SANTA CRUZ BIOTECHNOLOGY, INC.

urotensin II (E-20): sc-21096

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Two major regulatory peptides were originally isolated from fish urophysial extracts, urotensin I and II. In both frog and human, the urotensin II sequence is located at the carboxy-terminal position of the precursor. Human urotensin II is composed of only 11 amino acid residues, while fish and frog urotensin II possess 12 and 13 amino acid residues, respectively. The cyclic region of urotensin II, which is responsible for the biological activity of the peptide, has been fully conserved from fish to human. However, several substitutions have occurred in the amino-terminal region of the molecule. A human G protein-coupled receptor, GPR14, is the urotensin II receptor. Human urotensin II is found within both vascular and cardiac tissue, including coronary atheroma and effectively constricts isolated arteries from nonhuman primates. Urotensin II may act as an autocrine and/or paracrine hormone rather than as a circulating hormone, by playing an important role in the development of ventricular hypertrophy induced by chronic hypoxia.

REFERENCES

1. Bern, H.A., et al. 1985. Neurohormones from fish tails: the caudal neurosecretory system. I. "Urophysiology" and the caudal neurosecretory system of fishes. Recent Prog. Horm. Res. 41: 533-552.
2. Coulouarn, Y., et al. 1998. Cloning of the cDNA encoding the urotensin II precursor in frog and human reveals intense expression of the urotensin II gene in motoneurons of the spinal cord. Proc. Natl. Acad. Sci. USA 95: 15803-15808.
3. Ames, R.S., et al. 1999. Human urotensin-II is a potent vasoconstrictor and agonist for the orphan receptor GPR14. Nature 401: 282-286.
4. Zhang, Y., et al. 2002. Effect of chronic hypoxia on contents of urotensin II and its functional receptors in rat myocardium. Heart Vessels 16: 64-68.
5. Chartrel, N., et al. 2004. Biochemical characterization and immunohistochemical localization of urotensin II in the human brainstem and spinal cord. J. Neurochem. 91: 110-118.
6. Russell, F.D., et al. 2004. Investigation of signaling pathways that mediate the inotropic effect of urotensin-II in human heart. Cardiovasc. Res. 63: 673-681.
7. Bousette, N., et al. 2004. Increased expression of urotensin II and its cognate receptor GPR14 in atherosclerotic lesions of the human aorta. Atherosclerosis 176: 117-123.
8. Cheung, B.M., et al. 2004. Plasma concentration of urotensin II is raised in hypertension. J. Hypertens. 22: 1341-1344.

CHROMOSOMAL LOCATION

Genetic locus: UTS2 (human) mapping to 1p36; Uts2 (mouse) mapping to 4 E1.

SOURCE

urotensin II (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of urotensin II of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21096 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

urotensin II (E-20) is recommended for detection of urotensin II precursor of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for urotensin II siRNA (m): sc-45576.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.