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PAD4 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP2546a

Specification

PAD4 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession Q9UM07

PAD4 Antibody (N-term) Blocking Peptide - 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
The synthetic peptide sequence used to generate the antibody AP2546a was selected from the N-term region of human PAD4. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

PAD4 Antibody (N-term) Blocking Peptide - 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 (N-term) Blocking Peptide - Protocols

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

- Blocking Peptides

PAD4 Antibody (N-term) Blocking Peptide - Images

PAD4 Antibody (N-term) Blocking Peptide - 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 (N-term) Blocking Peptide - 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).Barton, A., et al., Arthritis Rheum. 50(4):1117-1121 (2004).Suzuki, A., et al., Nat. Genet. 34(4):395-402 (2003).