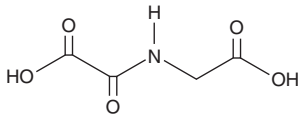
PRODUCT INFORMATION

N-Oxalylglycine

Item No. 13944

CAS Registry No.:	5262-39-5
Formal Name:	N-(carboxycarbonyl)-glycine
Synonym:	NOG
MF:	$C_4H_5NO_5$
FW:	147.1
Purity:	≥98%
UV/Vis.:	λ_{max}: 219 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

N-Oxalylglycine is supplied as a crystalline solid. A stock solution may be made by dissolving the N-oxalylglycine in the solvent of choice, which should be purged with an inert gas. N-Oxalylglycine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of N-oxalylglycine in ethanol and DMSO is approximately 10 mg/ml and approximately 5 mg/ml in DMF.

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 N-oxalylglycine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of N-oxalylglycine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The jumonji domain-containing protein 2 (JMJD2) subfamily of histone demethylases have been shown to catalyze demethylation of the methylated forms of histone 3 lysine 9 (H3K9) and H3K36 *in vitro* and in cells.[1] Because histone demethylases are implicated in certain diseases, including cancer, selective inhibitors are candidate anticancer agents as well as potential tools for elucidating the biological functions of JMJDs.[2] N-Oxalylglycine, the amide analog of α-ketoglutarate, is a cell permeable inhibitor of α-ketoglutarate-dependent enzymes, including JMJD2A, JMJD2C, and JMJD2E (IC_{50}s = 250, 500, and 24 µM, respectively).[3-6] It can also inhibit the prolyl hydroxylase domain-containing proteins PHD1 and PHD2 with IC_{50} values of 2.1 and 5.6 µM, respectively.[4-6]

References

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2. Tian, X. and Fang, J. *Acta Biochim. Biophys. Sin. (Shanghai)* **39(2)**, 81-88 (2007).
3. Hamada, S., Kim, T.D., Suzuki, T., *et al. Bioorg. Med. Chem. Lett.* **19(10)**, 2852-2855 (2009).
4. Hamada, S., Suzuki, T., Mino, K., *et al. J. Med. Chem.* 53(15), 5629-5638 (2010).
5. Rose, N.R., Ng, S.S., Mecinovic, J., *et al. J. Med. Chem.* **51(22)**, 7053-7056 (2008).
6. Rose, N.R., Woon, E.C.Y., Kingham, G.L., *et al. J. Med. Chem.* **53(4)**, 1810-1818 (2010).

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