SANTA CRUZ BIOTECHNOLOGY, INC.

TRP2 (C-9): sc-74439

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tyrosinase (TYR), a type I membrane protein and copper-containing enzyme, is involved in the production of melanin, the primary pigment found in vertebrates. Melanin biogenesis requires the enzymatic activity of TYR, which catalyzes the critical and rate-limiting step of tyrosine hydroxylation in the biosynthesis of melanin. Defects effecting TYR activity result in various forms of albinism. The TYR-related proteins, TRP1 and TRP2, are also specifically expressed in melanocytes, and they likewise contribute to the synthesis of melanin within the melanosomes. The TRPs, including TYR, all share a similar transmembrane region, contain two metal-binding regions and a cysteine-rich epidermal growth factor motif, and are localized in the melanosomal membrane. These proteins, however, have distinct catalytic activity, and they individually contribute to the biosynthesis of melanin biopolymers. The TRPs are believed to exist as a multi-enzyme complex, as these proteins form aggregates together, and the expression of TRP1 also helps stabilize TYR in melanocytes.

REFERENCES

1. Korner, A. and Pawelek, J. 1982. Mammalian tyrosinase catalyzes three reactions in the biosynthesis of melanin. Science 217: 1163-1165.
2. Shibahara, S., et al. 1986. Cloning and expression of cDNA encoding mouse tyrosinase. Nucleic Acids Res. 14: 2413-2427.
3. Hearing, V.J. and Jiménez, M. 1987. Mammalian tyrosinase—the critical regulatory control point in melanocyte pigmentation. Int. J. Biochem. 19: 1141-1147.

CHROMOSOMAL LOCATION

Genetic locus: DCT (human) mapping to 3q11.2; Dct (mouse) mapping to 14 E4.

SOURCE

TRP2 (C-9) is a mouse monoclonal antibody raised against amino acids 41-190 of TRP2 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.

TRP2 (C-9) is available conjugated to agarose (sc-74439 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74439 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74439 PE), fluorescein (sc-74439 FITC), Alexa Fluor® 488 (sc-74439 AF488), Alexa Fluor® 546 (sc-74439 AF546), Alexa Fluor® 594 (sc-74439 AF594) or Alexa Fluor® 647 (sc-74439 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74439 AF680) or Alexa Fluor® 790 (sc-74439 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

TRP2 (C-9) is recommended for detection of TRP2 of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

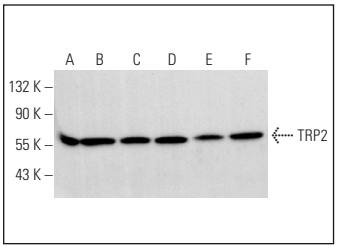
Suitable for use as control antibody for TRP2 siRNA (h): sc-41661, TRP2 siRNA (m): sc-41662, TRP2 shRNA Plasmid (h): sc-41661-SH, TRP2 shRNA Plasmid (m): sc-41662-SH, TRP2 shRNA (h) Lentiviral Particles: sc-41661-V and TRP2 shRNA (m) Lentiviral Particles: sc-41662-V.

Molecular Weight of TRP2 precursor: 59 kDa.

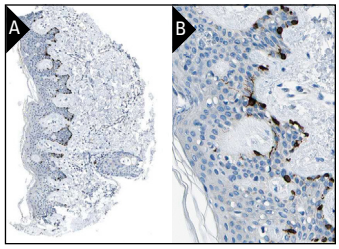
Molecular Weight of glycosylated TRP2: 75 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or NCI-H460 whole cell lysate: sc-364235.

DATA



TRP2 (C-9): sc-74439. Western blot analysis of TRP2 expression in Y79 (**A**), K-562 (**B**), HeLa (**C**), NCI-H460 (**D**), MCF7 (**E**) and C6 (**F**) whole cell lysates.



TRP2 (C-9): sc-74439. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic and membrane staining of a subset of epidermal cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Bernard, D., et al. 2010. Processing of tumor antigen differentially impacts the development of helper and effector $CD4^+$ T cell responses. Mol. Ther. 18: 1224-1232.
2. Jeon, S. and Kim, M.M. 2021. The down-regulation of melanogenesis via MITF and FOXO1 signaling pathways in SIRT1 knockout cells using CRISPR/Cas9 system. J. Biotechnol. 342: 114-127.
3. Fessé, P., et al. 2022. Human cutaneous interfollicular melanocytes differentiate temporarily under genotoxic stress. iScience 25: 105238.
4. Wagatsuma, T., et al. 2023. Pigmentation and TYRP1 expression are mediated by zinc through the early secretory pathway-resident ZNT proteins. Commun. Biol. 6: 403.

RESEARCH USE

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