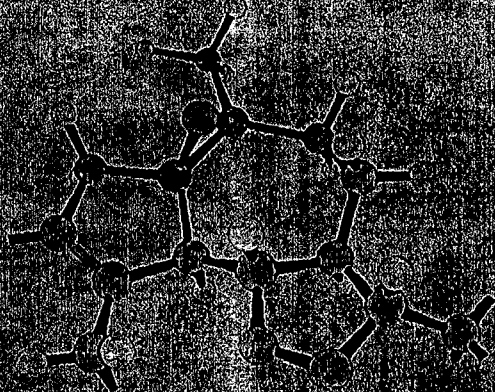


**ACHIEVEMENTS AND PROSPECTS  
FOR THE DEVELOPMENT  
OF PHYTOCHEMISTRY**



**REPUBLIC OF KAZAKHSTAN**

**MINISTRY OF EDUCATION AND SCIENCE**

**COMMITTEE OF SCIENCE**

**MINISTRY OF HEALTHCARE AND SOCIAL DEVELOPMENT**

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«PHYTOCHEMISTRY»**

**BOOK OF ABSTRACTS**

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PHYTOCHEMISTRY»**



**to mark the 20<sup>th</sup> anniversary of the International research and production  
holding «Phytochemistry»**

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THE CHEMICAL RESEARCH OF *ACANTHOPHYLLUM* SPECIES

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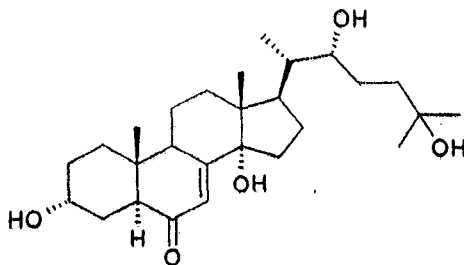
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There is no information about ecdysteroids of *Acanthophyllum* genus of pink family plant in the available scientific literature. In this context, *Acanthophyllum gypsophyloides* Regel and *Acanthophyllum pungens* (Bunge) Boiss were chosen like objects of study. There were collected in the vicinity of Tanbaly vil., Chu-Ili mountains of Almaty region in May 2012 in the ges-budding phase and in Ikansu vicinity of the Karatau Ridge of South Kazakhstan region in June 2013 in ges-flowering stage.

As a result of chromatographic studies it was found that extracts of the aerial parts of the raw material contain ecdysteroids, and the main is ecdysterone (quantitative content of *Acanthophyllum gypsophyloides* Regel. extract is 0.19% and the 2-deoxyecdysone are 0.002% and 0.013%, respectively).

It was conducted an additional column chromatography on alumina ( $Al_2O_3$ ) of 1<sup>st</sup> degree of Brockmann activity for deeper cleaning of ecdysteroid-containing fraction of *Acanthophyllum gypsophyloides* Regel extract. Fine structure and  $\alpha$ -orientation of the 5<sup>th</sup> (H) hydrogen of selected sample of steroid nature was proved by modern high-resolution spectral methods (mass, IR, UV, NMR  $^1H$ -,  $^{13}C$ , COSY, NOESY spectroscopy) and elemental analysis.

Such a way isolated ecdysteroid of *Acanthophyllum gypsophyloides* Regel. (T. 230-232°C,  $\lambda_{max}$  - 245 nm, the purity - 99.9%, gross formula  $C_{27}H_{44}O_5$ ,  $R_f$  0.4,  $[\alpha]_D^{27} + 99.7$  (with 0.25 acetonitrile «HPLC»)) was a new and it was named acanthosterone (3 $\alpha$ , 14 $\alpha$ , 22R, 25-tetrahydroxy-5 $\alpha$ (H)cholest-7-en-6-one).



As a bioscreening result it was detected that acanthosterone has expressed an anti-inflammatory and analgesic activity.