

“Helicobacter pylori: natural attachment-blocking antibodies and vaccine in protection against gastric disease and cancer”

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Most of the world-population carry *Helicobacter pylori*. Fortunately, the majority of individuals' experience little or no symptoms. We have found a protective mechanism where chronic mucosal inflammation can be reduced by broadly blocking antibodies. These antibodies that are present in most *H. pylori* carriers and reduce the attachment of *H. pylori* in the gastric mucosa. Of relevance for gastric disease, we found that patients with duodenal ulcer disease or gastric cancer have significantly lower levels of such blocking antibodies. To test for possibilities to elicit a protective immune response, we found; 1) that challenge infections with *H. pylori* induced blocking antibodies in human volunteers and in rhesus macaques; 2) vaccination induced blocking antibodies to the critically necessary protective level/titers in rhesus macaques; 3) vaccination in a mouse model induced blocking antibodies; 4) the vaccination reduced gastric mucosal inflammation and fully protected the mice from gastric cancer caused by *H. pylori*. Our new results suggest that the human immune response with blocking antibodies target an Achilles heel for the immune evasion strategy of *H. pylori*. The results show that the vaccination induced blocking antibodies reduce *H. pylori* adherence, reduce gastric inflammation, and reduce the risk for severe gastric disease and cancer.