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SUMMARY OF THESIS

GALISTEO Jr., Andrés Jimenez - ***Toxoplasma gondii* vs radiação ionizante: imunidade humoral e celular em baço e intestino de camundongos isogênicos imunizados com taquizoítos irradiados por cobalto^{60}.** São Paulo, 2008. (Tese de Doutoramento - Instituto de Pesquisas Energéticas e Nucleares/USP).

Toxoplasma gondii VS IONIZING RADIATION: CELL AND HUMORAL IMMUNITY IN SPLEEN AND GUT OF ISOGENIC MICE IMMUNIZED WITH ^{60}CO IRRADIATED TACHYZOITES

We are developing a vaccine for toxoplasmosis, using ionizing radiation as a tool. Here we analyzed the production of systemic and intestinal immunity, with protection studies, in several strains of inbred mice, by oral or parenteral route, using 255 Gy irradiated tachyzoites of *T. gondii* RH strain, with challenge with cysts of ME-49 strain. C57Bl/6j, BALB/c and C57Bl/6j IFN-$\gamma^{-/-}$ mice were immunized with 10^7 irradiated tachyzoites, by parenteral or oral route. Those preparations, both by parenteral or oral routes, induced the production of specific IgG, mainly of the IgG2b subclass, and IgA immunoglobulins in serum, as determined by ELISA. IgM production was negligible. Parenteral immunized mice showed higher IgG avidity maturation, as compared to oral immunized mice. Fecal excretion of IgG, IgA and IgM was detected in stools of immunized animals, more intense in oral immunized mice. In cellular immunity studies, induced by antigen, with detection of cytokine production by quantitative real-time PCR, there are a great production of IFN-γ by spleen cells, with lower levels in Peyer patches cells, where there are a greater IL-2 production. Challenge studies in immunized mice demonstrated protection to infection in all used schedules, greater in BALB/c mice. C57Bl/6j IFN-$\gamma^{-/-}$ mice, when immunized, showed no signs of disease and produced similar or greater levels of antibodies than wild type mice. They also excreted S-IgA and S-IgM in stools, but with low numbers of brain cysts in parenteral immunized mice, despite similar mortality. Our data points to a fair possibility of use of those irradiated parasites as an oral vaccine, devised to use for veterinary or wild felines vaccination, reducing the production of oocysts by those hosts and interrupting the chain transmission of human toxoplasmosis.

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