

论著

日本血吸虫SjCTPI-Hsp70 DNA疫苗与白细胞介素12对水牛的联合免疫保护作用研究

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摘要

目的 探讨中国大陆株日本血吸虫磷酸丙糖异构酶-热激蛋白(SjCTPI-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 实验采用双盲法,所用疫苗及制剂均在实验结束后解码。将购自非血吸虫病流行区45头8~10月龄健康水牛随机分为A组(SjCTPI-Hsp70+IL-12, 300 μg)、B组(SjCTPI+IL-12, 300 μg)和C组(空质粒pVAX+IL-12, 300 μg)等3组(每组15头),每头牛分别经肩部肌肉注射免疫3次,每次间隔28 d。末次免疫后28 d,每头牛经大腿内侧皮肤感染日本血吸虫尾蚴1 000条。解剖前2 d及当天分别收集粪便1次,用定量法计数虫卵和毛蚴。攻击感染后56 d解剖,用生理盐水经胸主动脉灌注法收集、计数成虫,检测每克肝组织虫卵数。结果 A、B组减虫率分别为51.2%和41.5% ($\chi^2=1.89, P>0.05$), 减雌虫率分别为48.9%和44.7% ($\chi^2=0.35, P>0.05$), 减粪卵率分别为52.1%和38.3% ($\chi^2=3.84, P<0.05$), 减毛蚴率为52.1%和33.2% ($\chi^2=7.30, P<0.01$)及减肝卵率为61.5%和42.0% ($\chi^2=7.61, P<0.01$)。结论 用SjCTPI?Hsp70+IL-12免疫水牛可获得一定的免疫保护性作用。

关键词 [日本血吸虫](#) [磷酸丙糖异构酶-热激蛋白](#) [DNA疫苗](#) [白细胞介素12](#) [联合免疫](#) [水牛](#) [免疫保护](#)

分类号

Protective Effects of Co-Immunization with SjCTPI-Hsp70 and Interleukin-12 DNA Vaccines against *Schistosoma japonicum*

Challenge Infection in Water Buffalo

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Abstract

Objective To induce protective effect of co-immunization with *S. japonicum* triose-phosphate isomerase fused to heat shock protein 70 (SjCTPI-Hsp70) plasmid and interleukin-12 (IL-12) DNA vaccines against *Schistosoma japonicum* (Chinese strain) infection in water buffalo. Methods Forty-five 8-10 months-old water buffalo from a non-endemic area were divided into three treatment groups each with fifteen buffalo: experimental group A (SjCTPI-Hsp70+IL-12, 300 μg), experimental group B (SjCTPI+IL-12, 300 μg), and control group C (pVAX+IL-12, 300 μg). All buffalo were immunized with a series of 3 intramuscular injections administered once every four weeks. Twenty-eight days post-vaccination, water buffalo were percutaneously challenged with 1 000 *S. japonicum* cercariae. Fecal examinations were conducted two days prior, one day prior, and on perfusion day, and the number of hatching miracidia and eggs per gram feces were recorded. Fifty-six days post-infection, the buffalo were sacrificed and perfused via the descending aorta. The recovered adult worms and eggs in liver tissue were counted. Results Groups A and B showed a worm reduction rate of 51.2% and 41.5% ($\chi^2=1.89, P>0.05$), female worm reduction of 48.9% and 44.7% ($\chi^2=0.35, P>0.05$), fecal egg reduction of 52.1% and 38.3% ($\chi^2=3.84, P<0.05$), a reduction of miracidia-hatching rate by 52.1% and 33.2% ($\chi^2=7.30, P<0.01$), and liver egg reduction of 61.5% and 42.0% ($\chi^2=7.61, P<0.01$), respectively. Conclusion Co-immunization with SjCTPI-Hsp70 and IL-12 DNA vaccines induces protective immunity against *S. japonicum* in water buffalo.

Key words [Schistosoma japonicum](#) [SjCTPI-Hsp70](#) [DNA vaccine](#) [IL-12](#) [Co-immunization](#) [Water buffalo](#) [Protective immunity](#)

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