abcam

ab128086

Anti-PADI4 / PAD4 antibody [OTI4H5]

Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086) is a mouse monoclonal antibody detecting PADI4 / PAD4 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **African green monkey, Human**.

- Over 30 publications

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human PADI4. Database link Q9UM07
Clone number	OTI4H5
Purification technique	Affinity purification Protein A
Concentration	Concentration data is not available right now, please try again later Batch concentration finder →
Purification notes	Purified from TCS

Reactivity data

WB

Tested

Species	Human

Dilution info	1/2000
Notes	-

Expected

Species	African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/150
Notes	-

Expected

Species	African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	African green monkey
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Expected

Species	African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information PADI4

Function

Catalyzes the citrullination/deimination of arginine residues of proteins such as histones, thereby playing a key role in histone code and regulation of stem cell maintenance (PubMed:15339660, PubMed:15345777, PubMed:16567635, PubMed:21245532). Citrullinates histone H1 at 'Arg-54' (to form H1R54ci), histone H3 at 'Arg-2', 'Arg-8', 'Arg-17' and/or 'Arg-26' (to form H3R2ci, H3R8ci, H3R17ci, H3R26ci, respectively) and histone H4 at 'Arg-3' (to form H4R3ci) (PubMed:15339660, PubMed:15345777, PubMed:16567635, PubMed:21245532). Acts as a key regulator of stem cell maintenance by mediating citrullination of histone H1: citrullination of 'Arg-54' of histone H1 (H1R54ci) results in H1 displacement from chromatin and global chromatin decondensation, thereby promoting pluripotency and stem cell maintenance (PubMed:15339660, PubMed:15345777, PubMed:16567635, PubMed:21245532). Promotes profound chromatin decondensation during the innate immune response to infection in neutrophils by mediating formation of H1R54ci (PubMed:18209087). Required for the formation of neutrophil extracellular traps (NETs); NETs are mainly composed of DNA fibers and are released by neutrophils to bind pathogens during inflammation (By similarity). Citrullination of histone H3 prevents their methylation by CARM1 and HRMT1L2/PRMT1 and represses transcription (PubMed:15345777). Citrullinates EP300/P300 at 'Arg-2142', which favors its interaction with NCOA2/GRIP1 (PubMed:15731352).

Storage

Shipped at conditions	Blue Ice

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

What is this antibody validated in?
Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in African green monkey, Human samples.

What is the molecular weight of PADI4 / PAD4?
Anti-PADI4 / PAD4 [OTI4H5] (ab128086) specifically detects a band for PADI4 / PAD4 (UniProt: Q9UM07) at a molecular weight of 74kDa.

Trusted by the scientific community
Anti-PADI4 / PAD4 [OTI4H5] (ab128086) was first used in a scientific publication in 2012 and has been cited over 30 times in peer-reviewed journals.

Supplementary info

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

Activity summary	PADI4 also known as PAD4 PADI4 protein or PAD-4 is an enzyme that plays a mechanical role in post-translational modification. It functions by catalyzing the conversion of arginine residues into citrulline in histones a process known as citrullination or deimination. This enzyme exhibits a molecular mass of approximately 74 kDa and is expressed notably in tissues like bone marrow and sites of inflammation. PADI4 shows high expression in immune cells such as neutrophils which are important for inflammatory responses.
Biological function summary	The PADI4 protein impacts gene expression by modifying chromatin architecture making it part of chromatin remodeling activities. PADI4 is known to associate with chromatin but it does not form large stable complexes. It influences the transcriptional activity of genes by altering histone interactions which can affect immune responses and cellular differentiation. Through these chromatin changes PADI4 plays a notable role in regulating genes associated with immune function and inflammatory responses.
Pathways	PADI4 integrates into the inflammatory response and apoptosis pathways. It influences apoptosis by modulating pro-inflammatory gene expression and participating in the formation of neutrophil extracellular traps (NETs). PADI4 works

	with other proteins such as histone H3 and histone H4 to influence immune cell pathways. These interactions underline its role in the regulation of protein expressions during inflammation and immune-mediated processes.
Associated diseases and disorders	PADI4 connects to rheumatoid arthritis (RA) and certain cancers. In rheumatoid arthritis altered activity of PADI4 can lead to the production of autoantibodies against citrullinated proteins which exacerbates inflammation in joints. The enzyme's dysregulation is also implicated in cancer progression where it may affect tumor growth and metastasis. PADI4's interaction with other proteins like citrullinated histones highlights its association with pathogenic processes in such diseases.

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

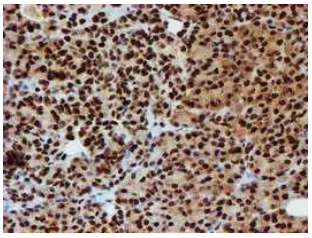
We do not recommend this combination. It is not covered by our product promise.

