

Product Data Sheet

Product Name: 2,3-Diaminopropionic acid

Cat. No.: GC30672

Chemical Properties

Cas. No. 4033-39-0

SMILES N[C@@H](CN)C(O)=O

Formula $C_3H_8N_2O_2$

M.Wt 104.11

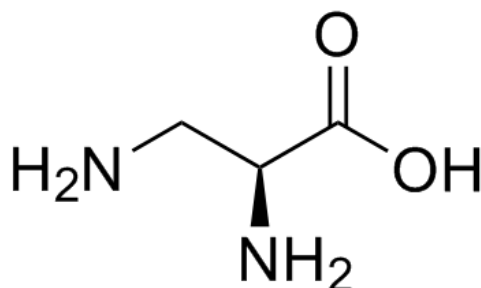
Solubility Soluble in DMSO

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

2,3-Diaminopropionic acid is an amino acid that is a precursor of antibiotics and a siderophore^[1]. The β-amino group of 2,3-Diaminopropionic acid acts as a nucleophile and forms amide bonds with the substrates of enzymes, which enables the trapping of acyl-enzyme intermediates that are linked through an amide bond^[2]. 2,3-Diaminopropionic acid can be used as a building block to shift the backbone of the cathelicidin LL-37, thereby altering the function and enhancing the enzymatic stability^[3]. 2,3-Diaminopropionic acid carries a positive charge under the weakly acidic pH conditions

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

of tumor tissues, while remaining neutral at physiological pH 7.4, and this pH-dependent charge property endows 2,3-diaminopropionic acid with significant potential for application in the preparation of anticancer peptides and pH-sensitive drug delivery carriers^[4-5].

References:

- [1] Kobylarz M J, Grigg J C, Shin-ichi J T, et al. Synthesis of L-2, 3-diaminopropionic acid, a siderophore and antibiotic precursor[J]. Chemistry & biology, 2014, 21(3): 379-388.
- [2] Huguenin-Dezot N, Alonzo D A, Heberlig G W, et al. Trapping biosynthetic acyl-enzyme intermediates with encoded 2, 3-diaminopropionic acid[J]. Nature, 2019, 565(7737): 112-117.
- [3] Rejmak W, Bury K, Bauer M, et al. Building Blocks of 2, 3-Diaminopropionic Acid Functionalized with an Oxa-Acid Spacer Shift the Functional Profile of Human Cathelicidin LL-37: Enhanced Enzymatic Stability and Selective Suppression of Neutrophil Degranulation[J]. Pharmaceuticals, 2026, 19(8): 1152.
- [4] Lan Y, Langlet-Bertin B, Abbate V, et al. Incorporation of 2, 3-diaminopropionic acid into linear cationic amphipathic peptides produces pH-sensitive vectors[J]. ChemBioChem, 2010, 11(9): 1266-1272.
- [5] Tanishiki N, Yano Y, Matsuzaki K. Endowment of pH responsivity to anticancer peptides by introducing 2, 3-diaminopropionic acid residues[J]. ChemBioChem, 2019, 20(16): 2109-2117.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA