Decitabine is a deoxycytidine analog that is incorporated into DNA, inhibiting DNA methyltransferase (DNMT1/3A/3B) activity. This demethylating agent is clinically used to treat myelodysplastic syndromes. Decitabine’s inhibition of DNA methyltransferase may be modulated by PKC. Decitabine exhibits anticancer chemotherapeutic, immunomodulatory, and neurotoxic activities. In cellular models of acute myelogenous leukemia (ALL), decitabine demethylation prevents cancer cell inactivation of TRAIL signaling, increasing apoptosis and cell death. In vivo, decitabine stimulates increases in cancer testis antigen-specific cytotoxic (CD8+) T cell activity. In dopaminergic neurons, this compound induces apoptosis and upregulation of tyrosine hydroxylase and α-synuclein, suggesting complications for use in subjects with Parkinson’s disease. Decitabine also inhibits replication of HIV in cellular models without displaying cytotoxicity. Additionally, this compound shows benefit in the treatment of sickle-cell anemia through its stimulation of fetal hemoglobin production.

References


Caution: This product is intended for laboratory and research use only. It is not for human or drug use.