

# DEVELOPMENT OF THE EXTRACTION METHOD OF PREDNISOLONE FROM AN OINTMENT WITH A HYDROPHILIC BASE FOR QUANTITATIVE SPECTROPHOTOMETRIC DETERMINATION

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**Introduction.** The composition of an ointment with a hydrophilic base includes 0.5g of prednisolone, 10.0g of urea, 1.0g of sodium edetate, propylene glycol, liquid paraffin, cetyl alcohol, stearyl alcohol, macrogol cetostearyl ether, purified water. Components, that constitute the base, and emulsifiers do not dissolve in ethyl alcohol. The urea, which is extracted from the ointment together with prednisolone, absorbs only in the region of 200-220 nm and does not affect the analysis results.

**Aim.** The aim of our work is to select a filter and determination of the necessary conditions for extracting prednisolone from an ointment with a hydrophilic base.

**Materials and methods.** The pharmacopoeial standard sample of prednisolone PSS State Pharmacopoeia of Ukraine (SPhU) No.11/1-2143 (the content of prednisolone is 99.8%) and hydrophilic ointment with active substance prednisolone ointment were used. The following analytical equipment was used: a "SPECORD 200" spectrophotometer, cuvettes with the thickness of 10 mm, AV 204 S / A METTLER TOLEDO analytical balance, a "Sartorius AG" pH meter. Reagents, measuring glassware of class A meeting the requirements of the SPhU were used for the work.

**Results and discussion.** It is established that during a single filtration approximately 70-80% of prednisolone from the nominal amount is extracted, therefore it is recommended to carry out the procedure three times. To select the optimal filter, filtration was carried out with a paper filter of the "Blue Ribbon" type and a glass filter of Schott. When using a glass filter of Schott, excluding prednisolone, auxiliary substances are extracted, the alcohol solution has fatty inclusions, and the investigated spectrum has an overestimated optical absorption. It is therefore advisable to use ashless filter paper such as "Blue Ribbon". The operations of heating, cooling, and filtration were first carried out for the standard solution, in order to determine the error introduced by the losses during filtration. It was found that the losses are insignificant ( $A_{st}=0,781$ ;  $A_{st(filter)}=0,775$ ;  $\Delta_{Handle}=0,78\%\leq 1,024\%=max\delta$ ) and fit within the framework of statistical uncertainty.

**Conclusions.** The extraction method of prednisolone from an ointment with a hydrophilic base was developed: a filter ("Blue Ribbon ") was selected and the necessary extraction conditions were determined. It was found that the procedure for extracting prednisolone from the base must be repeated three times – then the concentration is 99.62% of the nominal concentration.