

Poster Presentation

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Crystal structure of JHP933 from Helicobacter pylori J99

S. Lee^{1,2}, J. Yoon¹, B. Lee², S. Suh^{1,3}

¹Seoul National University, Department of Chemistry, Seoul, Republic of Korea, ²Seoul National University, Research Institute of Pharmaceutical Sciences, Seoul, Republic of Korea, ³Seoul National University, Department of Biophysics and Chemical Biology, Seoul, Republic of Korea

Helicobacter pylori infection is the main cause of chronic gastritis, gastric mucosal atrophy, peptic ulcer, and some forms of gastric cancer. There has been considerable interest in strain-specific genes found outside of the *cag* pathogenicity island, especially genes in the plasticity regions of *H. pylori*. In *H. pylori* strain J99, the plasticity region contains 48 genes ranging from *jhp0914* to *jhp0961*. Because little is known about many of these genes in the plasticity region, further studies are necessary to elucidate their roles in *H. pylori*-associated pathogenesis. The JHP933 protein, encoded by the *jhp0933* gene in the plasticity region of *H. pylori* J99, is one of the prevalently expressed proteins in some gastritis and peptic ulcer patients. However, its structure and function remain unknown. Here, we have determined the crystal structure of JHP933, revealing the first two-domain architecture of DUF1814 family. The N-terminal domain has the nucleotidyltransferase fold and the C-terminal domain is a helix bundle. Structural similarity of JHP933 to known nucleotidyltransferases is very remote, suggesting that it may function as a novel nucleotidyltransferase. It is expected that this study will facilitate functional characterization of JHP933 to obtain an insight into its role in pathogenesis by the *H. pylori* plasticity region.

Keywords: *Helicobacter pylori*, JHP933, nucleotidyltransferase