

Anti-Inflammatory Effects of 3-Formyl, 7-Flavonols Derivatives by Microwave Enhanced Chemistry Assisted - Vilsmeier Haack Synthesis

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In the modern medicines the novel and active molecules are essential to act against various diseases and increase the needs day by day due to population increase. In view of that, we attempt to make a variety of synthetic molecules against inflammation by a new and popular greener microwave assisted and faster method such as Microwave Enhanced Chemistry assisted Vilsmeier Haack Synthesis (MEC-VHS). In this paper, we report the synthesis of nitro- dinitro- and acetyl- derivatives of 3- formyl, 7-flavonols using MEC-VHS techniques against inflammation as anti-inflammatory agent. These derivatives were synthesized via pinkish formylation complex of dimethyl formamide and phosphorous oxychloride by microwave irradiation resulted as suspension by base. The re-crystallized products were characterized through Co-TLC, λ_{max} , IR, HPTLC, ¹HNMR, CHN analysis and mass spectral studies. The HPTLC finger print profiles obtained were of with a prominent single peak and with a matching R_f values compared to that obtained by an ordinary Co-TLC technique. All the synthesized compounds were screened for their anti-inflammatory activity by in vitro protein denaturation method and in vivo carrageenan induced paw oedema method and it was found that all the compounds excepting the un-substituted 3-formyl, 7-flavonols gave an equi- or more potent activity as compared to that of the standard.

Keywords: HPTLC Profiles; in Vitro and in Vivo Anti-Inflammatory Activities; Microwave Enhanced Chemistry; Vilsmeier-Haack Synthesis; 3-Formyl, 7-Flavonols.

Flavonoids are very good antioxidant and posses numerous health effects also it act as anticancer, anti-inflammatory, anti-analgesic and anti-microbial agents still there is a need to find

good and cost effective flavonoid content to the society to overcome the scarcity¹. A number of medicinal conditions were prevented with the use of flavonoids². Hydroxy, methoxy, halogen, alkyl