

PRODUCT INFORMATION



Mertansine-¹³C-d₃

Item No. 44406

Formal Name: (14S,16S,32S,33S,2R,4S,10E,12E,14R)-86-chloro-14-hydroxy-85,14-dimethoxy-33,2,7,10-tetramethyl-12,6-dioxo-7-aza-1(6,4)-oxazinana-3(2,3)-oxirana-8-(1,3)-benzenacyclotetradecaphane-10,12-dien-4-yl N-(3-mercaptopropanoyl)-N-(methyl-¹³C-d₃)-L-alaninate

Synonyms: DM1-¹³C-d₃, Emtansine-¹³C-d₃

MF: C₃₄[¹³C]H₄₅D₃ClN₃O₁₀S

FW: 742.3

Chemical Purity: ≥95% (Mertansine)

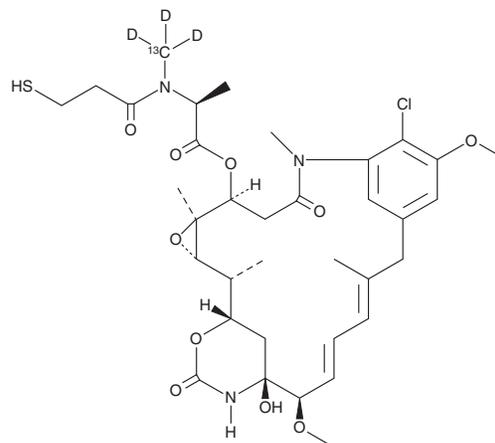
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀

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

Mertansine-¹³C-d₃ is intended for use as an internal standard for the quantification of mertansine (Item No. 22483) 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).

Mertansine-¹³C-d₃ is supplied as a solid. A stock solution may be made by dissolving the mertansine-¹³C-d₃ in the solvent of choice, which should be purged with an inert gas. Mertansine-¹³C-d₃ is slightly soluble in chloroform and methanol.

Description

Mertansine is a synthetic maytansinoid antimetabolic agent.^{1,2} It is cytotoxic to KB epidermoid carcinoma and SK-BR-3 breast cancer cells (IC₅₀ = 1.1 nM for both).¹ Mertansine has commonly been used as a payload in antibody-drug conjugates (ADCs) that selectively target cancer cells *in vitro* and in animal models.³⁻⁵ Formulations containing mertansine conjugated to ado-trastuzumab have been used in the treatment of HER2⁺ breast cancer.

References

1. Widdison, W.C., Wilhelm, S.D., Cavanagh, E.E., *et al.* Semisynthetic maytansine analogues for the targeted treatment of cancer. *J. Med. Chem.* **49**(14), 4392-4408 (2006).
2. Lopus, M. Antibody-DM1 conjugates as cancer therapeutics. *Cancer Lett.* **307**(2), 113-115 (2011).
3. Berdeja, J.G. Lorvotuzumab mertansine: Antibody-drug-conjugate for CD56⁺ multiple myeloma. *Front. Biosci.* **19**(1), 163-170 (2014).
4. Mckertish, C.M. and Kayser, V. A novel dual-payload ADC for the treatment of HER2⁺ breast and colon cancer. *Pharmaceutics* **15**(8), 2020 (2023).
5. Huhe, M., Lou, J., Zhu, Y., *et al.* A novel antibody-drug conjugate, HcHAb18-DM1, has potent anti-tumor activity against human non-small cell lung cancer. *Biochem. Biophys. Res. Commun.* **513**(4), 1083-1091 (2019).

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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