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

Plakophilin 1 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58670

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	Q13835
Reactivity	Rat, Pig, Dog, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	82861
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Plakophilin 1
Epitope Specificity	31-130/726
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nucleus. Cell junction, desmosome. Note: Nuclear and associated with desmosomes.
SIMILARITY	Belongs to the beta-catenin family.Contains 9 ARM repeats.
DISEASE	Defects in PKP1 are the cause of ectodermal dysplasia-skin fragility syndrome (EDSFS) [MIM:604536]; also known as McGrath syndrome. Ectodermal dysplasia defines a heterogeneous group of disorders due to abnormal development of two or more ectodermal structures. EDSFS is characterized by features of both cutaneous fragility and congenital ectodermal dysplasia affecting abnormalities in other epithelia or tissues. Desmosomes in the skin are small and poorly formed with widening of keratinocyte intercellular spaces and perturbed desmosome/keratin intermediate filament interactions.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Plays a role in formation of desmosomal plaques and is found in desmosomes of most simple and stratified epithelia. Not found in cell types that have non-epithelial desmosomes. Absent in fibroblasts and other connective tissue types, including sarcomas.

Additional Information

Gene ID	5317
Other Names	Plakophilin-1, Band 6 protein, B6P, PKP1
Target/Specificity	Isoform 2 is widely expressed. Isoform 1 is expressed in stratified squamous, complex, glandular duct and bladder epithelia.
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000

Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	PKP1
Function	A component of desmosome cell-cell junctions which are required for positive regulation of cellular adhesion (PubMed:23444369). Plays a role in desmosome protein expression regulation and localization to the desmosomal plaque, thereby maintaining cell sheet integrity and anchorage of desmosomes to intermediate filaments (PubMed:10852826, PubMed:23444369). Required for localization of DSG3 and YAP1 to the cell membrane in keratinocytes in response to mechanical strain, via the formation of an interaction complex composed of DSG3, YAP1, PKP1 and YWHAG (PubMed:31835537). Positively regulates differentiation of keratinocytes, potentially via promoting localization of DSG1 at desmosome cell junctions (By similarity). Required for calcium-independent development and maturation of desmosome plaques specifically at lateral cell-cell contacts in differentiating keratinocytes (By similarity). Plays a role in the maintenance of DSG3 protein abundance, DSG3 clustering and localization of these clusters to the cell membrane in keratinocytes (By similarity). May also promote keratinocyte proliferation and morphogenesis during postnatal development (PubMed:9326952). Required for tight junction inside-out transepidermal barrier function of the skin (By similarity). Promotes Wnt-mediated proliferation and differentiation of ameloblasts, via facilitating TJP1/ZO-1 localization to tight junctions (By similarity). Binds single-stranded DNA (ssDNA), and may thereby play a role in sensing DNA damage and promoting cell survival (PubMed:20613778). Positively regulates cap-dependent translation and as a result cell proliferation, via recruitment of EIF4A1 to the initiation complex and promotion of EIF4A1 ATPase activity (PubMed:20156963, PubMed:23444369). Regulates the mRNA stability and protein abundance of desmosome components PKP2, PKP3, DSC2 and DSP, potentially via its interaction with FXR1 (PubMed:25225333).
Cellular Location	[Isoform 1]: Cell junction, desmosome Nucleus. Cytoplasm, perinuclear region. Cytoplasm. Cell junction, desmosome. Cell membrane Cytoplasm, Stress granule Note=Colocalizes with EIF4A1 in stress granules following arsenate or hydrogen peroxide treatment (PubMed:20156963). Localizes to nucleoli following DNA damage (PubMed:20613778). Located in the cytoplasm during early tooth development, however localizes to the cell membrane in ameloblasts during molar growth (By similarity). Ca(2+)-mediated localization to the cell membrane in dental epithelial cells is inhibited via WNT3A (By similarity). Localizes to the cytoplasm when the phosphorylated form interacts with YWHAG (By similarity). Initially localized to the cytoplasm however as keratinocyte differentiation proceeds becomes localized to cell junctions as early cell-cell contacts become linear as part of membrane sealing (By similarity) Localized to lateral cell contacts in colocalization with DSP as epithelial sheet formation completes (By similarity). Protein stability is increased and localizes to the cytoplasm when phosphorylated at the N-terminus by AKT2 (PubMed:23444369). The unphosphorylated form is preferentially localized to desmosomes (PubMed:23444369) {ECO:0000250|UniProtKB:P97350, ECO:0000269|PubMed:20156963, ECO:0000269|PubMed:20613778, ECO:0000269|PubMed:23444369}

Tissue Location	[Isoform 1]: Expressed in stratified squamous, complex, glandular duct and bladder epithelia (at protein level)