

ANTIBAKTERIJSKA AKTIVNOST *Allium ursinum* L.

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Sažetak: *Allium ursinum* L. je u narodu poznatiji kao sremuš, crijemuš, divlji ili medvjedi luk. U ishrani se koristi kao povrće (salata i začín), a u humanoj medicini kao pomoćno sredstvo. Značajan je zbog svoje nutritivne i ljekovite vrijednosti. Pošto se u ishrani najvećim dijelom koristi sezonski u vrijeme prispjeća i u svježem stanju, kao salata, može da bude značajan izvor pojedinih hranljivih materija, mineralnih materija, koje su od velikog značaja za zdravlje ljudi. Otpornost bakterija na antimikrobne supstance (antibiotike i hemoterapeutike) jedan je od najznačajnijih problema u javnom zdravstvu. Problem antimikrobne rezistencije se veže uz patogene bakterije i uzročnike zoonoza, ali ta otpornost opterećuje i apatogene bakterije koje prenose gene rezistencije kroz prehrambeni lanac. Cilj ovoga rada je da se ispita antimikrobna aktivnost *Allium ursinum* L. na rast apatogenih bakterija izolovanih iz hrane životinjskog porijekla i da se odredi tip djelovanja na ispitivane izolate. Biljni materijal korišten u ovom radu je svježi list *Allium ursinum* L. ubran na padinama planine Kruševo Brdo, opština Kotor Varoš, Republika Srpska, Bosna i Hercegovina. Listovi sremuša su usitnjeni, dodato je suncokretovo ulje, te je gusta masa sremuša razrijeđena destilovanom vodom u omjeru sremuš:voda 80:20%. Za ispitivanje antibakterijske aktivnosti korišćena je agar difuziona metoda. Antibakterijska aktivnost je ispitana na 10 bakterijskih sojeva koagulaza negativnih stafilokoka izolovanih iz hrane životinjskog porijekla, iz kolekcije Laboratorije za mikrobiologiju hrane, hrane za životinje i vodu Javne ustanove Veterinarski institut Republike Srpske "Dr Vaso Butozan" Banja Luka. Rezultati analiza ukazuju na dobra inhibitorna svojstva *Allium ursinum* L. na 8 od 10 testiranih apatogenih bakterija sa zonom inhibicije od 9,67mm do 45,00mm. Baktericidno djelovanje je potvrđeno kod četiri izolata u sva tri ponavljanja, a bakteriostatsko kod dva izolata. Imajući u vidu da doprinos apatogene mikrofore iz hrane životinjskog porijekla u prenosu antimikrobne rezistencije kroz prehrambeni lanac nije u potpunosti poznat, te da dobijeni rezultati ukazuju da list *Allium ursinum* L. ima dobra antibakterijska svojstva, buduće studije je potrebno usmjeriti ka ispitivanju većeg broja bakterija.

Ključne riječi: *Allium ursinum* L., apatogene bakterije, antibakterijska aktivnost, rezistencija

ANTIBACTERIAL ACTIVITY OF *Allium ursinum* L.

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Abstract: *Allium ursinum* L. is popularly known as sremush, crijemush, wild or bear onion. It is used in the diet as a vegetable (salad and spice) and in human medicine as an aid. It is important for its nutritional and medicinal value. Since it is mostly used in the diet seasonally at the time of arrival and in a fresh state, as a salad, it can be a significant source of certain nutrients, minerals which are of great importance for human health. Resistance of bacteria to antimicrobial substances (antibiotics and chemotherapeutics) is one of the most significant problems in public health. The problem of antimicrobial resistance is related to pathogenic bacteria and zoonotic agents, but this resistance also burdens apathogenic bacteria that transmit resistance genes through the food chain. The aim of this study was to examine the antimicrobial activity of *Allium ursinum* L. on the growth of apathogenic bacteria isolated from food of animal origin and determine the type of action on the tested isolates. The plant material used in this paper is a fresh leaf of *Allium ursinum* L. harvested on the slopes of the Kruševo Brdo mountain, Kotor Varoš municipality, Republic of Srpska, Bosnia and Herzegovina. Sremush leaves were chopped, sunflower oil was added and a thick mass of sremush was diluted with distilled water in a ratio of sremush:water 80:20%. The agar diffusion method was used to examine the antibacterial activity. Antibacterial activity was tested on 10 bacterial coagulase strains of negative staphylococci isolated from food of animal origin, from the collection of the Laboratory for Microbiology of food, feed and water of the Public Institution Veterinary Institute of Republic of Srpska "Dr Vaso Butozan" Banja Luka. The results of the analysis indicate good inhibitory properties of *Allium ursinum* L. on 8 out of 10 tested apathogenic bacteria with an inhibition zone from 9.67 mm to 45.00 mm. Bactericidal activity was confirmed in four isolates in all three replicates, and bacteriostatic in two isolates. Given that the contribution of apathogenic microphores from food of animal origin in the transmission of antimicrobial resistance through the food chain is not fully known, that the results indicate that *Allium ursinum* L. has good antibacterial properties, future studies should focus on more bacteria.

Key words: *Allium ursinum* L., apathogenic bacteria, antibacterial activity, resistance