**Studying the chemical composition and biological active constituents of the *Ferula foetida***

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The nature of Kazakhstan differentiates with its unique and endemic plants that have useful medicinal properties. One of the plants with valuable properties is *Ferula foetida*. It has several pharmacological activities like anti-flatulent, antibacterial, antiviral, antifungal, anti-ulcerogenic, antidiabetic, anti-hepatotoxic properties [1]. Indian researchers investigating anti-helmintic activity led to the result that extract of *Ferula foetida* with the concentration 100 mg/mL showed the highest activity and significantly higher than standard medicines [2].

The research work shows the results of quantitative analysis of aerial and underground parts of *Ferula foetida* that include the compositional substituents and phytoconstituents analysis of the main organic groups. From aerial part of *Ferula foetida* extractive substances – 10,35%, organic acids – 0,155%, polysaccharides – 1,7%, alkaloids – 1,56%, coumarins – 1,96%, saponins – 2,15% were identified. The underground part of *Ferula foetida* showed content of extractive substances – 22,69%, flavonoids – 0,237%, polysaccharides – 2,8%, alkaloids – 1,34% and tannins – 8,5%. Eleven macro and micro elements from the ash of plant were identified by atomic absorption spectrometry method. It showed that underground part ash contains more microelements like Fe (11,826 µg/ml), Mn (2,4748 µg/ml), Cu (0,9230 µg/ml) and macroelements as K (1401,45 µg/ml), Ca (560,640 µg/ml), Na (158,08 µg/ml). Comparatively, ash of the aerial part showed higher concentration of macroelements that includes K (371,350 µg/ml), Ca (590,410 µg/ml), Na (250,675 µg/ml), Mg (209,625 µg/ml) and also microelements such as Fe (3,0438 µg/ml) and Cu (0,7856 µg/ml). The quantitative analysis was conducted according to the methodology of the State Pharmacopoeia of the Kazakhstan Republic. This study of *Ferula foetida* plant are going continued in order to do in-depth research of the chemical composition and biological active substances of both parts of the *Ferula foetida*.

**Keywords:** *Ferula foetida,* phytoconstituents, biological active compounds, quantitative analysis, macro-micro elements

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