

Cat#	SP-88402-5
Description:	Ac-Endothelin-1 (16-21), human [Ac-His-Leu-Asp-Ile-Ile-Trp (MW: 837.98)]
Size:	5 mg
Purity:	>95%
Store:	Desiccated at -20oC.

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 (ET) was first isolated and described by Yanagisawa et al. and has since been described as one of the most potent known vasoconstrictor compounds. Endothelin-1 (ET-1) is a powerful vasoconstrictor peptide and regulator of blood flow that plays an important role in blood pressure (BP) elevation in some models of experimental hypertension. ET-1 mediates its effects via two types of receptors, ETA and ETB, which are expressed in the vascular smooth muscle cells, endothelial cells, intestines and brain. Secretion of ET-1 results in long-lasting vasoconstriction, increased blood pressure and, in turn, overproduction of free radicals. As dysregulation of the endothelin system is an important factor in the pathogenesis of several diseases including atherosclerosis, hypertension and endotoxic shock, the ETA and ETB receptors are attractive therapeutic targets for treatment of these disorders. The biosynthesis and release of ET-1 are regulated at the transcriptional level.

ENDOTHELIN-1 (ET-1), the principal peptide of the endothelin family, has been shown to have a variety of biological activities in both vascular and nonvascular tissues, including the heart, the kidney, and the central nervous system. Endothelin-1 enhanced the surface expression and mRNA accumulation of VCAM-1 in cells treated with tumor necrosis factor α (TNF- α).

General References: Inoue A (1989) J. Biol. Chem 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

Related items:

Catalog#	ProdDescription
SP-101770-1	Big Endothelin-1 (22-39), rat
SP-55553-1	Endothelin-1, Human
SP-55554-1	Endothelin-3, Human MW: 2643.1]
SP-55555-1	Endothelin-2, Human MW: 2546.97]
SP-55557-1	Big Endothelin-1 (1-38), MW: 4282.96]
SP-88394-1	Endothelin-1 (1-15), amide, human (MW: 1717.04)
SP-88395-1	Endothelin-1 (1-15), human (MW: 1718.02)
SP-88396-1	[Ala18] Endothelin-1, human MW: 2451.94]
SP-88397-1	[Ala3, 11, 18, Nle7] Endothelin-1, human MW: 2349.78]
SP-88399-1	[D-Val22, Phe33] Big Endothelin-1 (16-38), human [MW: 2620.97]
SP-88400-1	[D-Val22] Big Endothelin-1 (16-38), MW:2586.96]
SP-88401-1	[Phe22] Big Endothelin-1 (19-37), human MW 2182.53]
SP-88402-5	Ac-Endothelin-1 (16-21), human [Ac-His-Leu-Asp-Ile-Ile-Trp (MW: 837.98)]
SP-88426-5	Ac-[DTrp16] Endothelin-1 (16-21), human [Ac-D-Trp-Leu-Asp-Ile-Ile-Trp (MW: 887.03)]
SP-89900-1	"Endothelin-1 (11-21) (MW: 1409.70)"
SP-89901-1	Big Endothelin-1 Fragment (22-38) (human) (MW: 1809.03)
SP-89903-5	Endothelin (16-21) (AA: His-Leu-Asp-Ile-Ile-Trp) (MW: 795.94)

SP-88402-5 140713P