

Tyrosinase (C-19): sc-7833

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.

CHROMOSOMAL LOCATION

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

SOURCE

Tyrosinase (C-19) is available as either goat (sc-7833) or rabbit (sc-7833-R) affinity purified polyclonal antibody raised against a peptide mapping at the C-terminus of Tyrosinase of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7833 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as PE conjugate for flow cytometry, sc-7833 PE, 100 tests.

APPLICATIONS

Tyrosinase (C-19) 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), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Tyrosinase (C-19) is also recommended for detection of Tyrosinase in additional species, including equine, canine, bovine and porcine.

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.

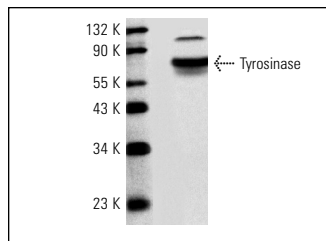
Molecular Weight of Tyrosinase: 60 kDa.

Molecular Weight of glycosylated Tyrosinase: 70-84 kDa.

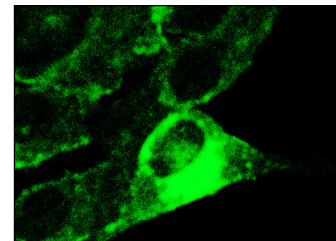
STORAGE

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

DATA



Tyrosinase (C-19): sc-7833. Western blot analysis of Tyrosinase expression in B16-F0 whole cell lysate.



Tyrosinase (C-19): sc-7833. Immunofluorescence staining of methanol-fixed B16-F0 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Halaban, R., et al. 2000. Proper folding and endoplasmic reticulum to Golgi transport of tyrosinase are induced by its substrates, DOPA and tyrosine. *J. Biol. Chem.* 276: 11933-11938.
- Kwak, Y.J., et al. 2011. Fermented *Viola mandshurica* inhibits melanogenesis in B16 melanoma cells. *Biosci. Biotechnol. Biochem.* 75: 841-847.
- Lee, J.E., et al. 2011. The regulatory mechanism of melanogenesis by FTY720, a sphingolipid analogue. *Exp. Dermatol.* 20: 237-241.
- Belleudi, F., et al. 2011. Expression and signaling of the tyrosine kinase FGFR2b/KGFR regulates phagocytosis and melanosome uptake in human keratinocytes. *FASEB J.* 25: 170-181.
- Jang, J.Y., et al. 2011. Partially purified components of *Nardostachys chinensis* suppress melanin synthesis through ERK and Akt signaling pathway with cAMP down-regulation in B16F10 cells. *J. Ethnopharmacol.* 137: 1207-1214.
- Jang, J.Y., et al. 2012. Aqueous fraction from *Cuscuta japonica* seed suppresses melanin synthesis through inhibition of the p38 mitogen-activated protein kinase signaling pathway in B16F10 cells. *J. Ethnopharmacol.* 141: 338-344.
- Liu, H., et al. 2013. Lyoniresinol inhibits melanogenic activity through the induction of microphthalmia-associated transcription factor and extracellular receptor kinase activation. *Mol. Cell. Biochem.* 373: 211-216.

RESEARCH USE

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

MONOS
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Try **Tyrosinase (T311): sc-20035** or **Tyrosinase (B-3): sc-514492**, our highly recommended monoclonal alternatives to Tyrosinase (C-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Tyrosinase (T311): sc-20035**.