



Product Information

DL-Buthionine-[S,R]-sulfoximine

Product Number **B 2640**

Storage Temperature 2-8 °C

Product Description

Molecular Formula: C₈H₁₈N₂O₃S

Molecular Weight: 222.3

CAS Number: 5072-26-4

Melting point: 214-215.5 °C (decomposition)¹

Specific rotation: 0° (c = 1, 1 M HCl at 25 °C)

Synonym: BSO

DL-Buthionine-(S,R)-sulfoximine is a selective inhibitor of γ -glutamyl cysteine synthase, an enzyme in the glutathione biosynthetic pathway. It is used as a tool for determining the depletion of glutathione. Depletion of intracellular glutathione by BSO has been associated with increased sensitivity of tumor cells to neoplastic agents.²

The synthesis and enzyme inhibiting properties of this compound have been reported.¹ The mechanism of action³ and related information on cytotoxicity and chemosensitization^{4,5,6} have also been published.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

The product is soluble in water (50 mg/ml), yielding a clear to very slightly hazy, colorless to yellow solution. Heat and/or sonication may be required to dissolve the material.

References

1. Griffith, O. W., and Meister, A., Potent And Specific Inhibition of Glutathione Synthesis by Buthionine Sulfoximine (S-n-Butyl Homocysteine Sulfoximine). *J. Biol. Chem.*, **254(16)**, 7558-7560 (1979).
2. The Merck Index, 12th ed., Entry# 1556.
3. Griffith, O. W., Mechanism of Action, Metabolism, and Toxicity of Buthionine Sulfoximine and its Higher Homologs, Potent Inhibitors of Glutathione Synthesis. *J. Biol. Chem.*, **257(22)**, 13704-13712 (1982).
4. Kramer, R. A., et al., Chemosensitization of L-phenylalanine Mustard by the Thiol-modulating Agent Buthionine Sulfoximine. *Cancer Res.*, **47(6)**, 1593-1597 (1987).
5. Green, J. A., et al., Potentiation of Melphalan Cytotoxicity in Human Ovarian Cancer Cell Lines by Glutathione Depletion. *Cancer Res.*, **44(11)**, 5427-5431 (1984).
6. Friedman, H. S., et al., Increased Melphalan Activity in Intracranial Human Medulloblastoma and Glioma Xenografts Following Buthionine Sulfoximine-mediated Glutathione Depletion. *J. Natl. Cancer Inst.*, **81(7)**, 524-527 (1989).

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