
Product Data Sheet

Product Name: Adrenomedullin (1-50), rat

Cat. No.: GC34230

Chemical Properties

Cas. No.

SMILES Tyr-Arg-Gln-Ser-Met-Asn-Gln-Gly-Ser-Arg-Ser-Thr-Gly-Cys-Arg-Phe-Gly-Thr-Cys-Thr-Met-Gln-Lys-Leu-Ala-His-Gln-Ile-Tyr-Gln-Phe-Thr-Asp-Lys-Asp-Lys-Asp-Gly-Met-Ala-Pro-Arg-Asn-Lys-Ile-Ser-Pro-Gln-Gly-Tyr-NH₂ (Disulfide bridge: Cys14-Cys19)

Formula C₂₄₈H₃₈₁N₇₇O₇₅S₅

M.Wt 5729.5

Solubility Soluble in DMSO

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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 **Protocol****Animal experiment****[1]:**

Animal models Sprague-Dawley rats

Caution: Product has not been fully validated for medical applications. For research use only.

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Preparation Method	<p>Rats was injected with sodium pentobarbital (50mg/kg, i.p.). A small slit was cut in the dura mater overlying the atlanto-occipital membrane of rats. A PE-10 tubing was inserted into the intrathecal space with its tip being positioned at the L4-L5 segments of the spinal cord. Then the rats were housed in dividually and allowed to recover for 1 week. The location of in trathecal catheter tip was confirmed by injecting lidocaine (200µg/10µL) and this procedure caused a motor paralysis of the lower limbs. Adrenomedullin (1-50) (AM₁₋₅₀) (20µg) or AM₁₋₅₀+AM₂₂₋₅₂ (20µg) was administered intrathecally (i.t.) once per day for 3days. PWT in response to mechanical stimulus was tested after the drug administration on days 1, 2 and 3 (up to day 5). Animals were sacrificed by decapitation. Dorsal root ganglion (DRG) at C2-L6 were dissected and collected under sterile technique.</p>
Dosage form	20µg; 3 days; intrathecally (i.t.)
Applications	<p>Intrathecally administration of Adrenomedullin (1-50) induced mechanical allodynia. Adrenomedullin (1-50) increased pERK and nNOS in spinal dorsal horn. Adrenomedullin (1-50) increased expression of Iba1 and GFAP in spinal cord. Application of Adrenomedullin (1-50) to DRG cultures increased expression of TRPV1.</p>

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References:

[1]Huang H, Wang M, Hong Y. Intrathecal administration of adrenomedullin induces mechanical allodynia and neurochemical changes in spinal cord and DRG[J]. Neuroscience Letters, 2019, 690: 196-201.

Background

Adrenomedullin (1-50), rat is a 50-amino acid polypeptide that induces selective arterial vasodilation by activating the calcitonin gene-related peptide 1 (CGRP1) receptor^[1]. In vivo, Adrenomedullin (1-50), rat can regulate hypoxic pulmonary hypertension by promoting the production of nitric oxide (NO) and hydrogen sulfide (H₂S) and reducing pulmonary vascular remodeling in hypoxic rats^[2, 3].

In vivo, intrathecal administration of rat Adrenomedullin (1-50) (20μg) for 3 days in a rat model of mechanical pain induced mechanical allodynia, increased the expression levels of pERK and nNOS in the spinal dorsal horn, increased the expression levels of Iba1 and GFAP in the spinal cord, and upregulated TRPV1 expression in dorsal root ganglion (DRG) cultures^[4].

References:

[1] Berthiaume N, Claign A, Cadieux A, et al. Rat adrenomedullin induces a selective

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- arterial vasodilation via CGRP1 receptors in the double-perfused mesenteric bed of the rat[J]. Canadian journal of physiology and pharmacology, 1995, 73(7): 1080-1083.
- [2] Vadivel A, Abozaid S, van Haften T, et al. Adrenomedullin promotes lung angiogenesis, alveolar development, and repair[J]. American journal of respiratory cell and molecular biology, 2010, 43(2): 152-160.
- [3] Matsui H, Shimosawa T, Itakura K, et al. Adrenomedullin can protect against pulmonary vascular remodeling induced by hypoxia[J]. Circulation, 2004, 109(18): 2246-2251.
- [4] Huang H, Wang M, Hong Y. Intrathecal administration of adrenomedullin induces mechanical allodynia and neurochemical changes in spinal cord and DRG[J]. Neuroscience Letters, 2019, 690: 196-201.

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