

论著

转化生长因子 β_1 抑制树突状细胞的成熟及下调TLR4的表达

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摘要 目的: 研究转化生长因子 β_1 (TGF- β_1) 对小鼠来源树突状细胞 (DC) 功能的影响。方法: 在培养体系中同时应用GM-CSF和TGF- β_1 培养的TGF β -DC, 用脂多糖 (LPS) 观察其对外源刺激的反应, 流式细胞仪 (FCM) 检测细胞表型, 应用BrdU ELISA法通过96 h混合淋巴细胞反应 (MLR) 检测其同种异基因刺激能力, ELISA法测IL-12 p70的分泌水平, 分别用半定量RT-PCR法和FCM检测Toll-like受体4 (TLR4) 表达。结果: TGF β -DC与常规培养的未成熟DC (imDC) 相比, CD80、CD86、I-Ab、CD40表达更低。LPS对TGF β -DC的促成熟作用反应不明显, 其表面共刺激分子升高的幅度不大, 异基因的刺激能力提高不显著, 且IL-12 p70的分泌下降。RT-PCR与FCM都显示TGF β -DC较imDC弱表达TLR4。结论: TGF β_1 能抑制DC共刺激分子的表达, TGF β -DC能抵抗LPS的促成熟作用, 并可能与其TLR4表达下降有关。

关键词 [树突细胞](#); [转化生长因子 \$\beta\$](#) ; [受体,Toll-like](#)

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TGF β_1 inhibits the maturation of dendritic cells and down-regulates TLR4 expression

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Abstract

AIM: To investigate the effects of transforming growth factor β_1 (TGF- β_1) on murine-derived dendritic cells (DC). METHODS: Murine bone marrow cells were cultured with GM-CSF and TGF- β_1 to develop TGF β -DC. Then they were stimulated by lipopolysaccharide (LPS). Their phenotypes were assessed by flow cytometry (FCM). The allogeneic stimulating capacity of DC was measured by mixed lymphocyte reaction (MLR) using BrdU ELISA method. IL-12 p70 protein was detected by ELISA and the expressions of Toll like receptor 4 (TLR4) on DCs were measured by semi-quantitative RT-PCR and FCM. RESULTS: Compared to immature DC (imDC) cultured with GM-CSF alone, the expressions of CD80, CD86, I-Ab and CD40 in TGF β -DC were lower. The TGF β -DC was resistant to maturation by LPS. Maturation resistance was evident from a failure to up-regulate CMs, to stimulate larger T cell proliferation and to increase secretion of IL-12 p70. Down-regulation of TLR4 expression on TGF β -DC was also found. CONCLUSION: TGF- β_1 inhibits the expression of co-stimulatory molecules on DC. It is resistant to maturation stimulus (LPS) and might be linked with TLR4 down-regulation.

Key words [Dendritic cells](#) [Transforming growth factor beta](#) [Receptors](#) [Toll-like](#)

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