Product Data Sheet

Product Name: Vasonatrin Peptide VNP
Cat. No.: GC34228

Chemical Properties

Cas. No.	141676-35-9		
SMILES	Gly-Leu-Ser-Lys-Gly-Cys-Phe-Gly-Leu-Lys-Leu-Asp-Arg-Ile-Gly-Ser-Met-Ser-Gly-Leu-Gly-Cys-Asn-Ser-Phe-Arg-Tyr (Disulfide bridge: Cys6-Cys22)		
Formula	$C_{123}H_{198}N_{36}O_{36}S_3$	M.Wt	2865.37
Solubility	Soluble in Water	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	Vasonatrin Peptide VNP		

Protocol

Animal experiment: Rats[2]The hypoxia-induced pulmonary hypertension (HPH) model is developed by subjecting rats to hypobaric hypoxia. The HPH rats are then treated with either VNP (50 lg/kg per day, i.p.) or saline (0.5 mL, i.p.) every day for 7 days. Haemodynamic indices, right ventricular hypertrophy (RVH) and remodelling of the pulmonary arteries are evaluated. In addition, plasma levels of atrial natriuretic peptide (ANP), endothelin (ET)-1 and angiotensin II (AngII) are determined, as is natriuretic peptide receptor-C (NPR-C) mRNA expression in the right ventricle[2].

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

References:

[1]. Jiang YS, et al. Vasonatrin peptide stimulates both of the natriuretic peptide receptors, NPRA and NPRB. Biochem Biophys Res Commun. 2014 Apr 18;446(4):1276-80.
[2]. Shi Z, et al. Vasonatrin peptide attenuates myocardial ischemia-reperfusion injury in diabetic rats and underlying mechanisms. Am J Physiol Heart Circ Physiol. 2015 Feb 15;308(4):H281-90.
[3]. Yu J, et al. Protective effects of vasonatrin peptide against hypobaric hypoxia-induced pulmonary hypertension in rats. Clin Exp Pharmacol Physiol. 2010 Jan;37(1):69-74.

Background

Vasonatrin peptide (VNP) is a chimera of atrial natriuretic peptide (ANP) and C-type

natriuretic peptide (CNP) with potent venodilating and natriuretic activity.

Vasonatrin peptide binds with both natriuretic peptide receptor A and B, but with a preference for B. VNP-stimulated cGMP is 11-fold greater in NPRB than NPRA[1].

The high-fat diet-fed streptozotocin-induced diabetic Sprague-Dawley rats are subjected to ischemia-reperfusion operation. VNP treatment (100 g/kg iv, 10 min before reperfusion) significantly improved the instantaneous first derivation of left ventricle pressure (LV dP/dtmax) and LV systolic pressure and reduced LV end-diastolic pressure, apoptosis index, caspase-3 activity, plasma creatine kinase (CK), and lactate dehydrogenase (LDH) activities[2]. Treatment hypoxia-induced pulmonary hypertension (HPH) with Vasonatrin peptide for 1 week significantly reduceS mean pulmonary arterial pressure, pulmonary vascular resistance, RVH and muscularization of the pulmonary arteries. Acute intravenous administration of 50 microg/kg Vasonatrin peptide significantly ameliorates pulmonary haemodynamics in HPH rats[3].

[1]. Jiang YS, et al. Vasonatrin peptide stimulates both of the natriuretic peptide receptors, NPRA and NPRB. Biochem Biophys Res Commun. 2014 Apr 18;446(4):1276-80. [2]. Shi Z, et al. Vasonatrin peptide attenuates myocardial ischemia-reperfusion injury in diabetic rats and underlying mechanisms. Am J Physiol Heart Circ Physiol. 2015 Feb 15;308(4):H281-90. [3]. Yu J, et al. Protective effects of vasonatrin peptide against hypobaric hypoxia-induced pulmonary hypertension in rats. Clin Exp Pharmacol Physiol. 2010 Jan;37(1):69-74.

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