

[1] 鄧孟洁, 史菲, 邱晨. 哮喘小鼠CD4⁺T细胞中microRNA-31和FOXP3 mRNA的表达及相互关系的研究[J]. 第三军医大学学报, 2012, 34(05): 419-422.

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哮喘小鼠CD4⁺T细胞中microRNA-31和FOXP3 mRNA的表达及相互关系的研究(PDF)

《第三军医大学学报》[ISSN:1000-5404/CN:51-1095/R] 卷: 34 期数: 2012年第05期 页码: 419-422 栏目: 论著 出版日期: 2012-03-15

Title: Expression and relationship of microRNA-31 and FOXP3 mRNAs in CD4⁺ T cells from a mouse asthma model

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关键词: 哮喘; CD4⁺T细胞; microRNA-31; 叉状头 / 翅膀状螺旋转录因子

Keywords: asthma; CD4⁺ T lymphocytes; microRNA-31; fork head / winged helix transcription factor

分类号: R562.25; R292-33; R392.2

DOI: -

文献标识码: A

摘要: 目的 初步探讨哮喘CD4⁺T细胞中microRNA-31和FOXP3的表达水平、两者的相关性及激素对它们的影响。 方法 以卵蛋白(OVA)致敏激发建立哮喘小鼠模型。将15只BALB/c小鼠分为正常对照组、OVA组和地塞米松组, ELISA检测小鼠支气管肺泡灌洗液(BALF)中IL-4和IFN- γ 水平; 实时荧光定量PCR检测小鼠脾脏CD4⁺T细胞的microRNA-31和FOXP3 mRNA的水平, 并分析二者之间的相关性。 结果 OVA组BALF中IL-4水平高于正常对照组[(228.29 \pm 66.18) pg/ml vs (66.63 \pm 17.33) pg/ml, $P < 0.05$], 地塞米松组BALF中IL-4水平与正常对照组或OVA组相比, 无统计学差异。各组间IFN- γ 无统计学差异。OVA组CD4⁺T细胞中FOXP3 mRNA为正常对照组的0.10倍 ($P < 0.05$); 地塞米松组CD4⁺T细胞中FOXP3 mRNA为OVA组的3.75倍 ($P < 0.05$); 正常对照组与地塞米松组之间FOXP3 mRNA无统计学差异。OVA组的microRNA-31为正常对照组4.79倍 ($P < 0.05$); 地塞米松组的microRNA-31为正常对照组4.85倍 ($P < 0.05$); OVA组microRNA-31水平和地塞米松组相比无统计学差异。microRNA-31和FOXP3 mRNA的Pearson相关系数为-0.609 ($P < 0.05$)。 结论 哮喘中microRNA-31和FOXP3 mRNA具有相关性。microRNA-31与地塞米松可能通过不同的途径调节CD4⁺T细胞中FOXP3 mRNA的表达。

Abstract: Objective To determine the expression levels of microRNA-31 and FOXP3 mRNAs in the spleen CD4⁺ T cells from asthma mice, and identify their relationship. Methods A total of 15 Balb/c mice were randomly divided into 3 groups, normal control group, model group, and dexamethasone treatment group. The murine asthma model was sensitized and challenged by ovalbumin (OVA). The inflammatory cytokines IL-4 and IFN- γ in the bronchoalveolar lavage fluid (BALF) in the 3 groups were measured by ELISA. Expression of microRNA-31 and FOXP3 mRNAs in spleen CD4⁺ T cells from the 3 groups were detected by quantitative real time-PCR assay. The relationship of the expression were also analyzed. Results The BALF level of IL-4 was increased in the model group (228.29 \pm 66.18 pg/ml) compared with the normal control group (66.63 \pm 17.33 pg/ml, $P < 0.05$), but no significant difference was found in its level between the dexamethasone treatment group (120.84 \pm 32.29) and normal control ($P > 0.05$). There was no significant difference in levels of IFN- γ among the three groups ($P > 0.05$). The expression of FOXP3 mRNA in the spleen CD4⁺ T cells in the model group was 0.10 times as great as in the normal control group ($P < 0.05$), and that in the dexamethasone treatment group was 3.75 times as great as in the model group ($P < 0.05$). However, there was no significant difference in FOXP3 mRNA between the normal control and the dexamethasone treatment group ($P > 0.05$). The expressions of microRNA-31 mRNA in the spleen CD4⁺ T lymphocytes in the model group were 4.79 times as great as in the normal control ($P < 0.05$), and that in the dexamethasone treatment group were 4.85 times as great as in the normal control ($P < 0.05$). There was no significant difference in microRNA-31 expression between the model group and the dexamethasone treatment group ($P > 0.05$). Pearson correlation coefficient between microRNA-31 and FOXP3 mRNA was -0.609 ($P < 0.05$). Conclusion There is a negative linear correlation between microRNA-31 and FOXP3 mRNA in asthma, and microRNA-31 and dexamethasone may affect the expression of FOXP3 mRNA via different pathways.

参考文献/REFERENCES

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备注/Memo: -

更新日期/Last Update: 2012-03-01

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下一篇/Next Article
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工具/TOOLS
引用本文的文章/References
下载 PDF/Download PDF(852KB)
立即打印本文/Print Now
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