H. Pylori mice study abstract, Wang 2000

# Astaxanthin-rich algal meal and vitamin C inhibit Helicobacter pylori infection in BALB/cA mice.


- **Wang X**,
- **Willen R**,
- **Wadstrom T**.


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Department of Infectious Diseases and Medical Microbiology, University of Lund, Sweden.

Helicobacter pylori infection in humans is associated with chronic type B gastritis, peptic ulcer disease, and gastric carcinoma. A high intake of carotenoids and vitamin C has been proposed to prevent development of gastric malignancies. The aim of this study was to explore if the microalga Haematococcus pluvialis rich in the carotenoid astaxanthin and vitamin C can inhibit experimental H. pylori infection in a BALB/cA mouse model. Six-week-old BALB/cA mice were infected with the mouse-passaged H. pylori strain 119/95. At 2 weeks postinoculation mice were treated orally once daily for 10 days (i) with different doses of algal meal rich in astaxanthin (0.4, 2, and 4 g/kg of body weight, with the astaxanthin content at 10, 50, and 100 mg/kg, respectively), (ii) with a control meal (algal meal without astaxanthin, 4 g/kg), or (iii) with vitamin C (400 mg/kg). Five mice from each group were sacrificed 1 day after the cessation of treatment, and the other five animals were sacrificed 10 days after the cessation of treatment. Culture of H. pylori and determination of the inflammation score of the gastric mucosae were used to determine the outcome of the treatment. Mice treated with astaxanthin-rich algal meal or vitamin C showed significantly lower colonization levels and lower inflammation scores than those of untreated or control-meal-treated animals at 1 day and 10 days after the cessation of treatment. Lipid peroxidation was significantly decreased in mice treated with the astaxanthin-rich algal meal and vitamin C compared with that of animals not treated or treated with the control meal. Both astaxanthin-rich algal meal and vitamin C showed an inhibitory effect on H. pylori growth in vitro. In conclusion, antioxidants may be a new strategy for treating H. pylori infection in humans.