

论著

巨细胞病毒对人胚成纤维细胞 β 肌动蛋白mRNA及微丝的影响

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摘要 目的: 探讨人巨细胞病毒(CMV)对人胚成纤维细胞(HF)的感染及其对细胞肌动蛋白基因(β -actin) mRNA表达水平和微丝的影响。方法: 应用细胞形态学、RT-PCR半定量法、透射电镜观察CMV对HF细胞的感染及感染后细胞 β -actin mRNA和微丝的变化。结果: 经CMV作用后, HF细胞形态由梭形变粗、变圆甚至脱壁; HF细胞有CMV即刻早期抗原基因(IE)mRNA表达, 且随着CMV滴度的增加, IE mRNA相对表达量逐渐升高, 而 β -actin mRNA相对表达量逐渐减弱, 甘油醛3-磷酸脱氢酶基因(GAPDH) mRNA表达无明显变化。透射电镜下, 在HF细胞核、浆内见到大量CMV病毒颗粒; 并有细胞微丝断裂、减少, 排列紊乱。结论: CMV能感染HF细胞, 并在其中活化复制, 且致细胞 β -actin mRNA表达水平降低; 微丝形态、结构发生改变。

关键词 [巨细胞病毒](#); [成纤维细胞](#); [感染](#); [肌动蛋白类](#); [微丝](#)

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Effects of cytomegalovirus on expression of β -actin mRNA and microfilaments in human embryo fibroblasts

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Abstract

AIM: To investigate the infection of human embryo fibroblasts (HF) with CMV as well as the effect of CMV on β -actin and microfilaments. METHODS: RT-PCR assay was used to detect the mRNA expression of CMV immediate early (IE) gene, β -actin and GAPDH genes in HF cells infected with CMV. The morphological changes and microfilaments in infected cells were observed with transmission electron microscopy. RESULTS: The morphology of HF cells infected with CMV changed significantly from fusiform shape to round shape. The mRNA expression of CMV immediate early gene was detected. The increase in mRNA level of IE gene was parallel with the infected titer of CMV. However, the expression level of β -actin mRNA in HF cells infected with CMV was decreased compared with the uninfected cells, while the expression of GAPDH mRNA did not change. CMV particles were observed in the cells by electron microscope. Microfilaments were found ruptured and shortened after the infection of CMV. CONCLUSIONS: CMV was able to infect human embryo fibroblasts and replicated in the cells. Also the CMV infection affected the expression of β -actin mRNA and the microfilaments.

Key words [Cytomegalovirus](#); [Fibroblasts](#); [Infection](#); [Actins](#); [Microfilaments](#)

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