SANTA CRUZ BIOTECHNOLOGY, INC.

connexin 43 (D-7): sc-13558

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. In Src transformed cells, there is a decrease in gap junctional communication, which appears to be associated with tyrosine phosphorylation of connexin 43. Activated c-Src phosphorylates the C-terminal tail of connexin 43 on Tyr 265, resulting in a stable interaction between both proteins, which leads 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 c-Src and/or pp60v-Src. In human vascular endothelial cells, connexin 43 is posttranslationally 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. Dermietzel, R., et al. 1989. Differential expression of three gap junction proteins in developing and mature brain tissues. Proc. Natl. Acad. Sci. USA 86: 10148-10152.
3. Yamamoto, T., et al. 1990. LM and EM immunolocalization of the gap junctional protein connexin 43 in rat brain. Brain Res. 508: 313-319.

CHROMOSOMAL LOCATION

Genetic locus: GJA1 (human) mapping to 6q22.31; Gja1 (mouse) mapping to 10 B4.

SOURCE

connexin 43 (D-7) is a mouse monoclonal antibody raised against amino acids 241-254 within the cytoplasmic domain of connexin 43 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

connexin 43 (D-7) is available conjugated to agarose (sc-13558 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13558 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13558 PE), fluorescein (sc-13558 FITC), Alexa Fluor® 488 (sc-13558 AF488), Alexa Fluor® 546 (sc-13558 AF546), Alexa Fluor® 594 (sc-13558 AF594) or Alexa Fluor® 647 (sc-13558 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13558 AF680) or Alexa Fluor® 790 (sc-13558 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

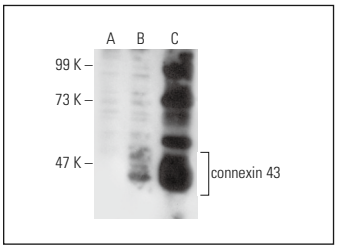
connexin 43 (D-7) is recommended for detection of connexin 43 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for connexin 43 siRNA (h): sc-29276, connexin 43 siRNA (m): sc-35091, connexin 43 siRNA (r): sc-60008, connexin 43 shRNA Plasmid (h): sc-29276-SH, connexin 43 shRNA Plasmid (m): sc-35091-SH, connexin 43 shRNA Plasmid (r): sc-60008-SH, connexin 43 shRNA (h Lentiviral Particles: sc-29276-V, connexin 43 shRNA (m) Lentiviral Particles: sc-35091-V and connexin 43 shRNA (r) Lentiviral Particles: sc-60008-V.

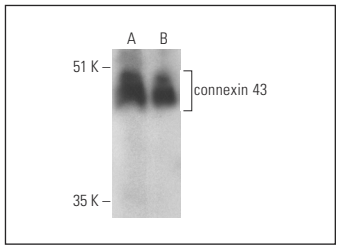
Molecular Weight of connexin 43: 43 kDa.

Positive Controls: connexin 43 (m): 293T Lysate: sc-119391, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

DATA



connexin 43 (D-7): sc-13558. Western blot analysis of connexin 43 expression in non-transfected: sc-117752 (**A**) and mouse connexin 43 transfected: sc-119391 (**B**) 293T whole cell lysates and mouse brain tissue extract (**C**).



connexin 43 (D-7) HRP: sc-13558 HRP. Direct western blot analysis of connexin 43 expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Zhang, Z.Q., et al. 2004. Effective asymmetry in gap junctional intercellular communication between populations of human normal lung fibroblasts and lung carcinoma cells. Carcinogenesis 25: 473-482.
2. Sarkar, D. and Singh, S.K. 2017. Neonatal hypothyroidism affects testicular glucose homeostasis through increased oxidative stress in prepubertal mice: effects on GLUT3, GLUT8 and Cx43. Andrology 5: 749-762.
3. Jiang, S., et al. 2018. Simulated microgravity hampers Notch signaling in the fight against myocardial ischemia-reperfusion injury. Mol. Med. Rep. 17: 5150-5158.
4. Martin, B., et al. 2019. Relaxin reverses maladaptive remodeling of the aged heart through Wnt-signaling. Sci. Rep. 9: 18545.
5. Chen, R., et al. 2020. Cx43 and AKAP95 regulate G_1/S conversion by competitively binding to cyclin E1/E2 in lung cancer cells. Thorac. Cancer 11: 1594-1602.

RESEARCH USE

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