abcam

ab76416

Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1615Y
Purification technique	Affinity purification Protein A
Specificity	Several customers have found that this antibody gives good results in mouse and rat however in our hands, we cannot obtain positive results. This antibody is therefore no longer covered by our Abpromise guarantee for use in mouse or rat.
Concentration	0.792 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval via the pressure cooker method before commencing with IHC staining protocol.

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/5000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/150
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50 - 1/150
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information KRT16

Function	Epidermis-specific type I keratin that plays a key role in skin. Acts as a regulator of innate immunity in response to skin barrier breach: required for some inflammatory checkpoint for the skin barrier maintenance.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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	Cytokeratin 16 often called K16 or Krt16 weighs around 50 kDa and belongs to the keratin family. Researchers commonly find K16 in epithelial tissues particularly in

	areas subjected to constant mechanical stress such as palms and soles. In addition to its localized expression K16 appears during wound healing processes where cells experience high turnover or regeneration activities. Its expression often pairs with Krt6 another keratin type contributing to its mechanical properties under stress conditions often called "pressure point".
Biological function summary	K16 plays critical roles in maintaining the integrity of epithelial cells and tissues. It is a structural protein that helps stabilize keratin cytoarchitecture. K16 forms a complex with its partner keratins like K17 providing resilience and elasticity to the skin ensuring durability in regions experiencing repetitive physical stress. Additionally K16 helps regulate proliferation and differentiation of keratinocytes contributing to healthy skin formation and repair.
Pathways	K16 takes part in signaling pathways associated with epidermal development and repair. It acts within the keratinization process interacting closely with signaling components that influence cell cycle regulation and DNA repair. Proteins such as p63 and Krt17 assist this regulatory mechanism influencing cellular responses to stress or damage. These interactions help modulate barrier function and skin homeostasis ensuring responsive adaptation to environmental changes.
Associated diseases and disorders	K16 links to conditions like psoriasis and pachyonychia congenita. In psoriasis K16 expression becomes markedly upregulated contributing to the characteristic skin hyperproliferation. Similarly in pachyonychia congenita mutations in the K16 gene lead to nail and skin anomalies causing painful epidermal lesions. Both disorders highlight K16's involvement with Krt6 and Krt17 as these proteins collectively demonstrate disrupted keratin networks resulting in compromised skin integrity.

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

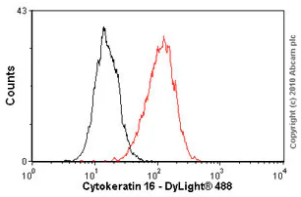
We do not recommend this combination. It is not covered by our product promise.

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.

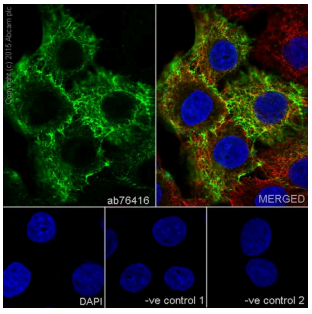
8 product images



Flow Cytometry (Intracellular) - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Flow Cytometry (Intracellular) staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

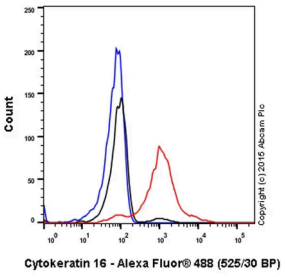
Overlay histogram showing HepG2 cells stained with unpurified ab76416 (red line). The cells were fixed with methanol (5 min) and then permeabilized with 0.1% PBS-Triton for 20 min. The cells were then incubated in 1x PBS/10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab76416, 1/50 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit monoclonal IgG (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HepG2 cells fixed with 4% paraformaldehyde/permeabilized in 0.1% PBS-Triton used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

ab76416 staining Cytokeratin 16/K16 in A431 (human epidermoid carcinoma) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody. ab7291 and ab150120 were used as counterstains for primary antibody ab75748 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.
Negative control 1: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
Negative control 2: Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)

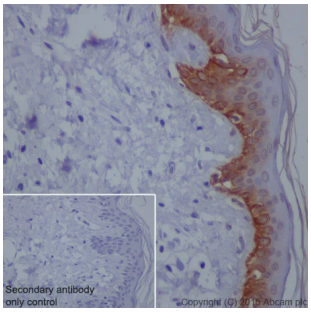


Flow Cytometry (Intracellular) - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Flow Cytometry (Intracellular) staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

ab76416 staining Cytokeratin 16/K16 in HACAT (human keratinocyte) cell lineby intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and the sample was incubated with the primary antibody at a dilution of 1/150. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/500 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

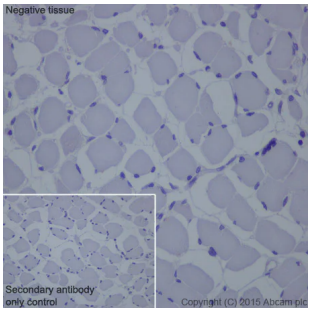
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

