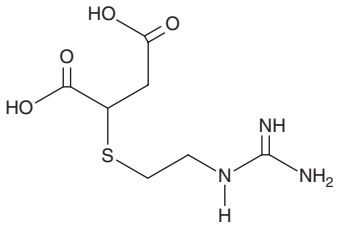
PRODUCT INFORMATION

2-Guanidinoethylmercaptosuccinic Acid

Item No. 19354

CAS Registry No.: 77482-44-1
Formal Name: 2-[[2-[(aminoiminomethyl)amino] ethyl]thio]-butanedioic acid
Synonym: GEMSA
MF: $C_7H_{13}N_3O_4S$
FW: 235.3
Purity: ≥98%
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-Guanidinoethylmercaptosuccinic acid (GEMSA) is supplied as a solid. A stock solution may be made by dissolving the GEMSA in water. We do not recommend storing the aqueous solution for more than one day.

Description

Enkephalin convertase, also known as carboxypeptidase E, removes C-terminal residues during the processing of propeptides, including enkephalin and proinsulin. GEMSA is a potent inhibitor of enkephalin convertase (K_i = 8.8 nM) that is functional *in vivo*.[1,2] It is a peptidomimetic inhibitor, occupying the specificity pocket of the enzyme.[3] GEMSA can also inhibit other carboxypeptidases, including thrombin-activatable fibrinolysis inhibitor.[4,5]

References

1. Przewlocka, B., Dziedzicka, M., Silberring, J., *et al.* Analgesic and convulsant effects of guanidinoethylmercaptosuccinic acid (GEMSA)-a potent enkephalin convertase inhibitor. *Neuropeptides* **8(4)**, 359-365 (1986).
2. Bommer, M., Nikolarakis, K., Noble, E.P., *et al. In vivo* modulation of rat hypothalamic opioid peptide content by intracerebroventricular injection of guanidinoethylmercaptosuccinic acid (GEMSA): Possible physiological role of enkephalin convertase. *Brain Res.* **492(1-2)**, 305-313 (1989).
3. Aloy, P., Companys, V., Vendrell, J., *et al.* The crystal structure of the inhibitor-complexed carboxypeptidase D domain II and the modeling of regulatory carboxypeptidases. *J. Biol. Chem.* **276(19)**, 16177-16184 (2001).
4. Bajzar, L., Manuel, R., and Nesheim, M.E. Purification and characterization of TAFI, a thrombin-activable fibrinolysis inhibitor. *J. Biol. Chem.* **270(24)**, 14477-14484 (1995).
5. Ore, F.D., Ajandouz, E.H., Giardina, T., *et al.* The membrane-bound basic carboxypeptidase from hog intestinal mucosa. *Biochim. Biophys. Acta.* **1421(2)**, 234-248 (2016).

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