

Novel bioactive flavonoid 5-hydroxy-2-(8-hydroxy 4-oxo-4*H*-chromen-2-yl)-4-oxo-3,4-dihydro-2*H*-1-benzopyran-7-yl-N-[(2-methylpropoxy) carbonyl] carbamate from *Kalanchoe pinnata*

Latha Ophelia George*^a, RadhaH R^b, Pragasam A^c & Preeti N Tallur^d

^a Research and Development Centre, Bharathiar University, Coimbatore 641 046, India

^b Professor, Department of Chemistry, KSSEM, Bangalore 560 109, India

^c Associate Professor, Department of Chemistry, Maharani Science College for Women, Mysore 570 005, India

^d Associate Professor, Department of Chemistry, Maharani Science College for Women, Mysore 570 005, India

E-mail: lathaophelia@gmail.com, radha.sudhakar99@gmail.com, preetiksh2003@gmail.com

Received 2 August 2024; accepted (revised) 27 November 2024

Kalanchoe pinnata is a conspicuous medicinal plant and finds wide applications in pharmaceutical industries. Phytochemical studies have established the mode of action of plant extract as bioactive agent. The foremost constituents accountable for biological activity are polyphenols, which are an important class of naturally occurring antioxidants, having innumerable biological activities such as anticancer, antifungal, antibacterial, antiviral and anti-cholesterol. The present study is focussed on extraction, identification and characterization of flavonoids present in leaves of *Kalanchoe pinnata*. The purified fractions of the methanol extract have been quantised by preparative TLC and RP-HPLC to achieve maximum purity. The isolated purified compounds have been studied for spectral characterisation like IR, ¹H and ¹³C NMR and MS. On the basis of chemical constitution and spectral analysis, the structure has been elucidated as a 5-hydroxy-2-(8-hydroxy 4-oxo-4*H*-chromen-2-yl)-4-oxo-3, 4-dihydro-2*H*-1-benzopyran-7-yl N-[(2-methylpropoxy) carbonyl] carbamate. Combined bioactivities are yet to be evaluated along with other known compounds like gallic acid and quercetin.

Keywords: *Kalanchoe pinnata*, RP-HPLC, Methanol extract, Spectral analysis

Kalanchoe pinnata is one of biologically important medicinal plants. It is a succulent plant with thick, fleshy leaves. The plant is known for its medicinal properties and is used in traditional medicine for various ailments. The present study aims to isolate and characterize the bioactive flavonoid compounds present in the leaves of *Kalanchoe pinnata*. The study involves extraction, purification, and characterization of the flavonoid compounds using various analytical techniques. The isolated compounds are then evaluated for their bioactivities, including antioxidant, anticancer, and anti-inflammatory activities. The results of the study will provide valuable insights into the pharmacological potential of *Kalanchoe pinnata* and its flavonoid compounds.