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2-[5-(2-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl] benzoic acid: Synthesis, Characterization and Pharmacological Evaluation

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ABSTRACT

2-[5-(2-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl]benzoic acid was synthesized by 2-fluoroacetophenone, which was converted into diketone which was cyclized with 2-hydrazinylbenzoic acid in the presence of catalytic amount of acetic acid in dry ethanol. Compound characterization was done by LCMS, IR, ^{1}H-NMR, CHN and XRD analysis. The newly synthesized compound was screened its antibacterial activity with four bacterial strains of Gram positive S. aureus (NCIM-5022) and Gram negative E. coli (NCIM-5051), using cup plate method, anthelmintic activity against P. posthuma, anti-inflammatory activity carried on carrageenan induced paw edema. Further antioxidant and anti-proliferative studies were done. It was found that fluorinated pyrazole nucleus exhibited significant antibacterial, anthelmintic and anti-inflammatory activity and moderate activity in anti-oxidant and anti-proliferative studies.

Keywords: 2-[5-(2-fluorophenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl]benzoic acid, 2-hydrazinyl benzoic acid, acetic acid, antibacterial activity, anthelmintic activity, anti-inflammatory activity, anti-oxidant activity, anti-proliferative studies.