

# connexin 45 (G-7): sc-374354

## 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  $\alpha$ -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. Each of the approximately 20 connexin isoforms produces channels with distinct permeabilities and electrical and chemical sensitivities; therefore, one connexin usually cannot fully substitute for another. Consequently, a wide variety of malignant phenotypes associate with decreased connexin expression and gap junction communication, dependent on the particular connexin that is effected. For instance, downregulation of connexin 45 in the left ventricle associates with end-stage heart failure due both to ischaemic cardiomyopathy and idiopathic dilated cardiomyopathy.

## 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. Grossman, H.B., et al. 1994. Decreased connexin expression and intercellular communication in human bladder cancer cells. *Cancer Res.* 54: 3062-3065.
3. Harris, A.L. 2001. Emerging issues of connexin channels: biophysics fills the gap. *Q. Rev. Biophys.* 34: 325-472.
4. Dupont, E., et al. 2001. Altered connexin expression in human congestive heart failure. *J. Mol. Cell. Cardiol.* 33: 359-371.

## CHROMOSOMAL LOCATION

Genetic locus: GJC1 (human) mapping to 17q21.31; Gjc1 (mouse) mapping to 11 E1.

## SOURCE

connexin 45 (G-7) is a mouse monoclonal antibody raised against amino acids 251-335 mapping near the N-terminus of connexin 45 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

connexin 45 (G-7) is available conjugated to agarose (sc-374354 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374354 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374354 PE), fluorescein (sc-374354 FITC), Alexa Fluor<sup>®</sup> 488 (sc-374354 AF488), Alexa Fluor<sup>®</sup> 546 (sc-374354 AF546), Alexa Fluor<sup>®</sup> 594 (sc-374354 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-374354 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-374354 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-374354 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## RESEARCH USE

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

## APPLICATIONS

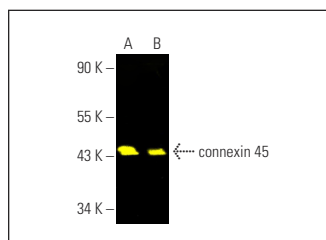
connexin 45 (G-7) is recommended for detection of connexin 45 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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 45 siRNA (h): sc-43080, connexin 45 siRNA (m): sc-43081, connexin 45 shRNA Plasmid (h): sc-43080-SH, connexin 45 shRNA Plasmid (m): sc-43081-SH, connexin 45 shRNA (h) Lentiviral Particles: sc-43080-V and connexin 45 shRNA (m) Lentiviral Particles: sc-43081-V.

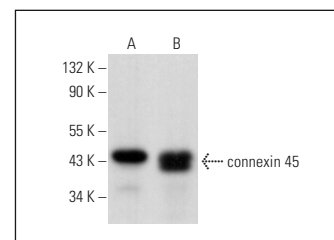
Molecular Weight of connexin 45: 45 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, F9 cell lysate: sc-2245 or Y79 cell lysate: sc-2240.

## DATA



connexin 45 (G-7) Alexa Fluor<sup>®</sup> 488: sc-374354 AF488. Direct fluorescent western blot analysis of connexin 45 expression in IMR-32 (A) and Y79 (B) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214.



connexin 45 (G-7): sc-374354. Western blot analysis of connexin 45 expression in F9 (A) and Sol8 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Ablasser, A., et al. 2013. Cell intrinsic immunity spreads to bystander cells via the intercellular transfer of cGAMP. *Nature* 503: 530-534.
2. Reikvam, H., et al. 2015. Connexin expression in human acute myeloid leukemia cells: identification of patient subsets based on protein and global gene expression profiles. *Int. J. Mol. Med.* 35: 645-652.
3. Akopian, A., et al. 2017. Targeting neuronal gap junctions in mouse retina offers neuroprotection in glaucoma. *J. Clin. Invest.* 127: 2647-2661.
4. Hong, J., et al. 2020. Connexin hemichannels contribute to the activation of cAMP signaling pathway and Renin production. *Int. J. Mol. Sci.* 21: 4462.
5. Hatabi, K., et al. 2022. Inhibition of gap junctional intercellular communication upregulates pluripotency gene expression in endogenous pluripotent muse cells. *Cells* 11: 2701.

## STORAGE

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

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