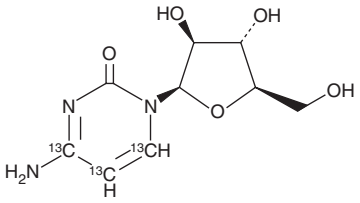
PRODUCT INFORMATION

Cytarabine-$^{13}C_3$

Item No. 28805

Formal Name:	4-amino-1-β-D-arabinofuranosyl-2(1H)-pyrimidinone-4,5,6-$^{13}C_3$
Synonyms:	Ara-C-$^{13}C_3$, 1-β-D-Arabinofuranosylcytosine-$^{13}C_3$
MF:	$C_6[^{13}C_3]H_{13}N_3O_5$
FW:	246.2
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cytarabine-$^{13}C_3$ (ara-C-$^{13}C_3$) is supplied as a solid. A stock solution may be made by dissolving the ara-C-$^{13}C_3$ in the solvent of choice, which should be purged with an inert gas. Ara-C-$^{13}C_3$ is soluble in the organic solvent DMSO (warmed).

Ara-C-$^{13}C_3$ is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Ara-C-$^{13}C_3$ is intended for use as an internal standard for the quantification of ara-C (Item No. 16069) by GC- or LC-MS. Ara-C is a nucleoside analog and prodrug form of the DNA polymerase inhibitor ara-CTP.[1] It is triphosphorylated to ara-CTP by the successive actions of deoxycytidine kinase, deoxycytidylate kinase, and nucleoside diphosphate kinase.[2] Ara-C inhibits proliferation of HL-60, ML-1, Raji, and Jurkat human leukemia cell lines with IC_{50} values of 37, 17, 16, and 72 nM, respectively.[3] It induces cell cycle arrest at the G_0/G_1 phase in HL-60 cells when used at concentrations of 2.5 and 15 µM.[1] Ara-C (75 mg/kg per day, i.p.) reduces tumor growth and increases tumor caspase-3 activity in an MOLM-13 mouse xenograft model.[4] It also increases survival and reduces brain herpesvirus titers in infected rats when administered subcutaneously at doses of 80 and 320 mg/kg.[5] Formulations containing ara-C have been used in the treatment of acute myeloid leukemia.

References

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2. Emadi, A. and Karp, J.E. The clinically relevant pharmacogenomic changes in acute myelogenous leukemia. *Pharmacogenomics* **13(11)**, 1257-1269 (2012).
3. Qin, T., Youssef, E.M., Jelinek, J., *et al.* Effect of cytarabine and decitabine in combination in human leukemic cell lines. *Clin. Cancer Res.* **13(14)**, 4225-4232 (2007).
4. Kelly, K.R., Espitia, C.M., Taverna, P., *et al.* Targeting PIM kinase activity significantly augments the efficacy of cytarabine. *Br. J. Haematol.* **156(1)**, 129-132 (2012).
5. Renis, H.E. Antiviral activity of cytarabine in Herpesvirus–infected rats. *Antimicrob. Agents Chemother.* **4(4)**, 439-444 (1973).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM