

**ANALGESIC POTENTIAL OF ROSEMARY ESSENTIAL OIL IN ACETIC ACID  
INDUCED WRITHING TEST ON NMRI-HAAN MICE**

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The analgesic and anti-inflammatory effects of rosemary essential oil (REO), its components, and other essential oils with similar content (1,8-cineole, camphor and  $\alpha$ -pinene) have been studied in animal models, with administration of high doses (1, 2). The aim of our study was to investigate analgesic potential of rosemary essential oil when used in smaller doses. In this study REO was orally administered at doses of 10 and 20 mg/kg bw/day for seven days. Painful infliction was induced by administration of 1% acetic acid intraperitoneally (10 ml/kg bw), 10 minutes after the last REO dose. Writhes counting started 5 minutes later. During the first period (5 – 25 minutes), pretreatment with REO (10 and 20 mg/kg bw/day), resulted in statistically significant (dose-dependent) reduction in the number of writhes ( $p < 0.05$ ), compared to the control group pretreated with saline. During the second counting period (25-45 minutes), statistically significant difference between the control and experimental groups was not detected. In our study, the application of REO caused a significant antinociceptive effect. Rosemary essential oil significantly reduces visceral pain caused by the irritation with acetic acid after a seven-day oral treatment in doses of 10 mg/kg bw and 20 mg/kg bw.

**References**

1. Takaki I, Bersani-Amado LE, Vendruscolo A, Sartoreto SM, Diniz SP, Bersani-Amado CA et al. Anti-Inflammatory and Antinociceptive Effects of *Rosmarinus officinalis* L. Essential oil in Experimental Animal Models. *J Med Food*. 2008;11(4):741-746.
2. Lee G, Park J, Kim MS, Seol GH, Min SS. Analgesic effects of eucalyptus essential oil in mice. *Kor J Pain*. 2019; 32(2): 79-86.

**ANALGETSKI POTENCIJAL ETARSKOG ULJA RUZMARINA KOD BOLNIH DRAŽI  
IZAZVANIH PRIMENOM SIRČETNE KISELINE U TESTU „GRČEVA“ NA MIŠEVIMA  
SOJA NMRI-HAAN**

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Postojanje analgetskog i antiinflamatornog delovanja etarskog ulja ruzmarina (EUR) i pojedinačnih komponenti, kao i EU sličnog sastava EUR (1,8-cineol, kamfor i  $\alpha$ -pinen), ispitivano je u studijama na životinjama, primenom visokih doza (1, 2). Cilj ispitivanja: utvrditi analgetski potencijal EUR primenjenog u nižim dozama. Tokom 7 dana, EUR je primenjivano oralno, u dozama 10 i 20 mg/kg tm/dan. Bolni nadražaj izazvan je primenom 1% sirčetne kiseline intraperitonealno (10 ml/kg tm), 10 minuta nakon poslednje doze EUR. Pet minuta kasnije započeto je brojanje grčeva. U prvom periodu brojanja (5. - 25. minut), u grupama životinja pretretiranim EUR u dozama 10 i 20 mg/kg tm/dan, došlo je do statistički značajnog (dozno-zavisnog) smanjenja broja grčeva ( $p < 0.05$ ), u odnosu na kontrolnu grupu pretretiranu fiziološkim rastvorom tokom 7 dana. U drugom periodu brojanja (25. do 45. minut), nije utvrđena statistički značajna razlika između izmerenih vrednosti u kontrolnoj i eksperimentalnim grupama. U našoj studiji primena EUR izazvala je značajan antinociceptivni efekat. Etarsko ulje ruzmarina značajno smanjuje visceralni bol izazvan nadražajnim delovanjem sirčetne kiseline nakon sedmodnevnog peroralnog pretretmana u dozama od 10 mg/kg tm i 20 mg/kg tm.

**Literatura**

1. Takaki I, Bersani-Amado LE, Vendruscolo A, Sartoreto SM, Diniz SP, Bersani-Amado CA et al. Anti-Inflammatory and Antinociceptive Effects of *Rosmarinus officinalis* L. Essential oil in Experimental Animal Models. *J Med Food*. 2008;11(4):741-746.
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