



中文标题 检索 药刊检索

大蒜新素对人巨细胞病毒即刻早期、早期和晚期基因转录水平的影响

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中文摘要:目的: 研究大蒜新素对人巨细胞病毒(HCMV)即刻早期(ie)、早期(e)和晚期(l)基因在转录水平的影响,探讨大蒜新素抗HCMV效应的作用机制。方法: 建立HCMV AD169株(MOI=2.5)感染细胞和大蒜新素($9.6 \text{ mg} \cdot \text{L}^{-1}$)处理感染细胞模型,并用相应剂量($2.3 \text{ mg} \cdot \text{L}^{-1}$)的更昔洛韦(GCV)作比较,用实时荧光定量PCR方法检测各组细胞感染后0.5、2、4、6、12、24 h病毒ul122、ul123、ul54、ul83 mRNA水平的动态变化。结果: 大蒜新素处理组ul122、ul123 mRNA的表达量始终明显低于感染对照组($P < 0.05$),而更昔洛韦处理组ul122 mRNA在0.5~6 h与病毒对照组无明显差异。大蒜新素对AD169 ul122、ul123 mRNA的抑制率在感染后24 h分别为75.2%、70.4%。2药物处理组ul54 mRNA表达量始终低于病毒对照组($P < 0.05$),大蒜新素和更昔洛韦对ul54 mRNA的抑制率在感染后24 h分别为4.5%、27.2%。在感染后6 h各组ul83 mRNA表达量明显增多,以病毒感染对照组变化最为明显。大蒜新素和更昔洛韦对ul83 mRNA的抑制率在感染后24 h分别为45.9%、26.2%。结论: 大蒜新素可显著抑制HCMV AD169毒株ie基因(ul122和ul123)的转录,导致其mRNA表达量明显降低,对ie基因(ul54)和基因(ul83)转录水平亦有所抑制,表明病毒ie基因可能是大蒜新素抗HCMV作用的主要环节。

中文关键词: 人巨细胞病毒 大蒜新素 实时定量PCR

Effects of allitridin on transcription of immediate-early,early and late genes of human cytomegalovirus *in vitro*

Abstract: Objective: The effect of allitridin on the transcription levels of immediate-early(ie),early(e) and late(l) genes of human cytomegalovirus (HCMV) was investigated in order to explore the mechanism of allitridin against HCMV. Method: Established the models of HCMV AD169 strain infected cells and AD169 strain infected cells treated with allitridin($9.6 \text{ mg} \cdot \text{L}^{-1}$),and they were compared with the appropriate dose($2.3 \text{ mg} \cdot \text{L}^{-1}$) of ganciclovir(GCV). All groups of cells were infected at 2.5 multiplicity of infection(MOI), using SYBR Green real-time PCR method to detect the dynamic change of ul122,ul123,ul54 and ul83 mRNA expression at 0.5,2,4,6,12,24 h post-infection. Result: The mRNA levels of ul122 and ul123 in AD169 infected cells treated with allitridin at all time points were markedly lower than those of AD169 infected controls($P < 0.05$), but there were no significant difference of ul122 gene in AD169 infected cells treated with GCV and AD169 infected cells at 0.5-6 h post-infection. The inhibitory rates of allitridin to AD169 ul122 and ul123 mRNA reached 75.2% and 70.4% at 24 h post-infection, respectively. The expression of ul54 mRNA in two drug-treatment groups at all time points were lower than those of AD169 infected cells group($P < 0.05$). The inhibitory rates of allitridin and GCV to AD169 ul54 mRNA were 45.4% and 27.2% at 24 h post-infection, respectively. The expression of HCMV ul83 mRNA in all groups rapidly increased after 6 h of infection, which is most obvious in AD169 infected cells group. The inhibitory rates of allitridin and GCV to AD169 ul83 mRNA were 45.9% and 26.2% at 24 h post-infection, respectively. Conclusion: Allitridin could effectively suppress the transcription of ie genes (ul122 and ul123) of HCMV AD169 strain, led the expression of mRNA significantly lowered. It was able to suppress the transcription of egene (ul54) and l gene (ul83) too, indicating that HCMV ie genes may be the key target of allitridin against HCMV.

keywords: HCMV allitridin real-time PCR

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