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KD-Validated Anti-Desmoplakin Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1509

Product Information

Application	WB, FC
Primary Accession	P15924
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB5220
Calculated MW	331774
Gene Name	DSP
Aliases	DSP; Desmoplakin; 250/210 KDa Paraneoplastic Pemphigus Antigen; KPPS2; PPKS2; DPII; DPI; DP; Desmoplakin (DPI, DPII); DCWHKTA
Immunogen	A synthesized peptide derived from human Desmoplakin

Additional Information

Gene ID	1832
Other Names	Desmoplakin, DP, 250/210 kDa paraneoplastic pemphigus antigen, DSP

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

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