

Product Data Sheet

Product Name: Dacarbazine-d6

Cat. No.: GC47167

Chemical Properties

Cas. No. 1185241-28-4

SMILES NC(C1=C(/N=N/N(C([2H])([2H])[2H])C([2H])([2H])[2H])NC=N1)=O

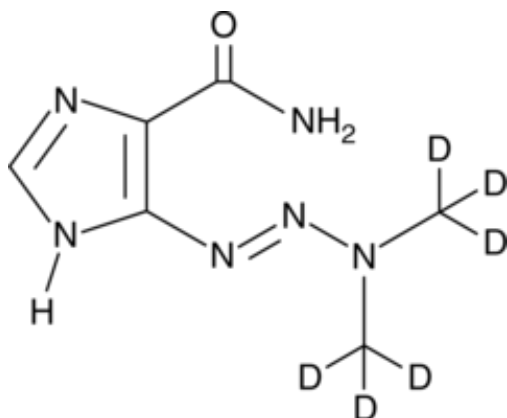
Formula C6H4D6N6O M.Wt 188.2

Solubility DMSO: slightly, heated, Methanol: slightly, heated Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Dacarbazine-d₆ is intended for use as an internal standard for the quantification of dacarbazine by GC- or LC-MS. 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 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 (IC₅₀s = 260, 287, 380, 526, and 367

Caution: Product has not been fully validated for medical applications. For research use only.

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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 $>400 \mu\text{M}$, 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.

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.-I., 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., Jakupiec, 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)

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