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ФАРМАЦЕВТИЧНА ОСВІТА, НАУКА ТА ПРАКТИКА: СТАН, ПРОБЛЕМИ, ПЕРСПЕКТИВИ РОЗВИТКУ

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КИЇВ

НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ
ІМЕНІ О. О. БОГОМОЛЬЦЯ
ФАРМАЦЕВТИЧНИЙ ФАКУЛЬТЕТ

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Матеріали
науково-практичної конференції з міжнародною участю, присвяченої 25-річчю фармацевтичного факультету Національного медичного університету імені О. О. Богомольця

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Results. In comparison to other oromucosal medicines, lozenges offer a unique advantage in maximizing the duration and concentration of active pharmaceutical ingredients on the oral mucosa, a feature not achievable by throat sprays or mouthwashes.

The selection of appropriate technology and lozenge type depends on the properties of the drug's active ingredients. For instance, if the active ingredient is thermolabile, the lozenge is prepared by compressing when heavy compression equipment is employed at high pressure. Preliminary wet granulation technology involves obtaining the required fraction of sugars or sweeteners with fillers first, followed by moistening the mixture with solutions of binding components.

The selection of constituent components and production parameters aims to ensure that the lozenge's dissolution occurs at an optimal pace-slow enough for efficacy but not excessively prolonged to meet consumer expectations. Compressed lozenges differ from classical tablets in terms of their qualities as finished products, the names and quantities of main excipient groups, and specific parameters at various stages of the technological process.

Excipients employed in the technology of compressed lozenges encompass sugars and sugar substitutes, sugar-free carriers, fillers, sugar-free and sugar-containing binders, antifriction agents, flavorings, and colorants.

Conclusions. Compressed lozenges are a promising dosage form for pharmaceutical development, providing both local and systemic effects on the patient's body.

FORMULATION OF BERBERINE ENCAPSULATION MASS SAMPLES

Yanushevych M., Butkevych T., Polova Zh.
Department of Pharmacy and industrial technology of drugs
Bogomolets National Medical University
Kyiv, Ukraine

Introduction. In the pharmaceutical development of medicinal products, one of the most important stage lies in selecting suitable excipients. These not only dictate the dosage form and administration method but also play a crucial role in preserving therapeutic efficacy and ensuring adequate bioavailability of the active component.

The purpose of the study. Based on the preliminary results of the analysis of the constituent components of the hard capsule content, to formulate experimental samples of masses for encapsulation with berberine to obtain a semi-product with a good fluidity value.

Research methods. To create experimental masses for berberine encapsulation with desirable fluidity, the constituent components of hard capsule content were analyzed preliminarily. Information from the medical usage instructions of hard capsule-based medicinal products (data from the State Register of Medicinal Products was used) was organized.

Results. Results revealed that adjusting mass flow characteristics was imperative due to the pharmacological and technological properties of berberine, which hindered satisfactory capsule filling with a monodrug. Excipients from filler, disintegrant, and antifriction categories were introduced. Traditionally used lactose monohydrate, mannitol, and microcrystalline cellulose served as fillers. Antifriction components included magnesium stearate, a lubricant, and polyethylene glycol 4000, and talcum powder as glidants. Disintegrants encompassed corn starch, sodium carboxymethyl cellulose (swelling agents), and the superdisintegrant sodium croscarmellose.

Combining these excipients led to the creation of 9 experimental samples (№ 1 – microcrystalline cellulose, magnesium stearate, sodium croscarmellose, № 2 – microcrystalline cellulose, polyethylene glycol 4000, corn starch, № 3 – microcrystalline cellulose, talc, sodium carboxymethylcellulose, № 4 – lactose monohydrate, magnesium stearate, corn starch, № 5 – lactose monohydrate, polyethylene glycol 4000, croscarmellose sodium, № 6 – lactose monohydrate, talc, sodium carboxymethyl cellulose, № 7 – mannitol, magnesium stearate, sodium carboxymethyl cellulose, № 8 – mannitol, polyethylene glycol 4000, corn starch, № 9 – mannitol, talc, sodium croscarmellose). An experimental plan was developed. The bulk volume and tapped volume, bulk density and tapped density of berberine encapsulation mass, the compressibility index (Carr index) and Hausner ratio were responses.

Conclusions. By analyzing hard capsule content and formulating experimental samples, the goal was to identify optimal excipient combinations for berberine encapsulation mass, resulting in a semi-product with superior flow characteristics.

OBTAINING OF EMULSION CREAM WITH ESSENTIAL OIL OF CYMBOPOGON CITRATUS FORMULATIONS

Tatarchuk M., Polova Zh., Butkevych T.
Department of Pharmacy and industrial technology of drugs
Bogomolets National Medical University
Kyiv, Ukraine

Introduction. Pitted keratolysis adversely impacts the patient's quality of life. Conventional therapeutic approaches involve the administration of antibiotics since Corynebacterium spp, Micrococcus sedentarius, Dermatophilus congolensis, Streptomyces, Actinomyces keratolytica and Bacillus thuringiensis are identified as the causative agents of pitted keratolysis. A potential strategy to address antibiotic resistance involves leveraging essential oils, renowned for their substantial antibacterial properties. Schweitzer et al. (2022) demonstrated the potent inhibitory activity of lemongrass essential oil against pitted keratolysis pathogen strains.

The purpose of the study. The objective of this study was to formulate an oil-in-water emulsion cream incorporating essential oil from Cymbopogon citratus