CLONING AND EXPRESSION OF *TOXOPLASMA GONDII* DENSE GRANULE ANTIGEN 2 (*GRA2*) GENE BY *PICHIA PASTORIS*

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Abstract. Detection of *Toxoplasma gondii* infection is essential in pregnant women and immunosuppressed patients. Numerous studies have shown that the recombinant production of several *Toxoplasma* antigens, including dense granule antigens (GRAs) has high potential as diagnostic reagents. In the present study, we produced GRA2 using *Pichia pastoris* system. RNA of *T. gondii* RH strain tachyzoite was used as a template to produce cDNA clones of full-length *GRA2* via reverse transcriptase PCR. Amplicons were inserted into pPICZα A and the recombinant plasmid transformed into *P. pastoris*, X-33 strain. The expressed recombinant protein was identified by SDS-PAGE and Western blotting. A recombinant protein of ~28 kDa was produced, which could be detected by toxoplasmosis positive human sera indicating that the recombinant protein retained its antigenicity. The present study indicates that *P. pastoris*-expressed *GRA2* should be useful for detection of *Toxoplasma* infection.

Keywords: *Toxoplasma gondii*, *GRA2*, expression, Western blot

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