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SEARCH OF NEW EXCIPIENTS IN TECHNOLOGY OF FARMACEUTICAL DRUGS

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According to requirements of pharmaceutical science, the excipients used in technology of ready dosage forms have to provide pharmacokinetic parameters and necessary pharmaceutical effect [1].

By scientists from the field of biopharmacy and pharmaceutical technology it is proved that excipients are capable to strengthen effect of medicinal substances or, on the contrary, to reduce their activity, to accelerate or slow down release of medicinal substances [1, 2]. Development and deployment of new methods of production of dosage forms, improvement of substances which are used and increase in bioavailability and safety of medicines demands use in technological process of excipients of new generation. The pharmacological effect of drugs (medicines) depends not only on properties of the main operating substances but also on the physical and chemical nature and structural properties of excipients.

The quality and accordance of excipients to necessary requirements is regulated by the relevant normative documents: the State Pharmacopoeia of Ukraine, pharmacopoeia or temporary pharmacopoeial articles, etc. Depending on the origin nature excipients can be: natural (organic and inorganic), synthetic (in particular, the modified connections) [3]. Natural excipients have advantages in comparison with synthetic for their not toxicity. But an essential lack of natural excipients is their low resistance to microbic contamination that can promote fast damage of drugs and consequently loss of their quality. Use of natural excipients in technology of drugs will allow to reduce considerably risks of emergence of undesirable allergic or any other toxic reactions at the person. On the other hand, use of synthetic excipients reduces risks of loss of pharmaceutical effect of drugs, these substances are capable to provide necessary qualitative characteristics to ready dosage forms.

So, the procedure of selection and search of new excipients represents a current problem in modern technology of ready dosage forms. Rational and reasonable use of various groups of excipients allows to increase efficiency of pharmacotherapy considerably. Receiving new excipients will allow to create

essentially new highly effective dosage forms, convenient for application and have a sufficiently long shelf life.

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DEVELOPMENT OF SUPERCRITICAL FLUID CHROMATOGRAPHY METHOD FOR DETERMINATION OF ILLEGAL COMPOUNDS IN FOOD

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Introduction

Eleven fat-soluble red dyes Sudan I-IV, Sudan Red 7B, Sudan Red G, Sudan Orange G, Para Red, Methyl Red, Butter Yellow, Fast Garnet are legally used in industrial applications and research area but used illegally in food, particularly in chili-containing spices due to the attractive intensive red-orange color, low cost and wide availability. However, these compounds have carcinogenic and teratogenic activity and are banned for food usage in most countries, including in the European Union (EU). The European Commission decided in 2005 that the presence of any illegal dyes in food would be unacceptable at any level. EU set up the criteria for the limit of detection by HPLC methods in the range of 0.5 – 1.0 ppm for Sudan I and other illegal dyes [1]. The modern chromatographic technique as *supercritical fluid chromatography* (SFC) is a perspective alternative for the monitoring of banned agents in food samples.

A novel simple, fast and effective SFC method was developed for the separation and quantitative determination of eleven illegal dyes in chili-containing spices. The method was validated and the applicability of proposed method was proven for three different commercial chili-containing samples from Spain, Indonesia and Slovakia. Recoveries for all compounds and relative standard deviation were at acceptable levels. Limits of detection showed lower values than required by European Union regulations.