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## TERPENOIDS OF *Achillea micrantha*

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The genus *Achillea* L. numbers more than 50 species growing on the territory of the USSR. Of them, 11 species grow in Kazakhstan [1]. The majority of species of *Achillea* L. contain biologically active sesquiterpene  $\gamma$ -lactones [2].

*Achillea micrantha* Willd. is a plant which is widely distributed in the territory of Kazakhstan. From its epigeal part collected in the phase of mass flowering in the environs of the village of Zhairam, Dzhezkazgan province, Kazakh SSR, by aqueous extraction followed by chloroform treatment we obtained the total extractive substances, which were chromatographed on a column of KSK silica gel at a ratio of material to support of 1:24. From the benzene-ether (4:1) and (1:1), ether, and ether-ethyl acetate (4:1 and 1:1) fractions four sesquiterpene lactones were isolated: achillin (yield 0.05% calculated on the air-dry raw material) [3], artilesin (0.003%) [4], grossmizin (0.053%), and micranthin (0.003%) [6].

Extraction of the epigeal part of *A. micrantha* with chloroform gave a combined product, and this was treated with 60% ethanol. The filtrate was extracted with chloroform. The chloroform extract was chromatographed on a column of KSK silica gel (1:15). When the column was eluted with carbon tetrachloride-benzene (1:1), benzene, benzene-ether (9:1, 4:1, 1:1, and 1:4), achillin (0.02%), micranthin (0.02%), grossmizin (0.04%) and kaempferol 3-rhamnoside (0.04%) [7] were isolated.

The roots of *A. micrantha* were extracted with acetone and resin so obtained was chromatographed on a column of KSK silica gel (1:22), the benzene and benzene-ether (9:1) fractions yielded campesterol (0.005%) [8]. No sesquiterpene lactones were detected in the roots.

This is the first time that achillin, grossmizin, artilesin, kaempferol 3-rhamnoside and campesterol have been isolated from this species of *Achillea*. Achillin possesses antifeedant activity [9].

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