

POSTER PRESENTATIONS

BIOLOGICALLY ACTIVE COMPONENTS OF THE ESSENTIAL OIL OF *Ligularia macrophylla* (Ledeb.) DC.

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This report presents the results of a study of the biologically active components of the essential oils obtained from the raw material of *Ligularia macrophylla* (Ledeb.) DC. collected at the flowering stage in the valley of the Zharly River in the vicinity of the village of Nurken, Karkaraly District, Karaganda Region, Republic of Kazakhstan.

The component composition of the essential oils isolated from the aerial and underground parts of *Ligularia macrophylla* (Ledeb.) DC. was studied by gas chromatography–mass spectrometry on an Agilent 7890B/5977B gas chromatograph with a mass-selective detector. The components of the essential oils were identified by comparison of their mass spectra and linear retention indices (relative to C₇–C₄₀ alkanes).

In the essential oil from the aerial part of *Ligularia macrophylla* (Ledeb.) DC. obtained by hydrodistillation, 52 components were detected, of which 43 were identified. The main components of the essential oil from the aerial part of *Ligularia macrophylla* (Ledeb.) DC. are Δ^3 -carene – 35.16% and *cis*- β -ocimene – 18.27%. In the essential oil from the aerial part of *Ligularia macrophylla* (Ledeb.) DC. obtained by microwave extraction, 63 components were detected and 55 were identified, the main components among them being Δ^3 -carene – 24.62% and *cis*- β -ocimene – 15.16%.

By gas chromatography–mass spectrometry, 58 components were detected in the essential oil from the roots of *Ligularia macrophylla* (Ledeb.) DC. obtained by hydrodistillation, of which 51 were identified. The main components of the essential oil from the roots of *Ligularia macrophylla* (Ledeb.) DC. obtained by hydrodistillation are Δ^3 -carene – 30.68%, β -bisabolene – 16.01% and β -myrcene – 11.94%.

In the essential oil from the roots of *Ligularia macrophylla* (Ledeb.) DC. obtained by microwave extraction, 57 components were detected, of which 47 were identified. The major components were found to be Δ^3 -carene – 24.91%, β -bisabolene – 12.37% and β -myrcene – 9.08%.

Thus, the composition of the essential oils from the aerial and underground parts of *Ligularia macrophylla* (Ledeb.) DC. obtained by hydrodistillation and microwave extraction has been identified for the first time by gas chromatography–mass spectrometry.

In the determination of the biological activity of the essential oil samples from individual organs of *Ligularia macrophylla* (Ledeb.) DC., the sample of essential oil from the roots of this plant exhibited pronounced antimicrobial activity.