

## ***Rhipicephalus microplus* embryo proteins as a target for tick vaccine**

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*Rhipicephalus microplus* is one of the most widely distributed ticks in the world and its most common host is the domestic bovine. Control of the parasite is mainly based on the use of chemical products, which are composed by a few drugs. These products induce the selection of acaricide-resistant ticks and pollution in the environment. A novel potential approach consists in controlling the parasite using anti-tick vaccines. The characterization of the physiological function of tick molecules can help the development of new vaccines. Our group has previously characterized the capacity of various tick proteins as an inducer of a protective immune response. Our preliminary vaccination studies with native and recombinant egg-yolk aspartic endopeptidase (BYC), with a native cysteine endopeptidase (VTDCE) and recombinant glutathione S-transferase (GST-Bm) demonstrated immunogenicity and antigenicity of these proteins in bovines. Also, cattle immunized with these proteins showed a partially protective immune response against *R. microplus* infestation that was mostly due to an increase in the number of sterile eggs and reduction in the number of fully engorged ticks. These data support these proteins as candidate antigens to compose an anti-tick vaccine.

Additionally, our research is also focused on the identification of analogous proteins present in more than one tick species for the development of a broad-spectrum tick vaccine reactive with more than one tick species. The immunizations with these proteins could overcome the problem confronted by many countries where animals are parasitized by more than one tick species.

Key words: Ruminant; Ectoparasites; vaccine

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