The aim of this study was to investigate the phenotypic and genotypic characteristics of Streptococcus uberis isolated from subclinical mastitis (SCM) cases, and to examine the possible association between both characteristics. A total of 32 S. uberis were isolated from 772 quarter milk samples (SCM > 250,000 cells/ml) collected from 195 cows selected randomly from 18 dairy farms located in Argentina. The S. uberis strains were characterized phenotypically by the presence of virulence factors as plasminogen activator factor (PAF), hyaluronidase (HYA), capsule (CAP) and CAMP factor, and were further characterized genotypically by pulsed-field gel electrophoresis (PFGE). S. uberis strains expressed plasminogen activator factor, hyaluronidase or capsule (65.5 %, 56.3 %, 59.4 %, respectively), but only 25 % of isolates were CAMP factor positive. Thirteen different virulence profiles were identified on the basis of the combination of virulence factors. Eighteen PFGE patterns with 90% of similarity were identified among 32 S. uberis. A great diversity of virulence profiles and PFGE patterns were present among dairy farms. S. uberis strains with the same PFGE pattern showed different virulence profiles. Bovine S. uberis strains causing SCM included in the present study showed heterogeneity in regard to their phenotypic and genotypic characteristics, and the PFGE patterns are not associated with the virulence profiles.

Abstract

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Keywords

Streptococcus uberis, bovine subclinical mastitis, pulsed-field gel electrophoresis, virulence factors.