

Analysis of occurrence of virulence genes among *Yersinia enterocolitica* isolates belonging to different biotypes and serotypes

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Abstract

The 150 *Y. enterocolitica* strains isolated from humans and from pigs belonged to biotypes 4 (68.7%), 1A (18.7%) and 2 (4%), or were biochemically untypeable (8.6%). Biotype 4 was comprised of *Y. enterocolitica* strains representing serotype O:3, within biotype 1A the strains either belonged to serotypes O:5 and O:6 or were untypeable, and biotype 2 was represented by the strains of serotype O:9. The strains which were biochemically untypeable belonged to serotypes O:5, O:6 and O:3. Among the strains tested there also were those of an unidentified biotype and serotype. Nearly all the strains of biotype 1A represented genotype *ystB*⁺*myfA*⁺, and few belonged to genotype *ystB*⁺. The presence of the *ystB* gene in the strains of biotype 1A and only occasional occurrence of the gene in the other biotypes makes *ystB* a distinguishing marker of biotype 1A. The strains of genotype *ystA*⁺*ail*⁺*myfA*⁺*yadA*⁺ predominated in biotype 4 (serotype O:3). The strains of biotype 2 (serotype O:9) represented genotype *ystA*⁺*ail*⁺*myfA*⁺, and the plasmid *yadA* gene was detected in some of them. Within the group of biochemically untypeable strains *ystB*- and *myfA*-specific PCR products were mainly obtained.

The genotypes determined for the tested biotypes and serotypes of *Y. enterocolitica*, based upon the selected genes of virulence, can be applied as distinguishing markers and indicators of the potential virulence of *Y. enterocolitica* strains, excluding bioserotyping.

Key words: *Yersinia enterocolitica*, PCR, virulence genes