SANTA CRUZ BIOTECHNOLOGY, INC.

PADI4 (A-11): sc-365369

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

PADI4 (A-11) is a mouse monoclonal antibody raised against amino acids 181-250 mapping within an internal region of PADI4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PADI4 (A-11) is available conjugated to agarose (sc-365369 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365369 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365369 PE), fluorescein (sc-365369 FITC), Alexa Fluor® 488 (sc-365369 AF488), Alexa Fluor® 546 (sc-365369 AF546), Alexa Fluor® 594 (sc-365369 AF594) or Alexa Fluor® 647 (sc-365369 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365369 AF680) or Alexa Fluor® 790 (sc-365369 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

PADI4 (A-11) 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.

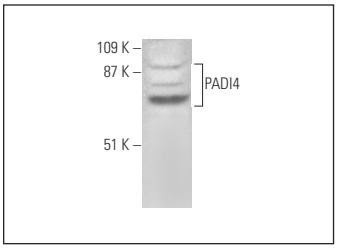
Molecular Weight of PADI4: 67 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

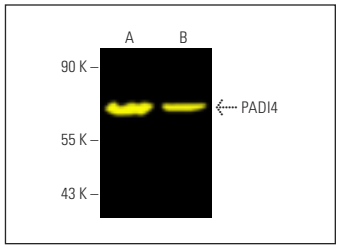
RECOMMENDED SUPPORT REAGENTS

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 (A-11) HRP: sc-365369 HRP. Direct western blot analysis of PADI4 expression in K-562 whole cell lysate.



PADI4 (A-11) Alexa Fluor® 488: sc-365369 AF488. Direct fluorescent western blot analysis of PADI4 expression in K-562 (**A**) and U-2 OS (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Xin, J., et al. 2016. Role of peptidylarginine deiminase type 4 in gastric cancer. Exp. Ther. Med. 12: 3155-3160.
2. El Shikh, M.E.M., et al. 2019. Extracellular traps and PAD4 released by macrophages induce citrullination and auto-antibody production in autoimmune arthritis. J. Autoimmun. 105: 102297.

STORAGE

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