SANTA CRUZ BIOTECHNOLOGY, INC.

connexin 32 (CXN-32): sc-59948

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

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 connexion expression and intercellular communication in human bladder cancer cells. Cancer Res. 54: 3062-3065.

CHROMOSOMAL LOCATION

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

SOURCE

connexin 32 (CXN-32) is a mouse monoclonal antibody raised against amino acids 105-123 of connexin 32 of human origin.

PRODUCT

Each vial contains 100 µl ascites containing IgG_1 with < 0.1% sodium azide.

APPLICATIONS

connexin 32 (CXN-32) is recommended for detection of connexin 32 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:2000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:100-1:200).

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.

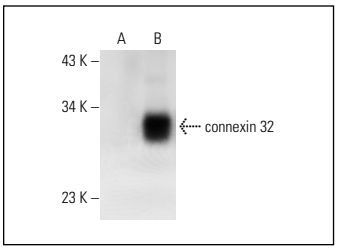
Molecular Weight of connexin 32: 32 kDa.

Positive Controls: connexin 32 (h2): 293T Lysate: sc-174827, mouse brain extract: sc-2253 or human liver extract: sc-363766.

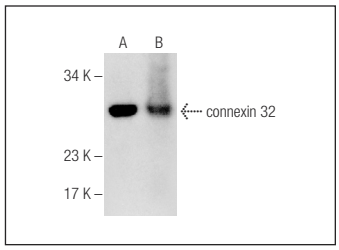
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



connexin 32 (CXN-32): sc-59948. Western blot analysis of connexin 32 expression in non-transfected: sc-117752 (**A**) and human connexin 32 transfected: sc-174827 (**B**) 293T whole cell lysates.



connexin 32 (CXN-32): sc-59948. Western blot analysis of connexin 32 expression in mouse brain (**A**) and human liver (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Cepeda, C., et al. 2015. In Rasmussen encephalitis, hemichannels associated with microglial activation are linked to cortical pyramidal neuron coupling: a possible mechanism for cellular hyperexcitability. CNS Neurosci. Ther. 21: 152-163.
2. Tsai, W.L., et al. 2017. Efficient programming of human mesenchymal stem cell-derived hepatocytes by epigenetic regulations. J. Gastroenterol. Hepatol. 32: 261-269.
3. Zhang, Y., et al. 2019. Cx32 mediates cisplatin resistance in human ovarian cancer cells by affecting drug efflux transporter expression and activating the EGFR-Akt pathway. Mol. Med. Rep. 19: 2287-2296.
4. Zhu, Z., et al. 2019. Molecular hydrogen accelerates the reversal of acute obstructive cholangitis-induced liver dysfunction by restoring gap and tight junctions. Mol. Med. Rep. 19: 5177-5184.
5. Tang, N., et al. 2019. Involvement of gap junctions in propylthiouracil-induced cytotoxicity in BRL-3A cells. Exp. Ther. Med. 17: 2799-2806.
6. Ruch, R.J. 2019. Connexin 43 suppresses lung cancer stem cells. Cancers 11: 175.
7. Zhang, X.M., et al. 2019. The gap junction inhibitor INI-0602 attenuates mechanical allodynia and depression-like behaviors induced by spared nerve injury in rats. Neuroreport 30: 369-377.
8. Luo, H., et al. 2019. Inhibition of ubiquitin-specific protease 14 promotes connexin 32 internalization and counteracts cisplatin cytotoxicity in human ovarian cancer cells. Oncol. Rep. 42: 1237-1247.

RESEARCH USE

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