

Neurophysin I (M-15): sc-7810

BACKGROUND

The nonapeptide hormones arginine vasopressin (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.

CHROMOSOMAL LOCATION

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

SOURCE

Neurophysin I (M-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Neurophysin I 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-7810 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Neurophysin I (M-15) is recommended for detection of precursor and mature Neurophysin I (oxytocin precursor) of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 Neurophysin I siRNA (m): sc-60090, Neurophysin I shRNA Plasmid (m): sc-60090-SH and Neurophysin I shRNA (m) Lentiviral Particles: sc-60090-V.

Molecular Weight of Neurophysin I: 10-19 kDa.

Positive Controls: rat pituitary gland extract: sc-364807.

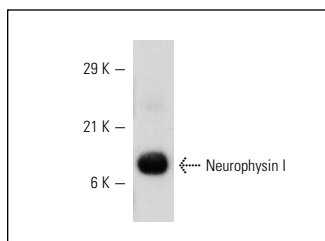
STORAGE

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.

DATA



Neurophysin I (M-15): sc-7810. Western blot analysis of Neurophysin I expression in rat pituitary tissue extract.

SELECT PRODUCT CITATIONS

- Koch, P., et al. 2009. Expression profile of PTPIP51 in mouse brain. *J. Comp. Neurol.* 517: 892-905.
- Ortiz-Miranda, S.I., et al. 2010. Differential modulation of N-type calcium channels by micro-opioid receptors in oxytocinergic versus vasopressinergic neurohypophysial terminals. *J. Cell. Physiol.* 225: 276-288.
- Wang, Y.F., et al. 2013. Hyposmolality differentially and spatiotemporally modulates levels of glutamine synthetase and serine racemase in rat supraoptic nucleus. *Glia* 61: 529-538.
- Tsuneoka, Y., et al. 2013. Functional, anatomical, and neurochemical differentiation of medial preoptic area subregions in relation to maternal behavior in the mouse. *J. Comp. Neurol.* 521: 1633-1663.
- Perello, M. and Raingo, J. 2013. Leptin activates oxytocin neurons of the hypothalamic paraventricular nucleus in both control and diet-induced obese rodents. *PLoS ONE* 8: e59625.
- Wang, Y.F., et al. 2013. GABAergic inhibition through synergistic astrocytic neuronal interaction transiently decreases vasopressin neuronal activity during hypoosmotic challenge. *Eur. J. Neurosci.* 37: 1260-1269.

PROTOCOLS

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Try **Neurophysin I (D-11): sc-393907**, our highly recommended monoclonal alternative to Neurophysin I (M-15).