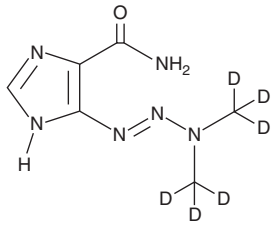
PRODUCT INFORMATION

Dacarbazine-d_6

Item No. 30771

CAS Registry No.: 1185241-28-4
Formal Name: 5-(3,3-dimethyl-1-triazen-1-yl)-1H-imidazole-4-d_6-carboxamide
MF: $C_6H_4D_6N_6O$
FW: 188.2
Chemical Purity: ≥95% (Dacarbazine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_6); ≤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

Dacarbazine-d_6 is intended for use as an internal standard for the quantification of dacarbazine (Item No. 21877) 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).

Dacarbazine-d_6 is supplied as a solid. A stock solution may be made by dissolving the dacarbazine-d_6 in the solvent of choice, which should be purged with an inert gas. Dacarbazine-d_6 is slightly soluble in DMSO and methanol when heated.

Description

Dacarbazine is a DNA alkylating prodrug that is activated by P450 enzymes in liver microsomes.[1] Following activation, it is converted, through a series of reactions, into a methyldiazonium cation that alkylates DNA at all phases of the cell cycle and induces apoptosis. *In vitro*, dacarbazine inhibits the growth of B16/F1, A-875, and SK-MEL-5 melanoma and non-cancerous WI-38 lung fibroblast and L-02 hepatocyte cell lines (IC_{50}s = 260, 287, 380, 526, and 367 µM, respectively).[2] Dacarbazine toxicity to 518A2 and SK-MEL-28 melanoma cell lines increases in a time-dependent manner with IC_{50} values of 121 and >400 µM, respectively, following a 1 hour incubation and 2.5 and 50 µM, respectively, following a 96 hour incubation.[3] *In vivo*, dacarbazine (70 mg/kg, once every 2 days) decreases tumor volume by 59.1% in a B16/F1 murine melanoma model in mice.[2] Formulations containing dacarbazine have been used in the treatment of metastatic melanoma and for Hodgkin's lymphoma in combination with other antineoplastic agents.

References

1. Marchesi, F., Turriziani, M., Tortorelli, G., *et al.* Triazene compounds: Mechanism of action and related DNA repair systems. *Pharmacol. Res.* **56(4)**, 275-287 (2007).
2. Jin, J.-l., Gong, J., Yin, T.-j., *et al.* PTD4-apoptin protein and dacarbazine show a synergistic antitumor effect on B16-F1 melanoma in vitro and in vivo. *Eur. J. Pharmacol.* **654(1)**, 17-25 (2011).
3. Valiahdi, S.M., Heffeter, P., Jakupec, M.A., *et al.* The gallium complex KP46 exerts strong activity against primary explanted melanoma cells and induces apoptosis in melanoma cell lines. *Melanoma Res.* **19(5)**, 283-293 (2009).

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