

Product Specification Sheet

**Connexin 46 (Cx46)/Gap Junction alpha-3 Protein (CXA-3) Antibodies**

<b>Cat.</b> CX46-S	Rabbit Anti-Rat Cx46 Antiserum	<b>SIZE:</b> 100 ul
<b>Cat.</b> CX46-A	Rabbit Anti- Rat Cx46 Ig G (affinity pure)	<b>SIZE:</b> 100 ug
<b>Cat.</b> CX46-P	Rat Connexin Cx46 Control peptide	<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. 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**. Hydropathy analyses of Cx sequences predicts 4 transmembrane™, 2 extracellular (EC), and 3 cytoplasmic (CP) domains. The EC, TM, and N-terminal CP domains are well conserved among family members, while Central and C-terminal domains are highly variable in both sequence and size. The N and C-termini are predicted to be cytoplasmic.

**Source of Antigen, Antibodies**

<b>Antigen</b>	11-aa peptide from <b>rat Cx46 (1); Designation (Cx46-P, control/blocking peptide)</b> conjugated to KLH; <b>Epitope location</b> ~ C-terminal, Cytoplasmic domain
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (#CX46-S) and IgG, purified over antigen-agarose (Cat # CX46-A)
<b>2-Ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
<b>-ve control IgG</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

**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/100ul 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 -200C and powder at 40C or -200C..

**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 -200C or below.

**Shipping:** 40C for solutions and room temp for powder

**Recommended Usage**

**Western Blotting** (1:1K-5K for neat serum and 1-10 µg/ml for affinity pure using Chemiluminescence technique). (see published refs using this antibody in 2).

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

**Histochemistry & Immunofluorescence:** we recommend the use of affinity purified antibody at 2-10 µg/ml (2). Adherent cells can be fixed in 50% methanol-50% acetone or 1% paraformaldehyde (3). (see published refs using this antibody in 2).

**Specificity & Cross-reactivity**

Rat Cx46-P immunogenic peptide sequence is specific for Cx46 and no significant homology is seen with other Connexins. CX46\_p is 91% conserved in mouse and <50% in human CX46. Antibody crossreactivity in various other species is not established. 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 and Giula, NB (1996) Cell 84, 381-388; White , WT et al (1995) Kidney Intl. 48, 1148-1157; Evans, HW (1994) Biochem. Soc. Tr. 788-792; Byer, E et al (1990) J. membrane Biol. 116, 187-194; Paul DL et al (1991) J Cell Biol. 115, 1077-1089.

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

Zampighi GA, 2005, Invest. Ophthalmol. Vis. Sci., 46: 3247, WB, IHC  
Isakson BE, 2001, Am J Physiol Cell Physiol 281: C1291, IHC, Laux-Fenton W, 2003, Cornea. 22(5):457-464,, IHC  
Jacobs MD, 2004, Invest. Ophthalmol. Vis. Sci., 45: 191- 199, , IF  
Fischer R, 2005, Gastroenterology, 128, 433-448, WB, IHC,  
Merriman-Smith BR, 2003, Invest. Ophthalmol. Vis. Sci., 44: 3458 - 3466, WB,  
Yoshida M, 2005, Pathology Intl 55, 732-737, , IHC,

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

**Related material available from ADI**

**Anti- Cx26 to Cx50**

CX46-S-A-P

71217A

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