World Journal of Gastroenterology

Submit a Manuscript: http://www.wjgnet.com/esps/
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.3748/wjg.v4.iSuppl2.134

World J Gastroenterol 1998 October 15; 4(Suppl2): 134
ISSN 1007-9327 (print) ISSN 2219-2840 (online)

Frequent inactivation of *p16* and *p15* expression in human esophageal squamous cell carcinoma detected by RT-PCR

Lian-Hua Jiao, Li-Dong Wang, Eric-Poe Xing, Guang-Yu Yang Yang, Chung S Yang

Lian-Hua Jiao, Li-Dong Wang, Laboratory for Cancer Research, Henan Medical University, Zhengzhou 450052, Henan Province, China

Eric-Poe Xing, Guang-Yu Yang Yang, Chung S Yang, Laboratory for Cancer Research, College of Pharmacy, Rutgers University, Piscataway, NJ 08854, United States

Author contributions: All authors contributed equally to the work.Author contributions: All authors contributed equally to the work.

Supported by NIH grant CA65871 and National Natural Science Found ation of China 39670296 and 39770296.

Correspondence to: Dr. Lian-Hua Jiao, Laboratory for Cancer Research, Henan Medical University, Zhengzhou 450052, Henan Province, China

Received: July 16, 1998
Revised: August 15, 1998
Accepted: September 9, 1998
Published online: October 15, 1998

Abstract

AIM: The cyclin-dependent kinase inhibitors *p16* and *p15* play important roles in the regulation of the cell cycle, and have been found to have tumor suppressor roles in a variety types of cancer. It has been shown that *p16* aberrant methylation and *p15* homozygous deletions were frequently involved in human esophageal squamous cell carcinoma (ESCC). The present study was to examine the impact of such molecular alterations on the expression of these genes.

METHODS: The mRNA level of both genes was measured in 21 frozen ESCC specimens using semi-quantitative RT-PCR.

RESULTS: Nineteen cases were observed at a low basal level of *p16* expression (0.11 ± 0.07, expression units normalized by housekeeping glyceraldehyde-3-phosphate dehydrogenate gene as internal standard) in the normal epithelia adjacent to the cancer tissue. Among the 19 cases, only 5 showed a significant elevation of *p16* expression (> 3.2 folds) in the tumor, whereas the remaining 14 showed either a slight increased (1-2 folds), or decreased *p16* expression compared to normal, whereas 11 had only a slight increase (1-2 folds) or a decrease in tumor. In the 5 cases where *p15* was already activated (> 0.5) in the adjacent normal epithelium, 4 of them had similar or a slightly lower expression level, but one had a great decrease in *p15* expression (< 1% of the normal level). For intact *p16* and *p15* genes, which encode cell cycle regulators, significant increase of their expression is expected in the cancer cells as a response to accelerated cellular proliferation. However, in our samples, significant activation was only seen in 7 cases for *p16* gene and 9 cases for *p15* gene. Fourteen cases for *p16* (70%) and 12 cases (57%) for *p15* either maintained low basal levels or had decreased expression levels in tumor, respectively, which indicate suppression or inactivation of the genes. No correlation between *p16* and *p15* expression was observed in our frozen samples.

CONCLUSION: The present findings indicate that distinct and ind ependent mechanisms are involved in the inactivation of *p15* and *p16* genes in ESCC.

Key words: Esophageal neoplasms; Carcinoma, squamous cell; *p16* gene; *p15* gene; Gene expression

Jiao LH, Wang LD, Xing EP, Yang GYY, Yang CS. Frequent inactivation of *p16* and *p15* expression in human esophageal squamous cell carcinoma detected by RT-PCR. *World J Gastroenterol* 1998; 4(Suppl2): 134 Available from: URL: http://www.wjgnet.com/1007-9327/full/v4/iSuppl2/134.htm DOI: http://dx.doi.org/10.3748/wjg.v4.iSuppl2.134

E- Editor: Li RF

Published by **Baishideng Publishing Group Inc**
8226 Regency Drive, Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
http://www.wjgnet.com