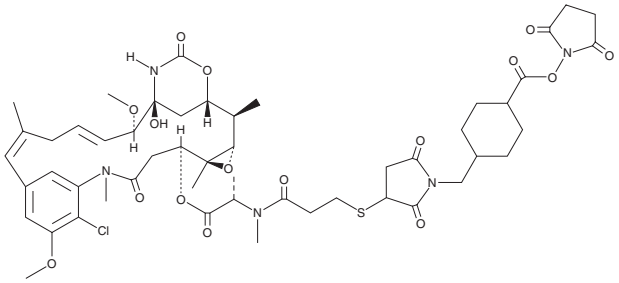
PRODUCT INFORMATION

DM1-SMCC

Item No. 23926

CAS Registry No.: 1228105-51-8
Formal Name: $N^{2'}$-deacetyl-$N^{2'}$-[3-[[1-[[4-[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]cyclohexyl]methyl]-2,5-dioxo-3-pyrrolidinyl]thio]-1-oxopropyl]-maytansine
Synonym: SMCC-DM1
MF: $C_{51}H_{66}ClN_5O_{16}S$
FW: 1,072.6
Purity: ≥98%
Supplied as: A crystalline 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

DM1-SMCC is supplied as a crystalline solid. A stock solution may be made by dissolving the DM1-SMCC in the solvent of choice, which should be purged with an inert gas. DM1-SMCC is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of DM1-SMCC in these solvents is approximately 12 and 16 mg/ml, respectively.

DM1-SMCC is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, DM1-SMCC should first be dissolved in DMF and then diluted with the aqueous buffer of choice. DM1-SMCC has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

DM1-SMCC is a reactive drug-linker molecule containing the maytansinoid DM1 (mertansine; Item No. 22483) and the crosslinker SMCC.[1,2] It inhibits the proliferation of HER2-positive HCC1954 and HER2-negative MDA-MB-468 breast cancer cells (IC_{50}s = 17.2 and 49.9 nM, respectively).[3] DM1-SMCC has been linked to B38.1, a chimeric antibody for the tumor antigen epithelial cell adhesion molecule (EpCAM), as an antibody-drug conjugate (ADC) to target DM1 to tumor sites.[4] DM1-SMCC linked to B38.1 inhibits the proliferation of MCF-7 breast cancer cells (IC_{50} = 11 nM).

References

1. Luo, Q., Chung, H.H., Borths, C., *et al.* Structural characterization of a monoclonal antibody-maytansinoid immunoconjugate. *Anal. Chem.* **88(1)**, 695-702 (2016).
2. Hamblett, K.J., Jacob, A.P., Gurgel, J.L., *et al.* SLC46A3 is required to transport catabolites of noncleavable antibody maytansine conjugates from the lusosome to the cytoplasm. *Cancer Res.* **75(24)**, 5329-5340 (2015).
3. Shao, S., Tsai, M.-H., Lu, J., *et al.* Site-specific and hydrophilic ADCs through disulfide-bridged linker and branched PEG. *Bioorg. Med. Chem. Lett.* **28(8)**, 1363-1370 (2018).
4. Oroudjev, E., Lopus, M., Wilson, L., *et al.* Maytansinoid-antibody conjugates induce mitotic arrest by suppressing microtubule dynamic instability. *Mol. Cancer Ther.* **9(10)**, 2700-2713 (2010).

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