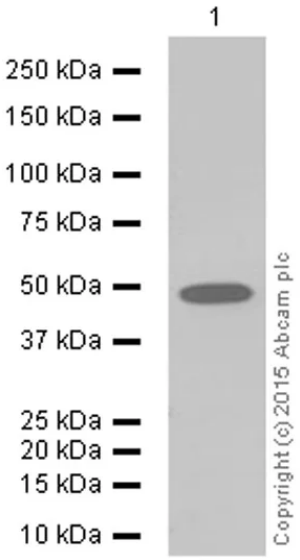
ab76416 staining Cytokeratin 16/K16 in human skin tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/500. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

ab76416 staining Cytokeratin 16/K16 in human skeletal muscle sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/500. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.



Western blot - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Western blot staining of HACAT (human keratinocyte) whole cell lysate using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

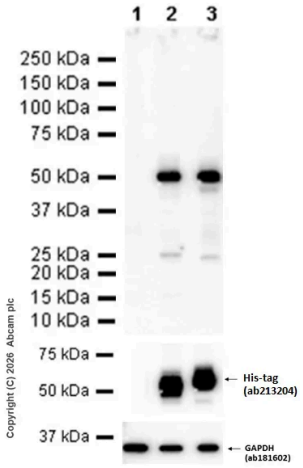
All lanes:
Western blot - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416) at 1/10000 dilution

All lanes:
HACAT (human keratinocyte) whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051 at 1/20000 dilution

Predicted band size: 51 kDa



Western blot - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Western blot staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

Blocking and dilution buffer and concentration: 5% NFDM /TBST.
ab181602 was used as a GAPDH loading control. ab213204 was used at 1/5000 dilution.
All lanes:
Western blot - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416) at 1/1000 dilution

Lane 1:
293T cells transfected with an empty vector containing a His tag whole cell lysate at 20 µg

Lane 2:
293T cells transfected with a full length human CK-16 expression vector containing a His-tag whole cell lysate at 20 µg

Lane 3:
293T cells transfected with a full length human CK-14 expression vector containing a His-tag whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 50 kDa

Exposure time: 40s

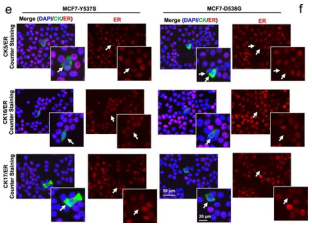


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Immunocytochemistry/ Immunofluorescence - Anti-Cytokeratin 14 + Cytokeratin 16 antibody [EP1615Y] (ab76416)

Cytokeratin 14 + Cytokeratin 16 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cytokeratin 14 + Cytokeratin 16 antibody

Immunocytochemistry-immunofluorescence using Anti-Cytokeratin 16/K16 antibody [EP1615Y], ab76416. Publication image from Zhu, L. et al., 2022, Nat Commun, 35440136. Legend direct from paper.

Basal cytokeratins induction is independent of mutant ER genomic binding but requires low ER expression.a Heatmap representing fold change mRNA expression (E2/veh) of six basal cytokeratins and four luminal cytokeratins in ER+ breast cancer lines from six publicly available data sets (GSE89888, GSE94493, GSE108304, GSE3834, GSE38132, and GSE50693). GREB1, PGR, and TFF1 are canonical E2-regulated genes included as positive controls. b Genomic track showing ER binding intensities at KRT5/6A/6B and KRT14/16/17 loci from ER ChIP-seq data sets of MCF7 ESR1 mutant cells. GREB1 locus serve as a positive control. c Graphic view of Pearson correlation between expression of ESR1 and each basal or luminal cytokeratin in ER+ breast tumors in TCGA (n = 808) and METABRIC (n = 1505) cohorts. Color scale and size of dots represent correlation coefficient and significance, respectively. d qRT-PCR measurement of ESR1, KRT5/6A/6B/14/16/17 mRNA levels in MCF7 WT and ESR1 mutant cells with ESR1 siRNA knockdown for 7 days. mRNA fold changes were normalized to WT cells; RPLP0 levels were measured as internal control. Each bar represents mean ± SD with three biological replicates. Data shown are representative from three independent experiments. Student’ s t-test (two-sided) was used to compare the gene expression between scramble and knockdown groups. e Representative images of ER, CK5, CK16, and CK17 staining in MCF7-Y537S and D538G cells. BCKs positive cells are highlighted with white arrows. Images were taken under x20 magnification. f Dot plots quantifying the ER intensities in BCKs positive (blue) and the corresponding proximal negative (red) cells from each region. Individual data points from five different regions per group from one experiment, representative of three independent experiments are shown. Paired t-test (two-sided) was applied to compare ER intensities between BCKs positive and negative cells. Source data are provided as a Source Data file for a, c, d, f.

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