

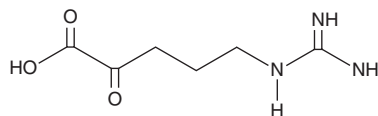
PRODUCT INFORMATION



2-Oxoarginine

Item No. 9004337

CAS Registry No.: 3715-10-4
Formal Name: 5-[(aminoiminomethyl)amino]-2-oxopentanoic acid
Synonyms: α-keto Arginine,
α-keto-δ-Guanidinovaleic Acid
MF: C₆H₁₁N₃O₃
FW: 173.2
Purity: ≥95%
Supplied as: A 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

2-Oxoarginine is supplied as a solid. A stock solution may be made by dissolving the 2-oxoarginine in the solvent of choice, which should be purged with an inert gas. 2-Oxoarginine is slightly soluble (0.1-1 mg/ml) in methanol.

2-Oxoarginine is sparingly soluble (1-10 mg/ml) in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

2-Oxoarginine is an intermediate in the catabolism of the amino acid L-arginine (Item No. 23703).¹ It is formed from L-arginine by deamination.^{2,3} 2-Oxoarginine (10 mM) inhibits GABA- or glycine-induced chloride currents in primary dissociated mouse spinal cord neurons.³ Topical application of 2-oxoarginine to the sensory motor cortex induces epileptiform discharges in rabbits.⁴ Serum levels of 2-oxoarginine are increased in patients with argininemia and decreased in patients with glioma.^{1,5} SNPs in the gene encoding alanine-glyoxylate aminotransferase 2 (AGXT2) are associated with changes in serum levels of 2-oxoarginine.²

References

1. Deignan, J.L., De Deyn, P.P., Cederbaum, S.D., *et al.* Guanidino compound levels in blood, cerebrospinal fluid, and post-mortem brain material of patients with argininemia. *Mol. Genet. Metab.* **100(Suppl 1)**, S31-S36 (2010).
2. Hall, J.A., Panickar, K.S., Brockman, J.A., *et al.* Cats with genetic variants of AGXT2 respond differently to a dietary intervention known to reduce the risk of calcium oxalate stone formation. *Genes (Basel)* **13(5)**, 791 (2022).
3. De Deyn, P.P., Marescau, B., and Macdonald, R.L. Guanidino compounds that are increased in hyperargininemia inhibit GABA and glycine responses on mouse neurons in cell culture. *Epilepsy Res.* **8(2)**, 134-141 (1991).
4. Marescau, B., Hiramatsu, M., and Mori, A. α-keto-δ-guanidinovaleic acid-induced electroencephalographic epileptiform discharges in rabbits. *Neurochem. Pathol.* **1**, 203-209 (1983).
5. Huang, J., Weinstein, S.J., Kitahara, C.M., *et al.* A prospective study of serum metabolites and glioma risk. *Oncotarget* **8(41)**, 70366-70377 (2017).

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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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