



Матеріали

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except #15, meets the requirements of the European Pharmacopoeia and State Pharmacopoeia of Ukraine for ODT. Wetting time test is not a standard test, but it is useful for quality control and provides a correlative evaluation of water absorbion. The wetting test uses minimal quantity of water, which represents the amount of moisture available in the oral cavity. The wetting time for all formulations of tablets was less than 60 s, except #5-9, 13-15. The faster wetting time of the tablets produces better disintegration time.

Conclusion: Using Graeco-Latin squares design, the influence of four groups of excipients on technological characteristics of metformin orodispersible tablets was evaluated.

JUSTIFICATION OF THE BASE COMPONENTS AT DEVELOPMENT OF CREAM WITH ZINC PYRITHIONATE COMPOSITION

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Introduction. One of the important problems of dermatology is the increase in the incidence of dermatosis of different etiologies, the increase is up to 5% per year. A special place is occupied by dermatoses caused by infectious factors, which account for up to 45-50% of all skin diseases. For the treatment of dermatological diseases, numerous medicines have been developed and introduced into production, among which our attention have attracted preparations containing zinc pyrithionate. When used externally, zinc pyrithionate exhibits antibacterial and antifungal effects. Active against pathogenic bacteria such as *Streptococcus* spp., *Staphylococcus* spp., *Escherichia coli*, *Pseudomonas aeruginosa*, *Proteus* spp. etc. The antifungal activity of the drugs is particularly pronounced in relation to *Pytyrosporum ovale* and *Pytyrosporum orbiculare*, which cause inflammation and excessive peeling in psoriasis and other skin diseases. In addition, this substance is active against dermatophytes (*Trichophyton* spp., *Microsporum* spp.), Yeast fungi (*Candida* spp., *Cryptococcus*), mold fungi (*Aspergillus* spp., *Penicillium*), etc. It acts on microorganisms that contain both on the surface and in deep layers of the dermis.

In the pharmaceutical market, zinc pyrithionate is presented in such preparations as "Skin Cap" (cream, shampoo), Chemigroup France, France and "Psoricap" (cream) PJSC Kyivmedpreparat, Ukraine.

Aim of the study. To carry out research on the substantiation of the composition of auxiliary substances of the base for cream with zink pyrithionate.

Materials and methods. Substance of zink pyrithionate and excipients: vaseline oil, isopropyl myristate, octyl dodecanol, sorbitan stearate, polyethylene glycol 100 stearate, cetostearyl alcohol. Mineral oils were used as the oil phase, as they are more stable in the process of storage than vegetable ones and do not require additional system stabilizers (antioxidants). According to the system of hydrophilic-lipophilic balance (HLB), for the choice of the optimal composition of the emulsifying mixture, it is recommended to use surface-active substances (surfactants) of the 1st and 2nd kinds, one of which should have a high value of HLB (1 kind emulsifier), and the other one to be of low HLB value (2 kind emulsifier). Surface active substances differ in a numerical index of the hydrophilic-lipophilic balance (HLB), according to which polyethylene glycol-100 stearate belongs to a group of emulsifiers of the first kind (type o / w, HLB 11.5), sorbitan stearate (HLB 4.7), and cetostearyl alcohol HLB 0.5) to emulsifiers of the 2nd kind (type w / o). Oil / water emulsions (20% oil phase) were prepared, purified water was used as a dispersion medium. In order to obtain a stable emulsion with satisfactory smearing properties, the variation of surfactants was performed, with the properties of the emulsions changing.

Model samples of emulsion creams were investigated for colloidal and thermal stability, rheological characteristics were determined and microscopic studies were carried out, using laboratory equipment available at the Department of Industrial Pharmacy at the National University of Pharmacy (homogenizer Polytron®Sytem PT 3100, Kinematika AG Switzerland, Lumam Microscope P1; rheoviscometer Rheolab QC, firm "Anton Paar" Austria).

Results. Based on the conducted comprehensive studies, a range of acceptable concentrations

of surfactant has been established: sorbitan stearate - 4-6%, cetostearyl alcohol - 4-6%, polyethylene glycol-100 stearate - 3-5%.

Conclusions. The dependence of the change of structural and mechanical parameters (structural viscosity, thixotropy, plasticity) on the ratio of surfactants has been investigated. The range of concentrations of surfactant, in which the structural and mechanical parameters are expressed as maximum has been determined.

CATALYTIC METHOD OF SYNTHESIS OF SUCCINIC ACID

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Introduction: Succinic acid is one of such substances without which the organism can not functionate. Its participates in energy exchange the level of cells, due to it cells can breathe freely. Succinic acid is harmless for organism and there is not a side effects, its influences well on metabolism and supports activity of the endocrine and nervous system, improves mastering of nutritives. Succinic acid as auxiliary means are applied in treatment of such diseases as ischemia, cardiosclerosis, hypertensive illness, myocarditis, cardiac anomaly. In a cosmetology **Sodium Succinate** (salt of Succinic acid) has wide application for the effective removal of age-old defects of skin. Development of methods of synthesis of Succinic acid and its salts is a pressing question.

Aim of research: to prepare Palladium - Rhenium catalysts systems and to realize research of activity this catalysts in reaction of hydrogenation of maleic anhydride for the synthesis of Succinic acid.

Materials and methods: execution of scientific research maked of catalytic heterogeneous hydrogenation in liquid phase in laboratory reactor of increasing pressure.

For analyzing of products were used such methods as spectrophotometric (spectrophotometer «Specord UV VIS»), chromatographic (chromatograph «Chrom – 5») and gravimetric methods; determination of temperature of melting of Succinic acid.

Results of research: were synthesized catalysts on the basis of Palladium and Rhenium using different carriers – activated carbon (OY-A) and aluminium oxide (Al_2O_3). A synthesis was conducted by the impregnation of carriers by mixture of salts of Palladium and Rhenium with help of burning in the atmosphere of nitrogen at 523K and renewal hydrogen at 773K. Percent correlation of active components in the prepared experimental samples was Pd:Re = 4:1. Researches of activity of the synthesized catalysts conducted in setting of increasing pressure in the reaction of hydrogenation of maleic anhydride at 80-90° C under the pressure of hydrogen of 80 atm during 5 hours. The distilled water was solvent. Mass of maleic anhydride was 0.1g; mass of catalyst was 0.01g; a volume of reactionary phase was 10 ml.

Were found such products of reaction as Succinic acid, 1,4- Butanediol, Tetrahydrofuran.

The degree of transformation of maleic anhydride was determined by the spectrophotometric method. Before and after the reaction on the spectrophotometer «Specord UV VIS» for reduction of stripe of absorption at 2010 nm that characterizes content of maleic acid. Determining the amount of formation Succinic acid was conducted by chromatographic and gravimetric methods. A temperature of melting of Succinic acid was 183 -184°C.

1,4- Butanediol and Tetrahydrofuran were analyzed by chromatographic method on chromatograph «Chrom – 5»; gas-transmitter – argon, a glass column is long a 2,5 m filled by polisorb -1.

According to the results of research Succinic acid is the basic product of hydrogenation of maleic anhydride. In application of catalyst Pd-Re/ Al_2O_3 ; percent yield of Succinic acid was 96% and side products did not appear. In the presence of catalyst of Pd-Re/(OY-A) percent yield of Succinic acid diminished to 90% and than, in reactionary mixture were found 1,4 – Butanediol (3%) and Tetrahydrofuran (0,3%).

Conclusion: synthesized mixed Palladium – Rhenium catalysts systems with activated carbon and aluminium oxide show high activity in the reaction of hydrogenation of maleic anhydride. At the