Product Data Sheet

Product Name: Lysipressin acetate
Cat. No.: GC64811

Chemical Properties

Cas. No.	83968-49-4		
Formula	C48H69N13O14S2	M.Wt	1116.27
Solubility	DMSO : ≥ 100 mg/mL (89.58 mM)	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	Lysipressin acetate		

Protocol

Cell experiment [1]:

Cell lines	Vascular smooth muscle cells (VSMCs)
Preparation Method	VSMCs were isolated from rat aorta and from human uterine artery. hVSMC cells were pre-incubated 20 min at 37 °C in the presence of LiCl (2.10-2 M) with the protease inhibitor Bestatin (10-5 M) and BSA (0.1%), conditions known to reduce peptide degradation and thus terlipressin conversion into Lysipressin. Cells were further incubated in the same media for 2 or 30 additional min in the presence of terlipressin (10-5 M), Lysipressin (10-6 M) or with vehicle (control).
Reaction Conditions	10-6 M, 2 or 30 min

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

Product Data Sheet

Applications	In the presence of protease inhibitors (bestatin and BSA) used to prevent terlipressin conversion into Lysipressin, no significant changes were observed for a short incubation-period (2 min) in either terlipressin or Lysipressin IPs accumulation. After a 30 min incubation period, terlipressin-induced accumulation of IPs was reduced in the presence of BSA and bestatin, but not suppressed.

References:

[1]. Colson P H, Virsolvy A, Gaudard P, et al. Terlipressin, a vasoactive prodrug recommended in hepatorenal syndrome, is an agonist of human V1, V2 and V1B receptors: implications for its safety profile[J]. Pharmacological Research, 2016, 113: 257-264.

Background

Lysipressin acetate is the acetate form of Lysipressin. Lysipressin is a nine-amino-acid peptide, which consists of a six-component loop formed by a disulfide bridge, two cysteine residues, and a side chain that includes three amino acid residues. Lysipressin is synthesized in the large cell nuclei of the anterior hypothalamus, stored in the posterior pituitary (neurohypophysis), and secreted into the blood. Depending on the amino acid in the 8th position (lysine or arginine), there are two forms of vasopressin: Lysipressin (lysine vasopressin) or arginine vasopressin [1].

Lysipressin acetate is an arginine vasopressin receptor 1A (V1A) receptor agonist that binds to rat and human V1A receptors (Kis = 1.2 and 10.1 nM, respectively) and

Product Data Sheet

Lysipressin acetate increases intracellular calcium levels in cultured rat and human aortic cells with half-maximal activation (Kact) values of 12 and 20.8 nM, respectively. On human cultured VSMCs, LVP and AVP dose-dependently stimulated PLC activity. AVP and LVP both induced dose-dependent and transient increase in [Ca2+]i in rat and human cultured VSMCs [2].

Lysipressin (Lysine vasopressin) is about 1/6 times as potent as Arginine vasopressin in inhibiting water diuresis in dogs when they are injected intravenously in equal vasopressor doses [3]. Lysipressin produce antidiuresis in the pig, without significantly altering glomerular filtration rate [3].

References:
[1]. Grigorjeva M E, Golubeva M G. The Role of Cholinergic Receptors in the Reactions of the Hemostasis System on Vasopressin[J]. Biology Bulletin Reviews, 2022, 12(6): 631-637.
[2]. Colson P H, Virsolvy A, Gaudard P, et al. Terlipressin, a vasoactive prodrug recommended in hepatorenal syndrome, is an agonist of human V1, V2 and V1B receptors: implications for its safety profile[J]. Pharmacological Research, 2016, 113: 257-264.
[3]. MUNSICK R A, SAWYER W H, Van Dyke H B. The antidiuretic potency of arginine and lysine vasopressins in the pig with observations on porcine renal function[J]. Endocrinology, 1958, 63(5): 688-693.

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