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Goat Anti-PAD4 / PADI4 Antibody
Peptide-affinity purified goat antibody
Catalog # AF1776a

Specification

Goat Anti-PAD4 / PADI4 Antibody - Product Information

Application	**IF, Pep-ELISA**
Primary Accession	Q9UM07
Other Accession	NP_036519, 23569
Reactivity	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**74079**

Goat Anti-PAD4 / PADI4 Antibody - Additional Information

Gene ID 23569

Other Names
Protein-arginine deiminase type-4, 3.5.3.15, HL-60 PAD, Peptidylarginine deiminase IV, Protein-arginine deiminase type IV, PADI4, PADI5, PDI5

Dilution
IF~~1:50~200
Pep-ELISA~~N/A

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-PAD4 / PADI4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-PAD4 / PADI4 Antibody - Protein Information

Name PADI4

Synonyms PAD4, PADI5, PDI5

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).

Cellular Location
Cytoplasm. Nucleus. Cytoplasmic granule. Note=Cytoplasmic granules of eosinophils and neutrophils.

Tissue Location
Expressed in eosinophils and neutrophils, not expressed in peripheral monocytes or lymphocytes

Goat Anti-PAD4 / PADI4 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-PAD4 / PADI4 Antibody - Images

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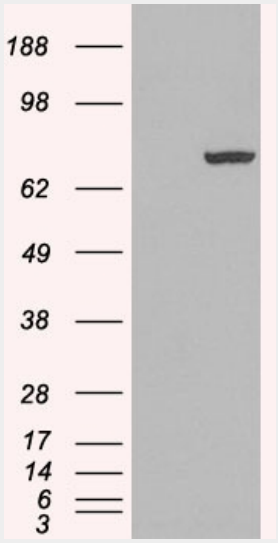
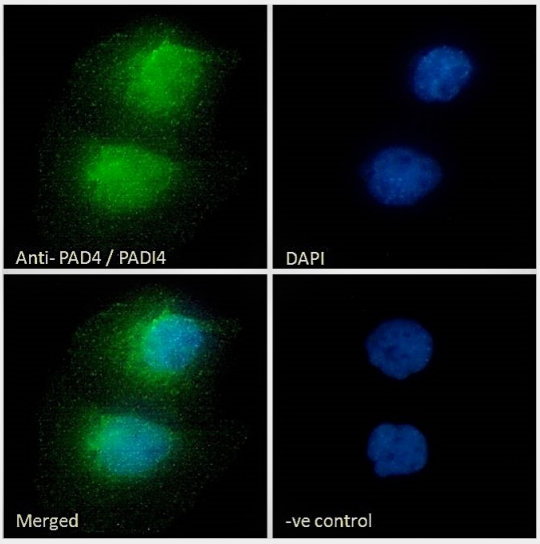
AF1776a (0.3 µg/ml) staining of human spleen lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

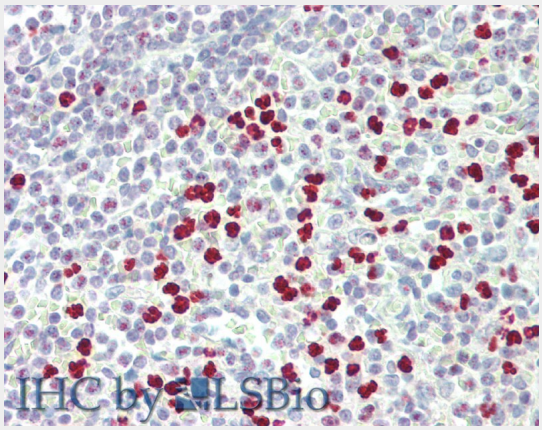


HEK293 overexpressing PADI4 (RC206501) and probed with AF1776a (mock transfection in first lane), tested by Origene.

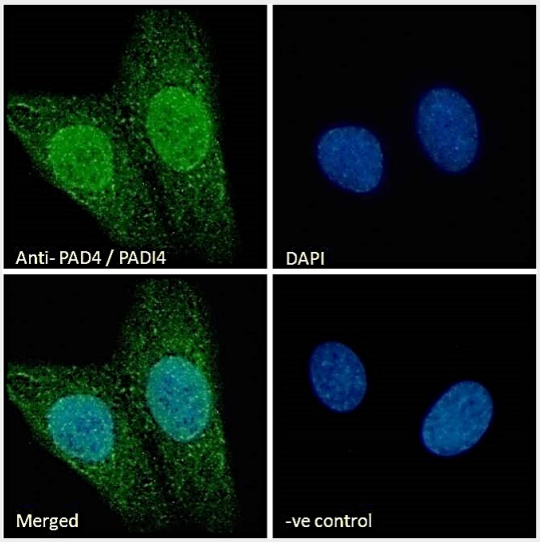


EB06547 Immunofluorescence analysis of paraformaldehyde fixed HeLa cells, permeabilized with

0.15% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml), showing nuclear staining. The nuclear stain is DAPI (blue)



EB06547 (5µg/ml) staining of paraffin embedded Human Spleen. Steamed antigen retrieval with citrate buffer pH 6, AP-staining. **This data is from a previous batch, not on sale.**



EB06547 Immunofluorescence analysis of paraformaldehyde fixed U2OS cells, permeabilized with 0.15% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml), showing nuclear staining. The nuclear stain is DAPI (blue)

Goat Anti-PAD4 / PADI4 Antibody - Background

This gene is a member of a gene family which encodes enzymes responsible for the conversion of arginine residues to citrulline residues. This gene may play a role in granulocyte and macrophage development leading to inflammation and immune response.

Goat Anti-PAD4 / PADI4 Antibody - References

The PADI4 gene does not contribute to genetic susceptibility to rheumatoid arthritis in Chinese Han population. Chen R, et al. Rheumatol Int, 2010 Jun 20. PMID 20563870.
Peptidyl arginine deiminase type IV (PADI4) haplotypes interact with shared epitope regardless of anti-cyclic citrullinated peptide antibody or erosive joint status in rheumatoid arthritis: a case control study. Bang SY, et al. Arthritis Res Ther, 2010. PMID 20537173.
Contribution of anti-CCP antibodies, proximal interphalangeal joint involvement, HLA-DRB1 shared epitope, and PADI4 as risk factors for the development of rheumatoid arthritis in palindromic rheumatism. Tamai M, et al. Scand J Rheumatol, 2010 Aug. PMID 20476860.

Cumulative association of 22 genetic variants with seropositive rheumatoid arthritis risk. Karlson EW, et al. Ann Rheum Dis, 2010 Jun. PMID 20233754.
Coordination of PAD4 and HDAC2 in the regulation of p53-target gene expression. Li P, et al. Oncogene, 2010 May 27. PMID 20190809.