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BOOK OF ABSTRACTS



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Poster session

(Poster place –Authors list (Presenting author)- Title –Country)

FF-18-01. Igor Shinkovenko, Tetiana Ilina, Alla Kovalyova, Olga Goryach, Olena Golembiovskaya, Andrii Komissarenko. Phenolic compounds of the liquid extract of lady's bedstraw herb (*Galium verum* L.) (Ukraine);

FF-18-02. S. P. Kustova, M. O. Boiko, T. V. Matvieieva, A. S. Kamyshan1, O. V. Boiko. The technology of obtaining of capsules of the camphoric acid derivate (Ukraine);

FF-18-03. Komisarenko M.A., Polischuk I.M., Koshovyi O.M., Upyr T.V. Investigation of saponins of raspberry fruit cake alcohol extract by the HPLC method (Ukraine);

FF-18-04. Olena Krivoruchko Alexander Markin, Victoria Samoilova. Essential oil of flowers of *Sorbus aucuparia* and *Sorbus aria* (Ukraine);

FF-18-05. Olga Demeshko, Vladimir Kovalov. Research of elemental composition of *Catalpa bignonioides* (Ukraine);

FF-18-06. Olga Mykhailenko, Zigmantas Gudžinskas, Vladimir Kovalyov , Liudas Ivanauskas, Victoriya Georgiyants. Comparative study on the composition of phenolic compounds in *Iris* species from Ukraine, Lithuania and Latvia (Ukraine, Lithuania);

FF-18-07. Ie.V. Gladukh, Yu.S. Kukhtenko, D.P. Soldatov. Determination of the effect of extraction multiplicity on the yield of biologically active substances from the roots of white willow (Ukraine);

FF-18-08. H.P. Kukhtenko O.S. Kukhtenko, Ie.V. Gladukh. Choice of the optimum composition of venotonic action phytogel (Ukraine);

FF-18-09. Valinčiūtė-Jankauskienė A*, Kubilienė L. Features of Adverse drug reaction reporting in Lithuania 2007-2017 (Lithuania);

FF-18-10. Karyna Hordiei, Tetiana Gontova, Elina Kotova. Analysis of hydroxycinnamic acids content of the feverfew herb depending on the place of cultivation (Ukraine);

FF-18-11. Kotov S.A., Gontova T.M., Kotova E.E. Development of a procedure for identification of elecampane sesquiterpene lactones by TLC method (Ukraine);

FF-18-12. O. V. Bevz, D. A. Leontiev, N. V. Volovyk. The requirements to standard samples for qualification of the thermal analysis equipment (Ukraine);

FF-18-13. Danylova I.A., Burian A.A. Determination of quality of mineral water in Ukraine (Ukraine);

FF-18-14. Petrushova Lidiya, Alexeeva Tatiana, Ukrainetz Igor. Development of quantification of N-(4-trifluoromethylphenyl)-4-hydroxy-2,2-dioxo-1H-2λ6,1-benzothiazine-3-carboxamide by alkalimetry (Ukraine);

FF-18-15. O. I. Chernyayeva, I. S. Hrytsenko Control of the quality of capsules of the camphoric acid derivative (Ukraine);

FF-18-16. K. I. Proskurina, O. A. Yevtifieieva Application aspects of the spectrophotometry method in quantitative standardization of domestic herbal drugs (Ukraine);

FF-18-17. Yevhen Romanenko, Oleh Koshovyi, Tetiana Ilina, Natalia Borodina, Igor Kireyev, Nadiya Tryshchuk. The study of a new dry extract of the motherwort herb (Ukraine);

FF-18-18. Mykhailo Myha, Oleh Koshovyi, Tetiana Ilina, Natalia Borodina, Olena Golembiovsk. The search for new sources of triterpene saponins among the representatives of the *Salvia* genus in the flora of ukraine (Ukraine);

FF-18-19. Natalia Chaika, Oleh Koshovyi, Tetiana Ilina, Natalia Borodina, Masen Matar, Ganna Kravchenko. The study of the chemical composition and the hypoglycemic activity of dry extracts from the leaves of bearberry (Ukraine);

FF-18-20. Yeromina H.O., Kiz O.V., Ieromina Z.G., Drugovina V.V., Yaremenko V.D., Perekhoda L.O., Demchenko A.M. Searching for new anti-shock substances among 2-phenyliminothiazole derivatives (Ukraine);

FF-18-21. T. Ye. Kolisnyk, O. A. Ruban, G. D. Slipchenko. Formulation of sustained release matrix tablets as an approach to improve antidiabetic efficacy of *Vaccinium myrtillus* leaf extract (Ukraine);

FF-18-22. Iosypenko O.O., Kyslychenko V.S., Molodan D.V. Review of application of *Cucurbita pepo* species in health treatment (Ukraine);

FF-18-23. Mohammed S.B., Upyr T.V., Lenchyk L.V. Study of phenolic compounds in prunes (Ukraine);

FF-18-24. Kaspars Jekabsons, Reinis Rembergs, Jana Namniece, Linards Klavins, Maris Klavins, Ruta Muceniece. Potential of *Vaccinium* spp. berry pomaces for design of novel health promoting products (Latvia);

Formulation of sustained release matrix tablets as an approach to improve antidiabetic efficacy of *Vaccinium myrtillus* leaf extract

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Bilberry (*Vaccinium myrtillus*) leaves belong to promising sources of natural antidiabetic drugs. Bilberry leaf extracts (BLEs) were found to inhibit small intestine enzymes participating in carbohydrate digestion that prevents glucose absorption and decreases glycemic level [1]. Hence, the development of a sustained release (SR) formulation was suggested as an approach to increase the efficacy of BLE. This should contribute to the prolongation of half-life and increasing small intestine concentrations of bilberry leaf polyphenols.

SR matrix tablets of BLE were prepared by wet granulation technique using Eudragit L100, Methocel K4M, Methocel K100LV as matrix forming agents. The other excipients used were Avicel PH101 (diluent), Plasdone S-630 (binder) and magnesium stearate (lubricant). Syrian hamsters with experimental alimentary metabolic syndrome and persistent insulin resistance were used for *in vivo* evaluation. The pharmacological agents tested were pure BLE, SR matrix tablets of BLE and voglibose tablets as a reference drug (the tablets were administered as partly crushed). At the end of the experiment an oral maltose loading test was carried out. The blood glucose and serum insulin levels determined before maltose load were used to calculate HOMA-IR indices. The inhibitory activity against disaccharide digestion and glucose absorption was assessed by postprandial glucose and insulin levels (blood samples were collected at 30, 60, 90, 120 min after maltose load).

None of the agents normalized biochemical markers to intact values; however, SR matrix tablets were the most effective in the blood glucose level reduction. Also, by HOMA-IR indices BLE matrix tablets statistically significantly didn't differ from the reference drug. The dynamics of glucose and insulin levels after maltose loading demonstrated that SR formulation possesses a considerably greater inhibition on carbohydrate digestion and absorption as compared to pure BLE. Thus, it can be concluded that SR formulation has a positive impact on improving the bioavailability of BLE.

References:

1. Bljajić K, Petlevski R, Vujić L, Čačić A, Šoštarić N, Jablan J, et al. Chemical Composition, Antioxidant and α -Glucosidase-Inhibiting Activities of the Aqueous and Hydroethanolic Extracts of *Vaccinium myrtillus* Leaves. *Molecules*. 2017;22:E703.