ABSTRACT

Various pyrazolylpyrimidine derivatives (**JI1 to JI16**) were synthesized by using guanidine hydrochloride and urea from the various chalcone derivatives which were synthesized from the intermediate, 1-[3-(4-hydroxyphenyl)-5-(3-nitrophenyl)-4,5-dihydro-1*H*-pyrazol-1-yl]ethanone using different aromatic aldehydes by Claisen Schmidt condensation reaction at 0-5°C. This intermediate was obtained from 4-[5-(3-nitrophenyl)-4,5-dihydro-1*H*-pyrazol-3-yl]phenol by treatment with hydrazine hydrate. The synthesized compounds were confirmed by IR, ^{1}H NMR and Mass spectral data. All title compounds were investigated for *in-vivo* anti-inflammatory activity by using carrageenan induce paw edema method and *in-vivo* analgesic activity by using eddy's hot plate method. compounds JI2, JI4, JI7, JI10, JI12 and JI15 with electron releasing groups like $-OCH_3$ and $-N(CH_3)_2$ in phenyl ring, were found to have extremely significant anti-inflammatory activity which was comparable to standard Indomethacin. compounds JI4, JI5, JI8, JI12, JI13 and JI16 with electron releasing groups like $-OCH_3$ in phenyl ring, were found to have compounds have also shown significant analgesic activity which was also comparable to standard diclofenac sodium. Other synthesised compounds JI1, JI3, JI9, .JI11 with electron withdrowing groups like –Cl, anthracin-9-yl etc were found to be inactive as anti-inflammatory as well as analgesic.

Key words: 4-hydroxy acetophenone, pyrazolylpyrimidine, aromatic aldehyde, chalcone, anti-inflammatory, analgesic.