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3,5-Diacetyl-1,4-dihydropyridines: Synthesis and MDR Reversal in Tumor Cells

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Abstract. Eleven 4-phenyl-3, 5-diacetyl-1, 4-dihydropyridines (AcDHPs) (G1-11) substituted at the phenyl ring were synthesized and compared for t heir cytotoxic activity and multidrug resistance (MDR)-reversing activity in inv itro assay systems. Among them, compound(G7)showed the highest cytotoxic ac tivity against human promyelocytic leukemia HL-60 and human squamous ce ll carcinoma HSC-2 cells. However, no compounds tested produed radicals atp H 7.4-12.5. The activity of P-glycoprotein (Pgp) responsible for MDR in t umor cells was reduced by compounds (G2, 3, 6, 5, 8, 1, 11), verapamil and nifedipine. However, compounds (G4, 7, 10) were hardly active while G9 did not show a MDR reversing effect at 2.0-20.0 μg/mL. These data show a

relationship between chemical structures and MDR-reversing effect on tumor cells.