SANTA CRUZ BIOTECHNOLOGY, INC.

copeptin (M-20): sc-7812

The Power to Question

BACKGROUND

The nonapeptide hormones Arginine Vasopressin (ARG-Vasopressin or AVP) and Oxytocin are synthesized in the supraoptic and paraventricular nuclei of the hypothalamus together with their respective "carrier" proteins, the neurophysins. Vasopressin and Oxytocin are produced by separate populations of magnocellular neurons in both nuclei. Neurophysin I (NPI) and Neurophysin II (NPII) function as carrier proteins for Oxytocin and Vasopressin, respectively. Oxytocin is a pituitary hormone which induces uterine contractions during childbirth and the ejection of milk from the mammary glands during nursing. Vasopressin is involved in the metabolism of water and electrolytes and has been identified as a vasoconstrictor. Both Neurophysin genes exist as three exons, with each exon encoding a functional protein domain. Studies show that the identically conserved middle region (exon B) is involved in NP-NP homodimer formation as well as being the site for the Glycine 17 to Valine point mutation responsible for familial diabetes insipidus. The genes encoding Neurophysin I and II map to human chromosome 20p13.

REFERENCES

1. North, W.G., et al. 1980. Isolation and partial characterization of two human neurophysins: their use in the development of specific radioimmunoassays. J. Clin. Endocrinol. Metab. 51: 884-891.
2. Brownstein, M.J., et al. 1980. Synthesis, transport, and release of posterior pituitary hormones. Science 207: 373-378.
3. Abercrombie, D.M., et al. 1984. Cooperative interactions in neurophysin-neuropeptide hormone complexes. Analytical affinity chromatography of native and covalently-modified neurophysins. Int. J. Pept. Protein Res. 24: 218-232.
4. Ruppert, S., et al. 1984. Recent gene conversion involving bovine vasopressin and oxytocin precursor genes suggested by nucleotide sequence. Nature 308: 554-557.
5. Doris, P.A. 1984. Vasopressin and central integrative processes. Neuroendocrinology 38: 75-85.
6. Gopal Rao, V.V.N., et al. 1992. The human gene for oxytocin-neurophysin I (OXT) is physically mapped to chromosome 20p13 by *in situ* hybridization. Cytogenet. Cell Genet. 61: 271-273.
7. Olias, G., et al. 1996. Heterologous expression of human vasopressin-neurophysin precursors in a pituitary cell line: defective transport of a mutant protein from patients with familial diabetes insipidus. DNA Cell Biol. 15: 929-935.

CHROMOSOMAL LOCATION

Genetic locus: Avp (mouse) mapping to 2 F1.

SOURCE

copeptin (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of copeptin of mouse origin.

RESEARCH USE

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

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-7812 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

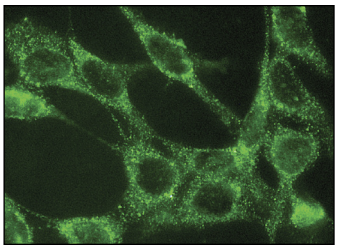
APPLICATIONS

copeptin (M-20) is recommended for detection of mature copeptin and precursor of Neurophysin II 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).

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.

DATA



copeptin (M-20): sc-7812. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Duplan, S.M., et al. 2009. Impact of Sim1 gene dosage on the development of the paraventricular and supraoptic nuclei of the hypothalamus. Eur. J. Neurosci. 30: 2239-2249.

STORAGE

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

PROTOCOLS

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