

# TRP1 (F-6): sc-166791

## 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., 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 DOPochrome tautomerase. *EMBO J.* 11: 519-526.

## CHROMOSOMAL LOCATION

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

## SOURCE

TRP1 (F-6) is a mouse monoclonal antibody raised against amino acids 448-537 of TRP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

TRP1 (F-6) is recommended for detection of TRP1 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 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.

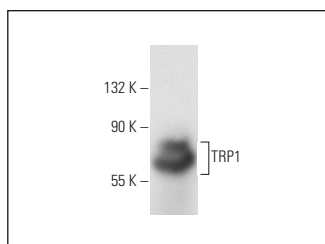
Molecular Weight of TRP1 glycosylation: 70-90 kDa.

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

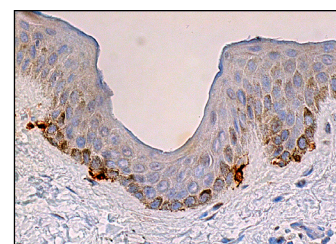
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



TRP1 (F-6): sc-166791. Western blot analysis of TRP1 expression in B16-F0 whole cell lysate.



TRP1 (F-6): sc-166791. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of melanocytes.

## SELECT PRODUCT CITATIONS

1. Tofani, L.B., et al. 2018. *In vitro* TYRP-1 knockdown based on siRNA carried by liquid crystalline nanodispersions: an alternative approach for topical treatment of vitiligo. *Pharm. Res.* 35: 104.

## 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.