

Product Data Sheet

Cat# **SP-101770-1**

Description: Big Endothelin-1 (22-39), rat (AA: Val-Asn-Thr-Pro-Glu-Arg-Val-Val-Pro-Tyr-Gly-Leu-Gly-Ser-Pro-Ser-Arg-Ser) (MW: 1915.2)

Size: 1 mg

Purity: >95%

Store: Desiccated at -20oC.

Endothelins are among the most potent vasoconstrictor proteins known. Over expression of endothelins contributes to hypertension and heart disease. Three isoforms are known, each containing 21 amino acids: endothelin-1 (ET-1), endothelin-2 (ET-2) and endothelin-3 (ET-3). All three isoforms are encoded by a 38-amino-acid precursor known as big endothelin. Endothelins are expressed in many tissues, including lung, kidney, brain, pituitary and placenta.

The vasoconstrictor/pressor activity of endothelin-1 appear to be more potent and long lasting than any other known vasoconstrictors. Endothelin (ET-1) is a 21 amino acid peptide that is produced by the vascular endothelium from a 39 amino acid precursor, big ET-1, through the actions of an endothelin converting enzyme (ECE) found on the endothelial cell membrane. ET-1 formation and release are stimulated by angiotensin II (All), antidiuretic hormone (ADH), thrombin, cytokines, reactive oxygen species, and shearing forces acting on the vascular endothelium. ET-1 release is inhibited by prostacyclin and atrial natriuretic peptide as well as by nitric oxide.

Big ET-1 is converted to the mature peptide by the metalloproteinase endothelin-converting enzyme-1 (ECE-1). Big Endothelin-1 (1-38) is precursor of endothelin 1. Big endothelin-1 is cleaved to yield endothelin-1 via the activity of an endothelin-converting enzyme (ECE). Big Endothelin-1 can be hydrolyzed by chymase to generate endothelin 1 (1-21) in vitro. Vasoconstrictor activity appears to be due to its conversion to endothelin 1 by endothelin converting enzyme in the tissue.

Big endothelin-1 is considerably less active in constricting arterial strips than mature 21-residue endothelin-1 (5, 6) and is converted to active endothelin-1 via a specific unusual proteolytic processing at Trp-Val catalyzed by a putative peptidase called endothelin-converting enzyme

Reference: Inoue A (1989) J Biol Chem. 5;264(25):14954-9; M Burkhardt et. al (2000) Journal of Hypertension, 18(3), 273-279

for in vitro research use only

Related items:

Catalog#	ProdDescription
PP-1220	Endothelin-1 (human, bovine, dog, mouse, porcine, rat) Acetate
SP-55553-1	Endothelin-1, Human [H-Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-Phe-Cys-His-Leu-Asp-Ile-Ile-Trp-OH; ME: 2491.95]
SP-88394-1	Endothelin-1 (1-15), amide, human (AA: Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-Phe-Cys-NH2) (MW: 1717.04)
SP-88395-1	Endothelin-1 (1-15), human (AA: Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-Phe-Cys) (MW: 1718.02)
SP-89900-1	"Endothelin-1 (11-21) (AA: Cys-Val-Tyr-Phe-Cys-His-Leu-Asp-Ile-Ile-Trp (Disulfide bridge Cys1-Cys5)) (MW: 1409.70)"
SP-101770-1	141208