

Product Specification Sheet

**Connexin 40 (CX40B12) /Gap Junction alpha-5 Protein (CXA-5) Antibodies**

<b>Cat.</b> CX40B12-S	Rabbit Anti-Rat CX40B12 Antiserum # 2	<b>SIZE:</b> 100 ul
<b>Cat.</b> CX40B12-A	Rabbit Anti- Rat CX40B12 IgG # 2 (aff pure)	<b>SIZE:</b> 100 ug
<b>Cat.</b> CX40B12-P	Rat Connexin CX40B12 Control peptide #2	<b>SIZE:</b> 100 ug

Gap junctions are composed of transmembrane channels that link the cytoplasm of neighboring cells. They differ from other membrane channels since they exist between two cells. Gap junctions are relatively non-specific and allow passive diffusion of small molecules up to 1000 Dalton. The junctions exist in almost all vertebrate and non-vertebrates cells. It is believed that gap junction play an important for intercellular communications and affect growth and differentiation of cells. Absence of intercellular communication mediated by gap junction may lead to transformed or cancerous growth. Gap junctional channel is composed of a hemichannel (connexon) in the cell membrane of one cell joined in mirror symmetry with a connexon in the opposing cell. Each connexon is an oligomer of six protein subunits that define the axial aqueous pore. Molecular cloning studies have identified a family of at least 12 highly related **Connexins** that are designated according to mol. wt, **Cx26-50**. Rat Connexin 40 is a 356-aa gap junction protein with a predicted mol. Wt. Of ~40 KDa. It is prominently expressed in lung, heart and skin (1-3).

**Long-term:** at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20oC or below.

**Recommended Usage**

**Western Blotting** We recommend testing of antiserum at 1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique. An antibody made to a similar epitope has been shown to recognize 40 Kda band in various tissues. See refs in 2.

**ELISA** (1:10K-100K; using 50-100 ng CX40B12 control peptide/well).

**Histochemistry & Immunofluorescence:** We recommend the use of affinity purified IgG at 2-20 ug/ml in formaldehyde fixed. See refs in 2.

**Source of Antigen and Antibodies**

<b>Antigen</b>	14-aa peptide from <b>Rat CX40</b> (1); <b>Designation (CX40B12-P, control peptide)</b> conjugated to KLH; <b>Epitope location</b> ~ C-terminal, Cytoplasmic domain
<b>Ab Host/type</b>	Rabbit, Polyclonal, Unpurified antiserum ( <b>cat # CX40B12-S</b> ) Aff pure IgG ( <b>cat # CX40B12-A</b> )
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

**Specificity & Cross-reactivity**

Rat CX40B12-P peptide sequence is specific for CX40B12 and no significant homology is seen with other Connexin. The CX40B12 peptide is 92% conserved in mouse, 85% in hamster, 71% in human, canine, zebra fish, 81% in chicken CX42. Antibody crossreactivity with Cx37 from various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at the web site).

**General References:** (1) Kumar, Nm (1996) Cell 84, 381; White , WT (1995) Kidney Intl. 48, 1148; Evans, HW (1994) Biochem. Soc. Tr. 788-792; Byer, E (1990) J. membrane, Biol. 116, 187 (2) Haefliger, JA (1992) JBC 267, 2057;

**2. Citations for ADI Antibodies** (see updates at the web site)

Gutstein D., 2001, Circ. Res. 88: 333-339, WB,, IHC,  
Wang L-H, 2005, Intl. J. Cardiology 100, 467-475, WB, IHC,  
Isakson BE, 2001, Am J Physiol Cell Physiol 281: C1291, , IHC,  
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Nishimura T, 2004, Placenta 25, 595-607, , IHC  
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Blomstrand F, 2004, Eur. J. Neurosci. 19, 4, 1005-1015, WB,  
Dominguez JN, 2005, Cardiovas..Res. 65, 842-850, , IHC,  
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Toon AB, 2000, Cardiovasc. Res. 46, 496-510, WB,, IHC,  
Rucker-Martin C, 2006, Cardiovas..Res. 72, 69-79, WB, IF  
Wiszniewski L, 2007, Differentiation, 75, Issue 5: 382-392, WB,  
Martin PEM, 2005, Br J Pharmacol.144(5):617-27., WB, IHC  
Sato T, 2002, Diabetes 51: 1565-1571, WB,  
Di WL, 2002, Hum. Mol. Genet. 11, -2014, , IF frozen sections  
Verheule S, 2002, Cardiovasc. Res. 55, 727-738, , IHC,  
Zheng-Fischhöfer Q. 2006, J.Cell Sci., 119: 693 - 701., WB, IF  
Fischer R, 2005, Gastroenterology, 128, 433-448, WB, IHC,  
Wang L, 2005, Am.J of Hypertension, 18, 1146-1153, WB, IHC,

**Form & Storage of Antibodies/Peptide Control**

**Antiserum (unpurified)**

100ul solution lyophilized powder  
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

**Affinity pure IgG**

100 ug/100ul solution lyophilized powder  
Supplied in **Buffer:** PBS+0.1% BSA  
**Reconstitute powder** in PBS at 1mg/ml

**Control/blocking peptide**

100 ug/100 ul solution lyophilized powder  
Supplied in **Buffer:** PBS pH 7.5,  
**Reconstitute powder in PBS at 1 mg/ml.**

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..



\*This product is for in vitro research use only.

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CX40B12-S-A-P

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