Product Data Sheet

Product Name: α-Guanidinoglutaric Acid
Cat. No.: GC11323

Chemical Properties

Cas. No.	73477-53-9		
Chemical Name	N-(aminoiminomethyl)-L-glutamic acid		
SMILES	NC(=N)N[C@@H](CCC(=O)O)C(=O)O		
Formula	$C_6H_{11}N_3O_4$	M.Wt	189.2
Solubility	≤50mg/ml in aqueous solutions	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	α-Guanidinoglutaric Acid		

Background

α-Guanidinoglutaric Acid is a novel nitric oxide synthase inhibitor with Ki value of 2.69 μM [1].

In the brain, nitric oxide (NO), which is synthesized from L-arginine (Arg) by NO synthase (NOS), acts as both an intra- and an intercellular second messenger, and it may suppress convulsions [1].

α-Guanidinoglutaric Acid (GGA) is a novel nitric oxide synthase inhibitor. GGA was increased in the cobalt-induced epileptic focus tissue in the cerebral cortex of cats [2]. GGA is an endogenous, potent, and non-guanidino nitrogen-substituted NOS inhibitor and that inhibition of nitric oxide biosynthesis may be involved in GGA-induced convulsions. In the cobalt-induced epileptic focus, GGA might inhibit NO production. GGA is a useful tool for the study of the enzyme-substrate relationship of NOS [1].

In rats, GGA injected in the cerebroventricle caused sporadic spike discharges with a

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latency of several minutes. When Arg was supplemented with GGA, no sporadic spike discharges were observed. These results indicated that Arg elevated the threshold of GGA-induced seizures. The initiation of the seizures induced by GGA was associated with a decrease in the 5-hydroxytryptamine level [1].

References:

[1]. Yokoi I, Kabuto H, Habu H, Mori A. alpha-Guanidinoglutaric acid, an endogenous convulsant, as a novel nitric oxide synthase inhibitor. J Neurochem. 1994 Oct;63(4):1565-7.

[2]. Mori A, Akagi M, Katayama Y, et al. alpha-Guanidinoglutaric acid in cobalt-induced epileptogenic cerebral cortex of cats. J Neurochem. 1980 Sep;35(3):603-5.