SPECTROSCOPIC STUDIES OF SOME NEW SYNTHESIZED 2(1H)-PYRIDINONES AND THEIR NUCLEOSIDES AS POTENTIAL PROBES FOR MONITORING CELL PROLIFERATION AND APOPTOSIS IN HUMAN LEUKEMIA HL-60 CELLS

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New series of substituted 2(1H)-pyridinones (1a-e) and their nucleosides (3a-e) were prepared as potential agents against leukemia. The nucleosides (2a-e) were synthesized using two independent methods and their structures were confirmed using FT-IR, 1D, and 2D-NMR techniques. 3-Cyano-4-(thien-2-yl)-6-(4'-chlorophenyl)-2(1H)-pyridinone (1e) and its nucleoside (2e and 3e) were found to have the highest activity against proliferation of the human promyelotic leukemia (HL-60) cells. Pyridinone derivatives substituted at position 4 with a 2-thienyl or 2-(trifluoromethyl)phenyl groups were found to exhibit high potency against apoptosis.