Schistosoma mansoni cercarial elastase (SmCE): differences in immunogenic properties of native and recombinant forms

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The *Schistosoma mansoni* cercarial elastase (SmCE) has previously been shown to be poorly immunogenic in mice. However, a minority of mice that were able to produce antibodies against SmCE after immunization with crude preparations containing the enzyme were partially protected against challenge infections of *S. mansoni*. In the present study, we show that in contrast to the poor immunogenicity of the enzymatically-active native form of SmCE, immunization of CBA/CA mice with purified native SmCE or a recombinant SmCE fused to recombinant *S. japonicum* glutathione S-transferase (rSmCE-SjGST) adsorbed onto aluminum hydroxide (alum) adjuvant (both are enzymatically-inactive), induced specific anti-SmCE IgG (mainly of the IgG1 subclass) in all mice within two weeks of the second immunization. Mice immunized with the rSmCE-jGST on alum showed 35% and ~50% reductions, respectively in mean worm burden and tissue eggs counts when compared to adjuvant alone-injected controls. These results suggest that SmCE may have potential as a vaccine candidate against schistosomiasis and that inactive forms of the antigen could be used to obtain the optimum immunogenic and protective effects.