

- **Cat. SP-88394-1** **Endothelin-1 (1-15), amide** **SIZE: 1 mg**
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Endothelins are proteins that constrict blood vessels and raise blood pressure. They are normally kept in balance by other mechanisms, but when they are over-expressed, they contribute to high blood pressure (hypertension) and heart disease. Endothelins are 21-amino acid vasoconstricting peptides produced primarily in the endothelium having a key role in vascular homeostasis. Among the strongest vasoconstrictors known, endothelins are implicated in vascular diseases of several organ systems, including the heart, general circulation and brain.

There are three isoforms (identified as ET-1, -2, -3) with varying regions of expression and two key receptor types, ETA and ETB. ETA receptors are found in the smooth muscle tissue of blood vessels, and binding of endothelin to ETA increases vasoconstriction (contraction of the blood vessel walls) and the retention of sodium, leading to increased blood pressure. ETB is primarily located on the endothelial cells that line the interior of the blood vessels. When endothelin binds to ETB receptors, this leads to the release of nitric oxide (also called endothelium-derived relaxing factor), natriuresis and diuresis (the production and elimination of urine) and mechanisms that lower blood pressure. Both types of ET receptor are found in the nervous system where they may mediate neurotransmission and vascular functions.

Endothelin 1, also known as EDN1, is a human gene and the corresponding peptide, one of three isoforms of human endothelin. It is a potent, 21-amino acid vasoconstrictor peptide produced by vascular endothelial cells. Endothelin-1 is a pain mediator that is involved in the pathogenesis of pain states ranging from trauma to cancer. It is a potent vasoactive peptide and appears to be implicated in the pathogenesis of pain associated with ischemic states (such as coronary artery disease or sickle cell anemia), and inflammation (such as arthritis) in addition to cancer. Endothelin-1 is synthesized by keratinocytes in normal skin and is locally released after cutaneous injury. While it is able to trigger pain through its actions on endothelin-A receptors (EDNRA) of local nociceptors, it can incidentally produce analgesia through endothelin-B receptors (EDNRB;). Khodorova et al. (2003) mapped an endogenous analgesic circuit, in which endothelin-B receptor activation induces the release of beta-endorphin from keratinocytes and the activation of G protein-coupled inwardly rectifying potassium channels (GIRKs, also called Kir-3) linked to opioid receptors on nociceptors.

Alternative titles; symbols
ET1; HIGH DENSITY LIPOPROTEIN CHOLESTEROL LEVEL QUANTITATIVE TRAIT LOCUS 7, INCLUDED; HDLCQ7, INCLUDED, PREPROENDOTHELIN 1, INCLUDED
Gene map locus: 6p24-p23.

Source of Peptide

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Sequence	Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-Phe-Cys-NH ₂
MW	1717.04

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Sequence	Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-Phe-Cys-OH
MW	1718.02

Form & Storage of Antibodies/Peptide Control

Storage
Short-term: unopened, undiluted liquid vials at -200C and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.
Shipping: 4oC for solutions and room temp for powder

General References: (1) Inoue A (1989) J. Biol. Chem. vol. 264, 14954-14959; Ahn D (2004) J. Clin. Invest. 114, 504-511; Blocj KD (1989) JBC 264, 10851-10857; Bourgeois, C (1997) J. Clin. Endocr. Metab. vol. 82, 3116-3123;

*This product is for in vitro research use only.

Related Items

Angiotensin I, II, and III and antibodies
Antibodies to angiotensin receptors type I and II

SP-88394-1 100510A