SANTA CRUZ BIOTECHNOLOGY, INC.

TRP1 (TA99): sc-58438

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 exists as a multi-enzyme complex, as these proteins form aggregates together, and the expression of TRP1 also helps stabilize TYR in melanocytes.

CHROMOSOMAL LOCATION

Genetic locus: TYRP1 (human) mapping to 9p23; Tyrp1 (mouse) mapping to 4 C3.

SOURCE

TRP1 (TA99) is a mouse monoclonal antibody raised against melenoma cell line SK-MEL-23 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.

TRP1 (TA99) is available conjugated to agarose (sc-58438 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58438 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58438 PE), fluorescein (sc-58438 FITC), Alexa Fluor® 488 (sc-58438 AF488), Alexa Fluor® 546 (sc-58438 AF546), Alexa Fluor® 594 (sc-58438 AF594) or Alexa Fluor® 647 (sc-58438 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-58438 AF680) or Alexa Fluor® 790 (sc-58438 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TRP1 (TA99) is recommended for detection of TRP1 in melanomas of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with carcinomas and sarcomas.

Suitable for use as control antibody for TRP1 siRNA (h): sc-36745, TRP1 siRNA (m): sc-36744, TRP1 shRNA Plasmid (h): sc-36745-SH, TRP1 shRNA Plasmid (m): sc-36744-SH, TRP1 shRNA (h) Lentiviral Particles: sc-36745-V and TRP1 shRNA (m) Lentiviral Particles: sc-36744-V.

Molecular Weight of TRP1: 70-90 kDa.

STORAGE

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

SELECT PRODUCT CITATIONS

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3. Ho, H., et al. 2011. WIPI1 coordinates melanogenic gene transcription and melanosome formation via TORC1 inhibition. J. Biol. Chem. 286: 12509-12523.
4. Bultema, J.J., et al. 2012. BLOC-2, AP-3, and AP-1 proteins function in concert with Rab38 and Rab32 proteins to mediate protein trafficking to lysosome-related organelles. J. Biol. Chem. 287: 19550-19563.
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6. Bultema, J.J., et al. 2014. Myosin Vc interacts with Rab32 and Rab38 proteins and works in the biogenesis and secretion of melanosomes. J. Biol. Chem. 289: 33513-33528.
7. McGough, I.J., et al. 2014. Identification of molecular heterogeneity in SNX27-retromer-mediated endosome-to-plasma-membrane recycling. J. Cell Sci. 127: 4940-4953.
8. Yatsu, A., et al. 2015. Rab40C is a novel Varp-binding protein that promotes proteasomal degradation of Varp in melanocytes. Biol. Open 4: 267-275.
9. El Hajj, P., et al. 2015. SNPs at miR-155 binding sites of TYRP1 explain discrepancy between mRNA and protein and refine TYRP1 prognostic value in melanoma. Br. J. Cancer 113: 91-98.
10. Ambrosio, A.L., et al. 2016. TPC2 controls pigmentation by regulating melanosome pH and size. Proc. Natl. Acad. Sci. USA 113: 5622-5627.
11. Asalla, S., et al. 2016. Restoring mitochondrial function: a small molecule-mediated approach to enhance glucose stimulated Insulin secretion in cholesterol accumulated pancreatic β cells. Sci. Rep. 6: 27513.
12. Yang, S.H., et al. 2017. Soyasaponin Ag inhibits α-MSH-induced melanogenesis in B16F10 melanoma cells via the downregulation of TRP-2. Int. J. Mol. Med. 40: 631-636.
13. Tagliatela, A.C., et al. 2020. Coronin 1C inhibits melanoma metastasis through regulation of MT1-MMP-containing extracellular vesicle secretion. Sci. Rep. 10: 11958.
14. Gaudel, C., et al. 2020. Regulation of melanogenesis by the amino-acid transporter SLC7A5. J. Invest. Dermatol. 140: 2253-2259.e4.

RESEARCH USE

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