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Heterologous expression of β -ketoacyl ACP synthase 1 of *Salmonella Typhi* in *Escherichia coli*

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Salmonella enterica serovar Typhi is the gram-negative and rod-shaped bacteria. This human-specific pathogen causes typhoid fever in humans, a severe infection of the reticulo endothelial system. New antibiotics inhibit this bacteria from infecting humans are urgently needed in order to ensure effective management of typhoid fever. In the drug discovery studies, determination of 3D protein structure is prerequisite. Highly pure protein was needed for protein structure determination. β -ketoacyl-ACP synthase I or KAS I is one of the essential genes in the *Salmonella Typhi* which play pivotal role in the fatty acid synthesis. KAS I has potential as drug targeted protein. This study will report on the cloning and overexpression of KAS I. KAS I was amplified from the genome of *Salmonella Typhi*. Polymerase Chain Reaction (PCR) using designated KASI primer. PCR was managed to amplify 1215 bp nucleotide product. The PCR product was cloned into the expression vector and transform into expression host cell *Escherichia coli* BL21. The recombinant was over-expressed by induction with isopropyl β -D-thiogalactoside (IPTG) to produce high yields of over-expressed protein. Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) revealed a molecular mass of purified protein is 47 kDa. Purified protein will be used for protein crystallization screening analysis.

Biography

Hasni Arsad has completed his PhD in 2010. His current position is a senior lecturer at Integrative Medicine Cluster, Advanced Medical and Dental Institute (AMDI), Universiti Sains Malaysia (USM). He is the coordinator for Bioinformatic dan Biostatistic Unit, AMDI, USM. Receiving several research grants related to cancer-herb, proteomic and bioinformatics studies.

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