Product Data Sheet

Product Name: Cantharidic Acid (sodium salt)
Cat. No.: GC12082

Chemical Properties

Cas. No.	1465-77-6		
Chemical Name	(1R,2S,3R,4S)-*rel*-2,3-dimethyl-7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid, disodium salt		
SMILES	OC([C@@]1(C)[C@](C(O)=O)(C)[C@@H]2CC[C@H]1O2)=O.[Na+].[Na+]		
Formula	$C_{10}H_{12}O_5$ • 2Na	M.Wt	258.2
Solubility	≤2mg/ml in PBS(pH7.2)	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	Cantharidic Acid (sodium salt)		

Background

Cantharidic acid, an inhibitor of protein phosphatases, is first isolated from Chinese blister beetles. Cantharidic acid is a hydrolysis product of cantharidin.

Protein phosphatases, account for virtually all of the phosphatase activity toward phosphoproteins, have been involved in controlling glycogen metabolism, glycolysis, gluconeogenesis, fatty acid synthesis, cholesterol synthesis, and protein synthesis. Protein phosphatases participate in protein phosphorylation, a principal regulatory mechanism in the control of almost all cellular processes [2].

In vitro: Cantharidic acid exihibited inhibitory effects on the protein phosphatases PP1 and PP2A with IC50 values of 0.6 and 0.05 μM, respectively. Cantharidic acid showed no effect on the activity of PP2B or PP2C [1].

In vivo: Intraperitoneal administration of cantharidic acid (10 mg/kg) to mice for 45 min caused extreme liver enlargement and congestion. Treatment with cantharidic acid

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

increased hepatic glycogenolysis, elevated blood glucose and hepatic glycogen phosphorylase levels, reduced hepatic glycogen content and glycogen synthase activity. Cantharidic acid endothal decreased microsomal Mg2+-ATPase levels [3].

References:

[1] McCluskey A, Sim A T R, Sakoff J A. Serine threonine protein phosphatase inhibitors: Development of potential therapeutic strategies[J]. Journal of medicinal chemistry, 2002, 45(6): 1151-1175.

[2] Ingebritsen T S, Cohen P. Protein phosphatases: properties and role in cellular regulation[J]. Science, 1983, 221(4608): 331-338.

[3] Graziano M J, Casida J E. Comparison of the acute toxicity of endothal and cantharidic acid on mouse liver in vivo[J]. Toxicology letters, 1987, 37(2): 143-148.