abcam

Product datasheet

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

35 Abreviews 274 References 9 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:** 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** Run BLAST with Run BLAST with
Positive control	WB: Mouse brain and heart tissue extract; HEK-293, P19 and Rat2 cell lysates. IHC-P: Cow heart tissue; human heart and testis tissue; mouse heart muscle tissue. ICC: BHK cells. Human pluripotent stem cell derived cardiomyocyte.
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**). Or search our wide range of secondary antibodies for use with your experiment. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

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

The Abpromise guarantee 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.

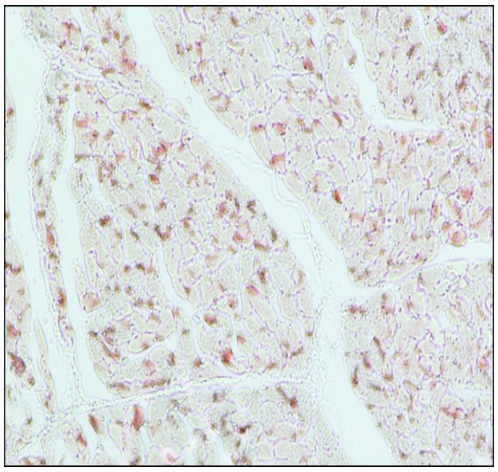
Application	Abreviews	Notes
IHC-Fr	★★★★★ (2)	Use at an assay dependent concentration.
ICC	★★★★★ (1)	1/400.
IHC-P	★★★★★ (19)	1/1000 - 1/5000.
WB	★★★★☆ (6)	1/2000 - 1/8000. Detects a band of approximately 43 kDa.

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 tipically 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

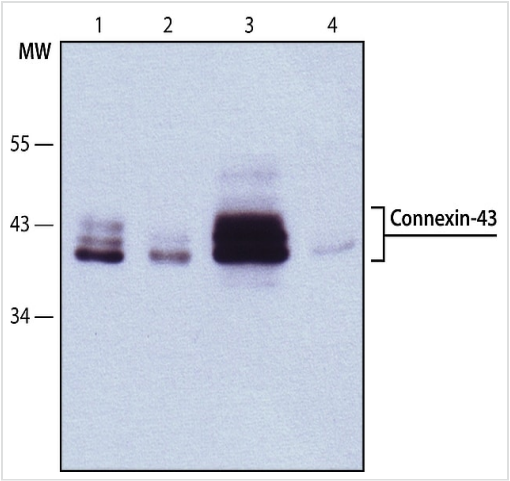
	autosomal dominant trait and is the most common congenital anomaly of the hand or foot. It is marked by persistence of the webbing between adjacent digits, so they are more or less completely attached. In this type there is usually complete and bilateral syndactyly between the fourth and fifth fingers. 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	Cell membrane. Cell junction > gap junction.

Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)

Immunohistochemical analysis of formalin-fixed, paraffion-embedded cow heart tissue staining Connexin 43 / GJA1 using ab11370 at1/2000 dilution. Detected using an Anti-Rabbit IgG-biotin antibody and an Avidin-peroxidase conjugate.

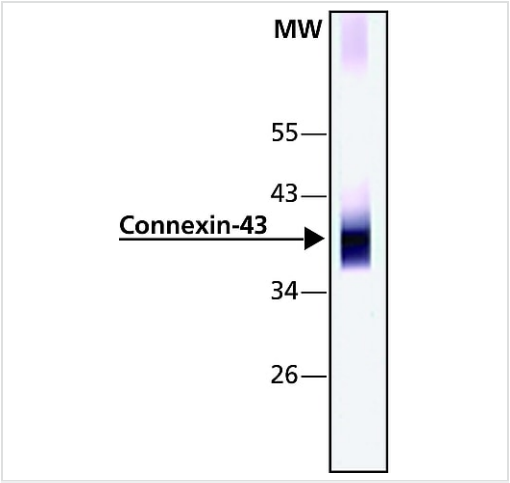


Western blot - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)

All lanes : Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370) at 1/2000 dilution

Lane 1 : HEK-293 (Human epithelial cell line from embryonic kidney) cell lysate
Lane 2 : P19 (mouse embryonic carcinima cell line) cell lysate
Lane 3 : Rat2 (rat embryo-derived cell line) cell lysate
Lane 4 : MDCK (canine kidney cell line) cell lysate

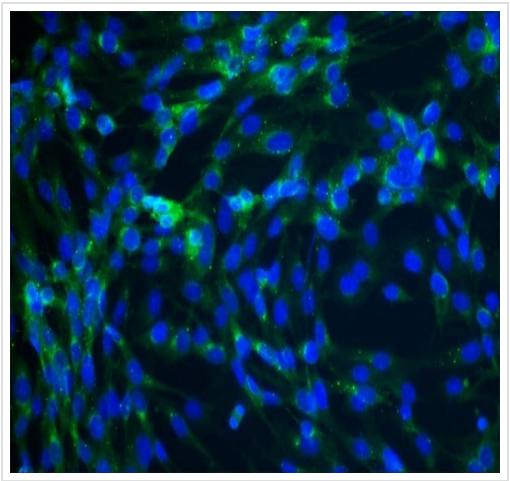
Secondary
All lanes : Goat Anti-Rabbit IgG-peroxidase conjugate



