at δ 5.72 (br s, H-3) and 4.85 (d, J=2.4 Hz, H-6). Furthermore, the ketal carbon resonance at δ 103.1 indicated the presence of the 8-hydroxy-8, 12-olide moiety[2].

Another hydroxyl should locate at C-10, since this oxygen-bearing carbon signal appeared at δ 74.2. The HMBC as well as the NOESY experiment revealed the presence of a 3β-acetoxy group and a 6β-senecioyl moiety. The absolute stereochemistry of **1** was finally disclosed by X-ray diffraction experiment utilized a Mo atom initiation. **1** was evaluated for its inhibitory activity against the growth of HL-60, A-549 and KB cell lines *in vitro* with IC_{50} values of 5.6×10^{-5}, 4.8×10^{-5} and 6.1×10^{-4} mol/L, respectively.



Structuee of Saluenolide A



X-ray structure of Saluenolide A

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