Identifying new *Helicobacter pylori* HtrA targets in epithelial cells

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Abstract

Gastric cancer is one of the highest mortality cancer types, and the leading cause of gastric cancer is persistent *Helicobacter pylori* infection. *H. pylori* secretes the enzyme HtrA, which cleaves adhesion proteins like E-cadherin and allows *H. pylori* to cross the epithelium. Recently, researchers used proteomics to find novel targets of HtrA associated with *H. pylori*. They confirmed E-cadherin as a target and identified human desmoglein-2 (hDsg2), neuropilin-1, ephrin-B2, and semaphorin-4D as potential targets. hDsg2 is a component of the desmosome junctions, which play important roles in epithelial cell-to-cell adhesion. Given the importance of cell-to-cell adhesion to epithelial health, the researchers focused on hDsg2. In vitro tests confirmed that HtrA secreted by *H. pylori*, and not other host cell proteases, cleaved hDsg2. This study is the first to demonstrate that HtrA secreted by *H. pylori* directly breaks down hDsg2 and suggests that HtrA is a 'master key' that allows *H. pylori* to penetrate the epithelium by breaking down adhesion proteins. More research is needed to unpack the full role of HtrA in *H. pylori* pathogenesis, but HtrA represents a promising future target to treat *H. pylori* infection.