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论著

干扰素-γ对感染日本血吸虫小鼠GTP酶表达的影响

季旻珺,蔡晓萍,苏川,吴海玮,李光富,王勇,朱翔,王新军,张兆松,吴观陵*

南京医科大学病原生物学系，南京 210029

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摘要

目的 探讨干扰素 γ(IFN-γ)对小鼠抗日本血吸虫感染保护力的机制。 方法 采用高密度寡核苷酸芯片(Affymetrix芯片)结合半定量逆转录 聚合酶链反应 (RT-PCR)方法 ,对BALB/c小鼠感染日本血吸虫过程中脾脏CD4+ T细胞进行基因转录水平分析 ,获得IFN γ诱导鸟苷三磷酸 (GTP)酶家族成员的变化图谱 ;并对其中IFN γ诱导GTP酶 (IGTP)进行分子克隆和序列测定。 结果 小鼠自然感染日本血吸虫过程中 ,IFN γ诱导GTP酶家族成员的基因表达呈现特征性变化 ,感染后 3wk ,基因表达上调或变化不显著 ;感染后 6wk至 13wk ,基因表达持续受到抑制。这种变化特征经RT PCR方法所证实。从小鼠脾脏可扩增出IGTP全长基因 ,但退火温度降低时出现IGTP基因转录缺失。 结论 小鼠急性感染日本血吸虫后 ,体内IFN-γ通路逐步受到抑制 ,针对血吸虫感染的依赖IFN-γ的抗感染保护力下降。

关键词 日本血吸虫 干扰素-γ 鸟苷三磷酸酶

分类号

Studies on the Characteristic of Interferon-γ Mediating Resistance in Mice Infected with *Schistosoma japonicum*

JI Min-jun,CAI Xiao-ping,SU Chuan,WU Hai-wei,LI Guang-fu,WANG Yong,ZHU Xiang,WANG Xin-jun,ZHANG Zhao-song,WU Guan-ling

Institute for Molecular Biology of Medicine,Nanjing Medical University,Nanjing 210029,China

Abstract

Objective To investigate the molecular characteristic of interferon-γ mediating protective immunity against schistosomiasis japonica in mice. MethodsCD4++ T cells were isolated from spleens of mice infected with *Schistosoma japonicum* at different time-points. The cDNA microarray technique combined with RT-PCR was used to explore IFN-γ inducible GTPase family gene expression profile of CD4++ T cell. IGTP, a representative IFN-γ inducible GTPase having vital anti-infection activity, was amplified from spleen of BALB/c mice using RT-PCR, then cloned into pGEM(r-T easy vector for sequencing. Results IFN-γ inducible GTPase family had the similar characteristic over the course of S.japonicum infection. The gene expression of these members were up-regulated or had little change at 3 wk post-infection, then down-modulated from 6 wk to 13 wk post-infection, which was also confirmed by RT-PCR. As for IGTP, two inserts were identified after sequencing. One was 142 bp shorter than another, but the fragment was lost due to low annealing temperature. Conclusion There is a dramatic inhibition of IFN-γ pathway and IFN-γ-dependent anti-infective immunity during the infection of *S.japonicum*.

Key words *Schistosoma japonicum* interferon-γ guanosine triphosphatase(GTPase)

DOI:

通讯作者 吴观陵 glwu@njmu.edu.cn

作者个人主页 季旻珺;蔡晓萍;苏川;吴海玮;李光富;王勇;朱翔;王新军;张兆松;吴观陵*