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ABSTRACT BOOK

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The development of medicated chewing gums as a rational dosage form for use in dentistry

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Introduction: Currently formulation of drugs into medicated chewing gums (MCGs) is promising trend in modern pharmaceutical technology, as this dosage form is well perceived by patients, convenient in use and characterized by high bioavailability [1]. Owing to comparatively long retention time in the oral cavity MCGs are attractive dosage form for the use in dentistry [2, 3]. The **purpose** of our work is the development of MCGs containing lysozyme hydrochloride (LH) and ascorbic acid (AsA) obtained by compression method with Health in Gum[®] (HiG) PWD 01 as a gum base.

Materials and methods: Objects of the study are LH (Bouwuis Enthoven B.V., Netherlands), AsA (Foodchem International Corporation, China), HiG[®] PWD 01 (Cafosa Gum SA, Spain) and mass for pressing. During the experiment physical-chemical, technological and statistical research methods were used.

Results: Taking into account fine dispersion and insufficient flow properties of LH, which may cause its inhomogeneous distribution in MCGs, two different methods for preparation of gum mass were tested. The first method was simple dry mixing of all ingredients as it is usually practiced in direct compression technology. The second method included the step of wet granulation of three-component mixture, *viz.* LH, intensive sweetener and taste additive. AsA was not considered to undergo wet granulation because of its satisfactory flow properties and also in order to avoid its oxidation upon contact with the granulating liquid. Therefore, AsA powder was mixed with the granulate and gum base, after that the rest excipients were added. A microscopic analysis was carried out and the technological properties of the blends were investigated.

Conclusions: Based on studies which were conducted it has been established that for obtaining compressed MCGs of a high quality LH should be added into chewing gums using pre-granulation technique, and AsA – by premixing with lysozyme granulate and gum base.

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