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MCPH1在肺组织的表达及其对人肺癌细胞株H1299 享到:

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Title: MCPH1 protein expression in lung tissues and effects of its over-expression on apoptosis in human lung cancer cell line

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关键词: [肺癌](#); [MCPH1](#); [免疫组化](#); [H1299](#); [细胞凋亡](#)

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摘要: 目的 探讨MCPH1基因在肺癌组织和正常组织的蛋白表达分布及其过表达后对人肺癌细胞系H1299凋亡的影响。 方法 临床收集20例肺癌组织和8例正常肺组织标本,免疫组化法检测MCPH1蛋白在肺组织的表达分布,真核表达质粒pcDNA3.1(-)/MCPH1和空白质粒pcDNA3.1瞬时转染肺癌细胞株H1299,并设立未处理组。转染质粒48 h后,采用Real-time PCR法检测细胞中MCPH1基因mRNA的转录表达情况;转染72 h后提取细胞总蛋白,Western blot检测细胞中MCPH1蛋白表达水平,流式细胞术检测细胞凋亡。 结果 MCPH1蛋白在肺癌组织中表达低于正常组织,而且MCPH1蛋白在癌组织中表现为核质低表达,在正常组织中为核质高表达;H1299转染pcDNA3.1(-)/MCPH1重组质粒后,可有效上调H1299细胞中MCPH1基因的mRNA和蛋白表达,处理组的细胞凋亡率(18.10±1.87)%较pcDNA3.1(-)转染组(5.76±1.85)%和未处理组(5.85±0.57)%显著增加($P<0.05$)。 结论 MCPH1在人肺癌组织表达降低,过表达之后可诱导肺癌细胞发生凋亡。

Abstract: **Objective** To evaluate the expression of protein microcephalin (MCPH1, also known as BRCT-repeat inhibitor of hTERT expression, BRIT1) in lung tissues and investigate the effects of its over-expression on the apoptosis of human lung cancer cell line H1299. **Methods** The protein expression of MCPH1 in 20

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tissue samples of lung cancer and 8 samples of normal lung tissues were studied by immuno-histochemistry. Eukaryotic expression plasmid pcDNA3.1(-)/ MCPH1 and blank plasmid pcDNA3.1 were transferred to lung cancer cells H1299, and the cells without transfection served as control. In 48 h after transfection, the cells were detected for transcription and expression of MCPH1 mRNA by real-time PCR. In 72 h after transfection, the total protein was extracted and the MCPH1 protein were determined by Western blotting. The apoptosis of H1299 cells was determined by flow cytometry. Results The expression of MCPH1 occurred mainly in the nucleus of normal tissues and was much lower in lung cancer tissues than in normal tissues. Both the expression of MCPH1 mRNA and protein were up-regulated effectively in H1299 cells after transfection with plasmid pcDNA3.1(-)/MCPH1. The apoptotic rate of H1299 cells transfected with plasmid pcDNA3.1(-)/MCPH1 was significantly higher than those transfected with the blank plasmid and those untransfected [(18.10±1.87)% vs (5.76±1.85)% and (5.85±0.57)%, $P<0.05$]. Conclusion MCPH1 protein is expressed in the cytoplasm of lung cancer tissues with lower expression. Over-expression of MCPH1 significantly induces the apoptosis of human lung cancer cells *in vitro*.

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