МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РЕСПУБЛИКИ КАЗАХСТАН

НАЦИОНАЛЬНАЯ АКАДЕМИЯ НАУК РЕСПУБЛИКИ КАЗАХСТАН

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DEVELOPMENT OF ISOLATION OF NEW DOMESTIC PREPARATIONS FROM HALOPHYTES OF KAZAKHSTAN

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For the first time, within the framework of the project of the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan for basic research, several Kazakhstan species of plants of following genera were studied: *Suaeda, Climacoptera, Petrosimonia, Kochia,* etc /1/.

Literary and patent surveys of 15 years in-depth were carried out on new plant objects. The moisture content, total ash, qualitative and quantitative contents of biologically active constituents of halophytes were determined according to methods reported in the State Pharmacopoeia XI edition techniques /2/. In the studied plants, 10 macro- and microelements, 20 amino, 8 fatty acids were found.

The scientific basis for the separation and isolation of biologically active complexes is proposed. In order to develop safe methods for producing and optimizing the technology for isolating biologically active substances, plants were subjected to three types of extraction: "classical" extraction – maceration, circulating Soxhlet extraction and supercritical fluid extraction (SFE). To obtain biologically active substances from the studied plant objects, an optimal block diagram of their separation has been developed.

Major compounds of biologically active complexes were isolated. Eight compounds were identified from *Kochia prostrata*. *Petrosimonia glaucescens* yielded five steroidal compounds. Twelve polyphenolic compounds isolated from *Suaeda acuminata* and *Climacoptera korshinskyi.* For identification of structures of the isolated substances were used following spectral analysis methods: 1D (^{13}C-NMR, ^{1}H-NMR), 2D (HMBC, HSQC, COSY, NOESY), IR, UV spectroscopy and mass spectrometry (EI-MS, ESI-MS, FAB-MS, CI) /3-6/.

Antitumor activity of conditional phytopreparations was studied for the first time and preclinical studies (acute toxicity, local irritant effect, allergic effects) of two preparations from *Petrosimonia sibirica* and *Kochia prostrata* were carried out /7/.

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Түйін. Қазақстанда өсетін *Suaeda, Climacoptera, Petrosimonia, Kochia* тектес өсімдіктердің сапалық құрамы және биологиялық белсенді заттарының негізгі топтарының сандық құрамы зерттелді. Өсімдіктердің құрамындағы биологиялық белсенді заттарға салыстырмалы талдау жүргізілді. Мацерация (тұндыру), Сокслет аппаратында жүргізілген циркуляциялық экстракциясы және жоғары критикалық флюидті CO_2 экстракциясын қолдана отырып, препараттарды алудың оңтайлы шарттары таңдалды. Негізгі сығындылар алынды, зерттелген биологиялық белсенді кешендердегі негізгі әсер етуші заттар анықталды. Биологиялық скринингке шартты препараттар тапсырылды.

Резюме. Определен качественный состав и количественное содержание основных групп биологичсеки активных веществ казахстанского видов растений родов *Suaeda, Climacoptera, Petrosimonia, Kochia.* Проведен сравнительный анализ биологически активных веществ. Подобраны оптимальные условия получения препаратов с помощью мацерацией (настаивание), циркуляционной экстракции в аппарате Сокслета и сверхкритической флюидной CO_2-экстракцией. Получены основные экстракты, определены действующие вещества в изучаемых биологически активных комплексах. Наработаны условные препараты для проведения биологического скрининга.