abcam

# ab109445

# Anti-Desmoplakin antibody [EPR4383(2)]

Recombinant | RabMAb | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine, 0.1% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR4383(2) |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.829 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 - 1/10000 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/250 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information DSP

| | |
|---|---|
| **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). 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 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). |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Storage information** | Stable for 12 months at -20°C |

## Notes

**Species reactivity**
Mouse: We have preliminary internal testing data to indicate this antibody may not react with this species. Please contact us for more information.

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | Desmoplakin is a protein that plays an integral role in linking intermediate filaments to desmosomal plaques. This protein is also known by its alternate name "DSP" and has a molecular mass of approximately 332 kDa. Desmoplakin is expressed in tissues where mechanical strength is necessary such as the heart and skin. Its expression ensures structural integrity and resilience in areas that experience substantial mechanical stress. |
| **Biological function summary** | Desmoplakin acts to maintain cell-cell adhesion through its involvement with desmosomes and is an essential component of the desmosomal complex. This complex is important for the architectural stability of epithelial and cardiac tissues. Desmoplakin interacts directly with other desmosomal proteins like plakoglobin and plakophilin forming a bridge between the cell membrane and the cytoskeleton. |
| **Pathways** | Desmoplakin is an important player in the maintenance and function of the cytoskeletal network particularly within the intermediate filament organization. In addition desmoplakin participates in cellular adhesion signaling pathways. Its interaction with proteins such as plakoglobin mediates the organization of desmosomes influencing cellular signaling and communication processes critical for tissue morphogenesis and repair. |
| **Associated diseases and disorders** | Mutations or malfunctions of desmoplakin are linked to conditions like arrhythmogenic right ventricular cardiomyopathy (ARVC) and skin disorders such as striate palmoplantar keratoderma. In these diseases desmoplakin's ability to maintain structural integrity is compromised leading to the disruption of tissue architecture. In ARVC for example the faulty interaction between desmoplakin and plakoglobin may cause abnormal heart muscle function contributing to the pathology of the disease. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

We do not recommend this combination. It is not covered by our product promise.

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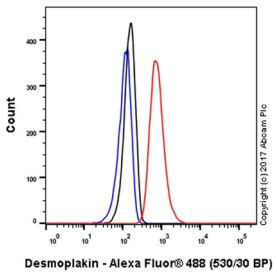
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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## 3 product images

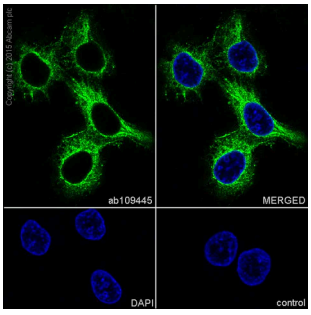



### Flow Cytometry (Intracellular) - Anti-Desmoplakin antibody [EPR4383(2)] (ab109445)

Desmoplakin Flow Cytometry (Intracellular) staining using rabbit Anti-Desmoplakin antibody

Intracellular Flow Cytometry analysis of A431 (Human epidermoid carcinoma epithelial cell) cells labeling Desmoplakin (red) with ab109445 at a 1/250 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluorr® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (Black) (ab172730). Blue (unlabeled control) - Cell without incubation with primary antibody and secondary antibody (Blue).

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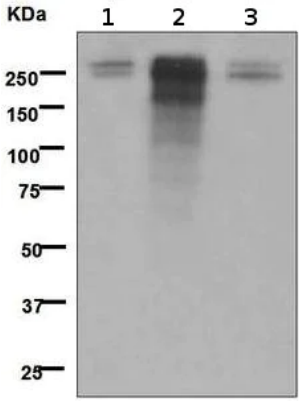



### Immunocytochemistry/ Immunofluorescence - Anti-Desmoplakin antibody [EPR4383(2)] (ab109445)

Desmoplakin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Desmoplakin antibody

Immunocytochemistry/Immunofluorescence analysis of A431 cells labelling Desmoplakin with ab109445 at 1/1000. Cells were fixed with 100% methanol. ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody.
Control: PBS only.
Nuclear counter stain: DAPI.

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# Western blot - Anti-Desmoplakin antibody [EPR4383(2)] (ab109445)

All lanes:
Western blot - Anti-Desmoplakin antibody [EPR4383(2)] (ab109445) at 1/1000 dilution

Lane 1:
A431 cell lysate at 10 µg

Lane 2:
HACAT cell lysate at 10 µg

Lane 3:
BXPC-3 cell lysate at 10 µg

Predicted band size: 332 kDa

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