



**Qty:** 100 µg/200 µL

**Ms anti-Connexin36**

**(Clone: 1E5H5)**

**For Research Use Only**

**Catalog No.** 37-4600

**Lot No.**

## Mouse anti-Connexin36

### FORM

This 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:** 1E5H5

**ISOTYPE:** Mouse IgG<sub>1</sub>

### IMMUNOGEN

Synthetic peptide derived from the C-terminal region of the rat and mouse Connexin36 proteins. This sequence differs from the human Connexin36 sequence by one amino acid.

### SPECIFICITY

This antibody is specific for the ~36 kDa Connexin36 protein.

### REACTIVITY

Reactivity has been confirmed with Connexin36-transfected HeLa cell lysates. Based on sequence homology, this antibody is also expected to react with rat Connexin36.

Sample	Immuno-precipitation (native)	Immuno-histochemistry (frozen tissues)	Western Blotting
Human	+++	ND	+++
Mouse	ND	+++	ND
Rat	ND	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:** 1-3 µg/mL

**Immunoprecipitation :** 5-10 µg/ IP reaction

**Immunohistochemistry:** 1-3 µg/mL

### STORAGE

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

(cont'd)

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## BACKGROUND

Intercellular communication through gap junctions plays an important role in a variety of cellular processes including homeostasis, morphogenesis, cell differentiation, and growth control.<sup>1-4</sup> Gap junctions are transmembrane channels that directly link neighboring cells by mediating the exchange of low-molecular weight (<1200 kDa) metabolites, ions, and second messengers. Gap junctions are formed by the interaction of hemichannels (connexons) on adjacent cells. Connexons are hexameric assemblies of connexin proteins.

Structural features common to connexin proteins include a cytoplasmic NH<sub>2</sub>-terminal tail, four transmembrane domains, two extracellular loops and a C-terminal cytoplasmic tail of varying length. Sequence comparisons reveal that the greatest divergence between connexins occurs at the second intracellular loop and at the cytoplasmic tail.<sup>1,2</sup> These domains are thought to mediate connexin type-specific properties including phosphorylation, response to gating stimuli, connexon assembly and membrane turnover. Modulation of gap junction communication can be achieved by multiple mechanisms and can occur very rapidly over a period of several hours. These mechanisms include alterations in transcription, translation, stability, post-translational processing (especially phosphorylation), gating, and insertion or removal from the plasma membrane. Interestingly, reduction or alteration in the levels or types of connexin expressed in a given cell type has been found to correlate with tumor progression and metastasis.<sup>5</sup>

CX36 is the first gap junction protein expressed predominantly in neuronal cells of the mammalian central nervous system. It is highly expressed in adult retina and is present in neurons of the inferior olive, the olfactory bulb, the CA3/CA4 hippocampal subfields and several brain-stem nuclei.<sup>6</sup> Cx36 mRNA expression in brain increases gradually during fetal development until day 7 post-partum, when its expression begins to decline.<sup>7</sup> Biophysical measurements of gap junction channels formed by transfected and endogenous Cx36 indicate that they possess unique properties well suited for mediating flexible electrical and biochemical interactions between neurons.<sup>8</sup> Recent studies have also shown that Connexin36 is essential for transmission of rod-mediated visual signals in the mammalian retina.<sup>10</sup>

## REFERENCES

1. Kumar M, Gilula MB. *Cell* 84:381-388, 1996.
2. Saez JC, et al. In: *Advances in Second Messenger and Phosphoprotein Research*; Eds: Shenolikar S and Narin A. Raven Press, New York, 1993.
3. Bennet MVL, et al. *Neuron* 6:305-320, 1990.
4. Kuraoka A, et al. *J Histochem Cytochem* 41:971-980, 1993.
5. Wilgenbus KK, et al. *Int J Cancer* 51:522-529, 1992.
6. Condorelli DF, et al. *Eur J Neurosci* 10:1202-1208, 1998.
7. Sohl G, et al. *FEBS Lett* 428:27-31, 1998.
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9. Nash JE, et al. *PNAS* 97(13):7573-7578, 2000.
10. Deans MR, et al. *Neuron* 36(4): 703-12, 2002.

## RELATED PRODUCTS

<b>Product</b>	<b>Clone/PAD*</b>	<b>Cat. No.</b>
Rabbit anti-Connexin36	CY44	51-6300
Rabbit anti-Connexin36	CYL5	51-6200
Rabbit anti-Connexin26	UM214	51-2800
Rabbit anti-Connexin29	ZMD.81	34-4200
Rabbit anti-Connexin30	Z-PP9	71-2200
Rabbit anti-Connexin32	ZMD.193	34-5700
Mouse anti-Connexin32	5F9A9	35-8900
Rabbit anti-Connexin43	Z-JB1	71-0700
Mouse anti-Connexin43	3D8A5	35-5000
Mouse anti-Connexin50	C6	33-4300
Connexin Antibody Sampler Pack	Various	90-0500
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

\*PAD: Polyclonal Antibody Designation

<b>Conjugate</b>	<b>ZyMAX™ Goat x Rabbit IgG (H+L)</b>	<b>ZyMAX™ Goat x Mouse IgG (H+L)</b>
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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