Chemical composition and biological activities of flower essential oil and lipid fraction of Ixora parviflora vahl. cultivated in Egypt

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Abstract

GC/MS analysis of the flowers essential oil of I. parviflora Vahl. revealed the presence of thirty five components representing 97.57 % of the total composition of the oil. The examined oil is highly rich in the oxygenated compounds especially the monoterpene type (83.30 %). Trans-hotrienol (51.66 %) was found to be the major constituent of the flower's essential oil followed by linalool (17.49 %) . Trace amount of oxygenated sesquiterpenes and diterpenes had been detected represented only by nerolidol acetate < (z) -> (0.51 %) and trans-phytol (0.76 %) respectively.

GLC analysis of both saponifiable and unsaponifiable matters prepared from the petroleum ether extract of the flowers had been investigated. Palmitoelic acid was identified as the major fatty acid present in the saponifiable fraction (45.35 %), the major hydrocarbon was found to be squalene (6.79 %), the major steroidal component was β–sitosterol (18.53 %) and the major triterpene was lupeol acetate (40.8 %). Chromatographic fractionation of the petroleum ether extract of the flowers revealed isolation and purification of Lupeol acetate (1), β–amyrin acetate (2), β–amyrin (3), and β–sitosterol (4). Both the essential oil and the petroleum ether extract prepared from the flowers of the plant under investigation showed significant cytotoxic, antimicrobial and antifugal activities.