SANTA CRUZ BIOTECHNOLOGY, INC.

Tyrosinase (M-19)-R: sc-7834-R

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

SOURCE

Tyrosinase (M-19)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Tyrosinase of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7834 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as phycoerythrin conjugate for flow cytometry, sc-7834 PE, 100 tests.

Available as agarose conjugate for immunoprecipitation, sc-7834 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

Tyrosinase (M-19)-R is recommended for detection of tyrosinase of mouse, rat and, to a lesser extent, 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), flow cytometry (1 µg per 1 x 10^6 cells) 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 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.

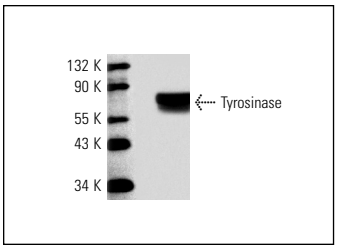
Molecular Weight of glycosylated Tyrosinase: 70-84 kDa.

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

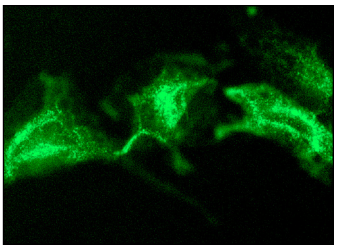
STORAGE

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

DATA



Tyrosinase (M-19): sc-7834. Western blot analysis of Tyrosinase expression in B16-F0 whole cell lysate.



Tyrosinase (M-19): sc-7834. Immunofluorescence staining of methanol-fixed B16-F0 cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Halaban, R., et al. 2000. Endoplasmic reticulum retention is a common defect associated with tyrosinase-negative albinism. Proc. Natl. Acad. Sci. USA 97: 5889-5894.
2. Lengagne, R., et al. 2008. Distinct role for CD8 T cells toward cutaneous tumors and visceral metastases. J. Immunol. 180: 130-137.
3. Koo, J.H., et al. 2008. Effect of xanthohumol on melanogenesis in B16 melanoma cells. Exp. Mol. Med. 40: 313-319.
4. Fujii, T., et al. 2009. Inhibitory effect of quercetin isolated from rose hip *(Rosa canina L.)* against melanogenesis by mouse melanoma cells. Biosci. Biotechnol. Biochem. 73: 1989-1993.
5. Ogiwara, K. and Hata, K. 2009. Melanoma cell differentiation induced by lupeol separates into two stages: morphological and functional changes. J. Nat. Med. 63: 323-326.
6. Shirasugi, I., et al. 2010. Sulforaphane inhibited melanin synthesis by regulating tyrosinase gene expression in B16 mouse melanoma cells. Biosci. Biotechnol. Biochem. 74: 579-582.
7. Fujii, T., et al. 2011. Inhibitory effect of rose hip *(Rosa canina L.)* on melanogenesis in mouse melanoma cells and on pigmentation in brown guinea pigs. Biosci. Biotechnol. Biochem. 75: 489-495.

RESEARCH USE

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