

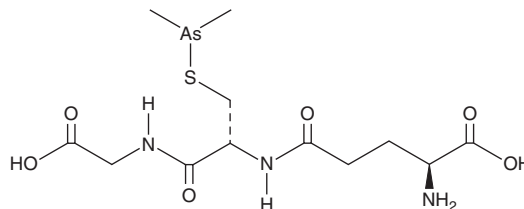
PRODUCT INFORMATION



Darinaparsin

Item No. 21659

CAS Registry No.: 69819-86-9
Formal Name: L-γ-glutamyl-S-(dimethylarsino)-L-cysteinyl-glycine
Synonyms: Dimethylarsinic glutathione, ZIO 101
MF: C₁₂H₂₂AsN₃O₆S
FW: 411.3
Purity: ≥95%
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

Darinaparsin is supplied as a crystalline solid. A stock solution may be made by dissolving the darinaparsin in the solvent of choice, which should be purged with an inert gas. Darinaparsin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of darinaparsin in ethanol and DMF is approximately 0.1 mg/ml and approximately 10 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of darinaparsin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of darinaparsin in PBS (pH 7.2) is approximately 35 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Darinaparsin is a dimethylated arsenic linked to glutathione. It is cytotoxic to DU145, LNCaP, and PC3 prostate cancer cells (IC₅₀s = 5-10 μM) and patient-derived primary prostate cancer cells (IC₅₀s = 2.5-20 μM), as well as Jurkat T cell lymphoma and L540 Hodgkin lymphoma cells (IC₅₀s = 2.7 and 1.3 μM, respectively).^{1,2} It decreases the tumor-initiating subpopulation in DU145 and PC3 cells and halts the cell cycle in the G₂/M phase.² Darinaparsin decreases transcription of Gli-2, a transcription factor that mediates Sonic hedgehog signaling, when used at a concentration of 1.5 but not 3 μM. It decreases SHP1 phosphatase activity and increases ERK phosphorylation.¹ Darinaparsin reduces tumor growth in DU145 and PC3 prostate cancer mouse xenograft models when administered at a dose of 100 mg/kg every other day.²

References

1. Ravi, D., Bhalla, S., Gartenhaus, R.B., *et al.* The novel organic arsenical darinaparsin induces MAPK-mediated and SHP1-dependent cell death in T-cell lymphoma and Hodgkin lymphoma cells and human xenograft models. *Clin. Cancer Res.* **20(23)**, 6023-6033 (2014).
2. Bansal, N., Farley, N.J., Wu, L., *et al.* Darinaparsin inhibits prostate tumor-initiating cells and Du145 xenografts and is an inhibitor of hedgehog signaling. *Mol. Cancer Ther.* **14(1)**, 23-30 (2015).

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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