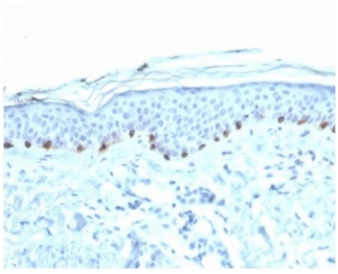
Tyrosinase Antibody / Melanin Biosynthesis Enzyme Antibody [clone TYR/3826] (V9597)

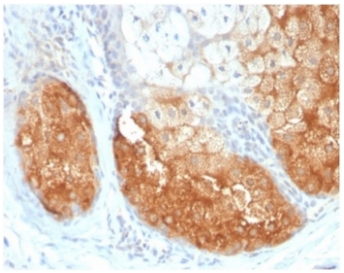
Catalog No.	Formulation	Size
V9597-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V9597-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V9597SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

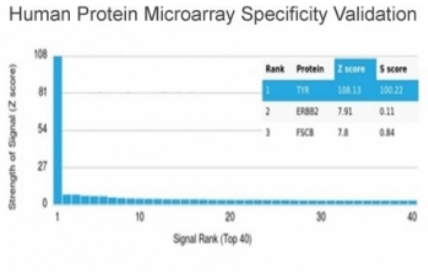
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b, kappa
Clone Name	TYR/3826
Purity	Protein A/G affinity
UniProt	P14679
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE): 1-2ug/ml
Limitations	This Tyrosinase Antibody / Melanin Biosynthesis Enzyme Antibody is available for research use only.



Tyrosinase Antibody Human Skin IHC. Immunohistochemical staining of FFPE human skin using Tyrosinase antibody (clone TYR/3826) demonstrated specific cytoplasmic staining of melanocytes within the basal layer of the epidermis, consistent with the restricted expression pattern of tyrosinase in pigment-producing cells. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 Tris-EDTA buffer for 20 minutes followed by cooling prior to staining. The primary antibody was used at 2 ug/ml. This Tyrosinase Antibody, also called a Melanin Biosynthesis Enzyme Antibody, is useful for investigating melanocyte biology, melanin biosynthesis, pigmentation disorders, and melanoma research.



Tyrosinase Antibody Human Melanoma IHC. Immunohistochemical staining of FFPE human melanoma tissue using Tyrosinase antibody (clone TYR/3826) demonstrated strong cytoplasmic staining in malignant melanocytic cells, consistent with the role of tyrosinase as the rate-limiting enzyme in melanin biosynthesis. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 Tris-EDTA buffer for 20 minutes followed by cooling prior to staining. The primary antibody was used at 2 ug/ml. This Tyrosinase Antibody, also called a Melanin Biosynthesis Enzyme Antibody, is useful for investigating melanocyte biology, melanin biosynthesis, pigmentation disorders, and melanoma research.



Tyrosinase Antibody Protein Microarray Validated. Analysis of the HuProt(TM) human protein microarray containing more than 19,000 full-length human proteins demonstrated exceptional specificity of Tyrosinase antibody (clone TYR/3826). TYR was identified as the top-ranked target with a Z-score of 108.13 and an S-score of 100.22, while the next highest-ranking proteins (ERBB2 and FSCB) showed negligible S-scores, indicating minimal off-target binding. The Z-score represents the binding signal strength relative to the mean signal across the array, expressed as standard deviations above the mean. The S-score represents the difference in Z-scores between adjacent ranked proteins, with larger values indicating greater target specificity. These data independently validate the outstanding specificity of clone TYR/3826 for studies of melanocyte biology, melanin biosynthesis, pigmentation disorders, and melanoma research.

Description

Tyrosinase Antibody / Melanin Biosynthesis Enzyme Antibody recognizes tyrosinase (TYR), the copper-containing oxidase that catalyzes the rate-limiting steps of melanin biosynthesis. Tyrosinase converts tyrosine to L-DOPA and subsequently oxidizes L-DOPA to dopaquinone, initiating the biochemical pathway leading to production of eumelanin and pheomelanin pigments. Because tyrosinase activity determines both the quantity and type of melanin produced, it is the principal enzymatic regulator of pigmentation in skin, hair, and the eye. Expression of TYR is largely restricted to melanocytes and retinal pigment epithelial cells, making it one of the most widely used markers for studies of pigment cell biology and melanoma.

Tyrosinase is synthesized within the endoplasmic reticulum and undergoes extensive glycosylation before trafficking through the Golgi apparatus to mature melanosomes, where melanin synthesis occurs. Proper folding, copper incorporation, glycosylation, and intracellular transport are all essential for enzymatic activity. Defects in these processes reduce melanin production and can lead to inherited pigmentation disorders. Tyrosinase functions together with TYRP1, TYRP2 (DCT), PMEL, and other melanosomal proteins to regulate pigment formation, melanosome maturation, and transfer of melanin to surrounding keratinocytes.

Mutations in TYR are the major cause of oculocutaneous albinism type 1, resulting in reduced or absent tyrosinase activity and impaired melanin production. Conversely, tyrosinase expression is maintained in most melanomas and therefore serves as an important diagnostic biomarker as well as a target for immunotherapy. Tyrosinase is also widely studied in dermatology, developmental biology, regenerative medicine, and pigmentary disease because of its central role in melanocyte differentiation and melanogenesis. Continued investigation of TYR is improving understanding of pigmentation disorders, melanoma progression, and mechanisms controlling melanosome biology.

Clone TYR/3826 is a mouse monoclonal antibody validated by HuProt protein microarray, demonstrating exceptional target specificity against more than 19,000 full-length human proteins. This independent specificity validation complements the clone's performance in immunohistochemistry and other research applications, making it well suited for studies of melanocyte biology, melanin biosynthesis, pigmentation disorders, and melanoma. A Tyrosinase Antibody is a valuable research tool for investigating melanin biosynthesis, melanocyte differentiation, melanosome biology, pigmentation disorders, and melanoma research.

Explore additional reagents for melanoma diagnosis, pigment cell biology, and oncology research on our Cancer Marker Antibodies page.

Application Notes

Optimal dilution of the Tyrosinase Antibody / Melanin Biosynthesis Enzyme Antibody should be determined by the researcher.

Immunogen

Recombinant full-length human Tyrosinase protein was used as the immunogen for the Tyrosinase antibody.

Storage

Aliquot the Tyrosinase antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Tyrosinase antibody, Melanin Biosynthesis Enzyme antibody, TYR antibody, Monophenol Monooxygenase antibody

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