EXPLORATION OF HYPOTHETICAL METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* DIHYDROXYACETONE KINASE

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ABSTRACT

Methicillin/multiple-resistant *Staphylococcus aureus* (MRSA) is a highly dangerous pathogen often found in clinical and hospital settings and causes skin infections in humans. Its resistance to numerous antibiotics makes it an important subject of research. Previous *in silico* research identified dihydroxyacetone kinase (DAK) as being essential to pathogen survival and absent in the human genome, making it a suitable drug target for antibiotics. According to sequence BLASP result, MRSA DAK contains two domains--KL and M. We report the cloning, expression, and characterization of MRSA DAK. Cloning of DAK-M was done with use of pRSET A plasmid at the restriction sites BamH1 and KPN1 respectively. Cloning was confirmed by restriction analysis and diagnostic PCR. Recombinant pRSET A/DAK-M was transformed into *E. coli* BL21(DE3)pLysS for protein expression. Purification of HPr and EI along with cloning of DAK-KL is underway.