

## PP14. BIOLOGICALLY ACTIVE TERPENOIDS *ACHILLEA TIANSHANICA* KUPR. et KULEMIN

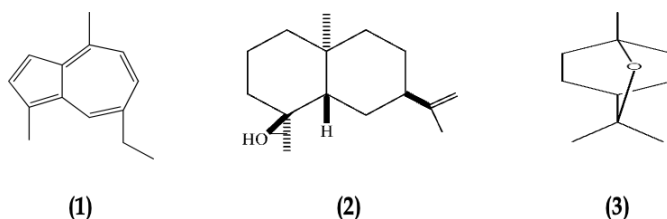
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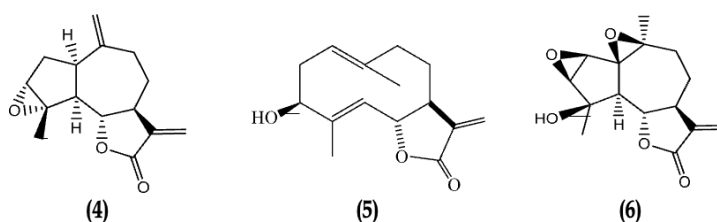
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The genus *Achillea* L. is represented by 10 species in the flora of Kazakhstan, among them *Achillea tianschanica* Kupr. et Kulemin is endemic. The report presents the results of a chemical study of *Achillea tianschanica* Kupr. et Kulemin, collected in the flowering phase in the Sairam-Ugam National Park along the slope and floodplain of the Sairamsu River in the Turkestan Region of the Republic of Kazakhstan. For a comparative analysis of the composition of the essential oil and extractives of *A. tianschanica* Kupr. et Kulemin and related species: *A. nobilis* L., *A. millefolium* L., *A. setacea* Waldst. et Kit. and *A. stricta* L. we carried out the extraction of the essential oil and the extraction of the aerial part of the studied species of *Achillea* L. with chloroform. Component composition of the essential oil of the *A. tianschanica* Kupr. et Kulemin was determined by chromat-mass spectrometry on a gas chromatograph with a mass selective detector Agilent 7890B/5977B.



At the same time, 43 compounds were found, among which the major terpenoids are (in %): chamazulene (1) - 22.938, intermedeol (2) - 14.177, 1,8-cineole (3) - 10.245. From the



chloroform extract of the aerial part of *Achillea tianschanica* Kupr. et Kulemin isolated sesquiterpene  $\gamma$ -lactones estafiatin (1), hanfillin (2), chrysartemin A (3).

Thus, chamazulene (1), intermedeol (2), 1,8-cineol (3) were identified for the first time from the essential oil of the *Achillea* L. species, as well as from the sum of extractive substances - sesquiterpene  $\gamma$ -lactones estafiatin (4), hanfillin (5), chrysartemin A (6). Based on the results of biological screening and pharmacological studies, it was determined that estafiatin (4) has antiparasitic and antitumor activity, hanfillin (5) has antitumor activity, chamazulene (1) has antimicrobial, anti-inflammatory and wound healing activity, 1,8-cineol (3) has antihelminthic activity.