**Product datasheet**

Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker ab11370

★★★★★ 26 Abreviews  134 References  7 Images

**Overview**

**Product name**
Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker

**Description**
Rabbit polyclonal to Connexin 43 / GJA1 - Intercellular Junction Marker

**Host species**
Rabbit

**Tested applications**
Suitable for: ICC/IF, IHC-Fr, ICC, IHC-P, WB

**Species reactivity**
Reacts with: Mouse, Rat, Hamster, Cow, Dog, Human, Pig, Monkey

**Immunogen**
Synthetic peptide corresponding to Human Connexin 43/ GJA1 aa 362-382 (C terminal) conjugated to keyhole limpet haemocyanin.

Sequence:
KPSSRASSRASSRPRPDDLEI

Database link: P17302

**Positive control**
Mouse brain tissue lysate, human testis, mouse heart tissue

**General notes**
Storage in frost-free freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.
Abcam recommended secondaries - Goat Anti-Rabbit HRP (ab205718) and Goat Anti-Rabbit Alexa Fluor® 488 (ab150077).

See other anti-rabbit secondary antibodies that can be used with this antibody.

**Properties**

**Form**
Liquid

**Storage instructions**
Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

**Storage buffer**
pH: 7.40
Preservative: 0.097% Sodium azide
 Constituents: 0.0268% PBS, 1% BSA

**Purity**
Immunogen affinity purified

**Purification notes**
Affinity isolated antigen specific antibody is obtained by immunospecific purification which
removes essentially all rabbit serum proteins, including immunoglobulins, which do not specifically bind to connexin 43.

**Clonality**  
Polyclonal

**Isotype**  
IgG

### Applications

Our Abpromise guarantee covers the use of **ab11370** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC/IF</td>
<td>🟢🟢🟢🟢🟢</td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>IHC-Fr</td>
<td>🟢🟢🟢🟢🟢</td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>ICC</td>
<td>🟢🟢🟢🟢🟢</td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IHC-P</td>
<td>🟢🟢🟢🟢🟢</td>
<td>1/1000 - 1/5000.</td>
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<tr>
<td>WB</td>
<td>🟢🟢🟢🟢🟢</td>
<td>1/8000. Detects a band of approximately 43 kDa.</td>
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### Target

**Function**  
One gap junction consists of a cluster of closely packed pairs of transmembrane channels, the connexons, through which materials of low MW diffuse from one cell to a neighboring cell. May play a critical role in the physiology of hearing by participating in the recycling of potassium to the cochlear endolymph.

**Tissue specificity**  
Expressed in the heart and fetal cochlea.

**Involvement in disease**  
Defects in GJA1 are the cause of autosomal dominant oculodentodigital dysplasia (ODDD) [MIM:164200]; also known as oculodentoosseous dysplasia. ODDD is a highly penetrant syndrome presenting with craniofacial (ocular, nasal, dental) and limb dysmorphisms, spastic paraplegia, and neurodegeneration. Craniofacial anomalies typically include a thin nose with hypoplastic alae nasi, small anteverted nares, prominent columnella, and microcephaly. Brittle nails and hair abnormalities of hypotrichosis and slow growth are present. Ocular defects include microphthalmia, microcornea, cataracts, glaucoma, and optic atrophy. Syndactyly type 3 and conductive deafness can occur in some cases. Cardiac abnormalities are observed in rare instances.

Defects in GJA1 are the cause of autosomal recessive oculodentodigital dysplasia (ODDD autosomal recessive) [MIM:257850].

Defects in GJA1 may be the cause of syndactyly type 3 (SDTY3) [MIM:186100]. Syndactyly is an autosomal dominant trait and is the most common congenital anomaly of the hand or foot. It is marked by persistence of the webbing between adjacent digits, so they are more or less completely attached. In this type there is usually complete and bilateral syndactyly between the fourth and fifth fingers. Usually it is soft tissue syndactyly but occasionally the distal phalanges are fused. The fifth finger is short with absent or rudimentary middle phalanx. The feet are not affected.

Defects in GJA1 are a cause of hypoplastic left heart syndrome (HLHS) [MIM:241550]. HLHS refers to the abnormal development of the left-sided cardiac structures, resulting in obstruction to
blood flow from the left ventricular outflow tract. In addition, the syndrome includes underdevelopment of the left ventricle, aorta, and aortic arch, as well as mitral atresia or stenosis. Defects in GJA1 are a cause of Hallermann-Streiff syndrome (HSS) [MIM:234100]. HSS is a disorder characterized by a typical skull shape (brachycephaly with frontal bossing), hypotrichosis, microphthalmia, cataracts, beaked nose, micrognathia, skin atrophy, dental anomalies and proportionate short stature. Mental retardation is present in a minority of cases.

