

Chicken egg yolk antibody (IgY) as a functional food for controlling *Helicobacter pylori* infection

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H. pylori is a leading cause of gastritis, peptic ulcer, and gastric cancer in human. The bacterium expresses a high level of urease essential to its survival and pathogenesis. The importance of urease as a virulent factor is supported by the facts that urease-negative mutants fail to colonize gastric mucosa and that native or recombinant urease subunits protected animals from experimental challenge when used as a vaccine.

Passive immunization with antibodies has been an attractive way to provide protection against infections. The effect of egg yolk antibodies (IgY) has been assessed against various pathogens with good results. Recent studies show that IgY against *H. pylori* whole-cell lysates inhibited the growth of *H.pylori* and reduced the severity of gastritis in *H.pylori*-infected animals.

Considering urease as an essential virulent factor of *H.pylori*, we prepared IgY against the enzyme and examined its efficacy against *H.pylori* infection in both animal and human subjects. In a hairless mouse challenge test the egg yolk containing the anti-urease IgY significantly inhibited the growth of *H.pylori* in a dose-dependent manner. When used as a dietary component in foods, this egg yolk reduced UBT values in *H.pylori*-positive human volunteers. The application of anti-urease IgY in functional foods may be a promising approach for the management of *H.pylori*-associated diseases.