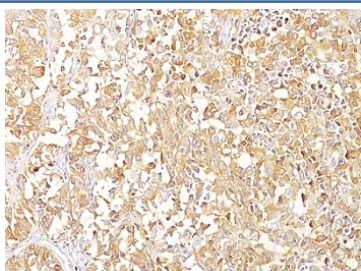


gp100 Antibody / PMEL17 [clone SPM142] (V9078)

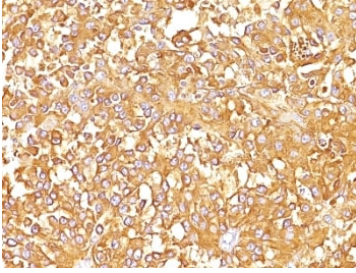
Catalog No.	Formulation	Size
V9078-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V9078-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V9078SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V9078IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

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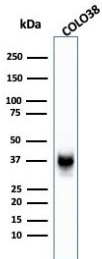
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	SPM142
Purity	Protein G affinity chromatography
UniProt	P40967
Localization	Cytoplasmic
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This gp100 antibody is available for research use only.



IHC: Formalin-fixed, paraffin-embedded human melanoma stained with gp100 antibody (SPM142).



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Western blot testing of human COLO-38 cell lysate with gp100 antibody (clone SPM142). The ~100 kDa glycosylated PMEL precursor is proteolytically cleaved into an ~60-64 kDa M-alpha fragment and an ~26 kDa M-beta fragment. The M-alpha fragment is subsequently processed into ~34-38 kDa and ~26 kDa fragments that assemble into the fibrillar matrix of melanosomes.

Description

gp100 antibody (clone SPM142) detects PMEL17, a melanocyte-specific type I transmembrane glycoprotein that plays an essential structural role in pigment cell biology. The UniProt recommended name is Melanocyte protein PMEL (PMEL). This protein, also called premelanosome protein or gp100, forms the internal fibrillar matrix of developing melanosomes, providing the template on which melanin is deposited. Its presence defines early stages of melanosome maturation and marks the commitment of cells to the melanocytic lineage.

The PMEL gene is located on chromosome 12q13.2 and encodes a precursor of roughly 100 kDa that undergoes multiple post-translational modifications and proteolytic processing. Following translation, PMEL is directed through the Golgi apparatus, where it becomes extensively glycosylated before being cleaved by proprotein convertases. The resulting fragments aggregate into ordered fibrils within the lumen of stage II premelanosomes, forming the striated substructure that supports melanin polymerization. Disruption of PMEL processing or fibril assembly can lead to abnormal melanosome morphology and pigmentary defects.

Expression of gp100 is under the transcriptional control of MITF (microphthalmia-associated transcription factor), the master regulator of melanocyte differentiation and pigment gene expression. PMEL17 is expressed in melanocytes, retinal pigment epithelial cells, and melanoma cells, but is absent from non-pigmented tissues. Within melanocytes, gp100 localizes to the melanosomal membrane and accumulates in dendritic extensions, where pigment granules are transferred to adjacent keratinocytes. In the eye, PMEL contributes to retinal pigment epithelial structure and light absorption, maintaining normal visual function.

Clone SPM142 is a monoclonal antibody developed for the detection of gp100 in mammalian tissues and cell preparations. It recognizes PMEL17 expressed in melanocytes and melanoma cells and provides dependable labeling of melanosomal structures. This antibody serves as a robust tool for studying melanosome formation, melanocytic differentiation, and the molecular features of pigment cell tumors. Its selectivity for PMEL17 makes it particularly valuable for identifying melanocytic origin in tissue samples and for assessing differentiation states in melanoma models.

Beyond its structural role, gp100 functions as a tumor-associated antigen and is widely used in melanoma immunology. Peptides derived from PMEL17 have been characterized as targets for cytotoxic T lymphocytes and have informed vaccine and immunotherapy research aimed at augmenting anti-melanoma immune responses. As a diagnostic marker, gp100 assists in distinguishing melanocytic lesions from other neoplasms and provides molecular context for studies on pigment cell transformation and metastasis.

gp100 antibody (clone SPM142) is suitable for detecting PMEL expression in melanoma tissue, cultured pigment cells, or developmental models of melanogenesis. NSJ Bioreagents provides gp100 antibody (clone SPM142) validated for use in relevant research applications supporting studies in pigment cell biology, melanosome biogenesis, and melanoma pathology.

Application Notes

The optimal dilution of the gp100 antibody for each application should be determined by the researcher.

1. Staining of formalin-fixed tissues requires boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 10-20 min followed by cooling at RT for 20 minutes.
2. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

Extract of pigmented melanoma metastases from lymph nodes was used as the immunogen for this gp100 antibody.

Storage

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