



**L'Union Médicale Balkanique  
Balkan Medical Union**



**Balkanska Medicinska Unija**



**32<sup>nd</sup>**

**Balkan  
Medical  
Week**

**32<sup>ème</sup>**

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**32<sup>nd</sup> BALKAN MEDICAL WEEK - Nis, SERBIA**  
**32eme SEMAINE MEDICALE BALKANIQUE - Nis, SERBIA**

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#### P64 6-(propan-2-yl)-3-methyl-morpholine-2,5-dione, a novel xanthine oxidase inhibitor

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**Introduction.** Cyclodepsipeptides are known to exhibit a broad spectrum of biological activities and present a great potential for pharmacological application. A novel didepsipeptide member of the family 6-(propan-2-yl)-3-methyl-morpholine-2,5-dione, was synthesized and its structure was confirmed by IR, <sup>1</sup>H and <sup>13</sup>C NMR spectral data.

**Aims.** In the present study the above mentioned compound was evaluated for inhibitory activity against commercial enzyme xanthine oxidase (XO) *in vitro*.

**Methods.** Bovine milk XO activity was assayed spectrophotometrically by measuring the uric acid formation from substrate xanthine.

**Results.** A significant inhibitory activity of the studied cyclodidepsipeptide on XO was observed to occur in a dose-dependent manner.

**Conclusions.** 6-(Propan-2-yl)-3-methyl-morpholine-2,5-dione may give a promise to be used in the treatment of gout and related primary or secondary hyperuricemic conditions.

**Keywords:** cyclodidepsipeptides, 6-(propan-2-yl)-3-methyl-morpholine-2,5-dione, xanthine oxidase inhibition

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#### P65 Comparative analysis of the antigenotoxicity of five selected 4-hydroxy-2H-chromen-2-one derivatives: possible mechanism of action

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**Introduction.** Coumarin and coumarin-related compounds have proved for many years to have significant therapeutic potential. A large number of 4-hydroxycoumarins and their derivatives have been synthesized and evaluated for their ability to play a positive role in the prevention of human and animal diseases. Still, their antigenotoxic potential is unknown.

**Aim.** In the present study we examined the capability of five substituted 4-hydroxy-2H-chromen-2-one derivatives to counteract genotoxicity induced by the ethyl methanesulfonate (EMS), well-established chemical mutagen, using the sex-linked recessive lethal (SLRL) test on *Drosophila melanogaster* under *in vivo* conditions. In addition, the molecular docking experiments were performed to obtain the binding mode of coumarin compounds into deoxyribonucleic acid (DNA) and to investigate the possible mechanism(s) of antigenotoxic action of selected 4-hydroxycoumarin derivatives.

**Methods.** Three days old Canton S males were treated with the potent mutagen EMS alone at a concentration of 0.75 ppm, as well as in combination with one of the five 4-hydroxycoumarins, namely diethyl 2-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylidene)malonate (2b), 3-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylidene)malonate (2c), 4-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylidene)malonate (2d), 5-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylidene)malonate (2e), 6-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylidene)malonate (2f).



2H-chromen-3-yl)ethylidene)pentane-2,4-dione (6b), 4-(4-(4-hydroxy-2-oxo-2H-chromen-3-yl)thiazol-2-ylamino)benzenesulfonic acid (4c), 4-hydroxy-3-(2-(2-nitrophenylamino)thiazol-4-yl)-2H-chromen-2-one (9c), (E)-4-hydroxy-3-(1-(m-tolylimino)ethyl)-2H-chromen-2-one (5d), in concentration 100 ppm.

**Results.** The frequency of germinative mutations increased significantly after the treatment with EMS and decreased after post-treatments with coumarins. The maximum reduction was observed after post-treatments with 2b, 6b, 4c, and 5d. By the formation of hydrogen bonds or electrostatic interactions with DNA guanine, tested coumarins prevent EMS induced alkylation.

**Conclusion.** The results indicate, in addition to its well documented action on development, a protective effect of five 4-hydroxycoumarins under the action of a strong mutagen, such as EMS.

**Key words:** antigenotoxicity; *Drosophila melanogaster*; 4-hydroxycoumarins

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### P66 Pharmaceutical care – the right way for professionalism

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**Introduction.** Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. Pharmaceutical care involves the process through which a pharmacist cooperates with a patient and other professionals in designing, implementing, and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient. This in turn involves three major functions:

- identifying potential and actual drug-related problems,
- resolving actual drug-related problems, and
- preventing drug-related problems.

The main benefit in pharmaceutical care is a contact based on trust in which the patient grants authority to the provider, and the provider gives competence and commitment to the patient.

**Aim.** The main aim of this study is to assess what would be the three priorities for Bulgaria in the fields of safety and quality of pharmaceutical care.

**Methods.** A standard questionnaire was applied to 150 pharmacists

**Results.** More than 70% of the pharmacists know the idea, but only 20% are willing to work in accordance to its principles. The main reasons for that are revealed.

**Key words:** Bulgaria, pharmaceutical care, pharmacy practice, priority

### P67 The application of new kinetic-spectrophotometric method for determination of metronidazole in pharmaceutical formulation

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**Introduction.** Metronidazole [2-(2-methyl-5-nitro-1H-imidazol-1-yl) ethanol] is an amebicide, antiprotozoal and antibiotic effective against anaerobic bacteria and certain parasites. Review of literature for MND analysis revealed that several existing methods including different technique such