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.

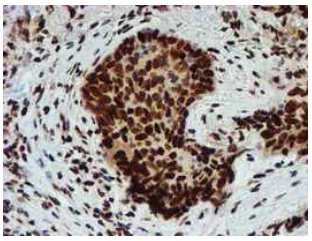
Full details and terms and conditions can be found here:
Terms & Conditions.

12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

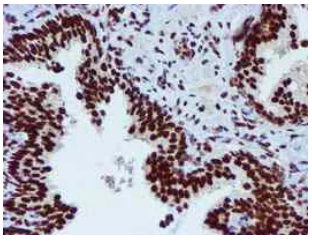
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Human pancreas tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

PADI4 / PAD4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PADI4 / PAD4 antibody

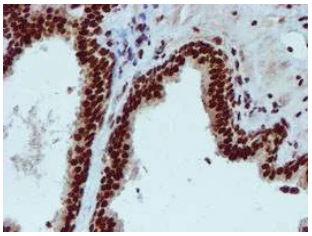
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded carcinoma of Human lung tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

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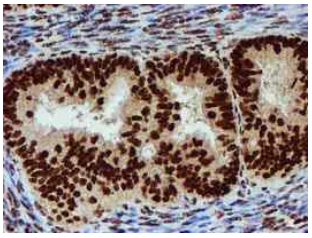
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Human prostate tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

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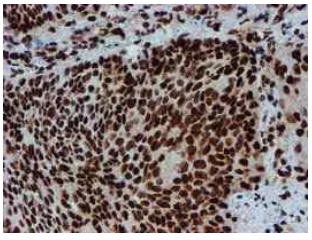
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Carcinoma of Human prostate tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

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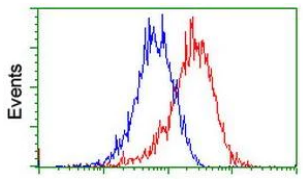
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Adenocarcinoma of Human endometrium tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

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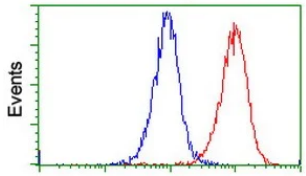
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Carcinoma of Human bladder tissue by Immunohistochemistry.



Flow Cytometry (Intracellular) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

PADI4 / PAD4 Flow Cytometry (Intracellular) staining using mouse Anti-PADI4 / PAD4 antibody

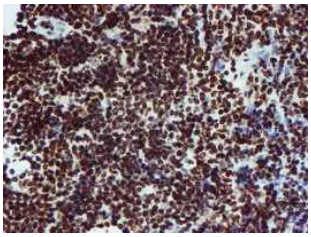
ab128086, at a dilution of 1/100, staining PADI4 / PAD4 in HeLa cells (Red), compared to a nonspecific negative control antibody (Blue), analysed by Flow cytometry (Intracellular).



Flow Cytometry (Intracellular) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

PADI4 / PAD4 Flow Cytometry (Intracellular) staining using mouse Anti-PADI4 / PAD4 antibody

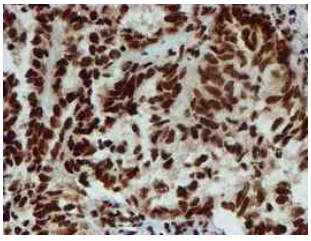
ab128086, at a dilution of 1/100, staining PADI4 / PAD4 in Jurkat cells (Red), compared to a nonspecific negative control antibody (Blue), analysed by Flow cytometry (Intracellular).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

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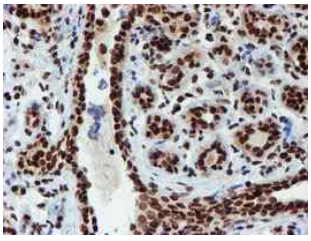
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Human lymphoma tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

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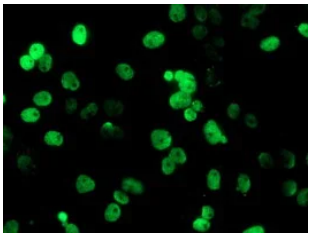
ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Adenocarcinoma of Human ovary tissue by Immunohistochemistry.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

PADI4 / PAD4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PADI4 / PAD4 antibody

ab128086, at a dilution of 1/150, staining PADI4 / PAD4 in paraffin-embedded Human breast tissue by Immunohistochemistry.



Immunocytochemistry/ Immunofluorescence - Anti-PADI4 / PAD4 antibody [OTI4H5] (ab128086)

PADI4 / PAD4 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-PADI4 / PAD4 antibody

ab128086, at a dilution of 1/100, staining COS7 cells transiently transfected by pCMV6-ENTRY PADI4 / PAD4 by Immunofluorescence.

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