abcam

ab79389

Anti-Pax2 antibody [EP3251]

Anti-Pax2 antibody [EP3251] (ab79389) is a rabbit monoclonal antibody detecting Pax2 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications
- Trusted since 2009

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 5.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP3251
Purification technique	Affinity purification Protein A
Dissociation constant	2.09 x 10^{-11} M
Concentration	0.275 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Transfected cell lysate - Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human

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

Expected

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

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	We recommend adjusting antibody dilutions according to your IHC staining protocol. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100
Notes	We recommend adjusting antibody dilutions according to your IHC staining protocol. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100
Notes	We recommend adjusting antibody dilutions according to your IHC staining protocol.

Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Target data

See full target information PAX2

Function	Transcription factor that may have a role in kidney cell differentiation (PubMed:24676634). Has a critical role in the development of the urogenital tract, the eyes, and the CNS.

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	Stable for 12 months at -20°C

Notes

What is this antibody validated in?
Anti-Pax2 antibody [EP3251] (ab79389) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of Pax2?
Anti-Pax2 [EP3251] (ab79389) specifically detects a band for Pax2 (UniProt: Q02962) at a molecular weight of 45kDa.

Trusted by the scientific community
Anti-Pax2 [EP3251] (ab79389) was first used in a scientific publication in 2009 and has been cited over 30 times in peer-reviewed journals.

Reviewed by scientists
Anti-Pax2 [EP3251] (ab79389) has over 10 independent reviews from customers.

Other related products
We have a range of other formats of antibody clone [EP3251] also available for your convenience: ab79389, Alexa Fluor® 647 - ab218058, Carrier free - ab284763, PE - ab305674, APC - ab305675, HRP - ab305676, Alkaline Phosphatase - ab308810, Alexa Fluor® 488 - ab309759, Alexa Fluor® 555 - ab312072, Alexa Fluor® 568 - ab312549, Alexa Fluor® 750 - ab321734

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	The Pax2 protein also known as Paired Box 2 is a transcription factor with a mass of approximately 47 kDa. It plays an important role in controlling gene expression during embryonic development. Researchers have identified Pax2 expression in the developing central nervous system kidneys and eyes. Pax2 contains a paired domain which enables it to bind to specific DNA sequences and regulate the transcription of target genes by recruiting other proteins and co-factors to chromatin.
Biological function summary	This transcription factor acts as a mediator in developmental processes influencing both organogenesis and tissue differentiation. Pax2 forms part of a transcriptional complex with other Pax family members such as Pax5 and Pax8 which together ensure the proper development of organs like the kidneys and eyes. These interactions allow Pax2 to control cell proliferation differentiation and survival in developing tissues thereby facilitating normal organ formation.

Pathways

	Pax2 functions within the Wnt/B-catenin and Sonic Hedgehog signaling pathways. These pathways are important for the regulation of cell fate and patterning during embryogenesis. Pax2 works closely with proteins such as Wnt1 and Gli1 to transduce signals that instruct the development of specific tissues. Pax2's involvement in these pathways demonstrates its critical role in responding to environmental cues that dictate developmental progression.
Associated diseases and disorders	Pax2 disruption is associated with renal coloboma syndrome and optic nerve coloboma. Mutations in the Pax2 gene can lead to defective kidney development and neurological defects in eye formation due to impaired gene regulation. Pax2 interacts with proteins like WT1 in kidney development where imbalances may contribute to disease phenotypes. Understanding Pax2's connection to these disorders could help in developing targeted therapeutic strategies.

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

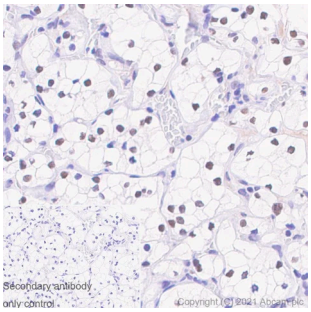
We do not recommend this combination. It is not covered by our product promise.

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.

