SANTA CRUZ BIOTECHNOLOGY, INC.

p-connexin 43 (mSer 262)-R: sc-17219-R

SANTA CRUZ BIOTECHNOLOGY

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: Gja1 (mouse) mapping to 10 B4.

SOURCE

p-connexin 43 (mSer 262)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping Ser 262 of connexin 43 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-17219 P, (100 µg 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.

RESEARCH USE

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

APPLICATIONS

p-connexin 43 (mSer 262)-R is recommended for detection of Ser 262 phosphorylated connexin 43 of mouse and rat 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).

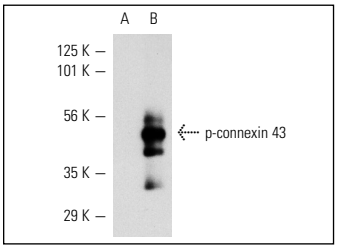
p-connexin 43 (mSer 262)-R is also recommended for detection of correspondingly phosphorylated connexin 43 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for connexin 43 siRNA (m): sc-35091, connexin 43 shRNA Plasmid (m): sc-35091-SH and connexin 43 shRNA (m) Lentiviral Particles: sc-35091-V.

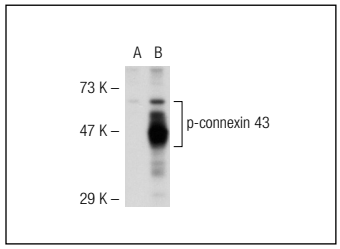
Molecular Weight of p-connexin 43: 43 kDa.

Positive Controls: connexin 43 (m): 293T Lysate: sc-119391, mouse brain extract: sc-2253 or F9 cell lysate: sc-2245.

DATA



p-connexin 43 (mSer 262)-R: sc-17219-R. Western blot analysis of human recombinant connexin 43 (**A**) and human recombinant connexin 43 phosphorylated by human recombinant PKC (**B**).



p-connexin 43 (mSer 262)-R: sc-17219-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. Norris, R.P., et al. 2008. Luteinizing hormone causes MAP kinase-dependent phosphorylation and closure of connexin 43 gap junctions in mouse ovarian follicles: one of two paths to meiotic resumption. Development 135: 3229-3238.
2. Andric, N., et al. 2010. Transactivation of the epidermal growth factor receptor is involved in the lutropin receptor-mediated down-regulation of ovarian aromatase expression *in vivo*. Mol. Endocrinol. 24: 552-560.
3. Andrysík, Z., et al. 2013. Aryl hydrocarbon receptor-mediated disruption of contact inhibition is associated with connexin 43 downregulation and inhibition of gap junctional intercellular communication. Arch. Toxicol. 87: 491-503.
4. Srisakuldee, W., et al. 2014. The FGF-2-triggered protection of cardiac subsarcolemmal mitochondria from calcium overload is mitochondrial connexin 43-dependent. Cardiovasc. Res. 103: 72-80.

PROTOCOLS

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