

## Cross-Reactivity of Anti-*Eimeria* Chicken Monoclonal Antibodies with *Cryptosporidium* Parasites

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Coccidia are protozoa belonging to the phylum Apicomplexa. After initial infection with Coccidia, hosts acquire immunity to reinfection and much efforts is currently underway to identify potential vaccine antigens capable of inducing protective host immune response. In order to identify potential receptor molecules of *Eimeria* which are involved in host cell invasion, several chicken monoclonal antibodies (mAbs) against *E. acervulina* (EA) were developed. One of these mAbs, 6D-12-G10, identified the conoid antigen and significantly inhibited the sporozoite invasion of CD8 positive T lymphocytes *in vitro*. Furthermore, this mAb also showed cross reactivity with tachyzoites from closely related coccidian parasites including *Neospora* and *Toxoplasma*. The species-specificity and cross-reactivity of other mAbs were determined using the

sporozoites of seven different avian *Eimeria* species including EA, *E. brunetti*, *E. maxima*, *E. mitis*, *E. necatrix*, *E. praecox* and *E. tenella*. The mAb 8E-1 recognized a common antigenic determinant present on all *Eimeria* species whereas the mAbs HE-4, 8D-2 and 5D-11 recognized interspecies-specific epitopes. The mAb 8C-3 identified a species-specific epitope.

In this study, cross-reactivity of these chicken mAbs, 6D-12-G10, 8E-1, HE-4, 8D-2, 5D-11 and 8C-3 with *Cryptosporidium muris* was studied using confocal laser scanning microscopy. These mAbs stained the apical complex of *Cryptosporidium muris* sporozoites. These results indicates that these mAbs identify conserved epitope which represent on the apical complex of the apicomplexan parasites.