

# Nociceptin (S-17): sc-9764

## BACKGROUND

Nociception, a pain response mechanism, occurs in response to stimuli that threaten the integrity of an organism. The first synapses produced as a result of the initiation of nociception are modulated by excitatory amino acids (glutamate and aspartate) and many peptides (substance P, CGRP, CCK, endogenous opioids). Nociceptin (also designated orphanin FQ) is a neuronal peptide that is similar to opioid peptides. Nociceptin activates KOR-3 ( $\kappa$ -type opioid receptor, also designated ORL1), a G protein-coupled receptor. Although similar to dynorphin A, a  $\kappa$  opioid peptide, nociceptin functions to make animals hyperreactive to nociceptive stimulations. Nociceptin is also involved in locomotor behavior and may be involved in the modulation of synaptic plasticity in learning and memory.

## REFERENCES

1. Meunier, J.C., et al. 1995. Isolation and structure of the endogenous agonist of opioid receptor-like ORL1 receptor. *Nature* 377: 532-535.
2. Reinscheid, R.K., et al. 1995. Orphanin FQ: a neuropeptide that activates an opioidlike G protein-coupled receptor. *Science* 270: 792-794.
3. Florin, S., et al. 1996. Nociceptin stimulates locomotion and exploratory behaviour in mice. *Eur. J. Pharmacol.* 317: 9-13.
4. Yu, T.P., et al. 1998. Orphanin FQ/nociceptin inhibits synaptic transmission and long-term potentiation in rat dentate gyrus through postsynaptic mechanisms. *J. Neurophysiol.* 80: 1277-1284.
5. Mollereau, C., et al. 1999. Distinct mechanisms for activation of the opioid receptor-like 1 and  $\kappa$ -opioid receptors by nociceptin and dynorphin A. *Mol. Pharmacol.* 55: 324-331.
6. Koizumi, M., et al. 2004. Exogenous, but not endogenous nociceptin modulates mesolimbic dopamine release in mice. *J. Neurochem.* 89: 257-263.
7. Marti, M., et al. 2004. Blockade of nociceptin/orphanin FQ transmission in rat substantia nigra reverses haloperidol-induced akinesia and normalizes nigral glutamate release. *J. Neurochem.* 91: 1501-1504.
8. Orsini, M.J., et al. 2005. The nociceptin pharmacophore site for opioid receptor binding derived from the NMR structure and bioactivity relationships. *J. Biol. Chem.* 280: 8134-8142.

## CHROMOSOMAL LOCATION

Genetic locus: PNOC (human) mapping to 8p21.1; Phoc (mouse) mapping to 14 D1.

## SOURCE

Nociceptin (S-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Nociceptin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9764 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Nociceptin (S-17) is recommended for detection of nociceptin of mouse, rat and human 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).

Nociceptin (S-17) is also recommended for detection of nociceptin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Nociceptin siRNA (h): sc-106306, Nociceptin siRNA (m): sc-150018, Nociceptin shRNA Plasmid (h): sc-106306-SH, Nociceptin shRNA Plasmid (m): sc-150018-SH, Nociceptin shRNA (h) Lentiviral Particles: sc-106306-V and Nociceptin shRNA (m) Lentiviral Particles: sc-150018-V.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **Nociceptin (F-10): sc-398073**, our highly recommended monoclonal alternative to Nociceptin (S-17).