New Adhesive Discovered on Very Sticky Bacterium

Ishii (l) and Hori

Microbes' ability to stick to everything from teeth to steel is both bane and boon, contributing to infection and contamination, but with uses in industry and agriculture. Using a new technique in electron microscopy, Katsutoshi Hori, of Nagoya Institute of Technology, Showa-ku, Nagoya, Japan, and colleagues at the Tokyo Institute of Technology have found a new cell surface appendage, which Hori likens to an anchor, on a highly adhesive species of bacteria. "The anchor tethers cell body to substrate at distances of several hundred nanometers," says Hori, while previously, bacterial adhesion had been thought to occur at distances of tens of nanometers. Since adhesion is the first step in biofilm formation, this could contribute to finding new ways to prevent it. "We are analyzing genes responsible for the anchor," says Hori. "We are also analyzing whether this mechanism is common to many adhesive strains of bacteria."

(S. Ishii, J. Koki, H. Unno, and K. Hori. 2004. Two morphological types of cell appendages on a strongly adhesive bacterium, *Acinetobacter* sp. strain Tol 5. Appl Environ. Microbiol. 70:5026-5029.)

Journal Highlights of ASM News, October 2004