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Актуальні питання створення нових лікарських засобів: тези доповідей XXIV міжнародної науково-практичної конференції молодих вчених та студентів (20 квітня 2017 р.) в 2-х т., Т.1. – Х.: Вид-во НФаУ, 2017. – 414 с.

Збірка містить матеріали науково-практичної конференції молодих вчених та студентів «Актуальні питання створення нових лікарських засобів». Матеріали згруповано за провідними напрямками науково-дослідної та навчальної роботи Національного фармацевтичного університету. Розглянуто теоретичні та практичні аспекти синтезу біологічно-активних сполук і створення на їх основі лікарських субстанцій; стандартизації ліків, фармацевтичного та хіміко-технологічного аналізу; вивчення рослинної сировини та створення фітопрепаратів; сучасної технології ліків та екстемпоральної рецептури; біотехнології у фармації; досягнень сучасної фармацевтичної мікробіології та імунології; доклінічних досліджень нових лікарських засобів; фармацевтичної опіки рецептурних та безрецептурних лікарських препаратів; доказової медицини; сучасної фармакотерапії, соціально-економічних досліджень у фармації, маркетингового менеджменту та фармакоекономіки на етапах створення, реалізації та використання лікарських засобів; управління якістю у галузі створення, виробництва і обігу лікарських засобів; інформаційних технологій у фармації та медицині; основ педагогіки та психології; суспільствознавства; філології. Для широкого кола наукових і практичних працівників фармації та медицини.

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Topical issues of new drugs development: Abstracts of XXIV International Scientific And Practical Conference Of Young Scientists And Student (April 20, 2017) in 2 vol., Vol.1. – Kh.: Publishing Office NUPh, 2017. – 414 P.

Book of Abstracts includes materials of Scientific and Practical Conference of Young Scientists and Students «Actual questions of development of new drugs». Materials are grouped according to the main directions of scientific, research and educational work of the National University of Pharmacy. Theoretical and practical aspects of the synthesis of biologically active compounds and development of medicinal substances on their basis; standardization of drugs, pharmaceutical and chemical-technological analysis, the study of raw materials and herbal remedies development, modern drug technology and extemporal recipe; biotechnology in pharmacy, modern advances in pharmaceutical microbiology and immunology, clinical trials of new drugs, pharmaceutical care for prescription and OTC-drugs, evidence-based medicine, modern pharmacotherapy, socio-economic studies in pharmacy, marketing management and pharmacoeconomics during the development, implementation and use of drugs, quality management in development, production and trafficking of drugs; information technologies in pharmacy and medicine; basics of pedagogy and psychology; social science; philology are presented. For a wide audience of scientists and pharmaceutical and medicinal employees.

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# TECHNOLOGY AND EVALUATION OF QUALITY OF “DERMOSTOP” OINTMENT

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**Introduction.** Diabetic foot syndrome (DFS) –the most frequent and severe complication of diabetes mellitus, which occurs in 20-80% patients with SD from 20 to 75 years. The development of purulent-necrotic process against the background of the diabetic foot in more than 50-75% of cases leads to non-traumatic amputations. Complex treatment and prevention of DFS is an urgent task in endocrinology. Our republic has a rich raw material supply of natural raw materials. Therefore, studies aimed at expanding the range of anti-inflammatory application phyto-preparations are relevant.

**Research objectives:** development of composition, technology and evaluation of the quality of anti-inflammatory ointment of complex composition «Dermostop».

**Materials and methods.** Scientists of the Tashkent Pharmaceutical Institute have developed the formulation «Dermostop», consisting of flowers of calendula, nettle leaves and white mulberry, of milfoil herb and chicory roots, recommended for external therapy of various etiology dermatoses, the formulation has astringent, antiseptic, antimicrobial, anti-inflammatory and wound healing effect.

On the basis of «Dermostop» preparation, a liquid extract (1:1) was obtained by the method of three-stage fractional maceration with circulation, and its standardization was carried out. The pharmacological studies carried out showed high efficiency of the natural complex of polyamidoamino acids - Glypil produced from waste of silkworm cocoons in prevention and external therapy of DFS and other dermatoses on the background of diabetes mellitus.

