



**Qty:** 100 µg/200 µL

**Mouse anti-Connexin 45**

**Catalog No.** 415800

**Lot No.**

## Mouse Anti-Connexin 45

### FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

**Clone:** 5C7G1

**Isotype:** IgG1

### IMMUNOGEN

Peptide corresponding to amino acid residues from the C-terminal region of mouse connexin 45 protein (accession # P28229, NP\_032148.1), which is 100% homologous with rat and 93% homologous with human, rhesus monkey, swine and canine.

### SPECIFICITY

This antibody is specific for the connexin 45 (gap junction alpha-7 protein) protein. On Western blots of mouse connexin 45 (Cx45) transfected HeLa cells, it identifies the target band at ~45 kDa.

### REACTIVITY

Reactivity has been confirmed with mouse Cx45 transfected HeLa cells by Western blotting and with mouse inner plexiform layer of the retina by immunohistochemistry. Based on amino acid sequence homology, reactivity with rat, human, rhesus monkey, swine and canine is also expected. This antibody is recommended to be used in WB of Cx45 whereas clone 453 (cat# 411700) is recommended for immunohistochemistry.

Sample	Western Blotting	Immuno-Histochemistry (frozen)
Mouse	+++	++
Canine	ND	ND
Human	ND	ND
Rat	ND	ND
Rhesus monkey	ND	ND
Swine	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

### USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

**Western Blotting:** 2 µg/mL  
**Immunohistochemistry:** 4-6 µg/mL

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## STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

## BACKGROUND

The family of connexin proteins forms intercellular gap junctions (GJs) consisting of channels that allow direct flow of ions and small molecules between neighboring cells. Twenty mammalian connexins encoded by different genes have been identified so far, and these proteins are widely and differentially expressed in developing and adult tissues.<sup>1</sup> Connexin 45 (Cx45) has been cloned from various species including chicken, mouse, zebrafish, and human.

The loss of Cxs and GJs is a hallmark of carcinogenesis, while their induction in cancer cells leads to a reversal of the cancer phenotype, induction of differentiation, and regulation of cell growth.<sup>2</sup> Numerous reports have described expression of Cx45 in a number of mammalian tissues including kidney, vascular smooth muscle cells in brain and elsewhere.<sup>3</sup> In addition, Cx45 protein has been detected in mouse retina, also Cx45 promoter in somata of retinal neurons has been demonstrated.<sup>4</sup> Hypothesis suggests that gap junctional intercellular communication (GJIC) deficiency is also a characteristic of stem cells. It has also been demonstrated that human embryonic stem cells (hESCs) express two gap junction proteins, connexin 43 and connexin 45.<sup>5</sup>

## REFERENCES

1. Willecke K et al. *Biol Chem* 383: 725-37, 2002.
2. Carystinos GD et al. *J Mammary Gland Biol Neoplasia* 6(4):431-40, 2001.
3. Haefliger JA et al. *Cardiovasc Res* 62(2):345-56, 2004.
4. Maxeiner S et al. *J Neurosci* 25(3):566-76, 2005.
5. Wong RC et al. *Stem Cell* 22(6):883-9, 2004.

## RELATED PRODUCTS

<b>Product</b>	<b>Conjugate</b>	<b>Cat. No.</b>
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

<b>Conjugate</b>	<b>Goat anti-rabbit IgG (H+L)</b>	<b>Goat anti-mouse IgG (H+L)</b>	<b>Ex/Em*</b>	<b>Fluorescence similar to--</b>
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

\*Excitation/emission (nm); \*\*Not applicable

For additional secondary antibody conjugates, visit [www.invitrogen.com/antibodies](http://www.invitrogen.com/antibodies)

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