Public release date: 26-Oct-2007

Contact: You-De Chang
y.d.chang@wjgnet.com
0086-108-538-1892
World Journal of Gastroenterology

Helicobacter pylori inhibits intercellular communication of cultured gastric cells

The formation of a cancer is proven to be a multi-stage, multi-mechanism process by animal and human studies. As a definite carcinogen, the role of Helicobacter pylori (H pylori) in the formation of gastric cancer has been unclear. An article to be published on November 7 in the World Journal of Gastroenterology reveals a new mechanism explaining the promotional effect of H pylori on gastric cancer.

Gap junctions are fundamental structures necessary for cell differentiation, tissular physiology and normal functions of the organs of the body. The loss of functional gap junctions has been described in cancer cells and led to the hypothesis that such type of intercellular communication is involved in the carcinogenesis process. Up to now, a lot of data has been accumulated, confirming that gap junctional intercellular communication (GJIC) is frequently decreased or absent in cancers such as liver cancer, skin cancer, bladder cancer, breast cancer, lung cancer, and so on. However, the change of GJIC in H pylori-associated gastric cancer has been little exploited.

In this article, the researchers treated a human gastric cell line in vitro with intact bacteria and sonicated extracts of two H pylori strains with the virulence protein CagA. These were positive (CagA+) and negative (CagA-), respectively. After overnight treatment, the GJIC of the cells was measured by a technique named fluorescence redistribution after photobleaching (FRAP). The authors found that both CagA+ and CagA- H pylori strains could inhibit the GJIC of gastric cells when compared with a blank group. In addition, the inhibitory effect on the GJIC of gastric cells of CagA+ H pylori was more significant than that of CagA-.

The authors' conclusion emphasized the close relationship between H pylori and gastric cancer. The authors indicate that H pylori may make initiated cells of gastric cancer escape from the control of the neighboring ones by inhibiting GJIC. Consequently, H pylori, especially CagA+ strains, play an important role in the developmental process of gastric cancer.

The results of this article provide an innovative direction to develop new drugs for curing gastric cancer. That means drugs able to restore GJIC in cells with deficient gap junction may be used in the prevention and/or treatment of human gastric cancer.

###

Reference: Tao R, Hu MF, Lou JT, Lei YL. Effects of H pylori infection on gap-junctional intercellular communication and proliferation of gastric epithelial cells in vitro. World J Gastroenterol 2007; 13(41): 5497-5500
http://www.wjgnet.com/1007-9327/13/5497.asp

Correspondence to: Dr. Jin-Tu Lou, Central Laboratory, Children's Hospital, School of Medicine, Zhejiang University, 57 Zhugan Lane, Hangzhou 310003, Zhejiang Province, China.
rtao1211@yahoo.com.cn
Telephone: +86-571-87061007-2426 Fax: +86-571-87033296

About World Journal of Gastroenterology:

World Journal of Gastroenterology (World J Gastroenterol, WJG), a leading international journal in gastroenterology and hepatology, has an established reputation for publishing fi rst class research on esophageal cancer, gastric cancer, liver cancer, viral hepatitis, colorectal cancer, and H pylori infection, providing a forum for both clinicians and scientists, and has been indexed and abstracted in Current Contents/Clinical Medicine, Science Citation Index Expanded (also known as SciSearch) and Journal Citation Reports/Science Edition, Index Medicus, MEDLINE and PubMed, Chemical Abstracts, EMBASE/Excerpta Medica, Abstracts Journals, Nature Clinical Practice Gastroenterology and Hepatology, CAB Abstracts and Global Health. ISI JCR 2003-2000 IF: 3.318, 2.532, 1.445 and 0.993. WJG is a weekly journal published by The WJG Press. The publication date is 7th, 14th, 21st, and 28th every month. WJG is supported by The National Natural Science Foundation of China, No. 30224801 and No.30424812, which was founded with a name of China National Journal of New Gastroenterology on October 1, 1995, and renamed as WJG on January 25, 1998.

About The WJG Press

The WJG Press mainly publishes World Journal of Gastroenterology.