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Adhesion of *Gallibacterium anatis* to Chicken Oropharyngeal Epithelial Cells and the Identification of Putative Fimbriae

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ABSTRACT

Microbial infections are typically initiated by the colonization of tissues by a specific mechanism that promotes adherence to host cells or tissues. In this work, we characterized the ability of *Gallibacterium anatis* F149^T to express fimbriae that may be involved in mucosal attachment. Using transmission electron microscopy, the fimbriae-like structures could be observed on the surface of negatively stained *G. anatis* F149^T, and these structures were further visualized after being released by physical shaking. When the fimbriae-like structures were separated by SDS-PAGE, the proteins comprising them were isolated and sized at 13 and 25 kDa. *G. anatis* F149^T was able to adhere to chicken oropharyngeal epithelial cells. Adhesion could be completely inhibited by pretreatment of the bacterial cells with trypsin, whereas 25% inhibition was attained after pretreatment with an antiserum against the 13 kDa protein. We demonstrated by immuno-gold electron microscopy that the antibodies from the antiserum were specifically associated with the fimbria-like structures on *G. anatis*. These results indicated that *G. anatis* F149^T expresses fimbriae that contribute to its adhesion to chicken oropharyngeal epithelial cells and may be important for colonization of the upper respiratory tract.

KEYWORDS

G. anatis; Adhesion; Fimbria; Pili

Cite this paper

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