

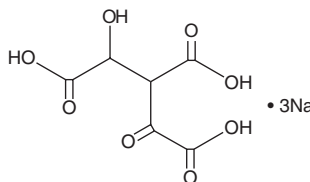
PRODUCT INFORMATION



Oxalomalic Acid (sodium salt)

Item No. 13521

CAS Registry No.: 89304-26-7
Formal Name: 3-carboxy-3-deoxy-2-pentulosaric acid, trisodium salt
MF: C₆H₆O₈ • 3Na
FW: 275.0
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Oxalomalic Acid (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the oxalomalic Acid (sodium salt) in water. The solubility of oxalomalic Acid (sodium salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Aconitase catalyzes the stereospecific isomerization of citrate to isocitrate in the first step of the citric acid cycle. It acts as an iron regulatory protein (IRP), controlling the translation of proteins involved in iron metabolism when iron is scarce and resumes aconitase activity when iron is abundant. Aconitase is now recognized as a regulator of iron-induced glutamate production.¹ Oxalomalic acid, formed by the condensation of oxaloacetate with glyoxylate *in vivo*, inhibits both aconitase and NADP-dependent isocitrate dehydrogenase in the conversion of citrate to isocitrate at concentrations as low as 1 mM.² At 5 mM, oxalomalic acid inhibition of aconitase leads to a decrease in the binding activity of IRP1 and a decrease in glutamate secretion in cultured lens epithelial cells, retinal pigment epithelial cells, and neurons.^{3,4}

References

1. Gerber, D.E. EGFR inhibition in the treatment of non-small cell lung cancer. *Drug Dev Res* **69(6)**, 359-372 (2008).
2. Ruffo, A., Testa, E., Adinolfi, A., *et al.* Control of the citric acid cycle by glyoxylate. Mechanism of the inhibition by oxalomalate and γ -hydroxy- α -oxoglutarate. *Biochem. J.* **103(1)**, 19-23 (1967).
3. Festa, M., Colonna, A., Pietropaolo, C., *et al.* Oxalomalate, a competitive inhibitor of aconitase, modulates the RNA-binding activity of iron-regulatory proteins. *Biochem. J.* **348 (Pt. 2)**, 315-320 (2000).
4. McGahan, M.C., Harned, J., Mukunnamkeril, M., *et al.* Iron alters glutamate secretion by regulating cytosolic aconitase activity. *Am J Physiol Cell Physiol* **288(5)**, 1117-1124 (2005).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 03/22/2024

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM