

connexin 45 (N-19): sc-7680

BACKGROUND

The connexin family of proteins form hexameric complexes called "connexons" that facilitate movement of low molecular weight proteins between cells via gap junctions. Connexin proteins share a common topology of four transmembrane α -helical domains, two extracellular loops, a cytoplasmic loop and cytoplasmic N- and C-termini. Many of the key functional differences arise from specific amino acid substitutions in the most highly conserved domains, the transmembrane and extracellular regions. Each of the approximately 20 connexin isoforms produces channels with distinct permeabilities and electrical and chemical sensitivities; therefore, one connexin usually cannot fully substitute for another. Consequently, a wide variety of malignant phenotypes associate with decreased connexin expression and gap junction communication, dependent on the particular connexin that is effected. For instance, downregulation of connexin 45 in the left ventricle associates with end-stage heart failure due both to ischaemic cardiomyopathy and idiopathic dilated cardiomyopathy.

REFERENCES

1. Manjunath, C.K., et al. 1987. Human cardiac gap junctions: isolation, ultrastructure and protein composition. *J. Mol. Cell. Cardiol.* 19: 131-134.
2. Grossman, H.B., et al. 1994. Decreased connexin expression and intercellular communication in human bladder cancer cells. *Cancer Res.* 54: 3062-3065.
3. Harris, A.L. 2001. Emerging issues of connexin channels: biophysics fills the gap. *Q. Rev. Biophys.* 34: 325-472.
4. Dupont, E., et al. 2001. Altered connexin expression in human congestive heart failure. *J. Mol. Cell. Cardiol.* 33: 359-371.

CHROMOSOMAL LOCATION

Genetic locus: GJA7 (human) mapping to 17q21.31; Gja7 (mouse) mapping to 11 E1.

SOURCE

connexin 45 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of connexin 45 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-7680 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

connexin 45 (N-19) is recommended for detection of connexin 45 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).

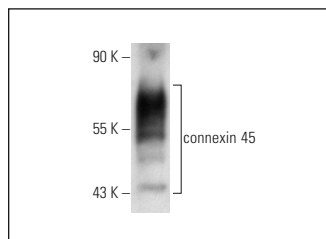
connexin 45 (N-19) is also recommended for detection of connexin 45 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for connexin 45 siRNA (h): sc-43080, connexin 45 siRNA (m): sc-43081, connexin 45 shRNA Plasmid (h): sc-43080-SH, connexin 45 shRNA Plasmid (m): sc-43081-SH, connexin 45 shRNA (h) Lentiviral Particles: sc-43080-V and connexin 45 shRNA (m) Lentiviral Particles: sc-43081-V.

Molecular Weight of connexin 45: 45 kDa.

Positive Controls: mouse eye tissue extract.

DATA



connexin 45 (N-19): sc-7680. Western blot analysis of connexin 45 expression in mouse eye tissue extract.

SELECT PRODUCT CITATIONS

1. Faucheux, N., et al. 2002. Organization of cyclic AMP-dependent connexin 43 in Swiss 3T3 cells attached to a cellulose substratum. *Biomaterials* 23: 413-421.
2. de Montgolfier, B., et al. 2007. The expression of multiple connexins throughout spermatogenesis in the rainbow trout testis suggests a role for complex intercellular communication. *Biol. Reprod.* 76: 2-8.
3. Baudino, T.A., et al. 2008. Cell patterning: interaction of cardiac myocytes and fibroblasts in three-dimensional culture. *Microsc. Microanal.* 14: 117-125.

RESEARCH USE

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

MONOS
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Try **connexin 45 (G-7): sc-374354**, our highly recommended monoclonal alternative to connexin 45 (N-19).