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
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.

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). 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.