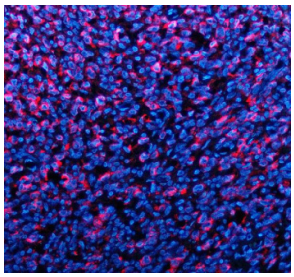
TYRP1 Antibody / Tyrosinase-related protein 1 (FY13200)

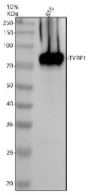
Catalog No.	Formulation	Size
FY13200	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

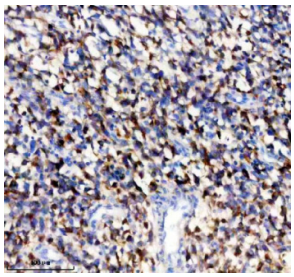
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P17643
Localization	Cytoplasm (Melanosome)
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This TYRP1 antibody is available for research use only.



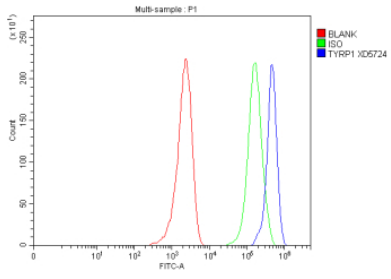
Immunofluorescent staining of TYRP1 using anti-TYRP1 antibody (red). TYRP1 was detected in a paraffin-embedded section of human melanoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5 ug/ml rabbit anti-TYRP1 antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of TYRP1 using anti-TYRP1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: mouse B16 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TYRP1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. Western blot of TYRP1 shows a predominant band at ~80 kDa, consistent with the mature N-glycosylated form of the ~61 kDa core protein commonly observed in pigmented melanoma cells.



Immunohistochemical staining of TYRP1 using anti-TYRP1 antibody. TYRP1 was detected in a paraffin-embedded section of human melanoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-TYRP1 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Flow Cytometry analysis of MCF-7 cells using anti-TYRP1 antibody. Overlay histogram showing MCF-7 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TYRP1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

TYRP1 antibody detects Tyrosinase-related protein 1, a melanogenic enzyme that participates in the biosynthesis of melanin within pigment-producing cells. The UniProt recommended name is Tyrosinase-related protein 1 (TYRP1, TRP1). This enzyme functions in the melanosome maturation process, catalyzing oxidation reactions that determine the type and intensity of pigmentation in skin, hair, and eyes. TYRP1 is one of three core melanogenic enzymes, working in coordination with tyrosinase (TYR) and dopachrome tautomerase (DCT).

Functionally, TYRP1 antibody identifies a 537-amino-acid type I transmembrane glycoprotein localized to melanosomal membranes. TYRP1 contributes to the oxidative conversion of 5,6-dihydroxyindole-2-carboxylic acid (DHICA) during eumelanin synthesis and stabilizes the activity of tyrosinase through protein-protein interactions. It plays a central role in regulating pigmentation intensity, melanosome biogenesis, and melanocyte survival. In addition, TYRP1 acts as an antioxidant enzyme, protecting pigment cells from oxidative stress generated during melanin production.

The TYRP1 gene is located on chromosome 9p23 and is specifically expressed in melanocytes and retinal pigment epithelial cells. Its expression is tightly regulated by the microphthalmia-associated transcription factor (MITF), which coordinates the transcriptional program of melanogenesis. TYRP1 expression levels and genetic polymorphisms contribute to pigment variation among populations and species.

Pathologically, mutations in TYRP1 cause oculocutaneous albinism type 3 (OCA3), characterized by reduced pigmentation and visual abnormalities. Altered TYRP1 expression has also been associated with melanoma progression, where it influences tumor cell differentiation and immune recognition. Research using TYRP1 antibody supports studies in

pigmentation biology, melanosome formation, and melanoma immunology.

TYRP1 antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect melanosomal proteins. NSJ Bioreagents provides TYRP1 antibody reagents optimized for pigment biology, cell differentiation, and cancer research applications.

Structurally, Tyrosinase-related protein 1 contains a luminal catalytic domain with two copper-binding sites and multiple glycosylation motifs that ensure enzymatic stability and trafficking. Its C-terminal transmembrane region anchors it to melanosomal membranes, while its N-terminal signal sequence directs localization to the secretory pathway. This antibody enables investigation of TYRP1's role in melanin biosynthesis, pigment cell regulation, and disease mechanisms affecting coloration.

Application Notes

Optimal dilution of the TYRP1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TYRP1 recombinant protein (Position: R131-V537) was used as the immunogen for the TYRP1 antibody.

Storage

After reconstitution, the TYRP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.