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Functions of the *Vasa* gene in *Schistosoma japonicum* as assessed by RNA interference

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Abstract

Vasa, an enzyme belonging to the helicase family, contributes to the regulation of reproductive system development in many species. Thus, we hypothesized that the *Vasa3* gene may function in the reproductive system of the parasite *Schistosoma japonicum (S. japonicum)*, which is a major causative agent of schistosomiasis. It is a severe disease globally affecting humans and animals. To test this hypothesis, we firstly conducted whole mount *in situ* hybridization analyses and found that the *S. japonicum Vasa3* (*SjVasa3*) gene was expressed mainly in the reproductive organs. We then explored the reproductive functions of *Vasa3* in *S. japonicum* using RNA interference (RNAi) techniques. Coupled schistosomes collected from mice 28 days post infection (dpi) were transfected three times with *SjVasa3*-specific small interfering RNA (siRNA) and cultured *in vitro* for up to 10 days. As measured by quantitative PCR (qPCR) and Western blot analysis, levels of