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Sub cloning of the encoding gene of Toxoplasma gondii GRA7 protein in expression plasmid

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Toxoplasma gondii is an intracellular obligate protozoan parasite, which infects humans and all warm-blooded animals all over the world. Dense granules are one of the specialized secretory organelles of *T. gondii*. The dense granule proteins (GRA) are believed to play an important role in intracellular survival and the nutrient/waist exchange mechanism with the host cell. The aim of the present study was to subcloning of the GRA7 protein encoding gene of *T. gondii* tachyzoites in an expression vector and its protein expression in the laboratory. The inserted plasmid containing GRA7 gene was extracted from TOP10 bacteria and digested with the BamH1 enzyme. The isolated gene was inserted into the pGEX plasmid. The recombinant plasmid was transformed into BL21. PCR and sequencing were used for verification of the cloning. The recombinant plasmid was induced by IPTG to express the fusion protein, which was identified by SDS-PAGE and Western blotting using the positive sera. Result of the PCR electrophoresis has shown the propagation of 749 bp insert. Comparison of our confirmed sequence using the Basic Local Alignment Search Tool (BLAST) has shown significant similarity with those available in gene bank. The gene expression was confirmed by performing SDS-PAGE on the product of lysed induced cells. At finally the ability of expressed protein in detaching of particular antibodies against the Toxoplasma was proved positively with western blotting.

Biography

Moin-Vaziri V has completed his PhD (Medical entomology) at the age of 30 years from Tehran University of medical sciences, Iran. She is Assistant Professor in Shahid Beheshti University of Medical sciences now. She has published more than 14 papers in national and international journals and trained on molecular entomology and Phlebovirus detection in France and Bioinformatic in Thailand.

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