TITLE: PREVALENCE OF EXTRA-INTESTINAL VIRULENCE GENES IN *ESCHERICHIA COLI* ISOLATED FROM MILK OF COWS WITH CLINICAL MASTITIS.

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ABSTRACT:
Escherichia coli is of the most prevalent bacteria in cases of environmental mastitis. In recent years, these cases have been increasing in many countries, especially in herds with control of contagious mastitis. This fact may also be related to the presence of biofilms on the surface of the mammary gland tissue, invasion capacity and antimicrobial resistance. Most *E.coli* serogroups isolated from bovine mastitis and from human diarrhea do not share the same genes encoding virulence factors. However, there are various genes in common among strains causing mastitis and those causing extraintestinal infection in humans, requiring a more intense investigation of these genes in order to establish definitive correlations. The objective of this work was to investigate some *E. coli* genes associated with extra-intestinal diseases in humans. A hundred strains of E. coli previously isolated from milk from cows with clinical mastitis from three farms in São Paulo state were analyzed by the PCR technique for the presence of the genes encoding adhesins such as *sfaDE, fimA, fimH, iha, EcpA, papA*, and *papC*. Each strain was plated onto MacConkey agar plates and incubated at 24h/35°C. Subsequently, a single colony was diluted in 200 µl sterilized water and boiled for 10 minutes, followed by centrifugation. The *sfaDE* and *iha* genes were not found in the strains investigated. The p*apA* and *papC* genes presented a prevalence of 1% and the *fimA* and *ecpA* genes were present in 31% and 63%, respectively. The gene that presented the highest frequency was *fimH* (93%), responsible for the adhesion to the human urinary tract and biofilm production. The results showed that *E. coli* found in bovine mastitis harbor virulence factors frequently associated with isolates obtained from extra intestinal infections.

Keywords: *Escherichia coli*, clinical mastitis, virulence genes, extra-intestinal disease

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