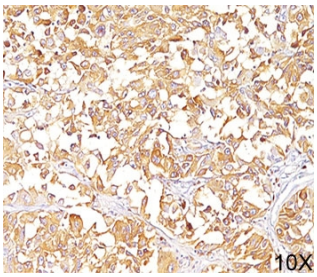
Gp100 Antibody Clone HMB45 / PMEL Melanoma Marker Antibody [clone HMB45] (V2253)

Catalog No.	Formulation	Size
V2253-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2253-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20
V2253SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100
V2253IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7

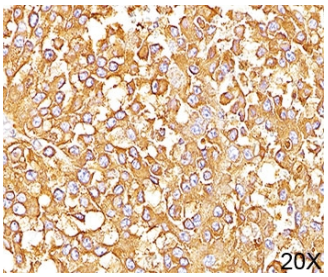
Citations (11)

Bulk quote request

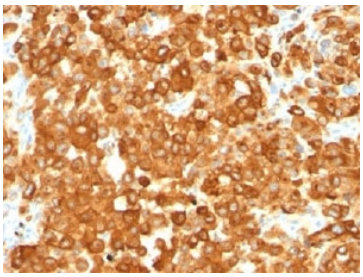
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	HMB45
Purity	Protein G affinity chromatography
Buffer	1X PBS, pH 7.4
Gene ID	6490
Localization	Cytoplasmic
Applications	Western blot: 1-2ug/ml Flow cytometry: 0.5-1ug/10^6 cells Immunofluorescence: 0.5-1ug/ml Immunohistochemistry (FFPE): 0.5-1ug/ml for 30 min at RT (1)
Limitations	This **gp100 antibody** is available for research use only.



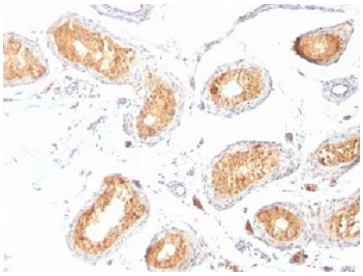
Gp100 Antibody Clone HMB45. Immunohistochemistry analysis of human melanoma tissue (10X magnification) stained with Gp100 Antibody Clone HMB45. Melanoma tumor cells show prominent cytoplasmic HRP-DAB brown chromogenic staining consistent with expression of gp100 / PMEL, a melanosome-associated protein characteristic of melanocytic lineage. The staining highlights melanoma tumor cells distributed throughout the tissue section, while surrounding stromal components show minimal background staining. Heat-induced epitope retrieval was performed by boiling sections in pH 9 Tris-EDTA buffer (10mM Tris with 1mM EDTA) for 20 minutes followed by cooling prior to staining.



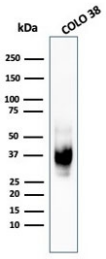
IHC staining of human melanoma (20X) with gp100 antibody (clone HMB45). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



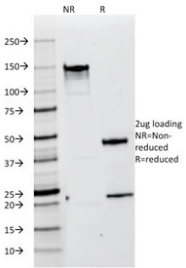
IHC staining of human melanoma with Gp100 Antibody Clone HMB45. HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



IHC staining of testis with Gp100 Antibody Clone HMB45. HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



Gp100 Antibody Clone HMB45. Western blot analysis of human COLO-38 melanoma cell lysate using Gp100 Antibody Clone HMB45. Lane 1: human COLO-38 cell lysate. A prominent band is detected at approximately 34-38 kDa, consistent with processed fragments 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.



SDS-PAGE analysis of purified, BSA-free gp100 antibody (clone HMB45) as confirmation of integrity and purity.

Description

Premelanosome protein (PMEL) is a melanocyte lineage-associated glycoprotein encoded by the PMEL gene and is an essential structural component of developing melanosomes where it forms fibrillar matrices that support melanin deposition and pigment granule maturation. PMEL is widely known in the literature as gp100 and represents one of the most established melanocytic differentiation markers used in melanoma research. The full protein name Premelanosome protein (PMEL) is commonly referred to as gp100, Pmel17, and silver locus protein in scientific publications describing melanosome biogenesis and melanocyte biology.

Gp100 Antibody Clone HMB45 is a classic mouse monoclonal antibody that recognizes the melanocytic differentiation antigen gp100 and is among the most widely cited melanoma antibodies reported in the scientific literature. The defining differentiator for this reagent is the antibody clone HMB45, which has accumulated an exceptionally large citation record with more than one thousand publications referencing its use in melanoma and pigment cell research. Because Clone HMB45 recognizes a melanosome-associated protein that is highly characteristic of melanocytic lineage, it has become one of the most recognized reagents for identifying melanocytes and melanoma cells in research and pathology studies.

The gp100 protein itself functions within early stages of melanosome development where it undergoes proteolytic processing to form amyloid-like fibrils that act as structural scaffolds for melanin polymerization. These fibrils organize the deposition of eumelanin and pheomelanin pigments during melanosome maturation, allowing pigment granules to form efficiently within melanocytes. Proper assembly of this fibrillar matrix is critical for normal pigmentation and melanosome structure. Within pigment-producing cells, gp100 localizes primarily to premelanosomes and early stage melanosomes where melanin synthesis is initiated and organized.

Expression of PMEL is largely restricted to melanocytes, retinal pigment epithelial cells, and melanocytic tumors, making gp100 an important lineage marker in studies of melanoma biology. Researchers frequently evaluate gp100 together with other melanocyte-associated proteins such as Melan-A, tyrosinase, and MITF to characterize melanocytic tumors and assess differentiation status. Because melanoma can display heterogeneous expression of lineage markers, antibodies targeting gp100 provide valuable complementary information when examining melanocytic lesions and melanoma metastases.

The long-standing scientific use of Gp100 Antibody Clone HMB45 reflects its central role in melanoma research and melanocyte biology. The extensive citation record associated with Clone HMB45 highlights its reliability as a reagent for studying melanocytic differentiation, melanosome biology, and melanoma tumor pathology. As a result, the HMB45 clone continues to serve as one of the most widely recognized and historically referenced antibodies used to investigate gp100 expression and melanocytic lineage in melanoma research.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and substrates may require the Gp100 Antibody Clone HMB45 to be titered up or down for optimal performance.
1. 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

The 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).

Alternate Names

PMEL antibody, gp100 melanoma antigen antibody, Pmel17 antibody, Melanocyte marker antibody

References (2)

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