

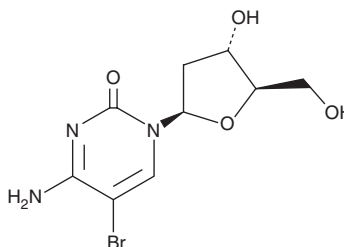
PRODUCT INFORMATION



5-Bromo-2'-deoxycytidine

Item No. 40644

CAS Registry No.: 1022-79-3
Formal Name: 5-bromo-2'-deoxycytidine
Synonyms: BrdC, BrdCyd, 5-Bromodeoxycytidine, NSC 61765
MF: $C_9H_{12}BrN_3O_4$
FW: 306.1
Purity: $\geq 95\%$
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

5-Bromo-2'-deoxycytidine (BrdC) is supplied as a solid. A stock solution may be made by dissolving the BrdC in the solvent of choice, which should be purged with an inert gas. BrdC is soluble in DMSO. BrdC is also soluble in water. We do not recommend storing the aqueous solution for more than one day.

Description

BrdC is a brominated derivative of the deoxyribonucleoside 2'-deoxycytidine (Item No. 34708).¹ It induces DNA cross-linking and the formation of DNA strand breaks when incorporated into a DNA fragment in place of cytosine and exposed to UVB damage.² BrdC inhibits cytopathogenicity induced by herpes simplex virus 1 (HSV-1) and HSV-2 in infected primary rabbit kidney (PRK) cells (MICs = 0.2-0.3 $\mu\text{g/ml}$).³ It decreases survival of U-1 melanoma cells and AG1522 non-cancerous cells and induces sensitization of both to radiation.¹ BrdC also sensitizes tumors to radiation and reduces tumor volume in a mouse model of glioma using RT-2 cells infused with an adenovirus expressing HSV thymidine kinase (ADV-TK) after implantation.⁴ *In vivo*, BrdC is converted to 5-bromo-2'-deoxyuridine (BrdU; Item No. 15580) and has been used to label cardiac progenitor cells (CPCs) in a rat model of myocardial infarction.⁵

References

1. Lawrence, T.S. and Davis, M.A. Selective radiosensitization and cytotoxicity of human melanoma cells using halogenated deoxycytidines and tetrahydrouridine. *Int. J. Radiat. Oncol. Biol. Phys.* **16(5)**, 1243-1246 (1989).
2. Zdzrowicz, M., Wityk, P., Michalska, B., *et al.* 5-Bromo-2'-deoxycytidine-a potential DNA photosensitizer. *Org. Biomol. Chem.* **14(39)**, 9312-9321 (2016).
3. De Clercq, E., Balzarini, J., Descamps, J., *et al.* Antiviral, antimetabolic, and cytotoxic activities of 5-substituted 2'-deoxycytidines. *Mol. Pharmacol.* **21(1)**, 217-223 (1982).
4. Brust, D., Feden, J., Farnsworth, J., *et al.* Radiosensitization of rat glioma with bromodeoxycytidine and adenovirus expressing herpes simplex virus-thymidine kinase delivered by slow, rate-controlled positive pressure infusion. *Cancer Gene Ther.* **7(5)**, 778-788 (2000).
5. Bocchi, L., Savi, M., Graiani, G., *et al.* Growth factor-induced mobilization of cardiac progenitor cells reduces the risk of arrhythmias, in a rat model of chronic myocardial infarction. *PLoS One* **6(3)**, e17750 (2011).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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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