

3rd INTERNATIONAL EURASIAN CONFERENCE ON
BIOLOGICAL AND CHEMICAL SCIENCES

19 - 20 March 2020
Ankara / Turkey

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ABSTRACT BOOK



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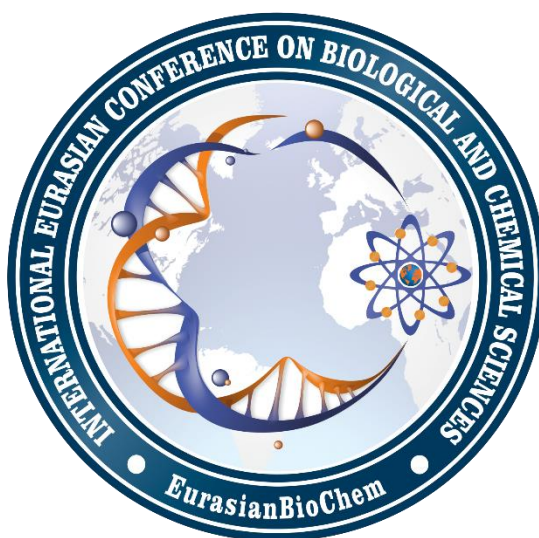


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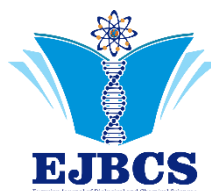
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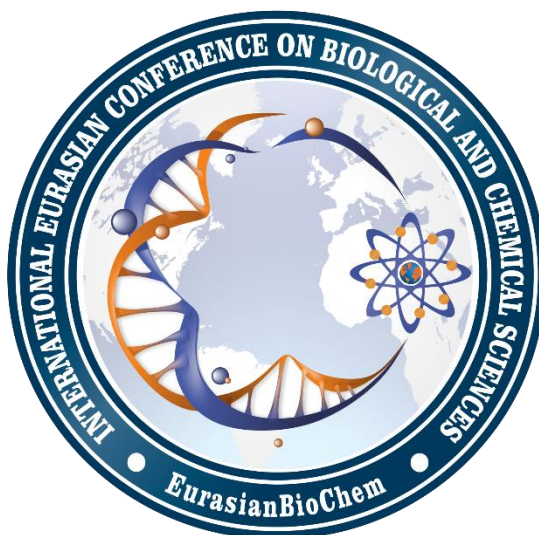
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➤ POSTER PRESENTATION

Chemical investigation and *in vitro* antimicrobial activity of *Verbascum orientale* growing in Altai region of Kazakhstan

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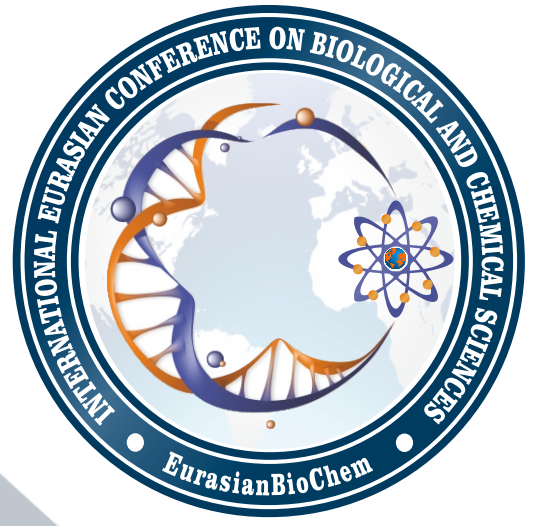
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Abstract

The purpose of the study is to establish the chemical composition of *Verbascum orientale* (Scrophulariaceae) growing in the Altai region of Kazakhstan to obtaining biologically active substances and establishing their chemical structure. Flavonoids were obtained from milled aerial plant parts (1 kg) by extraction with MeOH for 10 h in a Soxhlet apparatus. The extract was filtered. The pulp was treated with MeOH (raw-material–extractant ratio 1:9) and extracted (2×) at 90 ± 5°C for 1 h. The MeOH extract was filtered, evaporated in a rotary evaporator to 1/5 the volume, and dried in a vacuum drying cabinet. The yield of extract was 50.2–53.5 mass% of starting raw material. Lipophilic substances were removed from the extract (26.5 g) by sequential extraction with hexane then CH₂Cl₂, EtOAc, and n-BuOH. The obtained EtOAc fraction was separated over a column of RP-18 sorbent and HPLC to produce six flavonoids [kaempferide (1), luteolin (2), quercetin (3), luteolin 7-O-β-D-glucopyranoside (4), quercetin 3-O-β-D-glucopyranoside (5), and isorhamnetin 3-O-β-D-glucopyranoside (6)]. The isolated compounds were identified using chemical transformations; IR, UV, ¹H, ¹³C NMR, and mass spectral data; and comparisons of physicochemical data with the literature. The antimicrobial activity of the extracts against eight microbial strains was tested by using minimal inhibitory concentration (MIC) values. All tested extracts (n-Butanol, dichloromethane, ethyle acetate and hexane) didn't exhibit any antibacterial effect against tested strains.

Keywords: *Verbascum orientale*, Flavonoids, Antimicrobial activity



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