SANTA CRUZ BIOTECHNOLOGY, INC.

p-connexin 43 (Ser 255)-R: sc-12899-R

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The Power to Question

BACKGROUND

The connexins are a group of GAP junction proteins, which form a hexamer to compose a connexon. Clusters of connexons form a GAP junction through which low molecular weight proteins may diffuse from cell to cell. Several mammalian cells with malignant phenotypes exhibit decreased connexin expression and GAP junction communication. There is a decrease in GAP junctional communication in Src transformed cells. The decreased communication appears to be associated with tyrosine phosphorylation of connexin 43. Activated c-Src phosphorylates the C-terminal tail of connexin 43 on residue Tyr 265, resulting in a stable interaction between both proteins leading to inhibition of GAP junctional communication. In addition to tyrosine phosphorylation, connexin 43 has also been shown to be phosphorylated on serine in the absence of Src kinases and on both serine and tyrosine in cells expressing Src kinases such as pp60v-Src and/or c-Src. In human vascular endothelial cells, connexin 43 is postranslationally modified during mitosis, and mitosis-specific phosphorylation of connexin 43 correlates with the transient loss of GAP junction intercellular communication and redistribution of connexin 43.

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. Tibbitts, T.T., et al. 1990. Diffraction diagnosis of protein folding in GAP junction connexins. Biophys. J. 57: 1025-1036.
3. Swenson, K.I., et al. 1990. Tyrosine phosphorylation of the GAP junction protein connexin 43 is required for the pp60v-Src-induced inhibition of communication. Cell Regul. 1: 989-1002.
4. Rash, J.E., et al. 1992. Improved structural detail in freeze-fracture replicas: high-angle shadowing of GAP junctions cooled below -170°C and protected by liquid nitrogen-cooled shrouds. Microsc. Res. Tech. 20: 187-204.
5. 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: GJA1 (human) mapping to 6q22.31; Gja1 (mouse) mapping to 10 B4.

SOURCE

p-connexin 43 (Ser 255)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 255 of connexin 43 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12899 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

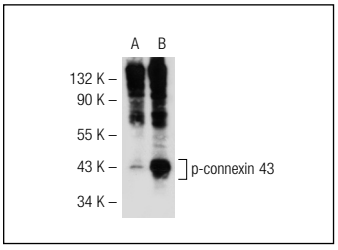
p-connexin 43 (Ser 255)-R is recommended for detection of Ser 255 phosphorylated connexin 43 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100– 500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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 43 siRNA (h): sc-29276, connexin 43 siRNA (m): sc-35091, connexin 43 shRNA Plasmid (h): sc-29276-SH, connexin 43 shRNA Plasmid (m): sc-35091-SH, connexin 43 shRNA (h Lentiviral Particles: sc-29276-V and connexin 43 shRNA (m) Lentiviral Particles: sc-35091-V.

Molecular Weight of p-connexin 43: 43 kDa.

Positive Controls: K-562 + PMA whole cell lysate: sc-2280, HeLa-PMA cell lysate: sc-2258 or connexin 43 (m): 293T Lysate: sc-119391.

DATA



p-connexin 43 (Ser 255)-R: sc-12899-R. Western blot analysis of connexin 43 phosphorylation in non-transfected: sc-117752 (**A**) and mouse connexin 43 transfected: sc-119391 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Arnold, J.M., et al. 2005. Cellular sublocalization of Cx43 and the establishment of functional coupling in IMR-32 neuroblastoma cells. Mol. Carcinog. 42: 159-169.
2. Naitoh, K., et al. 2006. MitoKATP channel activation suppresses gap junction permeability in the ischemic myocardium by an ERK-dependent mechanism. Cardiovasc. Res. 70: 374-383.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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