

Tyrosinase (SPM360): sc-56494

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, TRP-2, 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: TYR (human) mapping to 11q14.3; Tyr (mouse) mapping to 7 D3.

SOURCE

Tyrosinase (SPM360) is a mouse monoclonal antibody raised against recombinant 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.

STORAGE

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

APPLICATIONS

Tyrosinase (SPM360) is recommended for detection of Tyrosinase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Tyrosinase siRNA (h): sc-36766, Tyrosinase siRNA (m): sc-36767, Tyrosinase shRNA Plasmid (h): sc-36766-SH, Tyrosinase shRNA Plasmid (m): sc-36767-SH, Tyrosinase shRNA (h) Lentiviral Particles: sc-36766-V and Tyrosinase shRNA (m) Lentiviral Particles: sc-36767-V.

Molecular Weight of Tyrosinase: 60 kDa.

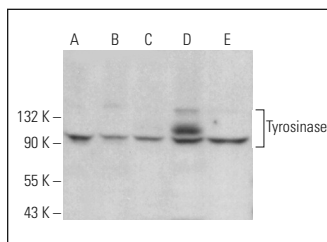
Molecular Weight of glycosylated Tyrosinase: 70-84 kDa.

Positive Controls: BYDP whole cell lysate: sc-364368, SK-MEL-24 whole cell lysate: sc-364259 or A-375 cell lysate: sc-3811.

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



Tyrosinase (SPM360): sc-56494. Western blot analysis of Tyrosinase expression in A-375 (A), SK-MEL-24 (B), BYDP (C), c4 (D) and Y79 (E) whole cell lysates.

RESEARCH USE

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

CONJUGATES

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