10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-PADI4/PAD4 Antibody

Catalog # ABO11351

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.

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
Application Details	Western blot, 0.1-0.5 □g/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. .
Source	Eukaryota
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.

Protein Information

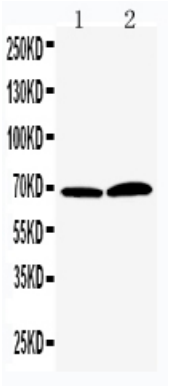
Name	PADI4 {ECO:0000303|PubMed:12833157, ECO:0000312|HGNC:HGNC:18368}
Function	Catalyzes the citrullination/deimination of arginine residues of proteins such as histones, thereby playing a key role in histone code and regulation of stem cell maintenance (PubMed:15339660, PubMed:15345777, PubMed:16567635, PubMed:19153223, PubMed:21245532, PubMed:25622091). 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). Citrullination of histone H3 prevents their methylation by CARM1 and HRMT1L2/PRMT1 and represses transcription (PubMed:15345777). Involved for the formation of neutrophil extracellular traps (NETs) by mediating citrullination of histone H3 and initiating decondensation of chromatin and nuclear membrane rupture (PubMed:19153223, PubMed:25622091, PubMed:28574339, PubMed:32170015). NETs are mainly composed of DNA fibers and are released by neutrophils to trap pathogens during inflammation (PubMed:19153223). 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

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.

Images

Anti-PADI4/PAD4 antibody, ABO11351, Western



blottingLane 1: PANC Cell LysateLane 2: 293T Cell Lysate

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.