Development of a UV-VIS Spectrophotometric Azithromycin Assay

Anton Mihail, Vislouh Oxana

Academic adviser: Dr. Uncu Livia
State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

The goal of project was the elaboration of an alternative Azithromycin assay given the fact that the Pharmacopoeial method is the biological one. This method is hardly realizable, and requires special determination conditions, which also creates some difficulties in the substance and pharmaceutical forms analysis. Materials and methods: For spectral analysis Agilent - 8453 UV-VIS spectrophotometers in wavelengths range from 350 up to 550 nm were used. Phosphate buffer solutions with different pH values were used as solvent. The colored product, resulting from reaction with concentrated sulphuric acid, was investigated. Results: Azithromycin, which is a compound with complex structure and is part of macrolide antibiotics group, forms a colored compound in reaction with concentrated sulphuric acid. In order to determine the possibility of using this compound in the UV-VIS spectrophotometric assay, we have studied the properties of mixture complex being composed from Azithromycin and Sulphuric acid; such as parameters also were assayed: the stability over the derivatization time, its dependency on reagents co-ratio and solvent's influence, and the value of pH environment. There were been developed the optimal technique of life time colouring reaction: the amount of reagents - 10 ml; reaction time – 30 min; pH – 7.0. The spectrum of absorption was recorded in the range from 350 up to 550 nm; the maximum of absorption was established at 483 nm. The basic parameters of the method were determined: solution concentration, specific absorption, absorbance law enforcement. The linearity and accuracy of the method were evaluated that range within the limits of about 3%. Conclusions: 1. There were been established the optimum conditions of Azithromycin assay, using the UV-VIS spectrophotomety on the base of coloring reaction of Azithromycin with concentrated Sulphuric acid. 2. There were been developed valuable technique and have evaluated the main criteria of validation: linearity, accuracy and the repeatability of the method. 3. UV-VIS spectrophotometry of quantitative Azithromycin determination may be also employed in the determination of this active principle in the pharmaceutical forms.

Elaboration of Principle Extractive Method From Skin Ointment Containing Izohidrafural and Methyluracil

Bobrov Elena, Vislouh Oxana, Suvorchina Olga

Academic adviser: Uncu Livia, M.D., Nicolae Ciobanu, M.D.
State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

The objective was to create a new pharmaceutical form for external use – the combined ointment with Izohidrafural and Methyluracil, which combines the antibacterial action of Izohidrafural and the regenerating action of Methyluracil and also to elaborate the method of extraction of active principles from the ointment. Materials and methods: Izohidrafuralum, Methyluracilum, the excipients: Vaselinum album, Alcoholum cetylstearylicum, Propylenglycolum, Glycerinum, Tween 80, PEG 400, Natrii laurylsulfas; the extragents: Dimethylformamidum, Natrii hydroxidum 0.1mol/l and the mixture of these two substances; spectrophotometer Agilent 8453 UV-VIS. Results: The combined ointment with Izohidrafural and Methyluracil can be used in treating skin diseases, in surgery, obstetrics and gynecology, ophthalmology, proctology due to high efficiency and good way of application. It was studied the concentrations of 0.1% for Izohidrafural and 5% for Methyluracil which ensure a good availability and the maximum pharmacological effect. To create