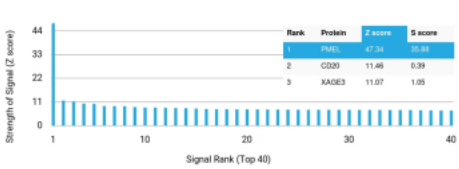
Melanocyte Lineage Antibody / PMEL [clone PMEL/7554R] (V5997)

Catalog No.	Formulation	Size
V5997-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5997-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V5997SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

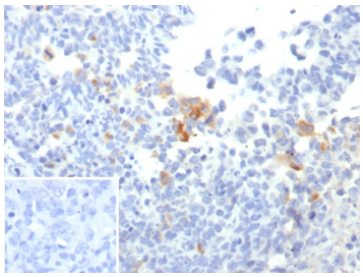
Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	PMEL/7554R
Purity	Protein A affinity
UniProt	P40967
Localization	Endoplasmic reticulum membrane, Endosome, Golgi apparatus, Melanosome, Multivesicular body, Secreted
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This Melanocyte Lineage/PMEL protein antibody is available for research use only.



Analysis of HuProt Protein Array (21,000+ full-length human proteins) with Melanocyte Lineage/PMEL protein antibody (clone PMEL17/7554R). Z-score: Signal strength (in SD above the mean) of antibody binding to each protein. S-score: Difference in Z-scores between the top target and the next best hit, indicating relative specificity. An antibody is considered specific if S â‰¥ 2.5. Example: Binding to protein X (Z = 43) vs protein Y (Z = 14) â†’ S = 29.



Immunohistochemistry analysis of Melanocyte Lineage / PMEL antibody in human melanoma tissue. FFPE human melanoma sections show focal HRP-DAB brown cytoplasmic staining in scattered tumor cells, consistent with premelanosome-associated localization of PMEL in melanocytic cells. Adjacent tumor cells demonstrate weak or minimal staining, reflecting heterogeneous expression within the lesion. The inset negative control, in which PBS was used in place of primary antibody, shows no specific brown chromogenic signal. Heat induced epitope retrieval was performed in 10 mM Tris with 1 mM EDTA, pH 9.0, by boiling for 10-20 minutes followed by cooling at room temperature for 20 minutes prior to antibody incubation.

Description

Melanocyte Lineage antibody recognizes Premelanosome protein, encoded by the PMEL gene and widely known as gp100, Pmel17, SILV, and Silver locus protein homolog. PMEL is a melanocyte-specific type I transmembrane glycoprotein that localizes to early stage melanosomes within melanocytes and melanoma cells. As a structural component of the melanosome, PMEL is essential for pigment organelle maturation and serves as a well-established marker of melanocytic lineage differentiation.

PMEL is synthesized in the endoplasmic reticulum and trafficked through the Golgi apparatus before being delivered to developing melanosomes. Within stage I and II melanosomes, the protein undergoes regulated proteolytic processing into fragments that assemble into amyloid-like fibrils. These fibrils form the internal matrix scaffold that supports eumelanin deposition. Proper processing and assembly of PMEL are critical for normal pigmentation and for protecting melanocytes from reactive melanin intermediates generated during pigment synthesis.

Melanocyte Lineage antibody detects PMEL expression in normal epidermal melanocytes, hair follicle melanocytes, and uveal melanocytes, as well as in the majority of primary and metastatic melanomas. Because PMEL expression is largely restricted to melanocytic cells, it is widely used in research applications to identify melanocytic differentiation and to distinguish melanoma from non-melanocytic malignancies. Expression levels may vary depending on tumor differentiation status, with reduced staining sometimes observed in poorly differentiated melanoma.

The PMEL gene is located on chromosome 12 and plays a central role in melanosome biogenesis. Alterations in PMEL expression or processing can influence melanosome structure and pigmentation phenotypes. In melanoma biology, PMEL is frequently evaluated as a melanocytic differentiation antigen and lineage-associated marker.

The Melanocyte Lineage antibody (Clone PMEL/7554R) is a recombinant monoclonal antibody suitable for detecting PMEL protein expression in research applications. This PMEL antibody supports studies of melanocyte biology, melanosome structure, pigmentation pathways, and melanoma characterization.

Application Notes

1. Optimal dilution of the Melanocyte Lineage/PMEL antibody should be determined by the researcher.

2. This Melanocyte Lineage/PMEL antibody is recombinantly produced by expression in human HEK293 cells.

Immunogen

A recombinant fragment (around amino acids 561-661) of human SILV protein (exact sequence is proprietary) was used as the immunogen for the Melanocyte Lineage/PMEL antibody.

Storage

Melanocyte Lineage/PMEL antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.