

POSTER PRESENTATIONS

APPLICATION OF CAPILLARY ELECTROPHORESIS AND HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY FOR THE QUANTITATIVE DETERMINATION OF CYNAROSIDE

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Cynaroside is a plant-derived flavonoid with antioxidant, anti-inflammatory, nephroprotective, cardioprotective, antimicrobial, antifungal, antitumor, and hypoazotemic activities. The Academician S.Yu. Yunusov Institute of the Chemistry of Plant Substances has developed a new hypoazotemic drug derived from the aerial parts of *Ferula varia* for use in the treatment of kidney diseases. The drug substance is produced at the Institute's pilot facility, while the finished dosage form as tablets is manufactured by NIKA PHARM LLC under the trade name "Nephrocizin".

The expanding therapeutic potential of cynaroside requires new dosage forms and sensitive, selective analytical methods for its identification, quantification, and stability assessment.

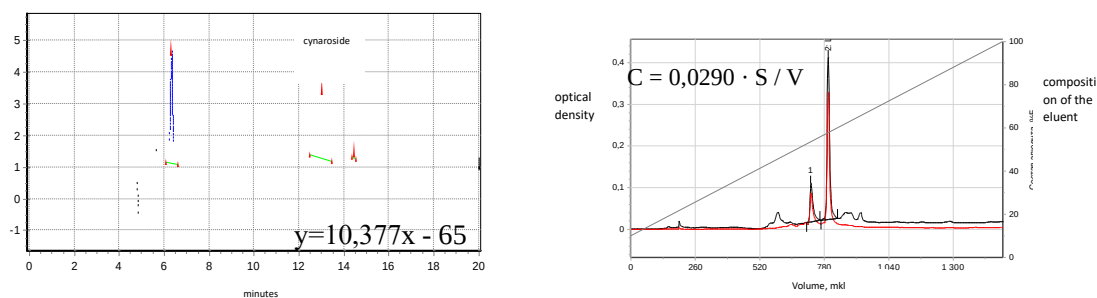


Figure 1 – Electropherogram of the drug formulation. Figure 2 – Chromatogram of the drug formulation.

This study aimed to develop capillary electrophoresis (CE) and high-performance liquid chromatography (HPLC) methods for the selective analysis of the phytosubstance *Cynaroside* and to evaluate their applicability to its pharmaceutical formulation.

CE analysis was performed on a Kapel-105M system (Russia) using micellar electrokinetic chromatography with 10 mM sodium tetraborate/80 mM sodium dodecyl sulfate as the background electrolyte. Separation was carried out at 260 nm, 20 kV, and 25 °C. The method provided an LOD of 0.0365 mg/mL and an LOQ of 0.1106 mg/mL (Fig. 1).

HPLC analysis was performed on a Milichrom A-02 system (Russia) with a ProntoSil 120-5 C18 AQ column (2 $\varnothing$ 75 mm). Gradient elution with water (A) and acetonitrile (B) (10–100% B) was carried out at 150 μ L/min. The LOD and LOQ were $3.3 \varnothing 10^{-5}$ and $1.1 \varnothing 10^{-4}$ mg/mL, respectively (Fig. 2).

Both methods enable selective quantification of cynaroside and monitoring of its degradation during storage.