

# PRODUCT INFORMATION



## Calicheamicin $\gamma_1$

Item No. 40830

CAS Registry No.: 108212-75-5

Formal Name: N-[(1R,4Z,8S,13E)-8-[[4,6-dideoxy-4-[[[2,6-dideoxy-4-S-[4-[[6-deoxy-3-O-methyl- $\alpha$ -L-mannopyranosyl]oxy]-3-iodo-5,6-dimethoxy-2-methylbenzoyl]-4-thio- $\beta$ -D-ribo-hexopyranosyl]oxy]amino]-2-O-[2,4-dideoxy-4-(ethylamino)-3-O-methyl- $\alpha$ -L-threo-pentopyranosyl]- $\beta$ -D-glucopyranosyl]oxy]-1-hydroxy-13-[2-(methyltrithio)ethylidene]-11-oxobicyclo[7.3.1]trideca-4,9-diene-2,6-diyn-10-yl]-carbamic acid, methyl ester

Synonym: Calicheamicin  $\gamma_1^1$

MF:  $C_{55}H_{74}IN_3O_{21}S_4$

FW: 1,368.3

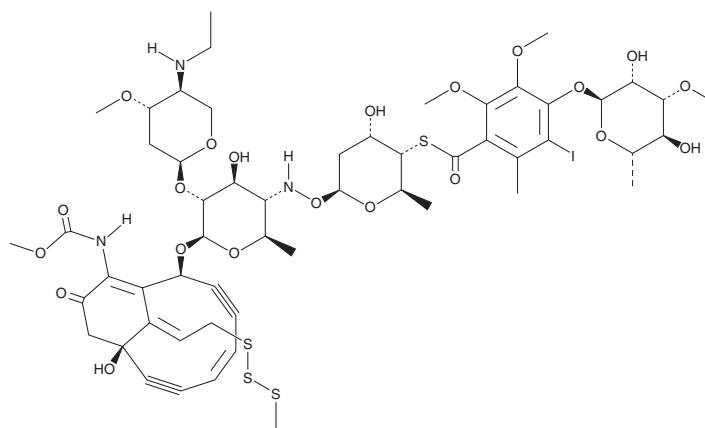
Purity:  $\geq 95\%$

Supplied as: A solid

Storage:  $-20^\circ\text{C}$

Stability:  $\geq 4$  years

Item Origin: Synthetic



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

## Laboratory Procedures

Calicheamicin  $\gamma_1$  is supplied as a solid. A stock solution may be made by dissolving the calicheamicin  $\gamma_1$  in the solvent of choice, which should be purged with an inert gas. Calicheamicin  $\gamma_1$  is slightly soluble (0.1-1 mg/ml) in acetonitrile and methanol and sparingly soluble (1-10 mg/ml) in DMSO.

Calicheamicin  $\gamma_1$  is sparingly soluble (1-10 mg/ml) in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

## Description

Calicheamicin  $\gamma_1$  is a polyketide synthase-derived enediyne that has been found in *M. echinospora*.<sup>1</sup> It is composed of carbohydrate and aromatic moieties, which bind to the minor groove in DNA, and a warhead moiety that aromatizes and oxidatively induces double-stranded DNA scission in cell-free assays.<sup>2,3</sup>

## References

1. Bhardwaj, M., Cui, Z., Daniel Hankore, E., *et al.* A discrete intermediate for the biosynthesis of both the enediyne core and the anthraquinone moiety of enediyne natural products. *Proc. Natl. Acad. Sci. USA* **120**(9), e2220468120 (2023).
2. Ahlert, J., Shepard, E., Lomovskaya, N., *et al.* The calicheamicin gene cluster and its iterative type I enediyne PKS. *Science* **297**(5584), 1173-1176 (2002).
3. Zein, N.N., Sinha, A.M., McGahren, W.J., *et al.* Calicheamicin  $\gamma_1^1$ : An antitumor antibiotic that cleaves double-stranded DNA site specifically. *Science* **240**(4856), 1198-1201 (1988).

### 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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