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

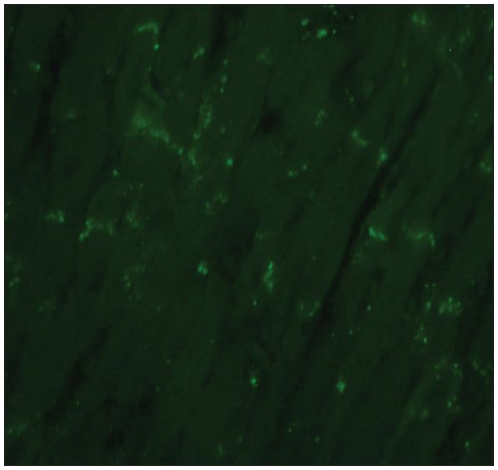
Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370) at 1/8000 dilution + Mouse brain extract

Secondary
Anti-Rabbit IgG-AP conjugate with NBT/BCIP substrate



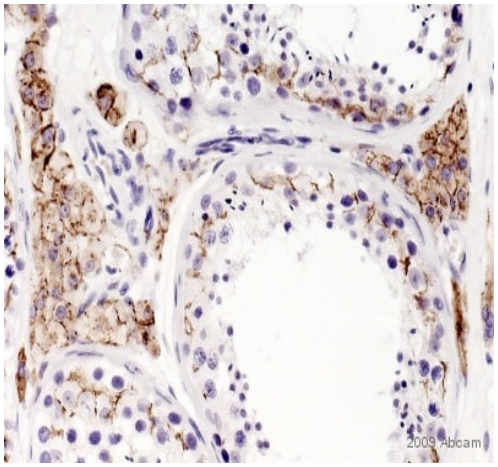
Immunocytochemistry - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)

Immunocytochemical analysis of BHK (baby hamster kidney cell line) cells fixed and permeabilized with methanol followed by methanol:acetone. -Connexin 43 / GJA1 was labeled using ab11370 at 1/400 dilution, followed by a Goat Anti-Rabbit-FITC conjugate (Green). The nuclear counterstain is DAPI (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)

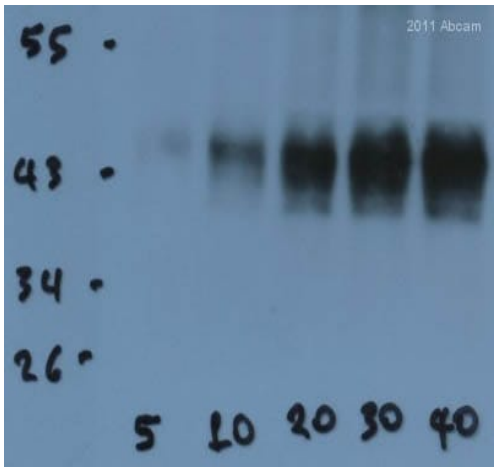
Immunohistochemical analysis of formalin-fixed, paraffion-embedded human heart tissue staining Connexin 43 / GJA1 using ab11370 at 1/2000 dilution, followed by a Goat Anti-Rabbit IgG-FITC conjugate (Green).



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)

Image courtesy of an anonymous Abreview.

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

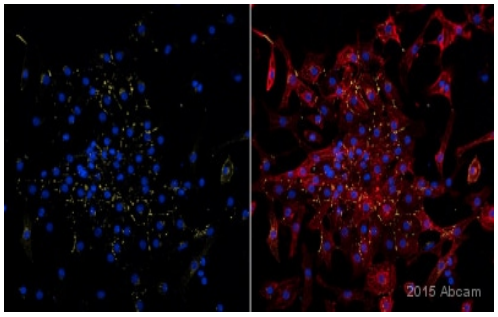
Lane 1 : Whole tissue lysate prepared from murine left ventricle at 5 µg
Lane 2 : Whole tissue lysate prepared from murine left ventricle at 10 µg
Lane 3 : Whole tissue lysate prepared from murine left ventricle at 20 µg
Lane 4 : Whole tissue lysate prepared from murine left ventricle at 30 µg
Lane 5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

Exposure time: 30 seconds

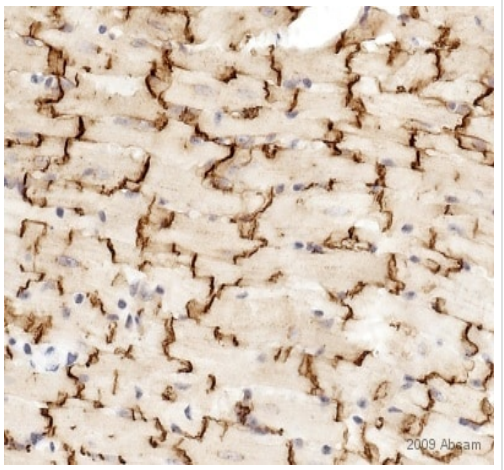


Immunocytochemistry - Anti-Connexin 43 / GJA1 antibody - Intercellular Junction Marker (ab11370)

This image is courtesy of an anonymous Abreview

ab11370 staining Connexin 43 / GJA1 in human pluripotent stem cell derived cardiomyocyte by ICC/IF (Immunocytochemistry/immunofluorescence). 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).



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

Immunohistochemistical 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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