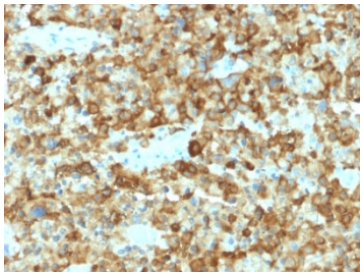
PMEL17 Antibody Glycosylated Protein / Melanoma gp100 Antibody [clone PMEL/2037] (V3930)

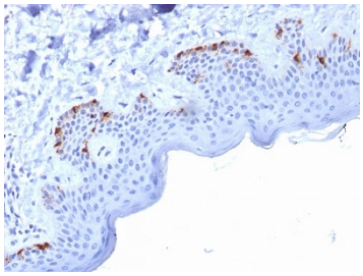
Catalog No.	Formulation	Size
V3930-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3930-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3930SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

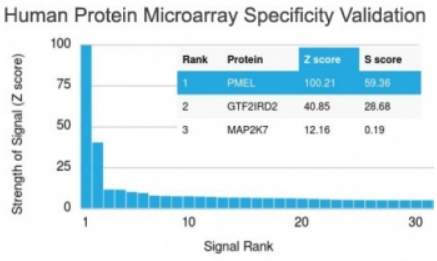
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	PMEL/2037
Purity	Protein G affinity chromatography
UniProt	P40967
Localization	Cytoplasmic
Applications	ELISA: 2-4ug/ml (order BSA/azide-free format) Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT Western blot: 1-2ug/ml
Limitations	This PMEL17 antibody is available for research use only.



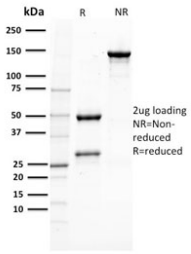
PMEL17 Antibody Glycosylated Protein. Immunohistochemistry analysis of human melanoma tissue stained with PMEL17 Antibody Glycosylated Protein clone PMEL/2037. Tumor cells display strong cytoplasmic HRP-DAB brown chromogenic staining consistent with expression of Premelanosome protein PMEL, also known as gp100, a melanosome-associated glycoprotein characteristic of melanocytic lineage. Positive staining highlights melanoma tumor cells distributed throughout the tissue section, while surrounding stromal elements show minimal background staining. Heat-induced epitope retrieval was performed by boiling sections in 10mM citrate buffer pH 6 for 10-20 minutes followed by cooling at room temperature prior to staining.



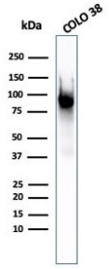
PMEL17 Antibody Glycosylated Protein. Immunohistochemistry analysis of human skin tissue stained with PMEL17 Antibody Glycosylated Protein clone PMEL/2037. Brown HRP-DAB chromogenic staining is observed in melanocytic cells located along the basal layer of the epidermis, consistent with expression of Premelanosome protein PMEL, also known as gp100, a melanosome-associated glycoprotein characteristic of melanocytic lineage. The staining highlights scattered melanocytes within the epidermal basal layer while surrounding keratinocytes and dermal cells remain largely negative. Heat-induced epitope retrieval was performed by boiling sections in 10mM citrate buffer pH 6 for 10-20 minutes followed by cooling at room temperature prior to staining.



Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using PMEL17 antibody (clone PMEL/2037). These results demonstrate the foremost specificity of the PMEL/2037 mAb.
Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.



SDS-PAGE analysis of purified, BSA-free PMEL17 antibody (clone PMEL/2037) as confirmation of integrity and purity.



PMEL17 Antibody Glycosylated Protein. Western blot analysis of human COLO-38 melanoma cell lysate using PMEL17 Antibody Glycosylated Protein clone PMEL/2037. Lane 1: human COLO-38 cell lysate. A band is detected at approximately 100 kDa, consistent with the glycosylated precursor form of Premelanosome protein PMEL, also known as gp100. PMEL is synthesized as a glycosylated precursor that migrates near approximately 100 kDa before undergoing proteolytic cleavage into an approximately 60-64 kDa M-alpha fragment and an approximately 26 kDa M-beta fragment. The M-alpha fragment is further processed into approximately 34-38 kDa and approximately 26 kDa fragments that assemble into the fibrillar matrix of developing melanosomes in melanocytic cells.

Description

Premelanosome protein (PMEL) is a melanocyte lineage-associated glycoprotein encoded by the PMEL gene that functions as a key structural component of developing melanosomes where melanin deposition occurs. The protein is widely known in the literature as gp100 or Pmel17 and plays an essential role in the formation of fibrillar matrices that organize pigment polymerization within melanosomes. PMEL17 Antibody Glycosylated Protein recognizes this melanocyte-associated protein and supports studies examining the glycosylated gp100 protein species present in melanocytes and melanoma cells. The protein is frequently referred to as gp100, Pmel17, or premelanosome protein in the scientific literature and is widely used as a melanocytic lineage marker in melanoma and pigment cell biology research. In western blot studies, PMEL is synthesized as a heavily glycosylated precursor that migrates near approximately 100 kDa due to extensive glycosylation before undergoing additional proteolytic processing events during melanosome maturation.

PMEL belongs to a group of melanosome-associated proteins that regulate pigment granule formation in melanocytes. During early melanosome development, the glycosylated PMEL precursor is transported through the secretory pathway and delivered to premelanosomes where it undergoes proteolytic processing and structural rearrangement. These processing steps generate fibrillar structures that form the internal matrix of melanosomes and provide the scaffold upon which eumelanin and pheomelanin pigments accumulate during melanogenesis. Proper assembly of this matrix is essential for normal pigment synthesis and melanosome architecture.

The gp100 protein is extensively glycosylated, and this post-translational modification contributes to the higher apparent molecular weight typically observed in biochemical studies. Glycosylation influences PMEL folding, intracellular trafficking, and targeting to developing melanosomes. Because the glycosylated gp100 precursor represents one of the dominant forms detected during protein analysis, PMEL17 Antibody Glycosylated Protein provides a useful reagent for investigating gp100 glycoprotein expression and the role of glycosylated PMEL in melanosome biology.

Expression of PMEL is largely restricted to melanocytes and melanocytic tumors, making gp100 one of the most widely studied melanocyte lineage markers in melanoma biology. Researchers frequently analyze gp100 together with other melanocytic proteins such as Melan-A, tyrosinase, and MITF to characterize melanocyte differentiation and melanoma tumors. Detection of glycosylated gp100 protein species therefore helps investigators study pigment cell development, melanosome biogenesis, and melanoma-associated molecular pathways.

PMEL17 Antibody Glycosylated Protein detects the glycosylated gp100 protein present in melanocytes and melanoma cells and supports investigation of melanosome-associated structural proteins. By recognizing glycosylated PMEL species commonly observed during protein analysis, this antibody enables researchers to examine melanosome formation, pigment cell differentiation, and melanoma-associated pathways in experimental systems where gp100 expression provides important biological insight.

Application Notes

Optimal dilution of the PMEL17 antibody should be determined by the researcher.

Immunogen

A portion of amino acids 376-502 from the human protein was used as the immunogen for the PMEL17 antibody.

Storage

Store the PMEL17 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

gp100 antibody, Premelanosome protein antibody, Pmel17 antibody, Melanosome structural protein antibody

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