

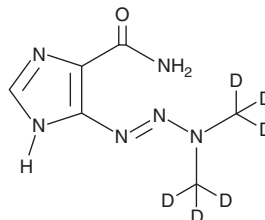
# PRODUCT INFORMATION



## Dacarbazine-d<sub>6</sub>

Item No. 30771

**CAS Registry No.:** 1185241-28-4  
**Formal Name:** 5-(3,3-dimethyl-1-triazen-1-yl)-1H-imidazole-4-d<sub>6</sub>-carboxamide  
**MF:** C<sub>6</sub>H<sub>4</sub>D<sub>6</sub>N<sub>6</sub>O  
**FW:** 188.2  
**Chemical Purity:** ≥95% (Dacarbazine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>6</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Dacarbazine-d<sub>6</sub> 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<sub>6</sub> is supplied as a solid. A stock solution may be made by dissolving the dacarbazine-d<sub>6</sub> in the solvent of choice, which should be purged with an inert gas. Dacarbazine-d<sub>6</sub> 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.<sup>1</sup> Following activation, it is converted, through a series of reactions, into a methyl diazonium 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<sub>50</sub>s = 260, 287, 380, 526, and 367 μM, respectively).<sup>2</sup> Dacarbazine toxicity to 518A2 and SK-MEL-28 melanoma cell lines increases in a time-dependent manner with IC<sub>50</sub> values of 121 and >400 μM, respectively, following a 1 hour incubation and 2.5 and 50 μM, respectively, following a 96 hour incubation.<sup>3</sup> *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.<sup>2</sup> 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).

#### 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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