

connexin 32 (HAM8): sc-21794

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 affected. For instance, mutations in connexin 32 result in Charcot-Marie-Tooth disease, a demyelinating disease of the peripheral nervous system.

REFERENCES

- Manjunath, C.K., et al. 1987. Human cardiac gap junctions: isolation, ultrastructure, and protein composition. *J. Mol. Cell. Cardiol.* 19: 131-134.
- Grossman, H.B., et al. 1994. Decreased connexin expression and intercellular communication in human bladder cancer cells. *Cancer Res.* 54: 3062-3065.
- Harris, A.L. 2001. Emerging issues of connexin channels: biophysics fills the gap. *Q. Rev. Biophys.* 34: 325-472.
- Menichella, D.M., et al. 2003. Connexins are critical for normal myelination in the CNS. *J. Neurosci.* 23: 5963-5973.
- King, T.J., et al. 2004. The gap junction protein connexin 32 is a mouse lung tumor suppressor. *Cancer Res.* 64: 7191-7196.
- Yamamoto, T., et al. 2004. IL-1 β regulates expression of Cx32, Occludin and claudin-2 of rat hepatocytes via distinct signal transduction pathways. *Exp. Cell Res.* 299: 427-441.

CHROMOSOMAL LOCATION

Genetic locus: GJB1 (human) mapping to Xq13.1; Gjb1 (mouse) mapping to X D.

SOURCE

connexin 32 (HAM8) is a mouse monoclonal antibody raised against amino acids 229-239 within the cytoplasmic region near the C-terminus of connexin 32.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

connexin 32 (HAM8) is recommended for detection of connexin 32 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for connexin 32 siRNA (h): sc-43076, connexin 32 siRNA (m): sc-43077, connexin 32 shRNA Plasmid (h): sc-43076-SH, connexin 32 shRNA Plasmid (m): sc-43077-SH, connexin 32 shRNA (h) Lentiviral Particles: sc-43076-V and connexin 32 shRNA (m) Lentiviral Particles: sc-43077-V.

Molecular Weight of connexin 32: 32 kDa.

Positive Controls: mouse pancreas extract: sc-364244.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

- Sun, X., et al. 2022. Connexin 32 ameliorates epithelial-to-mesenchymal-transition in diabetic renal tubular via inhibiting NOX4. *Pharmacol. Res.* 176: 106084.

RESEARCH USE

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

PROTOCOLS

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