10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-Plakophilin 2 Antibody

Catalog # ABO11587

Product Information

Application	WB
Primary Accession	Q99959
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Plakophilin-2(PKP2) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	5318
Other Names	Plakophilin-2, PKP2
Calculated MW	97415
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat, Mouse
Subcellular Localization	Nucleus . Cell junction, desmosome . Nuclear and associated with desmosomes.
Tissue Specificity	Detected in heart right ventricle (at protein level). Widely expressed. Found at desmosomal plaques in simple and stratified epithelia and in non-epithelial tissues such as myocardium and lymph node follicles. In most stratified epithelia found in the desmosomes of the basal cell layer and seems to be absent from suprabasal strata. .
Source	Eukaryota
Protein Name	Plakophilin-2
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human Plakophilin 2(863-881aa KKTDFVNSRTAKAYHSLKD), identical to the related mouse sequence, and different from the related rat sequence by one amino acid.
Purification	Immunogen affinity purified.

Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the beta-catenin family.

Protein Information

Name	PKP2 (HGNC:9024)
Function	A component of desmosome cell-cell junctions which are required for positive regulation of cellular adhesion (PubMed:25208567). Regulates focal adhesion turnover resulting in changes in focal adhesion size, cell adhesion and cell spreading, potentially via transcriptional modulation of beta-integrins (PubMed:23884246). Required to maintain gingival epithelial barrier function (PubMed:34368962). Important component of the desmosome that is also required for localization of desmosome component proteins such as DSC2, DSG2 and JUP to the desmosome cell-cell junction (PubMed:22781308, PubMed:25208567). Required for the formation of desmosome cell junctions in cardiomyocytes, thereby required for the correct formation of the heart, specifically trabeculation and formation of the atria walls (By similarity). Loss of desmosome cell junctions leads to mis-localization of DSP and DSG2 resulting in disruption of cell-cell adhesion and disordered intermediate filaments (By similarity). Modulates profibrotic gene expression in cardiomyocytes via regulation of DSP expression and subsequent activation of downstream TGFB1 and MAPK14/p38 MAPK signaling (By similarity). Required for cardiac sodium current propagation and electrical synchrony in cardiac myocytes, via ANK3 stabilization and modulation of SCN5A/Nav1.5 localization to cell-cell junctions (By similarity). Required for mitochondrial function, nuclear envelope integrity and positive regulation of SIRT3 transcription via maintaining DES localization at its nuclear envelope and cell tip anchoring points, and thereby preserving regulation of the transcriptional program (PubMed:35959657). Maintenance of nuclear envelope integrity protects against DNA damage and transcriptional dysregulation of genes, especially those involved in the electron transport chain, thereby preserving mitochondrial function and protecting against superoxide radical anion generation (PubMed:35959657). Binds single-stranded DNA (ssDNA) (PubMed:20613778). May regulate the localization of GJA1 to gap junctions in intercalated disks of the heart (PubMed:18662195). Involved in the inhibition of viral infection by influenza A viruses (IAV) (PubMed:28169297). Acts as a host restriction factor for IAV viral propagation, potentially via disrupting the interaction of IAV polymerase complex proteins (PubMed:28169297).
Cellular Location	Nucleus. Cell junction, desmosome. Cell junction. Cytoplasm Note=Colocalizes with CTNNA3 and SCN5A/Nav1.5 at intercalated disks in the heart. {ECO:0000250|UniProtKB:Q9CQ73}
Tissue Location	Expressed at myocyte intercalated disks in the heart (at protein level) (PubMed:18662195, PubMed:31845994). Expressed in gingival epithelial, endothelial and fibroblast cells (at protein level) (PubMed:34368962). Faintly expressed in tracheal epithelial cells (at protein level) (PubMed:28169297). Widely expressed. Found at desmosomal plaques in simple and stratified epithelia and in non- epithelial tissues such as myocardium and lymph node follicles. In most stratified epithelia found in the desmosomes of the basal cell layer and seems to be absent from suprabasal strata

Background

Plakophilin-2 is a protein that in humans is encoded by the PKP2 gene. This gene encodes a member of the arm-repeat(armadillo) and plakophilin gene families. It is mapped to 12p11.21. PKP2 is a constituent of the desmosomal plaque in simple epithelia, some stratified epithelia, and some nonepithelial cells. PKP2 is also enriched in the karyoplasm of cells of various types, including those lacking desmosomes. Plakophilin proteins participate in linking cadherins to intermediate filaments in the cytoskeleton and this gene product may regulate the signaling activity of beta-catenin. PKP2 has been shown to interact with Desmoplakin, Plakoglobin and Desmoglein 1.

Images



Anti-Plakophilin 2 antibody, ABO11587, All Western blottingAll lanes: Anti-PKP2(ABO11587) at 0.5ug/mlLane 1: Rat Cardiac Muscle Tissue Lysate at 40ugLane 2: Human Placenta Tissue Lysate at 40ugLane 3: Rat Brain Tissue Lysate at 40ugLane 4: Rat Intestine Tissue Lysate at 40ugLane 5: HELA Whole Cell Lysate at 40ugLane 6: JURKAT Whole Cell Lysate at 40ugLane 7: 293T Whole Cell Lysate at 40ugLane 8: MCF-7 Whole Cell Lysate at 40ugLane 9: U87 Whole Cell Lysate at 40ugPredicted bind size: 97KDObserved bind size: 97KD

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.