Product Data Sheet

Product Name:	(S)-Lisofylline
Cat. No.:	GC11867

Chemical Properties

Cas. No.	100324-80-9		
Chemical Name	3,7-dihydro-1-[5S-hydroxyhexyl]-3,7-dimethyl-1H-purine-2,6-dione		
SMILES	O=C(N(C)C1=C2N(C)C=N1)N(CCCC[C@@H](O)C)C2=O		
Formula	$C_{13}H_{20}N_4O_3$	M.Wt	280.3
Solubility	≤15mg/ml in ethanol;3mg/ml in DMSO;12mg/ml in dimethyl formamide	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	(S)-Lisofylline		

Background

Lisofylline (LSF) is a potent anti-inflammatory agent. LSF is a chiral metabolite of pentoxifylline [1]. Pentoxifylline is exclusively reduced to (S)-LSF in the cytosol when metabolized by isolated human liver cells [2].

In vitro: Lisofylline preserved β-cell insulin secretion and inhibited DNA damage of islets in the presence of IL-1β [3]. Simultaneous application of LSF and cytokines to INS-1 cells restored insulin secretion, mitochondrial membrane potential, MTT metabolism, and cell viability to control levels. LSF increased β-cell MTT metabolism as well as insulin release and glucose responsiveness [4].

In vivo: In rats subjected to hemorrhagic shock and resuscitation, LSF increased the intestinal and hepatic blood flow. Treatment with LSF (15 mg/kg) ameliorated the development of mucosal damage and hyperpermeability. Rats treated with LSF showed lower plasma concentrations of the intracellular hepatic enzyme, aspartate

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aminotransferase. LSF treatment increased concentrations of adenosine triphosphate in intestinal and hepatic tissue [1]. In NOD mice, lisofylline suppressed IFN-γ production, reduced the onset of insulitis and diabetes, and inhibited diabetes after transfer of splenocytes from Lisofylline-treated donors to NOD.scid recipients [3].

References:

[1] Wattanasirichaigoon S, Menconi M J, Fink M P. Lisofylline ameliorates intestinal and hepatic injury induced by hemorrhage and resuscitation in rats[J]. Critical care medicine, 2000, 28(5): 1540-1549.
[2] Lillibridge, J. A.,Kalhorn, T.F. and Slattery, J.T. Metabolism of lisofylline and pentoxifylline in human liver microsomes and cytosol. Drug Metabolism and Disposition 24(11), 1174-1179 (1996).
[3] Yang Z D, Chen M, Wu R, et al. The anti-inflammatory compound lisofylline prevents Type I diabetes in non-obese diabetic mice[J]. Diabetologia, 2002, 45(9): 1307-1314.
[4] Chen M, Yang Z, Wu R, et al. Lisofylline, a novel antiinflammatory agent, protects pancreatic β-cells from proinflammatory cytokine damage by promoting mitochondrial metabolism[J]. Endocrinology, 2002, 143(6): 2341-2348.

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