RESUMO - PROTOZOOLOGIA E PATÓGENOS TRANSMITIDOS POR VETORES

EVALUATION OF PROTECTION AGAINST TOXOPLASMA GONDII FORMATION TISSUE CYSTS IN BRAIN MICE VACCINATED WITH DNA VACCINE (ROP18 AND SAG1)

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Toxoplasma gondii is a protozoan that causes subclinical infection, as well as spontaneous abortions in some animal species and humans. Once the

alternatives to control toxoplasmosis is a development of vaccines. This study aimed to evaluate the humoral immune response and protection against tissue cysts in mice immunized with DNA vaccines with ROP18 and SAG1. The proteins were cloned, and transfections were performed in VERO cells to test cell transformation, which was observed by Polymerase Chain Reaction using cell lysate, protein, and vector primers. Mice were divided into 4 groups with nine each group (G1 pcDNASAG1, G2 pcDNAROP18, G3 pcDNA, and G4 pdDNASAG1+pcDNAROP18). The mice received 35 µg of plasmids at each dose performed between days 0, 21, and 42 via the intramuscular route, and the challenge was performed on day 87 with 25 brain cysts of the ME49 strain of T. gondii given orally. The animals were euthanized on day 140, and their brains were collected for subsequent brain cyst counting. The survival rate between 44% in group vaccinated with both protein and 88% in group vaccinated with SAG1 mice. The lowest survival rate was observed in the group vaccinated with both proteins. Regarding the quantification of brain cysts, the animals in the vaccinated groups showed a statistically significant decrease in cyst counts compared to the control group, particularly in the group vaccinated with the SAG1 protein ($p < 0.05$). Therefore, we concluded that our proteins offer partial protection against T. gondii infection and could be considered good vaccine candidates.

Palavras-chave: dna vectors; transfection; vero cell; proteins.