

PADI4 (C-3): sc-166645

BACKGROUND

The protein arginine deiminase (PAD) family of proteins are often referred to as peptidylarginine deiminases. They catalyze the deimination of arginine residues of proteins. In the presence of calcium, the proteins in the PAD family act as catalysts for the posttranslational modification reaction that converts methylarginine to citrulline. The PAD proteins are cytoplasmic proteins primarily detected in eosinophils and neutrophils. The gene encoding for PADI4 is believed to be a rheumatoid arthritis susceptibility locus. By increasing the citrullination of proteins in rheumatoid arthritis synovial tissues, it may play a role in the pathogenesis of the disease.

REFERENCES

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3. Cantaert, T., et al. 2005. Functional haplotypes of PADI4: relevance for rheumatoid arthritis-specific synovial intracellular citrullinated proteins and anti-citrullinated protein antibodies. *Ann. Rheum. Dis.* 64: 1316-1320.
4. Kubota, K., et al. 2005. Determination of sites citrullinated by peptidylarginine deiminase using 180 stable isotope labeling and mass spectrometry. *Rapid Commun. Mass Spectrom.* 19: 683-688.
5. Nakayama-Hamada, M., et al. 2005. Comparison of enzymatic properties between hPADI2 and hPADI4. *Biochem. Biophys. Res. Commun.* 327: 192-200.
6. Yamada, R., et al. 2005. Citrullinated proteins in rheumatoid arthritis. *Front. Biosci.* 10: 54-64.
7. Chang, X., et al. 2005. Localization of peptidylarginine deiminase 4 (PADI4) and citrullinated protein in synovial tissue of rheumatoid arthritis. *Rheumatology* 44: 40-50.
8. Chang, X., et al. 2005. The inhibition of antithrombin by peptidylarginine deiminase 4 may contribute to pathogenesis of rheumatoid arthritis. *Rheumatology* 44: 293-298.
9. Harney, S.M., et al. 2005. Genetic and genomic studies of PADI4 in rheumatoid arthritis. *Rheumatology* 44: 869-872.

CHROMOSOMAL LOCATION

Genetic locus: PADI4 (human) mapping to 1p36.13.

SOURCE

PADI4 (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 239-270 within an internal region of PADI4 of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166645 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PADI4 (C-3) is recommended for detection of PADI4 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PADI4 siRNA (h): sc-61283, PADI4 shRNA Plasmid (h): sc-61283-SH and PADI4 shRNA (h) Lentiviral Particles: sc-61283-V.

Molecular Weight of PADI4: 67 kDa.

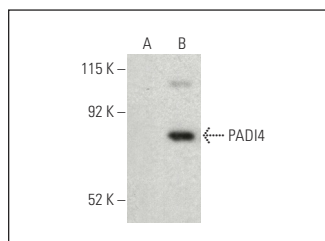
Positive Controls: PADI4 (h): 293T Lysate: sc-114204.

RECOMMENDED SUPPORT REAGENTS

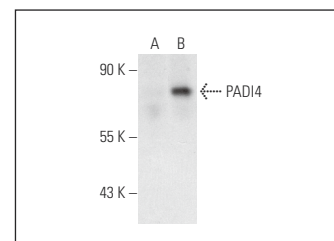
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.
- 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PADI4 (C-3): sc-166645. Western blot analysis of PADI4 expression in non-transfected: sc-117752 (A) and human PADI4 transfected: sc-114204 (B) 293T whole cell lysates.



PADI4 (C-3): sc-166645. Western blot analysis of PADI4 expression in non-transfected: sc-117752 (A) and human PADI4 transfected: sc-114204 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.