

## Scanning microscopic Evaluation of interaction between *Helicobacter pylori* and AGS cells

*Sang-Hoon Lee, Hye-Jung Min, Mi-Jung Yeom<sup>\*</sup>, Eun-Kyung Park,  
Su-Jin Kim, Sun-Kuy Yoon, Chang-Hyun Park<sup>\*</sup>, and Chang-Sub Uhm*  
*Korea University College of Medicine*

*Helicobacter pylori* is a major etiological agent in several gastroduodenal disorders. The adhesion of *H. pylori* to gastric epithelial cells is supposed to be the initial step of *H. pylori* infection. Several patterns of adhesion was revealed by transmission electron microscopy, but scanning electron microscopical observation of the adhesion of *H. pylori* to the host cells are very rare. So we observed the early interaction with AGS cells to understand the characters of adhesion.

AGS cell line was purchased from ATCC and cultured on 35mm culture dish for 3 days using RPMI-1640 with 10% FBS and appropriate antibiotics. *H. pylori* (strain 49503) were cultured for 3 days in Mueller Hinton Agar with 10% FBS. The cultured *H. pylori* were diluted with RPMI-1640 (OD=1.0,  $\lambda=600\text{nm}$ ), and added onto the cultured AGS cells for 30 min, 1 hr, and 2 hrs. The infected cells were then, processed for scanning electron microscopy and observed with Hitachi S-4700 scanning electron microscope.

*H. pylori* were associated with many microprocesses of AGS cells. Several patterns were identified; (1) simple contact with microvilli or filopodia, (2) partial or complete wrapping of part of *H. pylori* by lamellipodia, (3) hooking of part of *H. pylori* by crossing-over filopodia, and (4) formation of pedestal at the tip of microprocess or fusion of *H. pylori* to AGS cells.

*H. pylori* interacts with AGS cells in a variety of ways. Pathophysiological roles of AGS cell microprocesses need to be studied.



**Figure.** Several patterns of interaction between *H. pylori* and AGS cell microprocesses ; (1) Simple contact with microvilli or filopodia, (2) Partial or complete wrapping of part of *H. pylori* by lamellipodia, (3) Hooking of part of *H. pylori* by crossing-over filopodia, and (4) Formation of pedestal at the tip of microprocess or fusion of *H. pylori* to AGS cells.