

Tyrosinase (B-3): sc-514492

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 affecting 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, TRP-2, is a melanogenic enzyme termed DOPachrome tautomerase. *EMBO J.* 11: 519-526.

CHROMOSOMAL LOCATION

Genetic locus: TYR (human) mapping to 11q14.3.

SOURCE

Tyrosinase (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 506-527 at the C-terminus of Tyrosinase 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.

Blocking peptide available for competition studies, sc-514492 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Tyrosinase (B-3) is recommended for detection of Tyrosinase 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 Tyrosinase siRNA (h): sc-36766, Tyrosinase shRNA Plasmid (h): sc-36766-SH and Tyrosinase shRNA (h) Lentiviral Particles: sc-36766-V.

Molecular Weight of Tyrosinase: 60 kDa.

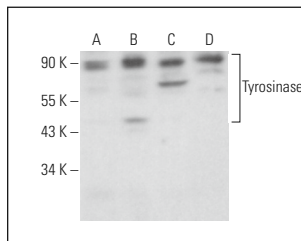
Molecular Weight of glycosylated Tyrosinase: 70-84 kDa.

Positive Controls: A-375 cell lysate: sc-3811, Y79 cell lysate: sc-2240 or SK-MEL-24 whole cell lysate: sc-364259.

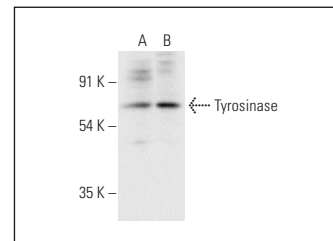
RECOMMENDED SUPPORT REAGENTS

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



Tyrosinase (B-3): sc-514492. Western blot analysis of Tyrosinase expression in TK-1 (A), c4 (B), SK-MEL-24 (C) and Y79 (D) whole cell lysates.



Tyrosinase (B-3): sc-514492. Western blot analysis of Tyrosinase expression in A-375 (A) and SK-MEL-24 (B) whole cell lysates.

RESEARCH USE

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



See **Tyrosinase (T311): sc-20035** for Tyrosinase antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488, 546, 594, 647, 680 and 790.