

**Induction of G1 arrest and apoptosis mediated  
by a novel nucleoside analog, LJ-331 in human  
leukemia HL-60 cells**

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In a continuous effort to develop novel anticancer agents we newly synthesized and evaluated the antitumor activity of nucleoside analogues. One analogue, 4-[2-Chlor-6-(3-iodo-benzylamino)-purin-9-yl]-2,3-dihydroxy-cyclopentanecarboxylic acid methylamide (**LJ-331**), has been shown to exert a potent inhibition of human cancer cell growth *in vitro* including human lung (A549), stomach (SNU-638) and leukemia (HL-60) cancer cells. Following mechanism of action study revealed that **LJ-331** induces cell cycle arrest at the G1 phase in HL-60 cells and evokes apoptotic phenomena such as an increase in DNA ladder intensity and chromatin condensation by a dose- and time-dependent manner. **LJ-331** also activated the caspase-3 activity in HL-60. This result suggests that the growth inhibition of human cancer cells by **LJ-331** might be related to the cell cycle arrest and induction of apoptosis.