SANTA CRUZ BIOTECHNOLOGY, INC.

connexin 31.1 (H-9): sc-515690

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. Connexin 31.1, Cx31.1 or Gap junction β-5 protein, is a 271 amino acid protein that is predominantly expressed in skin with lower expression in testis. Expression of connexin 31.1 is required for normal placental development in mice. Down-regulation of the connexin 31.1 gene correlates with head and neck squamous cell carcinomas (HNSCC) and therefore it may be a potential therapeutic target.

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. Hennemann, H., et al. 1992. Two gap junction genes, connexin 31.1 and 30.3, are closely linked on mouse chromosome 4 and preferentially expressed in skin. J. Biol. Chem. 267: 17225-17233.
3. Budunova, I.V., et al. 1995. The expression of gap junctional proteins during different stages of mouse skin carcinogenesis. Carcinogenesis 16: 2717-2724.
4. Davies, T.C., et al. 1996. Multiple members of the connexin gene family participate in preimplantation development of the mouse. Dev. Genet. 18: 234-243.
5. Harris, A.L. 2001. Emerging issues of connexin channels: biophysics fills the gap. Q. Rev. Biophys. 34: 325-472.
6. Al Moustafa, A.E., et al. 2002. Identification of genes associated with head and neck carcinogenesis by cDNA microarray comparison between matched primary normal epithelial and squamous carcinoma cells. Oncogene 21: 2634-2640.
7. Zheng-Fischhofer, Q., et al. 2007. Characterization of connexin31.1-deficient mice reveals impaired placental development. Dev. Biol. 312: 258-271.
8. Chang, C.Y., et al. 2009. Antisense down regulation of connexin31.1 reduces apoptosis and increases thickness of human and animal corneal epithelia. Cell Biol. Int. 33: 376-385.

CHROMOSOMAL LOCATION

Genetic locus: GJB5 (human) mapping to 1p34.3; Gjb5 (mouse) mapping to 4 D2.2.

SOURCE

connexin 31.1 (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 251-266 within a C-terminal cytoplasmic domain of connexin 31.1 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

connexin 31.1 (H-9) is recommended for detection of connexin 31.1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for connexin 31.1 siRNA (h): sc-88186, connexin 31.1 siRNA (m): sc-142494, connexin 31.1 shRNA Plasmid (h): sc-88186-SH, connexin 31.1 shRNA Plasmid (m): sc-142494-SH, connexin 31.1 shRNA (h) Lentiviral Particles: sc-88186-V and connexin 31.1 shRNA (m) Lentiviral Particles: sc-142494-V.

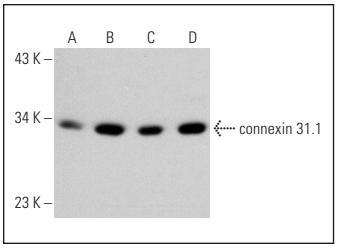
Molecular Weight of connexin 31.1: 31 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



connexin 31.1 (H-9): sc-515690. Western blot analysis of connexin 31.1 expression in NIH/3T3 (**A**), Jurkat (**B**), K-562 (**C**) and MDA-MB-231 (**D**) whole cell lysates.

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 for detailed protocols and support products.