

Down-Regulated Gene Expression of GKN1 and GKN2 as Diagnostic Markers for Gastric Cancer

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Abstract : Gastric cancer (GC) has high morbidity and fatality rate in various countries and is still one of the most frequent and deadly diseases. Novel mitogenic and motogenic Gastrokine1 (GKN1) and Gastrokine 2 (GKN2) genes that are highly expressed in the normal stomach epithelium and plays an important role in maintaining the integrity and homeostasis of stomach mucosal epithelial cells. Significant loss of copy number and mRNA transcript of GKN1 and GKN2 gene expression were frequently observed in all types of gastric cancer. In this study, 47 paired samples that were grouped according to the types of gastric cancer and the clinical characteristics of the patients, including gender and average of age were investigated with gene expression analysis and mutation screening by monetering RT-PCR, SSCP and nucleotide sequencing techniques. Both GKN1 and GKN2 genes were observed significantly reduced found by (Wilcoxon signed rank test; $p < 0.05$). As a result of gene screening, no mutation (no different genotype) was detected. It is considered that gene mutations are not the cause of inactivation of gastrokines. In conclusion, the mRNA expression level of GKN1 and GKN2 genes statistically was decreased regardless the gender, age or cancer type of patients. Reduced of gastrokine genes seems to occur at the initial steps of cancer development. In order to understand the investigation between gastric cancer and diagnostic biomarker; further analysis is necessary.

Keywords : gastric cancer, diagnostic biomarker, nucleotide sequencing, semi-quantitative RT-PCR

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