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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,¹ H and ¹³C 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 cyclodepsipeptide on XO was observed. The inhibition occurs in a dose-dependent manner.

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

Keywords: cyclodepsipeptides, 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 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), 3,5-dihydroxy-2-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylidene)malonate (2d), 3,5-dihydroxy-2-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylenedioxy)methane (2e), and 3-(1-(4-hydroxy-2-oxo-2H-chromen-3-yl)ethylenedioxy)methane (2f), in order to analyze the effects of treatment on sex-linked recessive lethal (SLRL) test.
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-hydroxyxoumarins under the action of a strong mutagen, such as EMS.

Keywords: Antigenotoxicity; Drosophila melanogaster; 4-hydroxyxoumarins

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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,
- solving 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% a willing to work in accordance to its principles. The main reasons for that are revealed.

Keywords: 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