abcam

Product datasheet

Anti-Connexin 43 / GJA1 antibody [EPR21153] ab217676

KO VALIDATED Recombinant RabMAb

★★★★★ 1 Abreviews 4 References 6 Images

Overview

Product name	Anti-Connexin 43 / GJA1 antibody [EPR21153]
Description	Rabbit monoclonal [EPR21153] to Connexin 43 / GJA1
Host species	Rabbit
Tested applications	**Suitable for:** IHC-P, IP, WB
Species reactivity	**Reacts with:** Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HeLa whole cell lysate; Human testis, fetal brain and breast cancer lysates. IP: Human testis tissue lysate. IHC-P: Human cardiac muscle and prostate tissue.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR21153

Isotype IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab217676 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-P		1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
IP		1/30.
WB	★★★★★ (1)	1/1000. Predicted molecular weight: 43 kDa.

Target

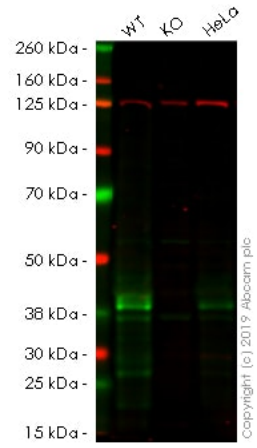
Function One gap junction consists of a cluster of closely packed pairs of transmembrane channels, the connexons, through which materials of low MW diffuse from one cell to a neighboring cell. May play a critical role in the physiology of hearing by participating in the recycling of potassium to the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



Western blot - Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676)

All lanes : Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676) at 1/1000 dilution

Lane 1 : Wild-type HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate
Lane 2 : GJA1 knockout HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate
Lane 3 : HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

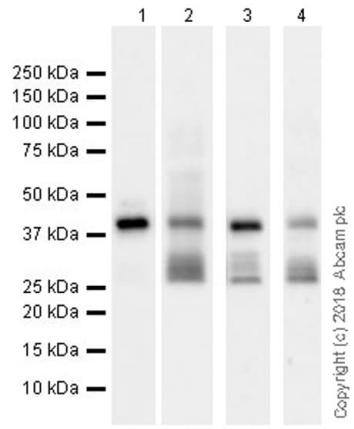
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 43 kDa

Lanes 1 - 4: Merged signal (red and green). Green - ab217676 observed at 43 kDa. Red - loading control, **ab130007**, observed at 130 kDa.

ab217676 was shown to recognize Connexin 43 / GJA1 in wild-type HEK 293 cells as signal was lost at the expected MW in GJA1 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and GJA1 knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% Milk. Ab217676 and **ab130007** (Mouse anti-Vinculin loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed **ab216773** and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed **ab216776** secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676)

All lanes : Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676) at 1/1000 dilution

Lane 1 : HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate
Lane 2 : Human testis tissue lysate
Lane 3 : Human fetal brain tissue lysate
Lane 4 : Human breast cancer tissue lysate

Lysates/proteins at 20 µg per lane.

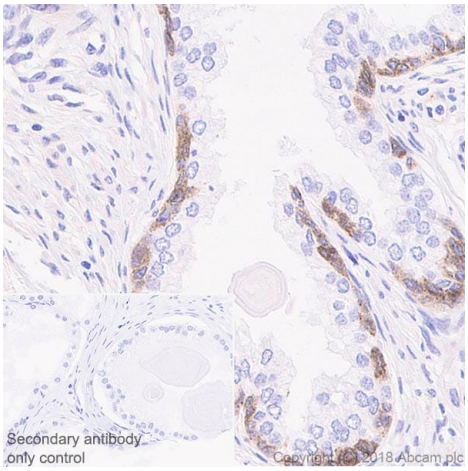
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

Predicted band size: 43 kDa
Observed band size: 26-32 kDa

Blocking and dilution buffer: 5% NFDM/TBST.

Exposure times.
Lane 1: 37 seconds.
Lane 2: 15 seconds.
Lane 3: 103 seconds.
Lane 4: 3 minutes.

The expression profile is consistent with the existence of natural variants described in the literature (PMID: 24210816; PMID: 28576298).

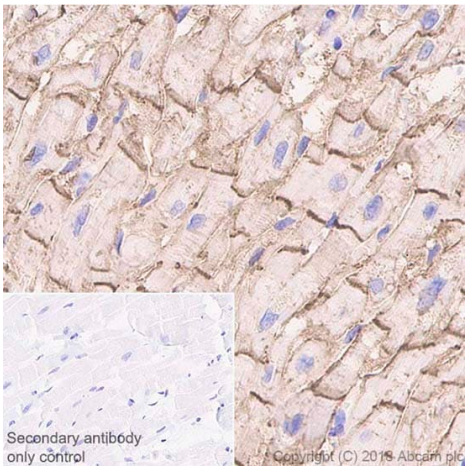


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676)

Immunohistochemical analysis of paraffin-embedded human prostate tissue labeling Connexin 43 / GJA1 with ab217676 at 1/500 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) ready to use. Positive staining on basal cells of human prostate gland (PMID: 20735413) is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) ready to use.

Heat mediated antigen retrieval using **ab93684** (Tris/EDTA buffer, pH 9.0).

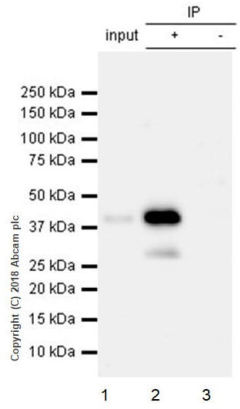


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676)

Immunohistochemical analysis of paraffin-embedded human cardiac muscle tissue labeling Connexin 43 / GJA1 with ab217676 at 1/500 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) ready to use. Positive staining on human cardiac muscle (PMID: 25018732) is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) ready to use.

Heat mediated antigen retrieval using **ab93684** (Tris/EDTA buffer, pH 9.0).



Immunoprecipitation - Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676)

Connexin 43 / GJA1 was immunoprecipitated from 0.35 mg of human testis lysate with ab217676 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab217676 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (**ab131366**), was used for detection at 1/5000 dilution.

Lane 1: Human testis lysate 10 µg (Input).
Lane 2: ab217676 IP in human testis lysate.
Lane 3: Rabbit monoclonal IgG (**ab172730**) instead of ab217676 in human testis lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 1 minute.

The expression profile is consistent with the existence of natural variants described in the literature (PMID: 24210816; PMID: 28576298).

Anti-Connexin 43 / GJA1 antibody [EPR21153] (ab217676)

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