**Sequence similarities**
Belongs to the connexin family. Alpha-type (group II) subfamily.

**Cellular localization**

**Images**

**Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)**
This image is courtesy of Carl Hobbs, King’s College London, United Kingdom

Immunohistochemical detection of Connexin 43 / GJA1 using ab11370 (1/1000) on human testis sections (PFA-fixed paraffin-embedded sections). Antigen retrieval: Heat mediated. Buffer/Enzyme Used: Citric acid pH6, 1% BSA as blocking agent for 10 mins @ rt°C. Biotin labelled secondary antibody used at 1/200. Stained are clusters of Leydig cells in the interstitium and what should be Sertoli cells within the seminiferous tubules and the junction between (?). Sertoli cells and tubule "capsular" cells are intensely positive at their membrane interfaces (capsular interface positivity only evident in upper middle of image). Interestingly, smooth muscle of human colon and myometrium were completely negative when tested at the same time.

**Western blot - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)**

All lanes: Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370) at 1/6000 dilution

Lane 1: Whole tissue lysate prepared from murine left ventricle at 5 µg
Lane 2: Whole tissue lysate prepared from murine left ventricle at 10 µg
Lane 3: Whole tissue lysate prepared from murine left ventricle at 20 µg
Lane 4: Whole tissue lysate prepared from murine left ventricle at 30 µg
Lane 5: Whole tissue lysate prepared from murine left ventricle at 40 µg

**Secondary**

All lanes: HRP-conjugated donkey anti-rabbit polyclonal at 1/10000 dilution
Developed using the ECL technique.

**Observed band size:** 43 kDa
why is the actual band size different from the predicted?

**Exposure time:** 30 seconds

ab11370 staining Connexin 43 / GJA1 in human pluripotent stem cell derived cardiomyocyte by ICC/IF
(Immunocytochemistry/imunofluorescence). Cells were fixed with paraformaldehyde, permeabilized with saponin and blocked with 5% serum for 15 minutes at room temperature. Samples were incubated with primary antibody (1/1000) for 16 hours at 4°C. An Alexa Fluor® 568-conjugated goat anti-rabbit IgG polyclonal (1/1000) was used as the secondary antibody.

Clear antibody signal (yellow) at the interface of adjoining cells in a population of human embryonic stem cell derived cardiomyocytes (red = sarcomeric alpha actinin).

ab11370 staining Connexin 43/GJA1 in Pig heart tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 1% BSA for 10 minutes at 21°C; antigen retrieval was by heat mediation in a citrate buffer. Samples were incubated with primary antibody (1/3000 in blocking buffer) for 2 hours at 22°C. A Biotin-conjugated Goat anti-rabbit IgG polyclonal (1/250) was used as the secondary antibody.
Immunohistochemical detection of Connexin 43/GJA1 with antibody ab11370 on PFA-fixed paraffin-embedded adult marmoset myocardium sections. Antigen retrieval step: Heat mediated in citric acid pH6. 1% BSA used for blocking (10 mins @ rt°C). Primary Antibody ab11370 used at 1/5000 for 2 hours. Secondary Antibody Name: anti-rabbit IgG biotin labelled (1/200). Submitted image has coloured arrowheads to indicate features: L/S myofibres show a classic intercalated disk positivity (red). Fibres that appear to be oblique wrt orientation show an ovoid punctate positivity that I assume to be intercalated disks (black). This positivity is strongest in the circumference of each ovoid. There is also localised punctate positivity between adjacent myofibres (green).

ab11370 staining Connexin 43/GJA1 in Dog Heart muscle tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 1% BSA for 10 minutes at 21°C; antigen retrieval was by heat mediation in a citrate buffer. Samples were incubated with primary antibody (1/6000 in blocking buffer) for 2 hours at 21°C. A Biotin-conjugated Goat anti-rabbit IgG polyclonal (1/250) was used as the secondary antibody.

Immunohistochemical detection of Connexin 43/GJA1 using ab11370 on Formaldehyde-fixed paraffin-embedded mouse heart muscle sections. Antigen retrieval step: heat mediated using citric acid pH6. Blocking step: 1% BSA for 10 mins @ rt°C. Primary antibody ab11370 incubated at 1/2000 for 2 hours. Secondary antibody: anti rabbit IgG conjugated to biotin used at 1/200. Submitted image of cardiac myofibres in L/S shows clear, specific labelling of Intercalated discs which are rich in Gap junctions (Connexin 43 is a major component of Gap junctions). No other positivity is observed in mouse heart (the image is taken from a whole heart section). NB: in mouse tongue the ventral keratinising stratified squamous epithelium shows positivity in not only basal cells but also in the Prickle cell layer, although markedly reduced: data not shown but see here http://www.immunoportal.com/ for appropriate image.
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