SANTA CRUZ BIOTECHNOLOGY, INC.

PADI4 (M-70): sc-98990

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

1. Hagiwara, T., et al. 2005. Deimination of Histone H2A and H4 at Arginine 3 in HL-60 granulocytes. Biochemistry 44: 5827-5834.
2. Barton, A., et al. 2005. Investigation of polymorphisms in the PADI4 gene in determining severity of inflammatory polyarthritis. Ann. Rheum. Dis. 64: 1311-1315.
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 (mouse) mapping to 4 D3.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

SOURCE

PADI4 (M-70) is a rabbit polyclonal antibody raised against amino acids 181-250 mapping within an internal region of PADI4 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PADI4 (M-70) is recommended for detection of PADI4 of mouse and rat origin by Western Blotting (starting dilution 1:200, 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 (m): sc-61284, PADI4 shRNA Plasmid (m): sc-61284-SH and PADI4 shRNA (m) Lentiviral Particles: sc-61284-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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