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(57) Abstract :
Possible drugs against methicillin-resistant Staphylococcus aureus (MRSA) from leaf extract of Butea monosperma (Lam.) Taub ABSTRACT Multi-drug resistance in microorganisms is a serious global health issue. The resistance of drug in bacteria is dramatically rising in the current pandemic situation due to the overuse of antibiotics. Among various drug resistance bacteria, methicillin-resistant Staphylococcus aureus (MRSA) is very harmful and threat to the public health. The present study reports some possible drug candidates from Butea monosperma (Lam.) Taub against MRSA. Preliminary, medicinal plant extract have been used for the antimicrobial activity against MRSA. After positive observation bioactive compounds of the plant extract have been analysed using GC-MS. The bioactive compounds from plant are used as ligand for the interaction with an important target protein (STK) of MRSA with the help of molecular docking by Autodock program. Based on docking of ligand and protein; binding energy, hydrogen bonds, involvement of amino acids have been recorded. The result significantly confirms that some biomolecules of B. monosperma found as drug, as they qualify the necessary standard like gastrointestinal absorption (HIA) and brain penetration (BBB) using Swiss ADME predictor. These compounds are (1) N-[5-(3-Hydroxy-2-methylpropenyl)-1,3,4,5-tetrahydrobenzo[cd]indol-3-yl]-N-methylacetamide; (2) 5-Methoxy-3,7-dihydroxyflavanone; (3) Stannane, tetraethyl- and (4) Dibutyl phthalate. The study concluded that the leaf extract of B. monosperma contains a number of bioactive compounds that show anti-microbial activity against MRSA, studied compounds interact with cell wall synthesising protein of MRSA and these are perfectly noted as drug which further need to investigate by pharmaceutics for development of medicine for society.

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