

## Mehanizem adhezije bakterij *Campylobacter* kot tarča za zmanjšanje antibiotske odpornosti

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### Izvleček

Sodoben način proizvodnje omogoča razvoj odpornosti zaradi uporabe številnih protimikrobnih učinkovin in širjenje rezistence zaradi globalne trgovine s surovinami in končnimi izdelki. Bakterije rodu *Campylobacter* spp. so vodilni povzročitelj črevesnih okužb ljudi v razvitih državah. Sposobnost tvorbe biofilmov bakterij *Campylobacter* spp. je pomemben prilagoditveni / obrambni mehanizem preživetja v proizvodno oskrbovalni verigi ali gostitelju. Čeprav je adhezija bakterij *Campylobacter* spp. in posledično tvorba biofilmov osnova njihove stalne prisotnosti in uspešnega prenosa, osnovni mehanizmi adhezije še niso znani. V predstavljenem projektu smo se osredotočili na raziskave adhezije bakterij *Campylobacter jejuni* z namenom predstaviti inovativno strategijo za uvajanje novih načinov omejevanja števila okužb ter nadzora bakterij v živilih.

**Ključne besede:** odpornost patogenih mikroorganizmov, *Campylobacter jejuni*, adhezija, biofilm

## Targeting *Campylobacter* adhesion in the fight against antimicrobial resistance

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### Abstract

Modern food production contributes to the emergence and spread of resistance through the intensive use of antimicrobial agents, and international trade of raw materials and food products. *Campylobacter* spp. cause food-borne illness worldwide due to contaminated food and cross-contamination. The biofilm of *Campylobacter* is a contributing factor to this prevalence, which enables them to withstand stress in the environment both outside and within the host. The mechanisms of *Campylobacter* adhesion to abiotic surfaces and biofilm formation are not known, but they have major implications in the food industry, where biofilms can create persistent sources of contamination, while conferring survival benefits to *Campylobacter* through industrial processes, to allow transmission to the next host. In the presented project we focused to understand the mechanism by which *Campylobacter jejuni* adheres to surfaces, which is crucial for the application of novel control strategies.

**Key words:** pathogen resistance, *Campylobacter jejuni*, adhesion, biofilm

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*Hrana, prehrana, zdravje:*

**Gojimo, hranimo, ohranjajmo. Skupaj**

P. Raspor (ur.)

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