

## COMPONENTS OF *Laser trilobum*

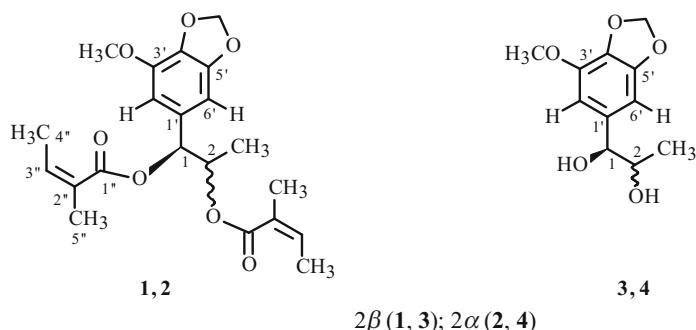
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*Laser trilobum* L. Borkh. is known to contain sesquiterpene lactones [1, 2].

The isolation of the sesquiterpene lactone lasolide, a coumarin derivative of hydroxypeucedanine, crocatone (latifolone), and an ester (laserine) from roots of *L. trilobum* collected in Khyzin Region of the Republic of Azerbaijan during fruiting was reported earlier [3, 4].

During separation of total extracted compounds of *L. trilobum*, we isolated a phenylpropanoid of formula C<sub>21</sub>H<sub>26</sub>O<sub>7</sub> as an ester. Although the IR spectrum of the newly isolated aromatic ester coincided in details with that of an aromatic ester from *Ferula oopoda* [5], nevertheless the PMR spectrum of the studied compound in the methyl range (except for ester methyls) contained two doublets characteristic of two secondary methyls at 1.14 (*J* = 6.5 Hz) and 1.24 ppm (*J* = 6.5 Hz) with resonances having the same area. This suggested that we were probably dealing with a mixture of two epimeric compounds such as 2-epilaserine (**1**) and laserine (**2**). An analogous mixture in a 2:1 ratio was isolated earlier from *Seseli vayredanum* [6].



2β(**1,3**); 2α(**2,4**)

In fact, integration of the NMR spectrum established that the compound isolated by us consisted of a mixture of two components in a 1:1 ratio and had the following PMR spectrum (300 MHz, CDCl<sub>3</sub>, δ, ppm): 1.14 (3H, s, CH<sub>3</sub>), 1.24 (3H, s, CH<sub>3</sub>), 1.80–2.1 (24H, m, H<sub>3</sub>C–CH=, H<sub>3</sub>C–CH=), 3.87 (6H, s, 2 × OCH<sub>3</sub>), 5.75 (1H, s, H-1), 5.90 (1H, s, H-1), 5.25–5.40 (2H, m, 2 × H-2), 5.93 and 5.94 (2H, s, 2 × OCH<sub>2</sub>O), 6.00–6.15 (4H, m, 4 × –CH=), 6.54 (2H, s, 2 × H-2), 6.56 (2H, s, 2 × H-6).

Saponification of the studied compound by base (5% KOH:EtOH) produced angelic acid, which was identified by its IR spectrum, and a mixture of diols **3** and **4** (3400, 1632, 1510, 1370, 1323, 1195, 1130, 1090, 1041, 932, 753 cm<sup>-1</sup>), saponified products of a mixture of 2-epilaserine and laserine [6], and helmanticine [7] were comparable.

A comparison of PMR spectra of 2-epilaserine and laserine [6] and the aromatic ester isolated from *L. trilobum* confirmed that the last consisted of a mixture of 2-epilaserine and laserine in a 1:1 ratio. Resonances of the ester and SSCC of the adjacent resonances were not given.

## REFERENCES

1. K. S. Rybalko, *Natural Sesquiterpene Lactones* [in Russian], Moscow, 1978.
2. M. Holub, R. Groote, V. Herout, and F. Sorm, *Collect. Czech. Chem. Commun.*, **33**, 2911 (1968).
3. Yu. M. Azizov and S. V. Serkerov, *Tr. Inst. Bot. Nats. Akad. Nauk Az.*, **28**, 373 (2008).
4. Yu. M. Azizov and S. V. Serkerov, *Tr. Inst. Bot. Nats. Akad. Nauk Az.*, **29**, 399 (2009).
5. S. V. Serkerov, *Khim. Prir. Soedin.*, 552 (1972).
6. F. B. Alejandro, F. Barrero, M. M. Herrador, and P. Arteaga, *Phytochemistry*, **31**, 203 (1992).
7. T. J. De Pascual, M. De Pascual, A. Arias, J. R. Moran, and M. Grande, *Phytochemistry*, **24**, 1773 (1985).

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