

Promoter Methylation of Dual-Specificity Phosphatase-6 Gene effect on Invasion and Metastasis of Nasopharyngeal Carcinoma

Abstract

Objective: The dual-specificity phosphatase-6 (DUSP-6) is a member of dual-specificity protein phosphatase (DUSP) family, it can make residues of threonine and tyrosine dephosphorylate. In recent years, it was found that DUSP-6 is correlated with tumour generation and progress. In this study we have detected the effect of DUSP-6 gene methylation on invasion and metastasis of nasopharyngeal carcinoma.

Methods: RT-PCR and methylation-specific PCR are used to detect mRNA expression and methylation state of DUSP-6 gene in nasopharyngeal carcinoma tissues and CNE2 cell line. The changes of mRNA expression and methylation state of DUSP-6 gene, proliferation and invasion of cells were detected after 5-aza- 2'-deoxycytidine (5-aza-cdR) treated CNE2 cell line.

Results: These results showed that DUSP-6 gene expression is related to its promoter methylation state, cervical lymph node metastasis is related to DUSP-6 gene promoter methylation state in patients with nasopharyngeal carcinoma, 5-aza-cdR can inhibit invasion of CNE2 cells, and make re-expression of DUSP-6 gene by promoter demethylation in CNE2 cells.

Conclusion: DUSP-6 gene promoter methylation state is possibly an important factor that effected invasion and metastasis of nasopharyngeal carcinoma. DUSP-6 gene may make a novel marker for prognostic evaluation in nasopharyngeal carcinoma.