HETEROLOGOUS PRODUCTION OF DENSE GRANULE GRA7 ANTIGEN OF *TOXOPLASMA GONDII* IN *ESCHERICHIA COLI*

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Abstract. Infection with *Toxoplasma gondii* causes serious health problems in congenitally-infected and immunocompromised individuals. Numerous studies have shown usefulness of dense granule antigens of *T. gondii* in serodiagnosis of the infection and induction of protective immunity. This study describes cloning, expression, purification and antigenicity evaluation of recombinant GRA7 protein (rGRA7). DNA encoding GRA7, amino acids 18 to 236, was obtained from *Toxoplasma gondii* RH strain by polymerase chain reaction amplification and cloned in prokaryotic expression plasmid pET-28b(+). Sequence analysis showed 97% similarity between GRA7 gene fragment and published sequence of *gra7*. Recombinant protein was expressed in *Escherichia coli* and purified in a single step by immobilized metal ion affinity chromatography. Antigenicity of the protein was evaluated in Western blot analysis showing human sera from acute *T. gondii* infection strongly reacted with rGRA7 while sera from chronic infection weakly recognized the protein. Negative sera failed to react with rGRA7. The antigenic rGRA7 might be used, in combination with other *T. gondii* antigen, to develop more efficacious diagnostic tests and/or in vaccine formulations.

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