

Vaccine testing of recombinant versions of the protective activation-associated secreted proteins from the bovine abomasal parasite *Ostertagia ostertagi*

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In previous vaccination experiments a sub-fraction from the protective *Ostertagia ostertagi* ES-thiol fraction, essentially consisting of 'activation-associated secreted proteins' (ASPs), was used successfully to immunise calves against an *Ostertagia* challenge infection. The aim of this research project was to express the ASP1 and ASP2 antigens in both a modified *Pichia pastoris* and an insect cell expression system and compare the protective capacities of the recombinants with their native counterparts in a vaccination trial. Both the *P. pastoris* and insect cell expression systems expressed soluble dimeric forms of the ASP1 and ASP2 antigens. The presence of cross reactive antibodies against the native molecules in animals vaccinated with the recombinants suggested that the recombinant ASPs displayed similar immunogenic epitopes as present on the native molecules. Nevertheless, none of the recombinants was able to induce a significant degree of protection in calves. Analysis of the abomasal antibody levels showed a marked increase in antigen specific IgG1 levels in the protected animals from the native ASP group compared to all other groups, indicating a possible difference in antigen processing or different post translational modifications between the native and recombinant antigens.