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

Desmoplakin Rabbit mAb

Catalog # AP78211

Product Information

Application	WB, FC
Primary Accession	P15924
Reactivity	Rat, Human
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	331774

Additional Information

Gene ID	1832
Other Names	DSP
Dilution	WB~~1:1000 FC~~1:10~50
Format	Liquid in 10mM PBS, pH 7.4, 150mM sodium chloride, 0.05% BSA, 0.02% sodium azide and 50% glycerol.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	DSP (HGNC:3052)
Function	A component of desmosome cell-cell junctions which are required for positive regulation of cellular adhesion (PubMed:25733715). Critical for cell-cell adhesion in early stage blastocysts and progression through proamniotic cavity formation (By similarity). Not required for preimplantation morphogenic process in blastocysts (By similarity). Required for keratin filament anchoring at the desmosome junction and subsequent organization of the keratin intermediate filament network within the cytoplasm (By similarity). Required for anchoring of desmosomes to the microtubule architecture, via its interaction with NIN (By similarity). Promotes microtubule- mediated GJA1/CX43 trafficking to cell membranes via its interaction with MAPRE1/EB1, thereby facilitating gap junction intracellular communication (PubMed:25225338). Plays a key role in adhesion and organization of the dermal epithelial barrier (PubMed:26604139). Critical for the maintenance of the neural tube structure following formation and organization of the neuroepithelium (By similarity). Facilitates outgrowth and

	repair of motor neuron fibers in regenerating axons following injury, probably by promoting recruitment of a complex containing DSP, CDH2, VIM and JUP to the outgrowth tips (By similarity). Critical for the normal formation of heart and myocardial tissue during early embryogenesis (By similarity). Also required for development of vascular capillary structures and intact endothelial cell barriers (By similarity). Regulates profibrotic gene expression in cardiomyocytes via activation of the MAPK14/p38 MAPK signaling cascade and increase in TGFB1 protein abundance (By similarity). Maintains cardiac rhythmicity by ensuring correct cell-cell adhesion within the sinoatrial node, via stabilization of protein components of both desmosome and Gap junctions (By similarity). Involved in maintaining the protein stability and recruitment of GJA1 to functional gap junctions, via inhibition of KRAS-mediated MAPK1/MAPK3 phosphorylation of GJA1 (By similarity). Negative regulator of cell cycle progression and differentiation in keratinocytes, potentially via inhibition of MAPK and phosphoinositide-3-kinase (PI3K) signaling pathways (PubMed:17475244). Mediates the interaction between the desmosome and COP9 signalosome complex (CSN) protein complex (PubMed:28891468). As a result of this interaction, promotes keratinocyte differentiation via deneddylation of EGFR resulting in a reduction in EGFR protein stabilization and translocation away from the cell membrane (PubMed:28891468). Required for the maintenance of protein abundance of desmosome junction components DSG1, DSG2, DSC2, DSC3, PKP1, PKP2 and PKP3 (PubMed:17475244, PubMed:26073755). Required for the survival and maintenance of germ cells in the gonads during embryonic development (By similarity). Binds to telomere DNA (via C-terminus) and acts to prevent telomere damage and maintain telomere length via its interaction with TRF2 (PubMed:31595153).
Cellular Location	Cell projection, axon {ECO:0000250|UniProtKB:E9Q557}. Cell junction, desmosome. Cell membrane. Cytoplasm. Nucleus. Note=Localizes to desmosome precursor particles in the cytoplasm (PubMed:25208567). Localizes to the cytoplasm in undifferentiated keratinocytes however becomes localizes to both lateral and tricellular cell-cell contacts as differentiation progresses and as epithelial sheet formation completes (By similarity) Localizes to the interface of the cortical keratin network and endodermal cell periphery in developing embryos (By similarity) {ECO:0000250|UniProtKB:E9Q557, ECO:0000269|PubMed:25208567}
Tissue Location	Expressed in oral mucosa (at protein level) (PubMed:30479852). Expressed in arrector pili muscle (at protein level) (PubMed:29034528). Expressed in the heart (at protein level) (PubMed:18662195, PubMed:32410525). Expressed in keratinocytes of the skin (at protein level) (PubMed:26604139) [Isoform DPII]: Resides predominantly in tissues and cells of stratified origin

Background

The desmoplakin (DP) is the most abundant desmosomal proteins and is located at the cytoplasmic portion of the desmosomes which are specialized cell-cell adhesion structures abundant in tissues such as muscle and epidermis that are subjected to mechanical stress. Desmoplakin 1 and 2 (DP 1 and 2) are two splice variants sharing common C-terminal and N-terminal globular head and tail domains, but differ in the length of the rod domain that links them. This antibody detects both DP1 (280-330 kDa) and DP2 (240-260 kDa). (PMID: 16467215, 11781569)

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