



# Chromatographic study of the oil extract of Artemisia Cina growing in South Kazakhstan

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## Purpose and objectives

**Purpose.** Study of oil extract of Artemisia cina using liquid chromatography.

**Objectives.** Identification and quantitative determination of the oil extract of Artemisia cina based on the main active substance - santonin using liquid chromatography.

## Material and research methods

Laboratory samples of the oil extract of Artemisia cina and a standard sample (SS) of santonin ( $\alpha$ -santonin, 53653, Sigma-Aldrich, USA) were used as research objects. The work used an Agilent Technologies 1200 liquid chromatograph (USA) with LabSolutions software, equipped with a G1379A degasser and a VWD G1314 variable wavelength spectrophotometric detector. The separation was carried out on a reverse phase column Agilent C18, 5 $\mu$ , (4.6x250mm) with a pre-column (Agilent C18, 5 $\mu$ ), eluent flow rate - 1.0 ml/min, injected sample volume - 20 mcl, column temperature 25°C.

## Sample preparation scheme

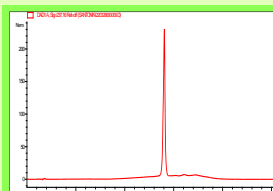
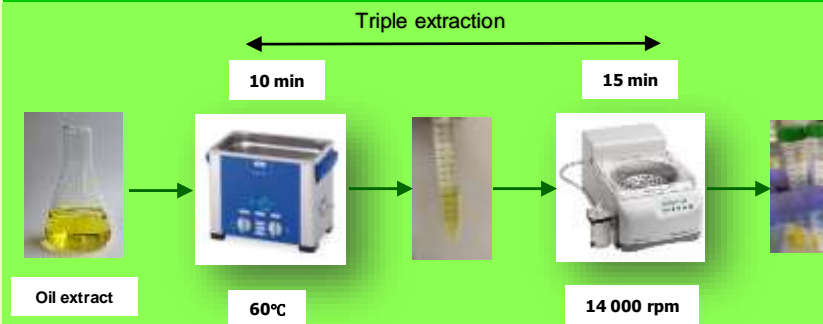


Fig. 1 - Chromatogram of a standard sample of santonin

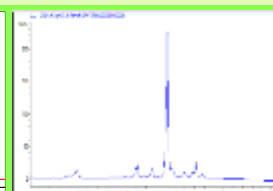


Fig. 2 - Chromatogram of oil extract of Artemisia cina

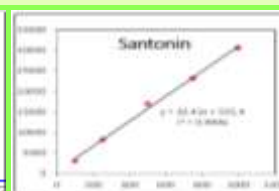


Fig. 3 – Graph of the dependence of the concentration of santonin in the test solution on the area of the chromatographic peak

## Main results

As a result, the optimal mobile phase for the identification and quantitative analysis of the oil extract of Artemisia cina by liquid chromatography was selected. When chromatography under conditions of gradient elution with acetonitrile (A) and phosphate buffer with pH = 6.8 (B), the retention time of the analyte and the standard sample of santonin was 14.3±0.2 min.

The quantitation method is validated according to the main characteristics: specificity, linearity, accuracy or precision, limit of detection and limit of quantitation (accuracy, trueness).

## Conclusions

A technique has been developed for the pharmaceutical analysis of the oil extract of Artemisia cina using liquid chromatography for santonin. Using the developed method, the quantitative content of santonin in the oil extract of Artemisia cina was determined within the range of 0.61±0.08%.

Table 1. –Quantitative content of santonin in the oil extract of Artemisia cina

№ TS	Amount of santonin in oil extract, g	Metrological characteristics						
		n	X <sub>cp</sub>	S	ΔX <sub>op</sub>	Sx	X <sub>op</sub> ±ΔX <sub>op</sub>	ε <sub>op</sub> ,%
1	0,620	6	0,61	5,7·10 <sup>-3</sup>	8,8·10 <sup>-3</sup>	3,4·10 <sup>-3</sup>	0,61±0,008	1,45
2	0,615							
3	0,599							
4	0,612							
5	0,619							
6	0,593							