SANTA CRUZ BIOTECHNOLOGY, INC.

TRP1 (B-2): sc-514900

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.

REFERENCES

1. Korner, A., et al. 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., et al. 1987. Mammalian tyrosinase—the critical regulatory control point in melanocyte pigmentation. Int. J. Biochem. 19: 1141-1147.
4. Tripathi, R.K., et al. 1992. Mutational mapping of the catalytic activities of human tyrosinase. J. Biol. Chem. 267: 23707-23712.
5. Tsukamoto, K., et al. 1992. A second tyrosinase-related protein, TRP2, is a melanogenic enzyme termed DOPAchrome tautomerase. EMBO J. 11: 519-526.
6. Bouchard, B., et al. 1994. Molecular characterization of a human tyrosinase-related-protein-2 cDNA. Patterns of expression in melanocytic cells. Eur. J. Biochem. 219: 127-134.

CHROMOSOMAL LOCATION

Genetic locus: Tyrp1 (mouse) mapping to 4 C3.

SOURCE

TRP1 (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 30-54 near the N-terminus of TRP1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-514900 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

TRP1 (B-2) is recommended for detection of TRP1 of mouse 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 TRP1 siRNA (m): sc-36744, TRP1 shRNA Plasmid (m): sc-36744-SH and TRP1 shRNA (m) Lentiviral Particles: sc-36744-V.

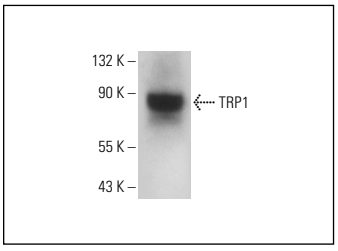
Molecular Weight of glycosylated TRP1: 70-90 kDa.

Positive Controls: B16-F0 cell ysate: sc-2298.

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



TRP1 (B-2): sc-514900. Western blot analysis of TRP1 expression in B16-F0 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Lee, J.H., et al. 2021. Inhibitory effect of *Elaeagnus umbellata* fractions on melanogenesis in α-MSH-stimulated B16-F10 melanoma cells. Molecules 26: 1308.

STORAGE

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

CONJUGATES

See **TRP1 (G-9): sc-166857** for TRP1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.