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PAD4 Antibody (C-term)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2546b

Specification

PAD4 Antibody (C-term) - Product Information

Application	**WB,E**
Primary Accession	Q9UM07
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**512-544**

PAD4 Antibody (C-term) - Additional Information

Gene ID 23569

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

Target/Specificity
This PAD4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 512-544 amino acids from the C-terminal region of human PAD4.

Dilution
WB~~1:1000

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

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

Precautions
PAD4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

PAD4 Antibody (C-term) - 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

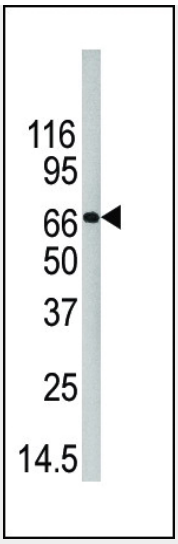
PAD4 Antibody (C-term) - Protocols

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

PAD4 Antibody (C-term) - Images

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Western blot analysis of anti-PAD4 Pab (Cat. #AP2546b) in 293 cell line lysate. PAD4(arrow) was detected using the purified Pab.

PAD4 Antibody (C-term) - Background

PAD4 is a member of a family of enzymes responsible for the conversion of arginine residues to citrulline residues via catalyzation of the deimination of the arginine residues. PAD4 down-regulates histone H3 and H4 arginine methylation, both by preventing arginine methylation by CARM1 and HRMT1L2/PRMT1 and by converting methylarginine to citrulline. This protein may play a role in granulocyte and macrophage development leading to inflammation and immune response.

PAD4 Antibody (C-term) - References

Nakayama-Hamada, M., et al., Biochem. Biophys. Res. Commun. 327(1):192-200 (2005).
Wang, Y., et al., Science 306(5694):279-283 (2004).
Arita, K., et al., Arthritis Rheum. 11(8):777-783 (2004).
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Suzuki, A., et al., Nat. Genet. 34(4):395-402 (2003).