

**Materials and methods:** four solutions containing ethyl alcohol and isopropyl alcohol in different reports; determination of the minimum inhibitory concentration (MIC) of these formulations against bacteria; the method of serial dilution in liquid nutrient medium (meat peptone broth 2%, pH = 7.0), liquid nutrient medium (broth Saturo).

**Results:** The most alcohol-based hand antiseptics contain ethanol, isopropanol or n-propanol, or a combination of two of these products. Concentrations are given as either percentage of volume (= ml/100 ml, abbreviated % v/v), percentage of weight (= g/100 g, abbreviated % m/m), or percentage of weight/volume (= g/100 ml, abbreviated % m/v).

Antimicrobial activity was determined for four solutions with different concentrations of alcohol. The antimicrobial activity of alcohols results from their ability to denature proteins. Alcohol solutions containing 60–80% alcohol are most effective, with higher concentrations being less potent. This paradox results from the fact that proteins are not denatured easily in the absence of water. Alcohols have excellent in vitro germicidal activity against Gram-positive and Gram-negative vegetative bacteria (including multi drug-resistant pathogens such as MRSA and VRE), *M.tuberculosis*, and a variety of fungi.

**Conclusions:** The efficacy of alcohol-based hand hygiene products is affected by a number of factors including the type of alcohol used, concentration of alcohol, contact time, volume of alcohol used, and whether the hands are wet when the alcohol is applied.

**Keywords:** Antiseptic solution, nosocomial infections, analysis, quality control, antimicrobial activity.

## THE IMPROVEMENT OF THE MANAGEMENT OF PHARMACIES IN THE REPUBLIC OF MOLDOVA

**Sprincean Vladislav, Trofaia Roman, Cassir Serghei**

*Academic adviser:* Elizaveta Reabov, Associate Professor, State Medical and Pharmaceutical University “Nicolae Testemițanu”, Chisinau, Republic of Moldova

Nowadays there are many controversial issues and paradoxes in the pharmaceutical activity of the Republic of Moldova (RM), connected either with the lack of maturity of market or with its already established structure.

In this work we tried to express our opinion about the actual situation and propose the alternative model of the development of pharmaceutical industry in RM in the most rational ways, based on the concept “from local to global”. Being in a working process we decided to raise many actual topics which concern the majority of the different social groups connected with the pharmaceutical activity in RM. These groups are: students of faculty Pharmacy, qualified pharmacists, doctors and professors and simple citizens, who face every day with advantages and disadvantages of local pharmacies. Some of the actual topics are: the economic benefits of raising and supporting local drugs’ manufacturers, the gradual introduction of new technologies of organization and management, the rationalization of the whole pharmaceutical industry of RM basing on the models of developed countries, etc.

The results of our research were unexpected not at the point of criticism of already established structure of local market, but at the point of a huge will, potential and opportunity to improve the whole system of organization and management of pharmaceutical industry in RM. The selected concept “from local to global” expresses the main idea of this inevitable process – we should realize all the necessary changes step by step, previously providing all the possible ways of the idea’s development. Thus we can forward our desires and powers in the right direction – from starting the improvement in our township, to expansion of its potential results in all the regions of our native land – the Republic of Moldova.

**Key words:** pharmacy, organization and management of pharmacies, the improvement of local market, from local to global.

## FORMULATION AND RESEARCH OF THE SOLID DISPERSION SYSTEMS OF SPIRONOLACTONE

Allaa M.Fathi Baroud

*Academic adviser:* Diug Eugen, Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

**Introduction:** Starting from the fact that spironolactone is practically insoluble in water, its formulation orodispersible is important to enhance dissolution rapid absorption from the oral cavity.

**Aim:** To increase the solubility of spironolactone was evaluated its association with different solubilized to form solid dispersion systems.

**Material and method:** *Preparation of solid dispersion systems:* Solid dispersion was obtained using the combined method: solvent evaporation and melting. Spironolactone and polyvinylpyrrolidone is dissolved in ethyl alcohol 96%. The resulting solution is left to complete evaporation of ethanol. Polyethylene glycol 4000 melts at a temperature of + 60° C, the mixture plus spironolactone and polyvinylpyrrolidone. Stir continuously until completely cooled. Parallel to prepare and physical mixture of spironolactone, polyvinylpyrrolidone and polyethylene glycol.

*Thermo-gravimetric analysis:* Substances studied, physical mixture and solid dispersion were subjected to thermo-gravimetric analysis derivatographic O1500D model MOM (Hungary). Samples were heated to a temperature of 1020° C, the heating rate of 10° C/min. He sought modification of the caloric content of substances and mixtures, recorded temperature variation, in the mass during heat treatment.

**Results:** The dispersed solid is characterized the 3 effects of decomposition in the temperature range 45 to 471° C, the mass loss of 86.96%. At a temperature of about 60° C the degradation of the system is associated with an endothermic effect, characteristic of a melting process which confirms that the system presents a phase change. There follows a series of endothermic and exothermic effects. Total mass loss is 97.91%.

**Conclusions:** The results confirm the formation of a solid dispersed system of spironolactone with polyvinylpyrrolidone and Polyethylene glycol 4000.

**Key words:** Spironolactone, polyvinylpyrrolidone, polyethylene glycol, solid dispersion system, thermo-gravimetric analysis.

## PEDAGOGICAL AND PSYCHOLOGICAL FEATURES OF PHARMACISTS DIGITAL SYSTEMS GENERATION TRAINING

Lysenko O., Tsekhmister Ya.

Bogomolets National Medical University, Kiev, Ukraine,

**Introduction:** The vast majority of modern students were born from 1984 to 1994 during the so-called breakthrough of informational and communicational technologies development.