

TITLE: ADHERENCE OF POTENTIALLY ZONOTIC ATYPICAL ENTEROPATHOGENIC *Escherichia coli* (aEPEC) STRAINS ISOLATED FROM ANIMAIS

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ABSTRACT:

The interaction of pathogens with their hosts and with their environment involves several possible strategies of adherence and colonization. The increasing importance of atypical EPEC (aEPEC) as agents of human diarrhea and its presence already characterized in several animal species has led to several studies aimed to clarify its virulent potential to humans and animals. Previous studies have shown a more close genetic relation between aEPEC and samples of the STEC pathotype, when compared to the typical EPEC (tEPEC). Our research group has isolated and has been studying strains aEPEC from animals belonging to serotypes frequently detected from human sources. The present study evaluated the adhesion profile on biotic and abiotic surfaces of thirteen aEPEC strains isolated from dogs (n=04) and cattle (n=9) belonging to seven serotypes, including the O26:H11 and previously searched for some virulence markers. The pellicle formation on glass was checked using tubes containing Luria-Bertani (LB) broth without salt (LBNS). Expression of type 1 fimbriae was examined by the agglutination capacity of mannan-rich yeast cells (*Saccharomyces cerevisiae*) on glass slides. Besides, the presence of the *fimH* and *agn43* genes was investigated by PCR. The assay for curli expression was performed in medium supplemented with Congo red and Coomassie brilliant blue. Evidence of cellulose production was assessed by growth and observation of fluorescent growth on agar LBNS supplemented with calcofluor. The pellicle formation at the air-liquid interface of glass tubes was observed in all strains being classified as strong (n=4), weak (n=4) or moderate (n=5). The majority of strains showed a positive result in the yeast agglutination test as also for the production of curli and presence of *fimH* and *agn43* genes. All of them were positive for the cellulose production, showing fluorescence under a UV light source. The five strains belonging to the serotype O26:H11 demonstrated a similar profile. Together, these data demonstrate the adhesion ability of these strains, and contribute for a better understanding of their interaction mechanisms with the host and environment.

Keywords: aEPEC, animal, in vitro adherence, zoonosis, virulence

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