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Synthesis of PiperidineandMorpholine Amides ofFerulic Acid and their Bioactivity against P-388 Leukemia Cells

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Abstract: Synthesis of *N*-feruloylpiperidine (**5a**) and *N*-feruloylmorpholine(**5b**) fromferulic acid through acetylation, chlorination, amidation, and deacetylation reactions have been conducted.The acetylation was carried out using acetic anhydride reagent in pyridine solvent at room temperature for 6 hours.The chlorination was performed with thionyl chloride in benzene solvent by refluxingat 75°C for 4 hours,proceeded by *in situ*amidationusing piperidine to synthesize of compound **1** and morpholine to synthesize of compound **2** in the presence of triethylamine and pyridine in dichloromethane solvent at room temperature. The deacetylation was performed using pyrrolidine reagent in ethyl acetate solvent at room temperature for 2 hours giving compounds **5a** and **5b** as yellowish crystalline solids with m.p. of 127-129°C and 151-153°C, respectively. Characterization of these compounds was committed by FTIR spectrophotometer and NMR spectrometer.The bioassay of the both compounds against P-388 leukemia cells gave IC_{50} of46.67 and 57.10 µg/mL,respectively.
Keywords:*N*-feruloylpiperidine, *N*-feruloylmorpholine, anticancer, ferulic acid, P-388 leukemia cell.

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