

The proliferation promoting effects of MAG-2 on human lung cancer cell PLA801

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摘要

Background and objective Both tumor proliferation and metastasis are multistep processes with many genes involved. A novel gene MAG-2, which may have close correlation with lung cancer metastasis, was identified in our lab through approach of suppression subtractive hybridization using lung cancer cell strains with same origin but different metastatic potential as models. The objective of our works presented here is to investigate the proliferation related effects of MAG-2 on human lung-giant-cell line PLA801, and to explore the underlying molecular mechanism. **Methods** Sense and anti-sense expressing vector of MAG-2 were constructed and transfected into PLA801C and D cell respectively and the change of expressing levels of target gene in stable transfected cell strains was assayed by RT-PCR. The alteration in terms of proliferation and cytoplasm Ca²⁺ of the stable transfected cell strains and vector controls were tested by the methods of MTT and Fluo-3-Am staining. The proteins levels of p53 and mRNA levels of PCNA of different cell strains were analyzed by Western blot and RT-PCR. **Results** The stable transfected cell strains of CMAG2+, DMAG2- and their vector controls Cvector and Dvector were obtained. The MAG-2 mRNA levels of CMAG2+ and DMPAG2- were 7 and 0.6 times higher or lower comparing those of vector controls. MAG-2 could increase the mRNA level of PCNA and down-regulated the p53 protein in PLA801C strain. In consistent with PCNA's mRNA elevating, the proportion of S-phase cell in the mass was also increased. But the significant difference was not observed on MTT assay between CMAG2+ and its control, the reason might be due to the mutated p53, which had strong proliferation promoting effects, was also down-regulated by MAG-2's over-expression in PLA801C, and the levels of cytoplasm calcium in CMAG2+ had 1.05 times more than that of vector control. As to the PLA801D strain, the decreased expression of MAG-2 result in lower level of cytoplasm calcium (0.64 time of control's) and the cell proliferation was also restrained by means of MTT assay. **Conclusion** MAG-2 has taken part in the proliferation regulation of lung cancer cells PLA801, and the mechanism of its proliferation-related function maybe lie in its effects on cytoplasmic free calcium.






关键词

Calcium signaling; Proliferation; Lung neoplasms


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
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