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Determination of Parasitic Load in Different Tissues of Murine Toxoplasmosis after Immunization by Excretory-Secretory Antigens using Real Time QPCR

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Abstract : Background: Excretory-secretory antigens (ESAs) of Toxoplasma gondii are one of the candidates for immunization against toxoplasmosis. For evaluation of immunization, we determined the kinetics of the distribution of Toxoplasma and parasite load in different tissues of mice immunized by ESAs. Methods: In this experimental study, 36 mice in case (n= 18) and control (n= 18) groups were immunized with ESAs and PBS, respectively. After 2 weeks, mice were challenged intraperitoneally with Toxoplasma virulent RH strain. Blood and different tissues (brain, spleen, liver, heart, kidney, and muscle) were collected daily after challenge (1, 2, 3 and last day before death). Parasite load was calculated using Real time QPCR targeted at the B1 gene. Results: ESAs as vaccine in different tissues showed various effects. However, infected mice which received the vaccine in comparison with control group, displayed a drastically decreasing in parasite burden, in their blood and tissues (P= 0.000). Conclusion: These results indicated that ESAs with reduction of parasite load in different tissues of host could be evaluable candidate for the development of immunization strategies against toxoplasmosis.

Keywords : parasitic load, murine toxoplasmosis, immunization, excretory-secretory antigens, real time QPCR
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