



MAGEA9基因在肝癌中的表达及RNAi 沉默后对肝癌细胞生长和克隆形成的影响

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Expression of MAGEA9 in Hepatocellular Carcinoma and Its Effects on Hepatocarcinoma cell Growth and Colony Formation by RNA Interference

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摘要 目的

研究基因MAGEA9在肝癌中的表达, 以及被沉默后对肝癌细胞株Focus和PLC/PRF/5生长的影响。

方法

采用半定量RT-PCR方法检测MAGEA9基因在48例肝癌样本的癌和癌旁组织, 14种人正常组织和17株人肝癌细胞株中的表达差异; 同时观察沉默MAGEA9表达后肝癌细胞生长曲线和克隆形成能力的变化。

结果

与癌旁样本相比, MAGEA9基因在肝癌组织mRNA表达水平上调的比例为29%(14/48); 在正常人体组织中局限于睾丸、心脏、脾脏、肾脏组织中表达; 利用RNA干扰技术下调MAGEA9基因的表达后, Focus和PLC/PRF/5细胞生长受到明显的抑制; 同时, PLC/PRF/5细胞克隆形成能力明显减弱。

结论

MAGEA9基因在维持肝癌细胞的恶性表型中可能起到重要的作用, 因此它可能与肝癌发生发展有密切的关系, 深入研究MAGEA9在肝癌中的功能, 有可能为肝癌诊断发现新的指标或为肝癌治疗提供潜在的药物靶点。

关键词: 肝细胞癌 RNA干扰 CT基因 MAGEA9

Abstract: Objective

To study the expression of MAGEA9 gene in hepatocellular carcinoma (HCC) and the effect of silencing of MAGEA9 gene on the cell growth of Focus and PLC/PRF/5 this derived from liver cancer.

Methods

Semi-quantitative RT-PCR was performed to detect the expression of MAGEA9 in 48 pairs of HCCs compared with adjacent non-cancerous livers (non-HCC). We also evaluated the expression of MAGEA9 gene in 14 normal human tissues and 17 HCC-derived cell lines by RT-PCR. The cell growth curve was observed after silencing of MAGEA9 by siRNAs using CCK-8 reagent. Finally, we constructed the shRNA expression vector pSUPER-shRNA-M9 for colony formation assay.

Results

MAGEA9 was significantly up-regulated in 29% (14/48) HCC specimens at mRNA level compared with non-HCCs. MAGEA9 gene was specifically expressed in testis, heart, spleen and kidney. Interestingly, silencing of MAGEA9 gene in Focus and PLC/PRF/5 cells markedly inhibited cell growth with siRNA-M9 as compared with the control cells transfected by siRNA-NC. In addition, the colony formation efficiency was depressed by shRNA-M9.

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Conclusion

The expression of MAGEA9 gene may be important for the malignant growth of hepatocarcinoma cells. Moreover, it may play an important role in the hepatocarcinogenesis. In further study, it may be used as a new marker or a potential therapeutic target for HCC.

Key words: Hepatocellular carcinoma RNA interference CT gene MAGEA9

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