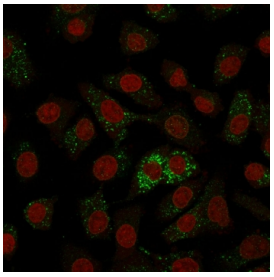
Major Vault Protein Antibody for IF / MVP Immunofluorescence Antibody [clone 1014] (V3042)

Catalog No.	Formulation	Size
V3042-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3042-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3042SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

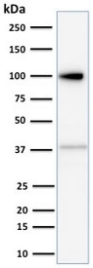
Citations (5)

Bulk quote request

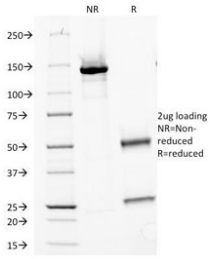
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	1014
Purity	Protein G affinity chromatography
UniProt	Q14764
Localization	Cytoplasmic, nuclear
Applications	Western Blot : 1-2ug/ml Immunofluorescence : 1-2ug/ml
Limitations	This Major Vault Protein Antibody for IF / MVP Immunofluorescence Antibody is available for research use only.



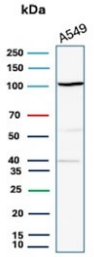
Major Vault Protein Antibody for IF. Immunofluorescence analysis of MVP expression in human A549 cells using Major Vault Protein Antibody for IF / MVP Immunofluorescence Antibody Clone 1014. Fluorescent signal (green) shows cytoplasmic and perinuclear localization with a distinct punctate pattern consistent with vault particle distribution, while nuclei are counterstained with Reddot (red). The staining highlights intracellular organization of Major vault protein (MVP / LRP) and supports its role in vesicular transport and cellular stress response pathways.



Western blot testing of HeLa cell lysate with Major Vault Protein antibody (clone 1014). Observed molecular weight: 104~110 kDa.



SDS-PAGE Analysis of Purified, BSA-Free Major Vault Protein Antibody for IF / MVP Immunofluorescence Antibody (clone 1014). Confirmation of Integrity and Purity of the Antibody.



Western blot testing of A549 cell lysate with Major Vault Protein antibody (clone 1014). Observed molecular weight: 104~110 kDa.

Description

Major Vault Protein (MVP), encoded by the MVP gene, is the primary structural component of vault ribonucleoprotein particles, large cytoplasmic complexes involved in intracellular transport, signal transduction, and cellular stress responses. MVP is also widely known as Lung resistance-related protein (LRP), reflecting its strong association with multidrug resistance in cancer. MVP is broadly expressed across tissues, with prominent expression in epithelial cells, immune cells, and tumor populations exhibiting therapy-resistant phenotypes.

Major Vault Protein Antibody for IF, also referred to as MVP immunofluorescence antibody or LRP antibody for immunofluorescence in the literature, is specifically suited for high-resolution visualization of MVP localization within intact cells. This Major Vault Protein Antibody for IF / MVP Immunofluorescence Antibody is uniquely positioned for studies requiring spatial mapping of protein distribution, intracellular trafficking, and dynamic relocalization under different biological conditions. Clone 1014 antibody provides consistent signal detection for imaging applications, and this mouse monoclonal antibody has been utilized in peer-reviewed studies, supporting its relevance in fluorescence-based research.

In immunofluorescence applications, MVP is predominantly detected in the cytoplasm with a characteristic diffuse to punctate staining pattern that reflects vault particle distribution. Perinuclear enrichment is frequently observed, consistent with MVP association with vesicular transport pathways and cytoskeletal networks. These patterns are especially well resolved by immunofluorescence, allowing visualization of vault particle organization that is not accessible through bulk protein detection methods such as western blot.

A key advantage of using an MVP antibody for IF is the ability to monitor changes in protein localization in response to cellular stress, drug exposure, or signaling activation. MVP has been shown to redistribute within the cell under conditions associated with chemotherapeutic treatment and oxidative stress, and immunofluorescence enables direct observation of these spatial changes. This makes MVP immunofluorescence antibody particularly valuable for studying mechanisms of drug resistance at the single-cell level, where subcellular localization may correlate with functional activity.

MVP plays a central role in vault complex assembly, forming large barrel-shaped structures together with components such as TEP1 and vault-associated RNAs. These complexes are implicated in intracellular transport processes, potentially mediating movement of macromolecules between the nucleus and cytoplasm. Immunofluorescence analysis using a Major vault protein antibody allows researchers to visualize these complexes in situ and assess how their distribution changes across different experimental conditions.

Functionally, MVP is strongly associated with multidrug resistance in cancer. Increased MVP expression has been reported in lung, breast, ovarian, and hematologic malignancies, where it contributes to reduced intracellular drug accumulation and altered apoptotic signaling. Immunofluorescence studies extend this understanding by revealing how MVP localization shifts within resistant cells, providing additional insight beyond expression levels alone.

Beyond drug resistance, MVP is involved in signaling pathways such as PI3K-AKT and has been linked to regulation of apoptosis, autophagy, and immune responses. Changes in intracellular distribution detected by immunofluorescence can therefore reflect broader alterations in cellular signaling and stress adaptation. Proper fixation and permeabilization are important for preserving MVP localization, as the protein is intracellular and associated with large ribonucleoprotein structures.

The MVP gene is located on chromosome 16p11.2 and encodes a protein composed of repeating structural domains that assemble into the characteristic vault particle. While MVP is primarily cytoplasmic, its dynamic localization and interaction with multiple signaling pathways highlight its functional complexity. Immunofluorescence using a Major vault protein antibody enables detailed visualization of these patterns at the single-cell level.

This MVP immunofluorescence antibody is suitable for detecting Major vault protein localization in cultured cells and tissue sections, supporting studies of intracellular transport, drug resistance, and spatial regulation of signaling pathways.

This MVP antibody is part of a broader collection of research tools designed to support studies in cancer biology, intracellular transport, and drug resistance mechanisms.

Application Notes

Optimal dilution of the Major Vault Protein Antibody for IF / MVP Immunofluorescence Antibody should be determined by the researcher.

Immunogen

Proteins precipitated from human breast cancer MCF-7 cells were used as the immunogen for the Major Vault Protein antibody.

Storage

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

Alternate Names

Major vault protein immunofluorescence antibody, Lung resistance-related protein immunofluorescence antibody, LRP antibody for immunofluorescence, MVP antibody for IF, Vault protein immunofluorescence antibody