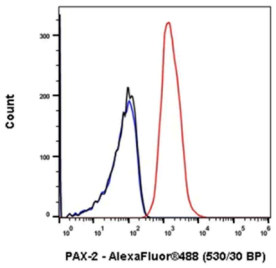
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human renal cancer using rabbit Anti-Pax2 antibody

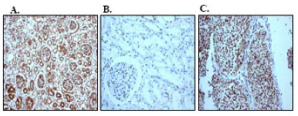
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human renal cancer tissue labelling Pax2 with ab79389 at 1/100 dilution. Positive staining on human renal cancer. The section was incubated with ab79389 for 30 minutes at room temperature. Slides were incubated with 3% Hydrogen Peroxide for 10 mins at room temperature after secondary antibody incubation to reduce the background. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. A Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody (Ready-to-use). Counterstained with hematoxylin. Negative control using PBS instead of primary antibody.
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Flow Cytometry (Intracellular) staining using rabbit Anti-Pax2 antibody

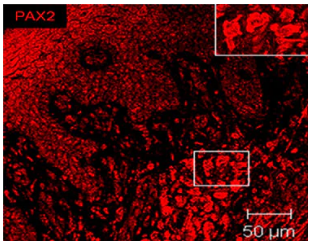
Intracellular Flow Cytometry analysis of K-562 (Human chronic myelogenous leukemia lymphoblast)labelling Pax2 with ab79389 at 1/30. Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 was used as the secondary antibody (red). Rabbit monoclonal IgG (ab172730) was used as the isotype control (black). Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

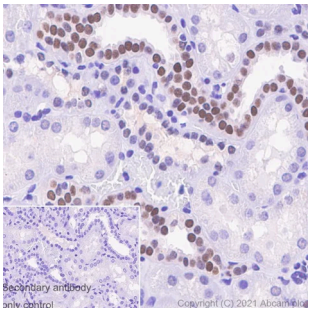
Pax2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Pax2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of (A) human fetal kidney, (B) human normal kidney and (C) human renal cell carcinoma tissues labelled Pax2 with unpurified ab79389 at a dilution of 1/1000.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

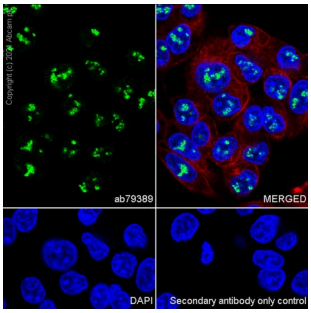
Immunohistochemical analysis of Human malignant melanoma tissue, staining Pax2 with unpurified ab79389.
Antigen retrieval was performed via heat mediation in a citrate buffer (pH 6). Sections were blocked with 0.1% Triton X-100/PBS containing 1% BSA and 10% horse serum for 1 hour. Samples were incubated with primary antibody overnight at 4°C. A Cy3®-conjugated goat anti-rabbit IgG was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of human kidney tissue using rabbit Anti-Pax2 antibody

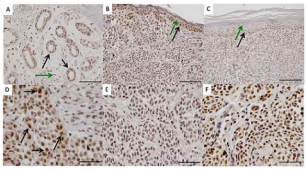
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue labelling Pax2 with ab79389 at 1/100 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody (Ready-to-use). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin. Positive staining on human kidney . The section was incubated with ab79389 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument



Immunocytochemistry/ Immunofluorescence - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunocytochemistry/ Immunofluorescence staining of HepG2 (human hepatocellular carcinoma epithelial cell) using rabbit Anti-Pax2 antibody

Immunocytochemistry analysis of HepG2 (human hepatocellular carcinoma epithelial cell) labelling Pax2 with ab79389 at 1/200 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100 at room temperature for 4 minutes. Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 was used as the secondary antibody (green). Cells were counterstained with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red). Nuclear DNA was labelled with DAPI (blue). Confocal image showing nucleolar staining in HepG2 cell line.

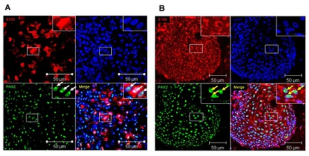


Lee SB et al. PAX2 regulates ADAM10 expression and mediates anchorage-independent cell growth of melanoma cells. PLoS One 6:e22312 (2011).

