

论著

## 登革病毒促进人树突状细胞分泌TNF- $\alpha$ 、IL-6、IFN- $\gamma$ 的动态观察

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**摘要** 目的: 研究登革病毒(DV)对人树突状细胞(DC)产生细胞因子的影响。方法: 人外周新鲜血常规分离单核细胞, 经细胞因子GM-CSF、IL-4诱导培养DC, 形态学特征、细胞表型和淋巴细胞刺激能力鉴定。用登革病毒2型感染DC, 于作用后6、12、24、48、72 h分别收集上清液和细胞, 间接免疫荧光法检测细胞上病毒抗原表达, ELISA法检测登革病毒感染后细胞因子TNF- $\alpha$ 、IL-6、IFN- $\gamma$ 水平的动态变化。结果: 人外周血经GM-CSF、IL-4诱导培养1周即可得到典型树突状细胞。间接免疫荧光法证明感染的DC胞浆和胞膜上携带登革病毒抗原, DV感染使DC分泌TNF- $\alpha$ 、IL-6能力显著大于对照组( $P < 0.01$ ), 但其分泌IFN- $\gamma$ 的能力无明显改变。结论: 树突状细胞是登革病毒的靶细胞, 登革病毒感染可促进树突状细胞分泌TNF- $\alpha$ 、IL-6。树突状细胞可能参与机体抗登革病毒感染的免疫防御机制。

**关键词** [登革热病毒](#); [树突细胞](#); [细胞因子类](#)

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## A dynamic observation on the levels of TNF- $\alpha$ 、IL-6 and IFN- $\gamma$ produced by human dendritic cells infected with Dengue virus

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### Abstract

<FONT face=Verdana>AIM: To study the dynamic levels of tumor necrosis factor alpha (TNF- $\alpha$ ), interleukin-6 (IL-6) and gamma interferon (IFN- $\gamma$ ) produced by human dendritic cells infected with Dengue virus. METHODS: Monocytes isolated from healthy human peripheral blood were incubated in medium with GM-CSF and IL-4 for more than 7 days. DCs were then collected and identified by scanning electron microscope, immunohistochemistry and lymphocytes stimulatory ability. Human dendritic cells (DC) were infected with Dengue-2 virus (DV-2) in vitro, culture supernatants were collected in different time postinfection (6 h, 12 h, 24 h, 48 h and 72 h), DV antigen in human dendritic cells were demonstrated by an indirect immunofluorescent assay (IFA), production of TNF- $\alpha$ , IL-6 and IFN- $\gamma$  in the culture supernatants were evaluated by ELISA. RESULTS: After 7 days, typical dendritic cells could be obtained. Virus antigen were detected in infected DC by IFA. Dengue virus induces TNF- $\alpha$  and IL-6 secretion from DC and does not induce IFN secretion. CONCLUSION: Human dendritic cells are target of dengue virus infection. TNF- $\alpha$ , IL-6 production from DC are increased with DV infection. Dendritic cells may play an important role in DV pathogenicity and immunity.</FONT>

**Key words** [Dengue virus](#); [Dendritic cells](#); [Cytokines](#)

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