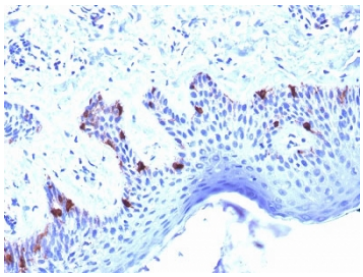
Melanoma gp100 Antibody Microarray Specificity Validation / PMEL Antibody [clone PMEL/2039] (V3929)

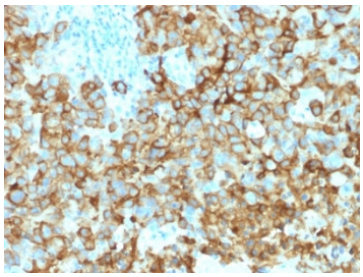
Catalog No.	Formulation	Size
V3929-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3929-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3929SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

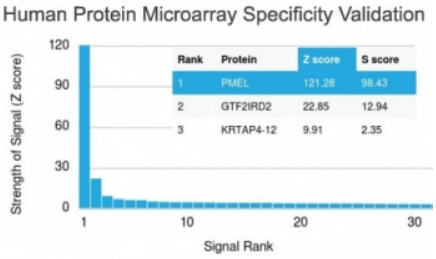
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	PMEL/2039
Purity	Protein G affinity chromatography
UniProt	P40967
Localization	Cytoplasmic
Applications	ELISA : 2-4ug/ml (order BSA/azide-free format) Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT Western Blot : 1-2ug/ml
Limitations	This Melanoma gp100 antibody is available for research use only.



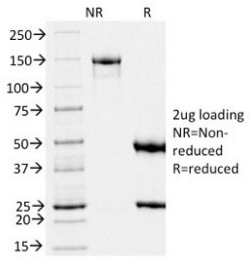
Melanoma gp100 Antibody with Microarray Specificity Validation (clone PMEL/2039). Immunohistochemistry analysis of human skin tissue stained with Melanoma gp100 Antibody Microarray Specificity Validation clone PMEL/2039. FFPE skin sections show focal HRP-DAB brown cytoplasmic staining in scattered melanocytes 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. Keratinocytes within the epidermis and underlying dermal structures show minimal background staining. Heat-induced epitope retrieval was performed in 10mM citrate buffer pH 6 by boiling for 10-20 minutes followed by cooling at room temperature for 20 minutes prior to antibody incubation.



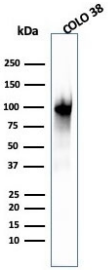
IHC testing of human melanoma with Melanoma gp100 antibody (clone PMEL/2039). Required HIER: boil tissue sections in 10mM citrate buffer, pH 6, for 10-20 min followed by cooling at RT for 20 min.



Melanoma gp100 Antibody Microarray Specificity Validation (clone PMEL/2039). HuProt protein microarray specificity analysis using Melanoma gp100 Antibody Microarray Specificity Validation clone PMEL/2039 against a protein array containing more than 19,000 full-length human proteins. The antibody shows strongest binding to PMEL (Premelanosome protein, also known as gp100), demonstrating highly selective recognition of the intended target compared with other proteins on the array. Z score represents the signal strength produced when the antibody binds to each protein on the array and is expressed as standard deviations above the mean signal of all proteins tested. When proteins are ranked by Z score, the S score represents the difference between adjacent Z scores and therefore reflects the relative specificity of the antibody for its intended target. These microarray results demonstrate the strong target specificity of clone PMEL/2039 for PMEL in large-scale protein microarray screening.



SDS-PAGE analysis of purified, BSA-free Melanoma gp100 antibody (clone PMEL/2039) as confirmation of integrity and purity.



Melanoma gp100 Antibody (clone PMEL/2039). Western blot analysis of human COLO-38 melanoma cell lysate using Melanoma gp100 Antibody Microarray Specificity Validation clone PMEL/2039. Lane 1: human COLO-38 cell lysate. A prominent 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 an approximately 100 kDa glycosylated precursor that undergoes proteolytic cleavage to generate 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 plays a central role in melanosome biogenesis and pigment formation within melanocytes. The protein is widely known as gp100 or Pmel17 and functions as a structural component of developing melanosomes where fibrillar matrices form to support melanin deposition. Melanoma gp100 Antibody Microarray Specificity Validation (clone PMEL/2039) recognizes this melanocyte-associated protein and supports studies examining gp100 expression in melanoma and pigment cell biology. The protein is frequently referred to in the literature as gp100, Pmel17, or premelanosome protein and is widely used as a melanocytic lineage marker in melanoma research and melanocyte differentiation studies.

The gp100 protein participates in early melanosome development where it undergoes proteolytic processing and structural rearrangement that generates amyloid-like fibrils forming the internal matrix of premelanosomes. These fibrils provide the scaffold required for deposition of eumelanin and pheomelanin pigments during melanogenesis. Proper assembly of this structural matrix is essential for melanosome architecture and efficient pigment production. Within melanocytes and melanoma cells, gp100 localizes primarily to premelanosomes and early stage melanosomes where pigment granules mature.

The defining differentiator for this antibody is its Microarray Specificity Validation. Protein microarray specificity screening of clone PMEL/2039 was performed using large-scale arrays containing thousands of human proteins to evaluate antibody selectivity. Microarray Specificity Validation analysis demonstrated strong preferential binding of clone PMEL/2039 to PMEL relative to other proteins present on the array. This Microarray Specificity Validation approach allows researchers to assess antibody target selectivity across a broad proteomic background and provides experimental evidence supporting the specificity of the Melanoma gp100 Antibody Microarray Specificity Validation clone PMEL/2039.

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 evaluate gp100 together with other melanocyte-associated proteins such as Melan-A, tyrosinase, and MITF to characterize melanocyte differentiation and melanoma tumors. Detection of gp100 therefore provides important molecular information when examining melanocytic lesions and melanoma metastases.

Melanoma gp100 Antibody Microarray Specificity Validation clone PMEL/2039 detects the gp100 protein present in melanocytes and melanoma cells and supports investigation of melanosome-associated structural proteins. The Microarray Specificity Validation differentiator reflects experimental large-scale protein screening used to confirm antibody selectivity, making clone PMEL/2039 a useful reagent for studies examining melanocyte biology, melanosome formation, and melanoma-associated molecular pathways.

Application Notes

Optimal dilution of the Melanoma gp100 antibody with microarray specificity validation 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 Melanoma gp100 antibody.

Storage

Store the Melanoma gp100 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

PMEL antibody, gp100 antibody, Pmel17 antibody, Premelanosome protein antibody