**The obtained results.** In the course of the research, the following composition of the «Dermostop» ointment was suggested: glypil 5.0 g; a liquid extract of «Dermostop» 5.0 g; boric acid 3.0 g; menthol – 0.5 g; emulsion base – up to 100.0 g. Technology: the ointment is prepared under aseptic conditions. Vaseline with the T-2 emulsifier is alloyed by stirring in a water bath, hot water (90-95 %) is gradually added and mixed again until the temperature lowers to 30° C, then cooled to room temperature. Menthol is introduced into the base and stirred. In the mortar glypil with the liquid extract «Dermostop» is grinded and gradually by 2-3 stages added emulsion consistency base, then the ointment was homogenized for one hour with a mechanical MI-2 stirrer until a homogeneous mass was formed. The finished ointment is packed in 30.0 g in tubes. Evaluation of «Dermostop» ointment quality was carried out according to appearance in a creamy ointment with a characteristic pleasant odor;

homogeneous, pH 6.5-6.8 (potentiometrically); the study of thermal and colloidal stability showed that the ointment is stable at temperature drops (from -20 to +45<sup>0</sup> C) and centrifugation for 5 minutes at a speed of 6000 r/min. In determining the rheological parameters of the ointment, the effective viscosity was studied, the shear stress and the plastic viscosity of the preparation were carried out on a Reotest-2 instrument using a cell consisting of a cylinder system S/S1 with a constant Z=5.6. The determination of the effective viscosity ( $\eta_{\text{eff}}$ ) at different gradient rates ( $\gamma$ ) for the preparation was carried out a shear flow at 25<sup>0</sup> C. The instrument reading  $\alpha$  was fixed in mode II at a different value. On the basis of the obtained data, two graphs were constructed: the first for determining the effective viscosity of preparation, Fig.1 (a), the second for determining the shear stress limit preparation Fig.1 (b).

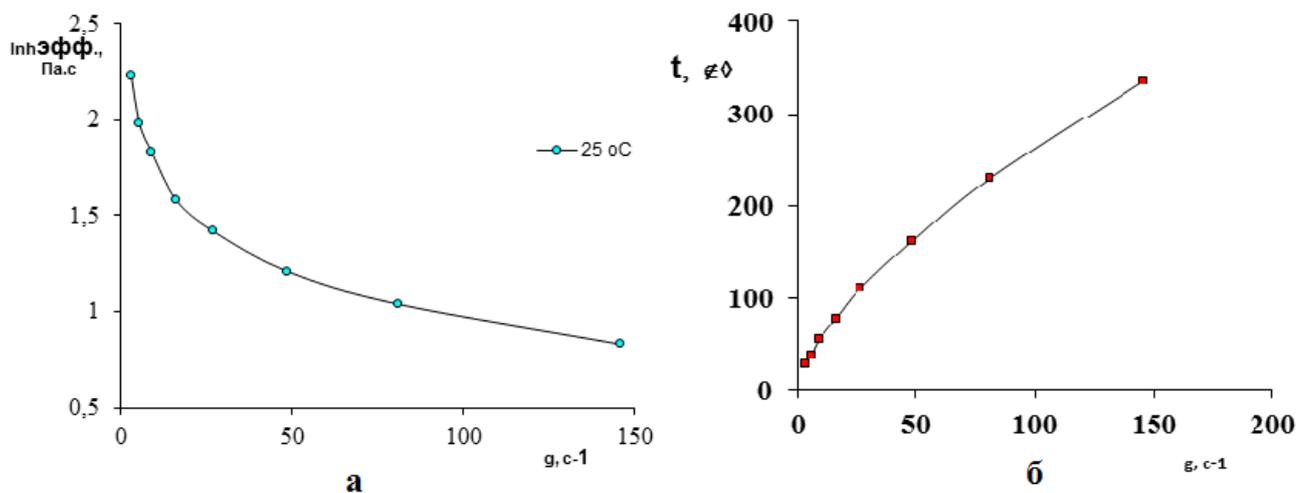


Fig. 1 (a) – dependence of the effective viscosity ( $\ln \eta_{\text{эфф.}}$ ) on the gradient of ( $\gamma$ ) the drug at 25<sup>0</sup> C; b-dependence of the shear stress ( $\tau$ ) on the gradient of the speed ( $\gamma$ ) for the preparation.

