



FlgN plays important roles in the adhesion of *Aeromonas hydrophila* to host mucus

X. Jiang^{1,2}, Y.X. Qin^{1,2}, G.F. Lin^{1,2}, L. Huang^{1,2}, B. Huang^{1,2}, W.S. Huang^{1,2} and Q.P. Yan^{1,2}

¹Fisheries College, Jimei University, Xiamen, Fujian, China

²Key Laboratory of Healthy Mariculture for the East China Sea, Ministry of Agriculture, Jimei University, Xiamen, Fujian, China

Corresponding author: Q.P. Yan

E-mail: yanqp@jmu.edu.cn

Genet. Mol. Res. 14 (2): 6376-6386 (2015)

Received November 4, 2014

Accepted February 5, 2015

Published June 11, 2015

DOI <http://dx.doi.org/10.4238/2015.June.11.13>

ABSTRACT. Adhesion to the host mucus is a crucial step in the early infection stage of pathogenic bacteria. To investigate the mechanisms of the adhesion of *Aeromonas hydrophila* to its host mucus, a mutant library was constructed using the mini-Tn10 transposon mutagenesis system. Of 276 individual colonies, the mutant strain with the most attenuated adhesion ability in this study was screened out and designated A77. Molecular analysis showed that a 414-bp sequence flanking mini-Tn10 in A77 had the highest identity (97%) with the bacterial flagellar protein gene *flgN*. A complemented strain *flgN*⁺ was constructed and the biological characteristics of the wild-type, mutant A77, and complemented *flgN*⁺ strains were investigated. The results showed that the decreased abilities of motility, adhesion to mucus, and biofilm formation in the mutant strain were partially recovered in the complemented *flgN*⁺ strain, which suggested that *flgN* plays an important role in the adhesion of *A. hydrophila* to its host.

Key words: Adhesion; *Aeromonas hydrophila*; *flgN*; Mini-Tn10Km; ELISA