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## PP-29

Primary phytochemical analysis of *Crocus alata* Regal et Semen

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The purpose of this study is phytochemical analysis of *Crocus alata*. Species of the genus *Crocus* are the sources of some biologically active substances with antibacterial, antiinflammatory, antiviral, antioxidant and other properties. Different parts of *C. alata* were collected from the natural environment of Almaty during the flowering period. Qualitative tests for determination of major biological active compounds in plant material revealed the occurrence of flavonoids, anthocyanins, phenols, amine-containing compounds, carbohydrates and carotenoids. Quantitative analysis revealed a predominant content of flavonoids and carotenoids in the aerial part of plant, in the bulbs were detected predominant content of amine compounds. The carbohydrate content in the tested parts of plant during the flowering stage does not exceed of 0,05-0,06%. Dry plant material was extracted with water, ethanol, benzene, dichloromethane, and followed by distillation on a rotary evaporator and freeze-drying to obtain the different extracts. Total phenolic content of the extracts was determined by the Folin-Ciocalteu method using gallic acid as a standard. Total antioxidant activities of the extracts were estimated by the  $\beta$ -carotene bleaching test and electron-donation ability of the extracts was measured from the bleaching of a purple-coloured methanol solution of DPPH. The high content of phenols, flavonoids, anthocyanins and carotenoids in the ethanol and dichloromethane extracts from the aerial part of plant is correlated with the activity of lipid peroxidation (63%-65%) and with significant ability to inhibit the DPPH radicals with IC<sub>50</sub> 387  $\mu$ g/ml. The results of evaluation of cytotoxicity by BSL test showed a high degree of negative influence on the survival of brine shrimp *Artemia salina* (LD<sub>50</sub> 12,7  $\mu$ g/ml) of the ethanol extract from the aerial part of *C. alata*. The results indicate the prospects of further study of *C. alata* from Kazakhstan as a source of natural compounds with high antioxidant and cytotoxic activity.

**Keywords:** *Crocus alata*, antioxidant activity, phenolic content, cytotoxicity