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Chemical and antimicrobial studies of monoterpene: Citral

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ABSTRACT

6,7-Citral-epoxy derivative (a mixture of E and Z isomers with respect to the C2 = C3 double bond) could be react with DNA base producing a major adduct. The mixture of epoxides was condensed with 2 mol of cytosine to give the adduct through condensation between aldehyde and amino groups. Antifungal and antibacterial studies were carried out on citral and citral-epoxide. Studies on the antifungal especially *Penicillium italicum* and *Rhizopus stolonifer* showed that citral and citral-epoxide have good antibacterial action. Antimicrobial studies of *P. italicum* and *R. stolonifer* explained also that citral and citral-epoxide have good antimicrobial activity. Citral epoxide shows high activity against the growth of bacteria methicillin resistant *Staphylococcus aureus* (MRSA) and fungi comparing by citral. The epoxide shows antibacterial activity more than the antibiotics nalidixic acid (NA) and ampicillin (AP) and nitrofurantoin (NI). The results revealed that these complexes are most effective against MRSA.

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