

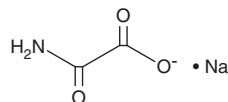
# PRODUCT INFORMATION



## Sodium Oxamate

Item No. 19057

**CAS Registry No.:** 565-73-1  
**Formal Name:** 2-amino-2-oxo-acetic acid, monosodium salt  
**Synonyms:** Oxalic Acid monoamide, Oxamic Acid  
**MF:** C<sub>2</sub>H<sub>2</sub>NO<sub>3</sub> • Na  
**FW:** 111.0  
**Purity:** ≥95%  
**Stability:** ≥2 years at room temperature  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that sodium oxamate be stored as supplied at room temperature. It should be stable for at least two years.

Sodium oxamate is supplied as a crystalline solid. Sodium oxamate is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of sodium oxamate be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of sodium oxamate in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Sodium oxamate is a derivative of pyruvate that inhibits the conversion of pyruvate to lactate *via* lactate dehydrogenase, thus disrupting glycolysis.<sup>1</sup> Because cancer cells produce a large amount of energy *via* aerobic glycolysis, sodium oxamate has been studied as an inhibitor of carbohydrate metabolism in various tumors.<sup>2-4</sup>

### References

1. Novoa, W.B., Winer, A.D., Glaid, A.J., *et al.* Lactic dehydrogenase. V. Inhibition by oxamate and by oxalate. *J. Biol. Chem.* **234(5)**, 1143-1148 (1959).
2. Yang, Y., Su, D., Zhao, L., *et al.* Different effects of LDH-A inhibition by oxamate in non-small cell lung cancer cells. *Oncotarget* **5(23)**, 11886-11896 (2014).
3. Zub, K.A., de Sousa, M.M.L., Sarno, A., *et al.* Modulation of cell metabolic pathways and oxidative stress signaling contribute to acquired melphalan resistance in multiple myeloma cells. *PLoS One* **10(3)**, (2015).
4. Cui, J., Shi, M., Xie, D., *et al.* FOXM1 promotes the warburg effect and pancreatic cancer progression *via* transactivation of LDHA expression. *Clin. Cancer Res.* **20(10)**, 2595-2606 (2014).
5. Zhao, Z., Han, F., Yang, S., *et al.* Oxamate-mediated inhibition of lactate dehydrogenase induces protective autophagy in gastric cancer cells: Involvement of the Akt-mTOR signaling pathway. *Cancer Lett.* **358(1)**, 17-26 (2015).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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