abcam

ab250665

Anti-Plakophilin 1 antibody [EPR14890] - BSA and Azide free

Recombinant RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR14890
Purification technique	Affinity purification Protein A

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information 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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab250665 is the carrier-free version of ab183512.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Plakophilin 1 also known as PKP1 is an important component of the cell's structural and signaling machinery. It is a member of the arm-repeat family of proteins and has a molecular mass of around 83 kDa. Plakophilin 1 is expressed in various epithelial tissues where it plays an important role in stabilizing cell junctions. It localizes mainly to desmosomes which are adhesive structures that connect cells together maintaining tissue integrity.
Biological function summary	This protein is a core part of desmosomal plaques which are thickened structures on the inner surface of cell membranes where desmosomes attach. Plakophilin 1 assists in linking the cadherin-catenin complex to intermediate filaments in the cytoskeleton promoting cell-cell adhesion. It is part of a larger protein complex that ensures mechanical strength and resilience across epithelial layers.
Pathways	Plakophilin 1 is involved in the assembly and organization of desmosomal junctions which are part of the broader adherens junction pathway. It interacts with several key proteins including desmoplakin and plakoglobin contributing to the stability and function of cell adhesions. These interactions are essential for maintaining the structural integrity and signaling capabilities of epithelial tissues.
Associated diseases and disorders	Plakophilin 1 mutations have been linked to ectodermal dysplasia-skin fragility syndrome a condition characterized by compromised skin integrity and hair anomalies. This protein is also associated with certain types of cardiomyopathy due to its role in desmosomal structure and cell adhesion. Its interaction with desmoplakin is particularly relevant in these disorders where faulty cell junctions lead to tissue fragility and pathological conditions.

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.

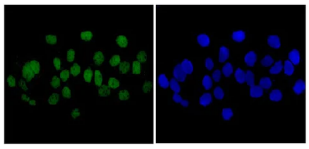
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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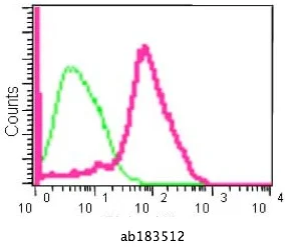
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-Plakophilin 1 antibody [EPR14890] - BSA and Azide free (ab250665)

Plakophilin 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Plakophilin 1 antibody

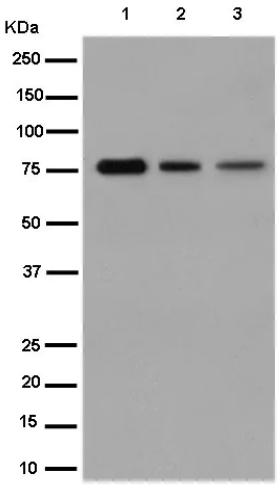
This data was developed using ab183512, the same antibody clone in a different buffer formulation.
Immunofluorescent staining of 4% paraformaldehyde fixed HACAT cells labeling Plakophilin 1 using ab183512 at a 1/100 dilution followed by Goat anti Rabbit IgG (Alexa Fluor®488) secondary at 1/200 dilution. Counterstained with Dapi (bue).



Flow Cytometry (Intracellular) - Anti-Plakophilin 1 antibody [EPR14890] - BSA and Azide free (ab250665)

Plakophilin 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Plakophilin 1 antibody

This data was developed using ab183512, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of HACAT cells (2% paraformaldehyde fixed) labeling Plakophilin 1 with ab183512 at 1/90 dilution (red) compared to a Rabbit monoclonal isotype control (green).



Western blot - Anti-Plakophilin 1 antibody [EPR14890] - BSA and Azide free (ab250665)

This data was developed using ab183512, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Plakophilin 1 antibody [EPR14890] (ab183512) at 1/20000 dilution

Lane 1:
Mouse skin tissue lysate at 10 µg

Lane 2:
A431 cell lysate at 10 µg

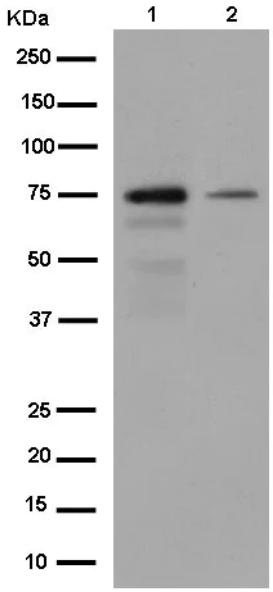
Lane 3:
HACAT cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 83 kDa

Observed band size: 75 kDa



Western blot - Anti-Plakophilin 1 antibody [EPR14890] - BSA and Azide free (ab250665)

This data was developed using ab183512, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Plakophilin 1 antibody [EPR14890] (ab183512) at 1/5000 dilution

Lane 1:
Human skin tissue lysate at 10 µg

Lane 2:
Human tonsil tissue lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 83 kDa

Observed band size: 75 kDa

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