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Bioactive Fractions of Curcuma angustifolia Rhizomes as Natural Antimicrobial and Anti-Biofilm Agents.

Curcuma angustifolia Roxb. rhizomes were subjected to successive solvent extraction using a Soxhlet apparatus with petroleum ether, chloroform, and ethyl acetate as solvents. Among the fractions obtained, the ethyl acetate extract rich in polar bioactive constituents was selected for further investigation. The extract was fractionated using column chromatography, and the resulting fractions were evaluated for antimicrobial and anti-biofilm activities. Preliminary screening revealed that several fractions exhibited notable antimicrobial activity against tested bacterial strains, with some also demonstrating significant inhibition of biofilm formation. These findings suggest that Curcuma angustifolia rhizomes contain bioactive compounds with promising therapeutic potential, particularly as natural antimicrobial and anti-biofilm agents. This study highlights the importance of plant-derived metabolites as alternative strategies in combating microbial infections and biofilm-associated resistance.

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