

lycopene for most people. Nowadays, the lycopene is included in a number of food supplements, such as: *Licopen* (Medicer Bio – lycopene 25 mg, flax flour 200 mg); *Lycopene* – 10 mg (Puritan's Pride); *Lycopene* -10 mg (Biovea).

Due to its antioxidant properties, lycopene is thought to play a role in preventing cancer and heart disease, lowers LDL levels, enhances the immunity, protects the enzymes. One of the most important benefits of the lycopene is the prevention and treatment of cancer – lung cancer, stomach cancer, bladder cancer, skin cancer and particularly prostate cancer.

**Conclusions:** The beneficial effects of lycopene determine us to initiate research to assess the lycopene content in different plant sources available on the market as well as some food and dietary supplements.

**Keywords:** lycopene, antioxidant, cancer

### 23. NMR SPECTRA INTERPRETATION

**Tocarenco Igor**

*Academic adviser:* **Podgornii Ana**, Assistant Professor, State Medical and Pharmaceutical University " Nicolae Testemițanu ", Chișinău, Republic of Moldova

**Introduction:** From all the methods, nuclear magnetic resonance (NMR) is one that offers the richest and the most complete structural information about organic compounds. This method can be applied to the elucidation of chemical structure as well as the determination of stereochemistry and conformation of their pure substance and mixture. The interpretation of the NMR spectrum becomes an increasingly empowered ability applied in the context of the rapid development of organic synthesis of new compounds, and in the increasing interest for the existing drug substances.

**Purpose and Objectives:** The highlighting of the main stages of NMR interpretation spectrum, the structure elucidation of organic compounds and determination of their stereochemistry and conformation.

**Materials and methods:** The study is performed by meta-analysis of published scientific data, standardization of analytical quality documents, articles from magazines and periodicals.

**Results:** As a result of the study was formulated an algorithm of the interpretation of NMR spectrum. We applied the rules established in the analysis of NMR spectrum, which gave us information about the structure of substances and their conformation. The data that were obtained correlate with the data from the scientific literature and confirm the applicability of the formulated algorithm.

**Conclusion:** The right interpretation of the NMR spectrum, allows the accurate identification of the structure of an unknown substance, with any molecular weight and any number of molecules, as well as isomers differentiation between them.

**Keywords:** NMR spectrum interpretation, functional group

### 24. STUDY OF PHYSICOCHEMICAL PROPERTIES OF A THIODIAZOL DERIVATES WITH ANTI-MYCOBACTERIAL ACIVITIES

**Uncu Andrei, Suvorchina Olga, Vislough Oxana, Bobrov Elena, Moiseev Ana**

*Scientific adviser:* **Valica Vladimir**, Ph.D., professor, Department of Pharmaceutical and Toxicological chemistry, State University of Medicine and Pharmacy "Nicolae Testemițanu", Chișinău, Republic of Moldova

**Introduction:** Tuberculosis remains one of the most devastating infectious diseases affecting people in different social and age groups. The situation becomes even more complicated with the increasing number of drug-resistant tuberculosis cases, where conventional therapy is no longer effective, and better antimycobacterial drugs either do not exist or are too expensive.

**The purpose of the study:** Study of physicochemical properties of an anti-mycobacterial compound from the group of thiodiazol derivates.

**Materials and methods:** Melting point determining device Kruss KSP1N & KSP1D, drying cabinet, UV-VIS spectrophotometer, solvents and reagents in accordance with the European Pharmacopoeia.

**Results:** In collaboration with the laboratory of the Institute of Organic Synthesis Chemistry of RM, were synthesized 80 compounds substituted derivatives of 5-aryl-1,3,4-oxadiazoles and thiourea, that were tested for anti-mycobacterial activity against *M. tuberculosis* in the Southern Research Institute, Birmingham, USA. In the series studied, a major activity (MIC 98%) was recorded for the monosubstituted compound of thiourea with allyl fragment. This compound is shown to be a white powder, with yellow tinge or colorless crystals, specific odor and a bitter taste. There have been made physical and physico-chemical analysis to determine the properties of the compound studied: melting point (119.6°C); solubility - the substance is practically insoluble in water and ethanol, slightly soluble in methanol, soluble in chloroform, acetone, DMSO, DMFA, and acetonitrile. It was determined the water content and the loss on drying (Karl Fischer titration reagent and drying oven), which showed water content of the minor (0.0009% and 0.001%, respectively), which also indicates that the substance is not hygroscopic.

**Conclusions:** Determined physicochemical properties of the studied compound will provide the support in the development of analytical methods and standardisation for this product.

**Keywords:** tuberculosis, anti-mycobacterial, tiodiasol, melting point

## 25. THE EFFECT OF NANOSILVER ON THE WOUND PROCESS

**Kryzhanovskiy Volodymyr, Bak Andrey**

*Academic advisers:* **Ulyanov Vadim**, Professor; **Sirma Elena**, graduate student, Odessa State Medical University, Odessa, Ukraine

**Introduction:** Analysis of the literature showed a constant increase in the number of methods to influence the course of wound healing, indicating their lack of effectiveness. Development of applications of nanotechnology in medicine opens wide prospects for their use in the treatment of wounds. The use of nanoparticles of metals, especially nanosilver, is of particular interest in this field.

**Purpose:** To investigate the effect of particles of nanosilver on the kinetics of cell populations on the skin wound model.

**Materials and methods:** 30 Wistar rats weighing 180-230g, were used during the experiment. All the animals were divided into 2 groups. In the first, the control group, the rats wool area was shaved under ether anesthesia, a 2 cm long wound deep to the subcutaneous fascia was applied using a scalpel, the defect was sutured. In the second group, silver (Ag) 30nm was applied on the wounds respectively. Nanoparticles Ag 30nm were produced by the Scientific Research Institute of Physics ONU Mechnikov. The obtained histologic sections were stained with hematoxylin-eosin and Van Gieson.

**Results:** As a result of the experiment in the second group, the decrease of leukocyte and macrophage infiltration was identified in the early stages of healing compared with the control which indicates the anti-inflammatory effect of nanoparticles of silver on the wound. Increase in the number of myofibroblasts indicates better constriction of the injury. The number of fibroblasts and new vessels on day 5 indicates the prevalence of the proliferative activity. The results of study on day 7 and later indicate more rapid wound healing.

**Conclusions:** The treatment of wounds using nanomaterials promotes the formation of tissue of histoarchitectonics closest to the intact skin.

**Keywords:** nanomaterials, wound, healing