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## REDISTRIBUTION OF THE EGF RECEPTOR AND $\alpha 5$ -, $\beta 1$ -INTEGRINS IN RESPONSE TO INFECTION OF EPITHELIAL CELL BY *SERRATIA PROTEAMACULANS*

O. A. Tsaplina\*

*Institute of Cytology, Russian Academy of Sciences, St. Petersburg, 194064 Russia*

\*e-mail: [olga566@mail.ru](mailto:olga566@mail.ru)

Eukaryotic cells use surface receptors to interact with their environment. Interacting with the cell receptors, pathogenic and opportunistic bacteria can invade cells that normally do not phagocytize. Bacteria *Serratia proteamaculans* can invade eukaryotic cells, and this ability correlates with the proteolytic activity of the actin-specific protease protealysin (Tsaplina et al., 2009). However, cellular receptors involved in the mechanism by which these bacteria penetrate the cells are not known. Bacterial outer membrane protein OmpX which is one of the substrates of protealysin is known to interact with EGF receptor and fibronectin. Therefore, in this work, changes in the localization of EGF receptors and fibronectin receptors  $\alpha 5$ -,  $\beta 1$ -integrins were monitored in the epithelial M-HeLa and A549 cells infected by bacteria *S. proteamaculans*. It turned out that in response to the infection  $\alpha 5$ - and  $\beta 1$ -integrin subunits accumulate on the surface of M-HeLa cells, and bacteria attach intensively at the sites of the  $\alpha 5$ -integrin localization. The  $\alpha 5$ -integrin was not detected in A549 cells, while the EGF receptor formed granules in the cytoplasm in response to invasion. A similar redistribution of EGF receptors occurs in response to EGF binding. These results indicate that invasion of *S. proteamaculans* into the epithelial cells of different origin occurs as a result of their interaction with different surface receptors.

**Keywords:** bacterial invasion, bacterial adhesion, protealysin, OmpX, EGF receptor,  $\beta 1$ -integrin,  $\alpha 5$ -integrin