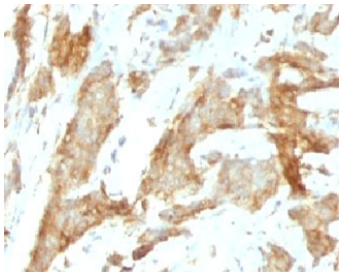
gp96 Antibody SPM249 / GRP94 Monoclonal Antibody [clone SPM249] (V2909)

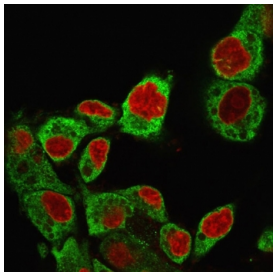
Catalog No.	Formulation	Size
V2909-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2909-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2909SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2909IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Bulk quote request

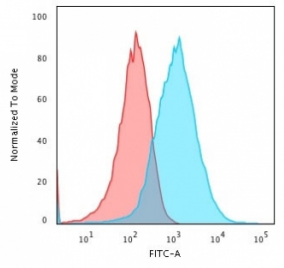
Species Reactivity	Human
Format	Purified
Host	Rat
Clonality	Monoclonal (rat origin)
Isotype	Rat IgG2a, kappa
Clone Name	SPM249
Purity	Protein G affinity chromatography
UniProt	P14625
Localization	Cytoplasmic and nuclear
Applications	Flow cytometry: 1-2ug/10^6 cells Immunofluorescence: 1-2ug/ml Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This gp96 Antibody SPM249 / GRP94 Monoclonal Antibody is available for research use only.



gp96 Antibody SPM249 IHC Staining in Human Breast Carcinoma. Immunohistochemical analysis of FFPE human breast carcinoma tissue using GRP94 Monoclonal Antibody clone SPM249. Brown DAB staining is observed predominantly in the cytoplasm of carcinoma cells, with variable staining throughout the tissue. The staining pattern is consistent with the primarily endoplasmic reticulum-associated localization of gp96. Heat-mediated antigen retrieval was performed using Tris-EDTA buffer (pH 9.0).



gp96 Antibody SPM249 IF Staining in Human HepG2 Cells. Immunofluorescence staining of permeabilized human HepG2 cells using GRP94 Monoclonal Antibody clone SPM249. gp96 is visualized in green, with RedDot nuclear counterstaining in red. Green fluorescence is concentrated in the perinuclear cytoplasm and extends throughout the cytoplasmic compartment, consistent with the endoplasmic reticulum localization of GRP94/HSP90B1.



gp96 Antibody SPM249 FACS Staining of Human HepG2 Cells. Flow cytometry analysis of PFA-fixed human HepG2 cells using GRP94 Monoclonal Antibody clone SPM249. The blue histogram represents gp96 antibody staining, while the red histogram represents the isotype control. A pronounced rightward fluorescence shift is observed in the antibody-stained population relative to the control, indicating detection of gp96-associated fluorescence.

Description

gp96 Antibody SPM249 / GRP94 Monoclonal Antibody targets glycoprotein 96 (gp96), also known as glucose-regulated protein 94 (GRP94), endoplasmin, and heat shock protein 90 beta family member 1 (HSP90B1). gp96 is an ATP-dependent molecular chaperone belonging to the HSP90 protein family and is primarily located within the endoplasmic reticulum (ER). It assists the folding and maturation of selected secretory and membrane proteins, helping maintain protein quality control and cellular homeostasis. Unlike cytosolic HSP90 proteins, gp96 functions within the ER and possesses a specialized group of client proteins involved in immunity, cell adhesion, and growth regulation.

One of the most extensively studied functions of gp96 involves the maturation of immune receptors. The protein is required for proper folding and expression of several Toll-like receptors, which recognize microbial components and initiate innate immune responses. gp96 also supports the maturation of integrins involved in cellular adhesion and migration. These functions establish a direct connection between ER protein quality control and the activity of receptors that regulate immune recognition, inflammation, and interactions with the extracellular environment.

Beyond its intracellular chaperone functions, gp96 has attracted considerable interest in tumor immunology. Under certain conditions, gp96 can be released from cells or detected at the cell surface, where it may participate in immune signaling. Tumor-derived gp96 preparations have been investigated for their ability to associate with antigenic peptides and promote antigen presentation through interactions with antigen-presenting cells. These properties contributed to early research exploring gp96-based cancer immunotherapy. However, the immunological effects of extracellular gp96 depend on its molecular context, associated components, and the responding cell populations.

Expression of gp96 is also influenced by ER stress and activation of the unfolded protein response, which increases cellular folding capacity during disturbances in protein homeostasis. Elevated gp96 expression has been reported in several malignancies and may contribute to tumor cell survival under proteotoxic stress. Research involving gp96 Antibody SPM249 supports investigation of the relationship between ER chaperone activity, immune receptor maturation, tumor-associated stress responses, and the immunological functions attributed to extracellular gp96.

For researchers interested in a published monoclonal reagent targeting the same protein, explore our GRP94 Antibody 9G10.F8.2

Application Notes

Optimal dilution of the gp96 Antibody SPM249 / GRP94 Monoclonal Antibody 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 min.
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

Purified glucose regulated protein 94 from chicken oviducts was used as the immunogen for the gp96 antibody.

Storage

Store the gp96 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

gp96 antibody, GRP94 antibody, HSP90B1 antibody, Endoplasmin antibody, Glucose-regulated protein 94 antibody, Glucose-regulated protein 96 antibody, Heat shock protein 90 beta family member 1 antibody, Tumor rejection antigen gp96 antibody, GRP96 antibody, TRA1 antibody

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