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The potential biologically active epoxides and hydroperoxides derived from natural monoterpene linalyl acetate as a major ingredient of lavender essential oil

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Lavender oil is obtained from the flowers of *Lavandula angustifolia* (Family: Lamiaceae) by steam distillation. The major component of lavender oil is linalyl acetate, isolated and epoxidated thermally and photochemically using (mcpba, H_2O_2) respectively to produce mixture of 6,7-epoxy-3,7-dimethyl-1-octene-3-yl acetate and 1,2-epoxy-3,7-dimethyl-6-octene-3-yl acetate photochemicaly, while produced epoxide four only thermally. On the other hand, photooxygenation of one using different singlet oxygen sensitizers gave two hydroperoxide derivatives of 6-hydroperoxy-3, 7-dimethylocta-1,7-diene-3-yl acetate and 7-hydroperoxy-3,7-dimethylocta-1,5-diene-3-yl acetate in the presence of Tetraphenyl Porphin (TPP), whereas gave hydroperoxide six only using Hematoporphyrin (HP). Studies on the antifungal especially *Penicillium italicum* and *Rhizopus stolonifer* showed that linalyl acetate and its epoxides and hydroperoxides derivatives have good antibacterial action.

Biography

Suzan A Khayyat has completed her PhD in Organic Chemistry by Faculty of Education, Jeddah, Saudi Arabia. She has worked as an Associate Professor of Organic Chemistry at King Abdulaziz University, Saudi Arabia. She has published more than 30 papers in reputed journals and has been serving as a Vice Dean of Faculty of Science and Arts in Rabigh at King Abdulaziz, Saudi Arabia.

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