

# Contactin 1 (N-19): sc-20296

## BACKGROUND

Changes in synaptic efficacy can mediate crucial processes during learning and memory formation. Accumulating evidence implicates cell adhesion molecules in activity-dependent synaptic modifications associated with paired-pulse facilitation (PPF), long-term potentiation (LTP) and long-term depression (LTD). Among the cell adhesion molecules involved in these processes are the contactins. Contactins are immunoglobulin superfamily members that play a selective role in synaptic plasticity, PPF and LTD, and may regulate cell-cell interactions contributing to synaptic plasticity in conjunction with other synapse targeting molecules, including paranodin and phosphacan. In addition, contactins are essential components that control expression and distribution of Na<sup>+</sup> channels in neurons, junctional attachment at the paranode, and ultimately the physiology of the myelinated nerve. The human Contactin 1 gene maps to chromosome 12q12 and encodes a 1,018 amino acid protein. The human Contactin 3 gene maps to chromosome 3p26 and encodes a 646 amino acid plasmacytoma-associated neuronal glycoprotein. The human Contactin 5 gene maps to chromosome 11q21-q22.2 and encodes a 1,100 amino acid neural adhesion molecule. The human Contactin 6 gene maps to chromosome 3p26-p25 and encodes a 1,028 amino acid neural adhesion molecule.

## REFERENCES

1. Ranscht, B. 1988. Sequence of contactin, a 130-kD glycoprotein concentrated in areas of interneuronal contact, defines a new member of the immunoglobulin supergene family in the nervous system. *J. Cell Biol.* 107: 1561-1573.
2. Fields, R.D. and Itoh, K. 1996. Neural cell adhesion molecules in activity-dependent development and synaptic plasticity. *Trends Neurosci.* 19: 473-480.
3. Kazarinova-Noyes, K., Malhotra, J.D., McEwen, D.P., Mattei, L.N., Berglund, E.O., Ranscht, B., Levinson, S.R., Schachner, M., Shrager, P., Isom, L.L. and Xiao, Z.C. 2001. Contactin associates with Na<sup>+</sup> channels and increases their functional expression. *J. Neurosci.* 21: 7517-7525.
4. Boyle, M.E., Berglund, E.O., Murai, K.K., Weber, L., Peles, E. and Ranscht, B. 2001. Contactin orchestrates assembly of the septate-like junctions at the paranode in myelinated peripheral nerve. *Neuron* 30: 385-397.
5. Murai, K.K., Misner, D. and Ranscht, B. 2002. Contactin supports synaptic plasticity associated with hippocampal long-term depression but not potentiation. *Curr. Biol.* 12: 181-190.

## CHROMOSOMAL LOCATION

Genetic locus: CNTN1 (human) mapping to 12q12; Cntn1 (mouse) mapping to 15 E3.

## SOURCE

Contactin 1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Contactin 1 of human origin.

## STORAGE

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

## 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-20296 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Contactin 1 (N-19) is recommended for detection of Contactin 1 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).

Contactin 1 (N-19) is also recommended for detection of Contactin 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Contactin 1 siRNA (h): sc-43695, Contactin 1 siRNA (m): sc-43086, Contactin 1 shRNA Plasmid (h): sc-43695-SH, Contactin 1 shRNA Plasmid (m): sc-43086-SH, Contactin 1 shRNA (h) Lentiviral Particles: sc-43695-V and Contactin 1 shRNA (m) Lentiviral Particles: sc-43086-V.

Molecular Weight of Contactin 1: 135 kDa.

Positive Controls: mouse brain extract: sc-2253.

## 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.

## SELECT PRODUCT CITATIONS

1. Su, J.L., Yang, C.Y., Shih, J.Y., Wei, L.H., Hsieh, C.Y., Jeng, Y.M., Wang, M.Y., Yang, P.C. and Kuo, M.L. 2006. Knockdown of contactin-1 expression suppresses invasion and metastasis of lung adenocarcinoma. *Cancer Res.* 66: 2553-2561.

## RESEARCH USE

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



Try **Contactin 1 (41): sc-136133**, our highly recommended monoclonal alternative to Contactin 1 (N-19).