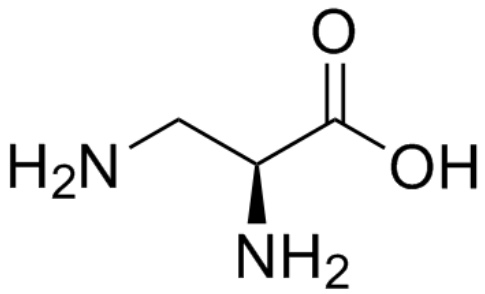
# Product Data Sheet

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

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***