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Anti-PADI4/PAD4 Antibody
Catalog # ABO11351

Specification

Anti-PADI4/PAD4 Antibody - Product Information

Application	**WB**
Primary Accession	Q9UM07
Host	**Rabbit**
Reactivity	**Human**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Protein-arginine deiminase type-4(PADI4) detection. Tested with WB in Human.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-PADI4/PAD4 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, PAD4, PADI5, PDI5

Calculated MW
74079 MW KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization
Cytoplasm. Nucleus. Cytoplasmic granule. Cytoplasmic granules of eosinophils and neutrophils.

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

Protein Name
Protein-arginine deiminase type-4

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence in the middle region of human PADI4(492-512aa ASPRSCYKLFQEQQNEGHGEA).

Purification

Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Anti-PADI4/PAD4 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

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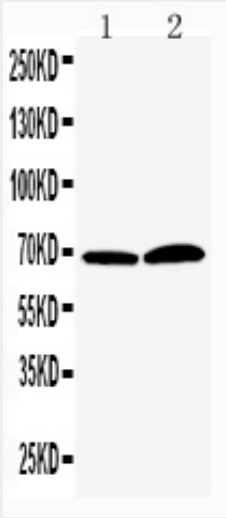
Anti-PADI4/PAD4 Antibody - Protocols

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

Anti-PADI4/PAD4 Antibody - Images



Anti-PADI4/PAD4 antibody, ABO11351, Western blottingLane 1: PANC Cell LysateLane 2: 293T Cell Lysate

Anti-PADI4/PAD4 Antibody - Background

PADI4(Peptidylarginine Deiminase, Type IV), also known as PAD or PAD4, is a human protein which in humans is encoded by the PADI4 gene. Peptidylarginine deiminases, such as PADI4, make up a family of posttranslational modification enzymes that convert arginine residues to citrulline residues in the presence of calcium ion(Nakashima et al., 1999). Suzuki et al.(2003) found from sequence data that the PADI4 gene maps to 1p36. Cuthbert et al.(2004) described a process, deimination, that converts histone arginine to citrulline and antagonizes arginine methylation. They showed that PADI4 specifically deiminated arg2, arg8, arg17, and arg26 in the H3 tail. Deimination by PADI4 prevented arginine methylation by CARM1. Dimethylation of arginines prevented deimination by PADI4, although monomethylation still allowed deimination to take place. In vivo targeting experiments on an endogenous promoter demonstrated that PADI4 could repress hormone receptor-mediated gene induction. PADI4 was recruited to the pS2 promoter following hormone induction when the gene was transcriptionally downregulated, consistent with a repressive role for PADI4.