

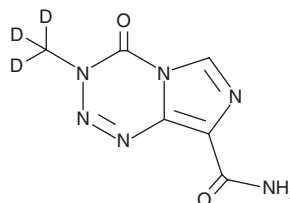
PRODUCT INFORMATION



Temozolomide-d₃

Item No. 22372

CAS Registry No.: 208107-14-6
Formal Name: 3,4-dihydro-3-(methyl-d₃)-4-oxo-imidazo[5,1-d]-1,2,3,5-tetrazine-8-carboxamide
Synonyms: Methazolastone-d₃, TMZ-d₃
MF: C₆H₃D₃N₆O₂
FW: 197.2
Chemical Purity: ≥98% (Temozolomide)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
UV/Vis.: λ_{max}: 252, 326 nm
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

Temozolomide-d₃ (TMX-d₃) is intended for use as an internal standard for the quantification of temozolomide (Item No. 18863).¹ 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).

TMX-d₃ is supplied as a solid. A stock solution may be made by dissolving the TMX-d₃ in the solvent of choice, which should be purged with an inert gas. TMX-d₃ is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of TMX-d₃ in these solvents is approximately 5 mg/ml.

Description

It is converted to MTIC in a non-enzymatic manner under physiological conditions. Temozolomide is selectively cytotoxic to U87 and D54 glioblastoma cells, which do not express O⁶-methylguanine-DNA methyltransferase (MGMT), over MGMT-expressing T98G and U3054MG glioblastoma cells (IC₅₀s = 51, 12, 660, and 370 μM, respectively).² It increases survival in a Br23c glioblastoma orthotopic mouse xenograft model when administered at a dose of 15 mg/kg. Temozolomide, in combination with antibodies targeting CD47, decreases tumor volume and increases the number of tumor-infiltrating CD4⁺ and CD8⁺ T cells in a GL261 murine glioma model.³ Formulations containing temozolomide have been used in the treatment of glioblastoma multiforme (GBM) and refractory anaplastic astrocytoma.

References

1. Tsang, L.L.H., Quarterman, C.P., Gescher, A., *et al.* Comparison of the cytotoxicity *in vitro* of temozolomide and dacarbazine, prodrugs of 3-methyl-(triazene-1-yl)imidazole-4-carboxamide. *Cancer Chemother. Pharmacol.* **27**(5), 342-346 (1991).
2. Svec, R.L., Furiassi, L., Skibinski, C.G., *et al.* Tunable stability of imidazotetrazines leads to a potent compound for glioblastoma. *ACS Chem. Biol.* **13**(11), 3206-3216 (2018).
3. von Roemeling, C.A., Wang, Y., Qie, Y., *et al.* Therapeutic modulation of phagocytosis in glioblastoma can activate both innate and adaptive antitumour immunity. *Nat. Commun.* **11**(1), 1508 (2020).

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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