

# Desmoplakin Rabbit mAb

Catalog # AP78211

## Product Information

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<b>Application</b>	WB, FC
<b>Primary Accession</b>	<a href="#">P15924</a>
<b>Reactivity</b>	Rat, Human
<b>Host</b>	Rabbit
<b>Clonality</b>	Monoclonal Antibody
<b>Isotype</b>	IgG
<b>Conjugate</b>	Unconjugated
<b>Purification</b>	Affinity Purified
<b>Calculated MW</b>	331774

## Additional Information

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

## Protein Information

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<b>Name</b>	DSP ( <a href="#">HGNC:3052</a> )
<b>Function</b>	<p>A component of desmosome cell-cell junctions which are required for positive regulation of cellular adhesion (PubMed:<a href="#">25733715</a>). 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). Plays a key role in adhesion and organization of the dermal epithelial barrier (By similarity). 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). Required for the normal</p>

formation of the heart, 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). 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 {ECO:0000250|UniProtKB:E9Q557}. 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 in the heart (at protein level) (PubMed:18662195). [Isoform DPII]: Resides predominantly in tissues and cells of stratified origin

## Background

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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)

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