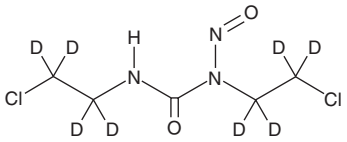
PRODUCT INFORMATION

Carmustine-d_8

Item No. 42213

Formal Name:	N,N'-*bis*(2-chloroethyl-d_8)-N-nitroso-urea
Synonyms:	BCNU-d_8, *bis*-Chloroethylnitrosourea-d_8
MF:	$C_5HD_8Cl_2N_3O_2$
FW:	222.1
Chemical Purity:	≥98% (Carmustine)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_8); ≤1% d_0
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

Carmustine-d_8 is intended for use as an internal standard for the quantification of carmustine (Item No. 15775) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Carmustine-d_8 is supplied as a solid. A stock solution may be made by dissolving the carmustine-d_8 in the solvent of choice, which should be purged with an inert gas. Carmustine-d_8 is soluble in ethanol and DMSO.

Description

Carmustine is a DNA alkylating agent.[1,2] It inhibits cell growth and induces cell cycle arrest at the G_2/M phase in C6 rat glioma cells when used at a concentration of 10 µM.[2] *In vivo*, carmustine (0.3 and 6.7 mg/kg per day) reduces tumor growth in a C6 rat glioma model. Carmustine (0.5 mg/kg, i.p.) also reduces the number of amyloid-β plaques and brain levels of amyloid-β (1-40) (Aβ40), as well as increases brain levels of soluble amyloid precursor protein (sAPP) in the APP/PS1 transgenic mouse model of Alzheimer's disease.[3] Formulations containing carmustine have been used in the treatment of gliomas and glioblastomas.

References

1. Wasserman, T.H., Slavik, M., and Carter, S.K. Clinical comparison of the nitrosoureas. *Cancer* **36(4)**, 1258-1268 (1975).
2. Soma, M.R., Baetta, R., De Renzis, M.R., *et al. In vivo* enhanced antitumor activity of carmustine [N,N'-bis(2-chloroethyl)-N-nitrosourea] by simvastatin. *Cancer Res.* **55(3)**, 597-602 (1995).
3. Hayes, C.D., Dey, D., Palavicini, J.P., *et al*. Striking reduction of amyloid plaque burden in an Alzheimer's mouse model after chronic administration of carmustine. *BMC Med.* **11**, 81 (2013).

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