

Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE
FACULTY OF VETERINARY MEDICINE - SKOPJE



Joint meeting
5th International Vet-Istanbul Group Congress
&
8th International Scientific Meeting
Days of veterinary medicine - 2018

BOOK OF ABSTRACTS

23-27 September 2018
Ohrid, R. of Macedonia

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FACULTY OF VETERINARY MEDICINE - SKOPJE**



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**Ohrid, 2018
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**DIOSGENIN AFFECTS STEROID HORMONE PRODUCTION AND
GENE EXPRESSION OF ANTIOXIDATIVE ENZYMES
IN THE OVARY OF MIDDLE-AGED RATS**

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Diosgenin is bioactive, steroidal saponin from *Dioscorea villosa* (Wild Yam) and appears to be novel promising substance for the treatment of menopausal symptoms. In addition, diosgenin may manipulate the endogenous steroid hormone levels and may affect the numerous oxidative stress pathways/molecules. Since decline in the steroid hormone levels as well as increase in oxidative stress in the ovaries play an integral part of the menopause, this study aimed to investigate the effects of diosgenin on production of estradiol and progesterone, as well as to investigate the effects of diosgenin on the expression of genes encoding the antioxidant enzymes (Cu, Zn-superoxide dismutase (CuZnSOD), Mn-superoxide dismutase (MnSOD), glutathione peroxidase (GPx), and catalase (CAT)) in ovary of acyclic-middle aged female rats. Middle-aged (13-months-old) acyclic female Wistar rats in constant diestrus stage, which represent tractable model to human menopause, were divided into control and diosgenin treated groups. Diosgenin (100 mg/kg b.w./day) was orally applied for 4 weeks, while C group received the vehicle alone. In our experimental model, diosgenin administration to acyclic middle-aged rats significantly increased estradiol and progesterone serum concentrations when compared to the corresponding control. Gene expression analysis revealed that diosgenin significantly down-regulate all examined enzymes involved in antioxidative defense. The down-regulation were especially pronounced in CuZnSOD and CAT, indicating that the diosgenin may decrease the pool of reactive oxygen species in the ovary directly and may act as free radical scavengers. Therefore, our results indicate beneficial potential of diosgenin in the middle-aged rat ovary.

Key words: diosgenin, acyclic female rat, gene expression