Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Cytarabine (hydrochloride)

Catalog No: tcsc2178

Available Sizes

Size: 100mg

Size: 500mg

Specifications

CAS No:
69-74-9

Formula:
$C_9H_{14}ClN_3O_5$

Pathway:
Cell Cycle/DNA Damage;Autophagy

Target:
Nucleoside Antimetabolite/Analog;Autophagy

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
Cytosine β-D-arabinofuranoside hydrochloride;Cytosine Arabinoside hydrochloride;Ara-C hydrochloride

Observed Molecular Weight:
279.68

Product Description

Cytarabine hydrochloride is an antimetabolic agent and **DNA synthesis** inhibitor with **IC_{50}** of 16 nM.

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IC50 & Target: IC50: 16 nM (DNA synthesis)

In Vitro: Cytarabine is phosphorylated into a triphosphate form (Ara-CTP) involving deoxycytidine kinase (dCK), which competes with dCTP for incorporation into DNA, and then blocks DNA synthesis by inhibiting the function of DNA and RNA polymerases. Cytarabine displays a higher growth inhibitory activity towards wild-type CCRF-CEM cells compared to other acute myelogenous leukemia (AML) cells with IC_{50} of 16 nM[1]. Cytarabine apparently induces apoptosis of rat sympathetic neurons at 10 μM, of which 100 μM shows the highest toxicity and kills over 80% of the neurons by 84 hours, involving the release of mitochondrial cytochrome-c and the activation of caspase-3, and the toxicity can be attenuated by p53 knockdown and delayed by bax deletion[2].

In Vivo: Cytarabine (250 mg/kg) also causes placental growth retardation and increases placental trophoblastic cells apoptosis in the placental labyrinth zone of the pregnant Slc:Wistar rats, which increases from 3 hour after the treatment and peaks at 6 hour before returning to control levels at 48 hour, with remarkably enhanced p53 protein, p53 trancriptional target genes such as p21, cyclinG1 and fas and caspase-3 activity[3]. Cytarabine is highly effective against acute leukaemias, which causes the chCytarabineteristic G1/S blockage and synchronization, and increases the survival time for leukaemic Brown Norway rats in a weak dose-related fashion indicating that the use of higher dosages of Cytarabine does not contribute to its antileukaemic effectiveness in man[4].