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论著

日本血吸虫Mr 23 000抗原与白细 胞介素-12多价DNA疫苗诱导小鼠保护性免疫的研究

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摘要

目的 研究能共同表达日本血吸虫Mr 23 000膜抗原（Sj23）与白细胞介素-12(IL-12)的多价DNA疫苗PV-IL12-Sj23诱导BALB/c小鼠免疫保护作用。 方法 在多价DNA疫苗PV-IL12-Sj23和PV-IL12的基础上，构建空白质粒PV和仅表达Sj23的质粒PV-Sj23。50只BALB/c小鼠分为5组，每组10只，分别注射多价DNA疫苗PV-IL12-Sj23、表达Sj23的质粒PV-Sj23、表达IL-12质粒PV-IL12、空白质粒PV和生理盐水，100 μg/只，免疫1次。4周后每只鼠攻击感染40±2条尾蚴，42 d后剖杀，计数成虫及肝内虫卵数。 结果 成功地构建了空白质粒PV和只表达Sj23的质粒PV-Sj23及多价DNA疫苗PV-IL12-Sj23。PV-IL12-Sj23组和PV-Sj23组分别获得了45.5%和27.2%的减虫率，两组比较差异有显著性（$P<0.05$），减卵率分别为58.4%和33.9%。 结论 多价DNA疫苗PV-IL12-Sj23可诱导BALB/c小鼠产生较显著的抗血吸虫免疫保护作用，且保护性效果比单价DNA疫苗PV-Sj23好。

关键词 日本血吸虫 膜抗原 白细胞介素-12 多价DNA疫苗 免疫保护

分类号

Protective immunity Induced by Multivalent DNA Vaccine of *Schistosoma japonicum* Mr23×103 Membrane Antigen and IL-12 in Mice

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Abstract

Objective To develop multivalent DNA vaccine PV-IL12-Sj23 which co-expresses Sj23 and cytokine IL-12, and investigate its protective efficacy in BALB/c mice against challenge infection. Methods On the basis of the reconstructed plasmid PV-IL12-Sj23 and plasmid PV-IL12, blank plasmid PV and plasmid PV-Sj23 only expressing Sj23 were constructed. Fifty BALB/c male mice were divided into five groups, which were immunized intramuscularly with multivalent DNA vaccine PV-IL12-Sj23, plasmid PV-Sj23 expressing Sj23, plasmid PV-IL12 expressing cytokine IL-12, blank plasmid PV and saline, respectively. Each mouse was immunized with 100 μg DNA only once. All the mice were challenged with 40 cercariae at week 4, killed and perfused for collection of worms at week10. The number of recovered worms and eggs in the liver were counted. Results Blank plasmid PV and plasmid PV-Sj23 expressing Sj23 were successfully constructed. The worm reduction rate in PV-IL12-Sj23 group and PV-Sj23 group was 45.5% and 27.2% ($P<0.05$) respectively. The number of eggs in liver tissue was reduced by 58.4% and 33.9% respectively. Conclusion Multivalent DNA vaccine PV-IL12-Sj23 can induce protective immunity against *Schistosoma japonicum* in BALB/c mice significantly, with a better protective efficacy than the monovalent DNA vaccine PV-Sj23.

Key words *Schistosoma japonicum* Membrane antigen IL-12 Multivalent DNA vaccine Immunoprotection

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