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Pax2 antibody

Immunohistochemical analysis of Pax2 expression in tissue sections of human benign nevi and malignant melanoma using ab79389 at 1/100 dilution. All specimens were fixed in 4% formaline (pH 7.4), embedded in paraffin followed by cutting with a microtome (3 µm thickness). The slides were deparaffinized in xylol for 20 minutes and then rehydrated in descending series of ethanol (100%, 100%, 96%, 96%, 70%, and 70%). For antigen retrieval the slides were boiled in citrate buffer (pH 6.0) for 40 min, and then allowed to cool down for 15 min. After washing with PBS buffer the endogenous peroxidase was blocked with H2O2 for 15 min at room temperature. After washing in PBS the slides were incubated with the antibody against PAX2 (dilution 1/100) for 60 min at room temperature and washed in PBS again. The secondary antibody was incubated for 20 min at room temperature and after washing the slides in PBS the biotin streptavidine label was incubated for 20 min at room temperature. A detection kit including horseradish peroxidase and diaminobenzidine as chromogene was applied for 5 min. Counterstaining was performed with hematoxilin for 6 min. (A) In normal sweat glands, Pax2 is expressed in gland epithelial cells (black arrows) while intermingled stromal cells only show very weak or absent nuclear Pax2 expression (green arrow) Bar represents 100 µm. (B, C) Normal appearing epidermal cell layers adjacent to (B, bar represent 100 µm) nevi or (C, bar represent 200 µm) malignant melanoma show a differentially Pax2 expression with strongest Pax2 levels in germinal basal cell layers (black arrows) decreasing in higher differentiated keratinocytes and finally being absent in corneocytes (green arrows). (D) Malignant melanoma cells - heterogeneous nuclear Pax2 expression. Strongest expression in large atypical nuclei with prominent nucleoli (black arrows). (E, F) Pax2 expression in intradermal nevi was heterogeneous and did not correlate with histological features.

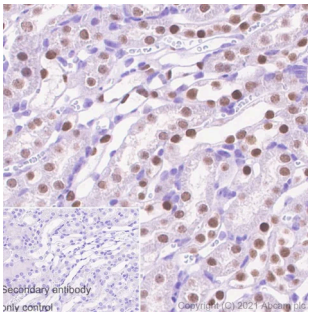


Lee SB et al. PAX2 regulates ADAM10 expression and mediates anchorage-independent cell growth of melanoma cells. PLoS One 6:e22312 (2011). Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

Immunocytochemistry/ Immunofluorescence - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Pax2 antibody

Pax2 is expressed in melanocytes of benign nevi (A) and melanoma cells of patients with malignant melanoma (B). Cells were grown on coverslips and fixed with 4% paraformaldehyde/PBS. After washing the cells with PBS, cells were permeabilized and blocked with 0.1% Triton X-100/PBS containing 5% BSA. Pax2 (green) was examined by immunofluorescent analysis using ab79389 at 1/100 dilution (incubated for 1 hour at room temperature). Following 3 times washing, bound antibodies were deteced by Alexa 488 conjugated goat anti-mouse or Cy3 conjugated goat anti-mouse secondary antibodies. Following PBS-washing nuclei were stained with 4'6-diamidino-2-phenylindole (DAPI, Blue) and cells were mounted in Fluoromount-G™ and examined by fluorescence microscopy. White arrows in the higher magnified insets indicate PAX2 expression in nucleoli of melanocytes of benign nevi (A), yellow arrows in the higher magnified insets specify PAX2 expression in nucleoli of melanoma cells (B).

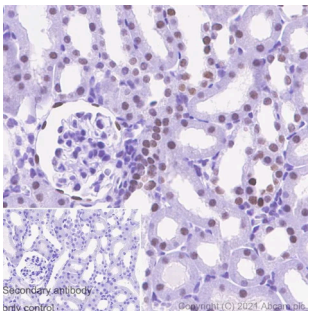


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Pax2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue labelling Pax2 with ab79389 at 1/100 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A Rabbit specific IHC polymer detection kit HRP/DAB

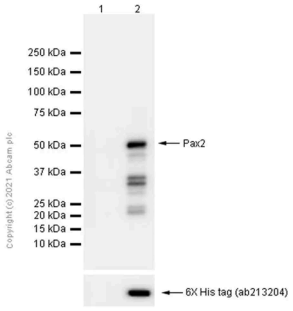
(ab209101) was used as the secondary antibody (Ready-to-use). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin. Positive staining on mouse kidney. The section was incubated with ab79389 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Pax2 antibody [EP3251] (ab79389)

Pax2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Pax2 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat kidney tissue labelling Pax2 with ab79389 at 1/100 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody (Ready-to-use). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin. Positive staining on rat kidney tissue. The section was incubated with ab79389 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Western blot - Anti-Pax2 antibody [EP3251] (ab79389)

All lanes:
Western blot - Anti-Pax2 antibody [EP3251] (ab79389) at 1/10000 dilution

Lane 1:
HEK-293 (Human embryonic kidney epithelial cell) transfected with empty vector whole cell lysate at 15 µg

Lane 2:
HEK-293 (Human embryonic kidney epithelial cell) transfected with his tagged human full-length PAX2 at 15 µg

Secondary

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

Predicted band size: 45 kDa

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