

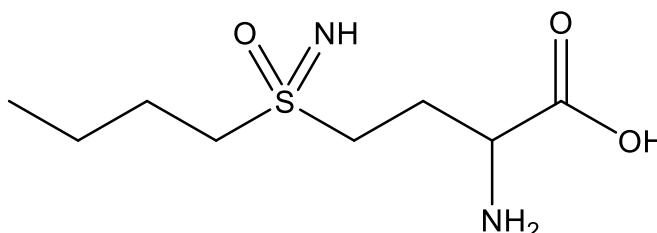
**Catalog # 10-4572**

**D,L-Buthionine Sulfoximine**

CAS# 5072-26-4

2-Amino-4-(S-butylsulfonimidoyl)butanoic acid

Lot # FBS3007



D,L-Buthionine sulfoximine is an irreversible inhibitor of  $\gamma$ -glutamylcysteine ligase (GCL). GCL is the first enzyme of the cellular glutathione biosynthetic pathway. Dysregulation of glutathione homeostasis is involved in many diseases including cancer, diabetes, neurodegenerative disorders and HIV/AIDS.<sup>1</sup> Most disease states involve decreased glutathione synthesis, however, in cancer, it is increased supporting cellular proliferation and protecting cancer cells. Pharmacological inhibition of GCL has been examined as a potential cancer treatment.<sup>2-4</sup>

- 1) Lu *et al.* (2009), *Regulation of glutathione synthesis*; Mol. Aspects Med. **30** 42
- 2) Lee *et al.* (2008), *Adaptive response to GSH depletion and resistance to L-buthionine-(S,R)-sulfoximine*; Mol. Cell Biochem. **12** 174
- 3) Qiwei *et al.* (2016), *The effects of buthionine sulfoximine on the proliferation and apoptosis of biliary tract cancer cells induced by cisplatin and gemcitabine*; Oncol. Lett. **11** 474
- 4) Glasuer and Chandel (2014), *Targeting antioxidants for cancer therapy*; Biochem. Pharmacol. **92** 90

**PHYSICAL DATA**

Molecular Weight:	222.31
Molecular Formula:	C <sub>8</sub> H <sub>18</sub> N <sub>2</sub> O <sub>3</sub> S
Purity:	>98%
	NMR: (Conforms)
Solubility:	Water (up to 5 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 2 years from the date of purchase. Solutions in water should be made fresh daily.

**Materials provided by Focus Biomolecules are for laboratory research use only and are not intended for human or veterinary applications.**