SANTA CRUZ BIOTECHNOLOGY, INC.

p-connexin 43 (mSer 262)-R: sc-22267-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.
6. Xie, H., et al. 1997. A mitosis-specific phosphorylation of the GAP junction protein connexin 43 in human vascular cells: biochemical characterization and localization. J. Cell Biol. 137: 203-210.
7. Kanemitsu, M.Y., et al. 1997. Tyrosine phosphorylation of connexin 43 by v-Src is mediated by SH2 and SH3 domain interactions. J. Biol. Chem. 272: 22824-22831.
8. Giepmans, B.N., et al. 2001. Interaction of c-Src with GAP junction protein connexin 43. Role in the regulation of cell-cell communication. J. Biol. Chem. 276: 8544-9854.

CHROMOSOMAL LOCATION

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

STORAGE

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

SOURCE

p-connexin 43 (mSer 262)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 262 phosphorylated 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-22267 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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), 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 canine, bovine, porcine and avian.

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: mouse brain extract: sc-2253 or F9 cell lysate: sc-2245.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Alonso, F., et al. 2010. An angiotensin II- and NFκB-dependent mechanism increases connexin 43 in murine arteries targeted by renin-dependent hypertension. Cardiovasc. Res. 87: 166-176.
2. Boassa, D., et al. 2010. Trafficking and recycling of the connexin43 gap junction protein during mitosis. Traffic 11: 1471-1486.

RESEARCH USE

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