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Antiulcer activity of new probiotic preparation consisting of lactic acid bacteria and propolis

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Introduction: In the proposed research the antiulcer activity of the new probiotic preparation consisting of microbial association of *Lactobacillus rhamnosus* 925ak, *Propionibacterium avidum* 1 and alcohol extract of propolis had been investigated. The drug form is lyophilized preparation in vials. The preparation had been gavaged to rats before initiation of ulcer with 96% alcohol. The most effective concentration of propolis in the preparation had been evaluated as well.

Methods: Preparation with three different contents was included in the study: Containing 0.5%, 1% and 2.5% of propolis extract. Animal models were rats of both genders with weight of 180-250 g. The ulceration was induced with 96% alcohol calculated as equal to 5 ml/kg. Animals were divided to 3 groups, 5 rats in each. The content of each vial was dissolved in 4.5 ml of distilled water. One group of animals were gavaged with 1.5 ml of preparation containing 0.5% of propolis extract, the second group with same amount of preparation containing 1% of propolis extract, the third group with preparation containing 2.5% of propolis extract and the fourth, control group of animals were gavaged with 1.5 ml of distilled water. In 60 min the experimental ulcer had been induced with 96% alcohol. In 60 min after alcohol introduction rats were decapitated and the stomach was examined for ulceration, the size and amount of ulcers.

Results: In the first group of rats (treated with 2.5% propolis in preparation), 4 rat's stomach have mild hyperemia of mucosa and 1 stomach has more significant hyperemia and 2 small ulcers. In the second group (treated with 1% propolis in preparation) 3 rat's stomachs have mild hyperemia of mucosa, 1 more significant hyperemia and 1 severe hyperemia and 5 small ulcers. In the group of animals which intake preparation with 0.5% of propolis no rat had an ulcer, 2 of 5 had mild hyperemia and 2 with more significant hyperemia. In the control group of animals the severe mucosal hyperemia had been observed in all rats, 3 of them had multiple ulcers and 1 has died during the experiment.

Conclusion: The results of the study shows that all the probiotic preparations containing different concentration of propolis (0.5%, 1% and 2.5%) are demonstrated significant antiulcer activity when introduced prior to ulcer induction (preventive treatment) and more effective was the preparation containing *Lactobacillus rhamnosus* 925ak, *Propionibacterium avidum* 1 and 0.5% of propolis dry extract.

Biography

Shakhlo Miralimova has earned her PhD in 2009 at the Institute of Microbiology of Academy of Sciences of the Republic of Uzbekistan. In 2011 through the IDB Merit Fellowship grant she has performed her Post doctoral research at the University of North Carolina at Chapel Hill. She has been working as the Head of the Department at the Institute of Microbiology and Invited Lecturer in the Tashkent Pharmaceutical Institute. Her area of research interest is in development of functional food containing probiotics, bacteriocins of lactic acid bacteria. She has more than 30 publications in the referred journals and has been serving as an External Editorial Board Member for IDB.

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