

论著

日本血吸虫SjC23-Hsp70 DNA 疫苗与IL-12对水牛保护性作用的研究

胡平成¹, 夏大^{1,2}, 崔虹艳¹, 张莘芳¹, 何永康³, 喻鑫玲³, 孙振球¹

1. 中南大学公共卫生学院流行病学与卫生统计学系, 长沙410078;
2. 湖南省益阳市卫生局, 湖南 益阳 413000;
3. 湖南省血吸虫病防治所, 湖南 岳阳414000

摘要: 目的: 研究日本血吸虫中国大陆株23 kD 膜蛋白-热休克蛋白(SjC23-Hsp70)DNA 疫苗联合佐剂白细胞介素12(IL-12) 质粒DNA 对水牛的免疫保护作用。方法: 将血吸虫病非流行区8~10 月龄健康水牛45 头随机分为A组(SjC23-Hsp70+IL-12)、B 组(SjC23+IL-12) 和C 组(pVAX+IL-12), 每组15 头。每头牛经肩部肌注免疫3 次, 每次间隔28 d。末次免疫后28 d, 每头牛感染日本血吸虫尾蚴1000 条。解剖前2 天及当天分别收集粪便1 次, 用定量法检测虫卵和毛蚴数。攻击感染后56 天解剖所有水牛, 经胸主动脉灌注法收集成虫, 计数成虫数, 检测每克肝组织虫卵数。结果: A、B 组与C 组相比, 分别获得45.70%和26.61%的减雌率, 44.51%和25.84%的减虫率, 41.10%和31.63%的减粪卵率, 48.11%和38.07%的减毛蚴率及43.39%和31.95%的减肝卵率。A 组的5 个率均比B 组高($P<0.05$)。结论: 用SjC23-Hsp70 DNA 疫苗和IL-12 联合免疫水牛可获得明显的免疫保护作用。

关键词: 日本血吸虫 23kD膜蛋白 热休克蛋白70 DNA疫苗 白细胞介素12 保护性作用

Protective effect of SjC23-Hsp70 DNA vaccine and interleukin-12 on Schistosoma japonicum infection in water buffalos

HU Pingcheng¹, XIA Da^{1,2}, CUI Hongyan¹, ZHANG Pingfang¹, HE Yongkang³, YU Xinling³, SUN Zhenqiu¹

1. Department of Epidemiology and Health Statistics, School of Public Health, Central South University, Changsha 410078;
2. Yiyang Health Bureau of Hunan Province, Yiyang Hunan 413000;
3. Hunan Institute of Schistosomiasis, Yueyang Hunan 414000, China

Abstract: Objective: To determine the immune-protective effect of Japan Schistosoma (Chinese mainland strain) 23 kD membrane protein-heat shock protein (SjC23-Hsp70) DNA vaccine plus adjuvant-induced interleukin-12 (IL-12) plasmid DNA on Schistosoma japonicum infection in water buffalos. Methods: Forty-five health water buffalos (8-10 months old) in non-endemic area of schistosomiasis were randomly assigned into group A (SjC23-Hsp70+IL-12, 300 μ g), group B (SjC23+IL-12, 300 μ g) and group C (pVAX+IL-12, 300 μ g), 15 in each group. Each buffalo was immunized by shoulder intramuscular injection for 3 times, at an interval of 28 days. Twenty-eight days after the last immunization, each buffalo was infected with 1000 Japan cercariae of Schistosoma. Fecal examinations were conducted 2 days and 1 day before the perfusion, and on the day of perfusion. The number of hatching miracidia and eggs per gram feces was recorded. Fifty-six days after the infection, the buffalos were sacrificed and perfused via the descending aorta. The recovered adult worms and eggs in the liver tissue were counted. Results: We compared group A and B with group C: the estrogen reduction rate was 45.7% and 26.61%; bug reduction rate was 44.51% and 25.84%; the fecal egg reduction rate was 41.1% and 31.63%; the miracidium reduction rate was 48.11% and 38.07%; and the liver egg reduction rate was 43.39% and 31.95%. The above rates in group A were higher than those in group B ($P<0.05$). Conclusion: SjC23-Hsp70 DNA vaccine combined with IL-12 may have a significant immunoprotective effect on buffalos.

Keywords: Japan Schistosoma 23 kD membrane protein heat shock protein 70 DNA vaccine interleukin-12 protective effect

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通讯作者: 喻鑫玲, Email: xinlingyy66@163.com

作者简介: 胡平成, 硕士, 副教授, 主要从事流行病学与卫生统计学研究。

作者Email: xinlingyy66@163.com

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