Bioserotypes and virulence markers of *Y. enterocolitica* strains isolated from roe deer (*Capreolus capreolus*) and red deer (*Cervus elaphus*)

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Abstract

Free-living animals are an important environmental reservoir of pathogens dangerous for other animal species and humans. One of those is *Yersinia (Y.) enterocolitica*, the causative agent of yersiniosis – foodborne, enzootic disease, significant for public health. The purpose of the study was to identify bioserotypes and virulence markers of *Y. enterocolitica* strains isolated from roe deer (*Capreolus capreolus*) and red deer (*Cervus elaphus*) obtained during the 2010/2011 hunting season in north-eastern Poland. From among 48 rectal swabs obtained from 24 roe deer, two strains of *Y. enterocolitica* from one animal were isolated. Although both belonged to biotype 1A they were identified as different serotypes. The strain obtained from cold culture (PSB) belonged to serotype O:5, while the strain isolated from warm culture (ITC) was regarded as nonidentified (NI), what may suggest mixed infection in that animal. The presence of *ystB* gene, coding for YstB enterotoxin, directly related to *Y. enterocolitica* pathogenicity was detected in both strains using triplex PCR. The effect of the examination of 32 swabs obtained from 16 red deer was the isolation of two *Y. enterocolitica* strains from two different animals. Both belonged to biotype 1A with NI serotype, but were originated from different types of culture. They gave positive results in case of products of a size corresponding to the *ystB* gene. No amplicons corresponding to *ail* and *ystA* genes were found. Roe deer and red deer may carry and shed *Y. enterocolitica*, what seems to be important in aspect of an environmental reservoir of this pathogen. The *Y. enterocolitica* strains isolated from wild ruminants had the amplicons of the *ystB* gene, what suggest they can be potential source of *Y. enterocolitica* infection for humans.

Key words: roe deer, red deer, *Yersinia enterocolitica*, reservoir, virulence markers

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