Arh. farm 2023; 73: S77–S78 ***PP 23***

EFEKAT HIDROLATA TIMIJANA NA INTEZITET SPONTANIH I ACETILHOLINOM IZAZVANIH KONTRAKCIJA FUNDUSA ŽELUCA

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Prilikom ekstrakcije etarskih ulja iz aromatičnih biljaka dobijaju se i hidrolati. Hidrolati su vodeni rastvori koji predstavljaju nusproizvode destilacije i sadrže određenu količinu bioaktivnih molekula, a koji se kvantitativno i kvalitativno razlikuju od etarskih ulja (1). Etarsko ulje timijana nakon oralne primene u visokim koncentacijama ima citotoksična svojstva i može prouzrokovati oštećenje crevnih ćelija (2), pa upotreba hidrolata, razblaženih hidrosolubilnih frakcija etarskih ulja, predstavlja potencijalno bezbedan način primene. Cilj ovog istraživanja bio je ispitivanje efekata različitih zapremina (10-1000 µl) hidrolata dobijenog hidrodestilacijom nadzemnog dela *Thymus vulgaris* L. (Lamiaceae) na intenzitet spontanih i acetilholinom (Ach) indukovanih kontrakcija izolovanog fundusa pacova (3). Primena različitih zapremina hidrolata *T. vulgaris* je značajno smanjila intenzitet spontanih kontrakcija fundusa u zavisnosti od primenjene zapremine. Primena 250, 500 i 1000 µl hidrolata je izazvala relaksacije u tkivu fundusa za više od 50% u odnosu na bazalne vrednosti ($p<0,01$). Utvrđeno smanjenje intenziteta kontrakcija izazvanih Ach je za u zapreminu od 138 µl hidrolata iznosilo 35.2 ± 4.8%. Važno je pronaći efikasan način za primenu prirodnih proizvoda kako bi se iskoristila njihova lekovita svojstva. Etarska ulja i njihove komponente mogu biti inaktivirane u kontaktu sa enzimima i crevnim sadržajem. Hidrolati su vredni, inovativni prirodni proizvodi koji imaju veliki potencijal za upotrebu u prehrambenoj industriji kao funkcionalna pića.

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Zahvalnica

Ovo istraživanje su podržavali Ministarstvo nauke, tehnološkog razvoja i inovacija Republike Srbije (Grant br. 451-03-47/2023-01/200113) i Interni naučni projekat Medicinskog fakulteta Univerziteta u Nišu br. 15.

EFFECT OF THYME HYDROSOL ON SPONTANEOUS AND ACETYLCHOLINE-INDUCED GASTRIC FUNDUS CONTRACTIONS

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Hydrosols are obtained during the extraction of essential oils from aromatic plants. Hydrosols contain a certain amount of bioactive molecules, which are quantitatively and qualitatively different from essential oils (1). Thyme essential oil has cytotoxic properties in high concentrations and can damage intestinal cells when administered orally (2); therefore, hydrosol application is a potentially safe way to use the diluted water-soluble fractions of essential oils. The aim of this study was to investigate the effect of different volumes (10-1000 μl) of hydrosol obtained by hydrodistillation of the aerial part of *Thymus vulgaris* L. (Lamiaceae) on the spontaneous and acetylcholine (Ach)-induced contractions intensity in the isolated rat fundus (3). Application of different volumes of *T. vulgaris* hydrosol significantly decreased the intensity of spontaneous contraction of the isolated rat fundus in a dose-dependent manner. The application of 250, 500, and 1000 μl of hydrosol induced more than 50% relaxation in fundus tissue ($p<0.01$). The application of hydrosol in a volume of 138 μl produced a 35.2 ± 4.8% relaxation of Ach-induced contractions of the gastric fundus. It is important to find an efficient method of administering natural products to benefit from their medicinal effects. Essential oils and their components can be inactivated when in contact with enzymes and intestinal contents. Hydrosols are valuable, innovative natural products that have great potential for use in the food industry as functional beverages.

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Acknowledgements

This research was supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Grant No. 451-03-47/2023-01/200113) and the Faculty of Medicine University of Niš Internal Scientific Project No. 15.