

## ***Toxoplasma gondii*: cloning, sequencing, expression, and antigenic characterization of ROP2, GRA5 and GRA7**

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**ABSTRACT.** *Toxoplasma gondii* is an intracellular obligate protozoan, which infects humans and warm-blooded animals. The aim of the present study was to clone the *rop2*, *gra5* and *gra7* genes from *T. gondii* RH strain and to produce recombinant proteins. The *rop2*, *gra5* and *gra7* gene fragments produced by polymerase chain reaction were cloned into the pET102/D-TOPO<sup>®</sup> vector which contains thioredoxin and polyhistidine tags at the C- and N-ends, respectively, and is expressed in *Escherichia coli* BL21(DE-3). The expression fusion proteins were found almost entirely in the insoluble form in the cell lysate. These recombinant proteins were purified with an Ni-NTA column. Concentrations of the recombinant antigens produced in the *E. coli* BL21-star ranged from 300 to 500 µg/mL growth media, which was used to immunize rabbits. We observed an identity ranging from 96 to 97% when nucleotide sequences were compared to GenBank database sequences. Immunocharacterization of proteins was made by indirect immunofluorescence assay. These

proteins will be used for serodiagnosis and vaccination.

**Key words:** *Toxoplasma gondii*; ROP2; GRA5; GRA7;  
Cloning; Expression; Antigenic characterization