From fig.1 (b) at  $\gamma \rightarrow 0$  the ultimate shear stress of the preparation is  $\tau_{\text{mp}} \approx 25$  Pa. To determine the plastic viscosity (plasticity) ( $\eta_p$ ) we used the formula of Shvedov-Bingham:  $\tau = \tau_{\text{mp}} - \eta_p \gamma$ ;

$$\eta_p = (\tau - \tau_{\text{mp}})/\gamma = (78.4 - 25)/16.2 = 3,3 \text{ Pa}\cdot\text{c}$$

The effective viscosity of the preparation, the shear stress and plasticity indices satisfy the requirements, therefore, in general the preparation has the optimum consistency from the consumer point of view.

**Conclusion:** studies have been carried out to develop the composition and technology of the anti-inflammatory ointment «Dermostop» of complex composition and studied their qualitative indices.

Dzubyuk A. O., Mouhtaram Saad, Karimov Dilshod, Daliev Sherzod; Sc. s.: Kotenko O. M.	234
Dzyuba M. B.; Sc. s.: Zayarnyuk N. L.	235
Evtushenko T. I., Konovalenko I. S., Polovko N. P.; Sc. s.: Polovko N. P.	237
Ewangande Hothee Prefina G.	238
Frenk Neo Leonid, Kovalev V. M., Kovalev V. V.	239
Frolova O. Ye., Tykhonov O. I., Gudzenko O. P.	240
Frolova O. E.; Sc. s.: Tikhonov A. I.	242
Ilkhamova N. B.; Sc. s.: Djalilov Kh. K.	243
Ilkhamova N. B., Yunusova Kh.M.; Sc. s.: Djalilov Kh. K.	245
Ilkhamova N. B., Yunusova Kh.M.; Sc. s.: Djalilov Kh. K.	247
Karaulanova N.; Sc. s.: Khalavka M. V.	249
Kashirin A. S.; Sc. s.: Kovalevskaya I. V.	250
Kazymova L.; Sc. s.: Derkach N. V.	251
Khalife Dona; Sc. s.: Rukhmakova O. A.	252
Khusenova Sh. Sh., Umaralieva N. R.; Sc. s.: Fayzullaeva N. S.	253
Kirpik E. A.; Sc. s.: Khalavka M. V.	255
Kolodiy K. I.; Sc. s.: Khalavka M. V.	256
Kolodko Ye. O., Zujkina S. S.; Sc. s.: Zujkina S. S.	257
Kolpakova O. A.; Sc. s.: Kucherenko N. V.	258
Konoshevich L. V.; Sc. s.: Tikhonov A. I.	259
Koraxujayeva A. U.; Sc. s.: Aminov S. N., Sharipov A. T.	260
Korobkova G. O.; Sc. s.: Masliy Ju. S.	261
Kriuchkova M. O., Tykhonov O. I., Shpychak O. S.; Sc. s.: Shpychak O. S.	262
Kudryk B. T., Martyniuk T. V.; Sc. s.: Tikhonov A. I.	263
Kulichenko K. O., Kovalova T. M.; Sc. s.: Kovalova T. M.	264
Levchenko V. S.; Sc. s.: Rukhmakova O. A.	265
Litvinova A. N.; Sc. s.: Levachkova Yu. V., Chushenko V. N.	266
Lytvinenko E., Bisaga E., Herasymova I., Vyshnevskaya L.	267
Lyubinskaya A. S.; Sc. s.: Kovalevskaya I. V.	268
Martynova Yu. O.; Sc. s.: Slipchenko G. D.	269
Muydinov D., Atashov K.; Sc. s.: Dankevych O. S.	270
Nesterenko T. O.; Sc. s.: Azarenko Iu. M.	271
Nkazana Malambo	272
Omorinbola Victor	273
Oniper O. S., Zhyvora N. V., Chushenko V. N.; Sc. s.: Zhyvora N. V., Chushenko V. M.	274
Palyukha A. S., Zayarnyuk A. M.; Sc. s.: Fedorova O. V.	275
Pashchenko E. V.; Sc. s.: Khokhlenkova N. V.	277