



Expression profiling of CEACAM6 associated with the tumorigenesis and progression in gastric adenocarcinoma

X. Deng, P. Liu, Y. Zhao and Q. Wang

Department of Surgery,
Shengjing Hospital Affiliated to China Medical University,
Shenyang, Liaoning Province, China

Corresponding author: X. Deng
E-mail: xindengcn@163.com

Genet. Mol. Res. 13 (3): 7686-7697 (2014)

Received June 27, 2013

Accepted March 11, 2014

Published September 26, 2014

DOI <http://dx.doi.org/10.4238/2014.September.26.6>

ABSTRACT. Carcinoembryonic antigen-related cellular adhesion molecule 6 (CEACAM6) is a member of the immunoglobulin superfamily and has been recently reported to affect the neoplastic, metastatic, and invasive ability of malignant cells by regulating intracellular signaling pathways during tumorigenesis and progression. We investigated the expression and amplification of CEACAM6 in relation to the clinicopathological and biological significance of gastric adenocarcinoma. Expression of CEACAM6 mRNA in 75 primary gastric adenocarcinoma and 20 adjacent tissues compared to normal gastric mucosae were explored using real-time quantitative-polymerase chain reaction. Immunohistochemical assays were conducted to evaluate the expression and tissue distribution of CEACAM6 protein. Overexpression of CEACAM6 mRNA in both gastric adenocarcinoma (2.513 ± 0.869) and adjacent tissues (1.171 ± 0.428) was significantly higher than the relative expressions in non-neoplastic specimens (0.594 ± 0.513) ($P < 0.01$). CEACAM6 protein was present in 52 (69.33%) gastric adenocarcinomas, but

not in normal gastric tissues. Adenocarcinomas with elevated CEACAM6 expression were significantly associated with lymph node metastases and advanced stages. There were no relationships between CEACAM6 expression and tumor size, histological differentiation, or different subtypes, respectively. Moreover, higher expression of CEACAM6 was found to be correlated with short postoperative survival time of patients with gastric cancer. Amplification and upregulation of CEACAM6 expression was observed in human gastric adenocarcinomas, which may be correlated with the generation or transformation of malignant cells, tumor aggressive progression, and clinical outcome. CEACAM6 may be a valuable biomarker screening for gastric tumor and novel predictor for patients in advanced stages of gastric cancer.

Key words: CEACAM6; Tumorigenesis; Gastric adenocarcinoma; RQ-PCR; Molecular marker