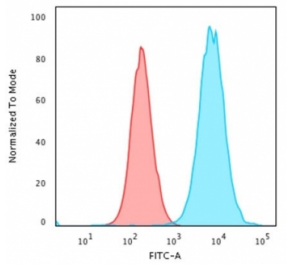
Beta-2 Microglobulin Antibody rB2M/961 / MHC Class I Component Antibody [clone rB2M/961] (V3538)

Catalog No.	Formulation	Size
V3538-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3538-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3538SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V3538IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

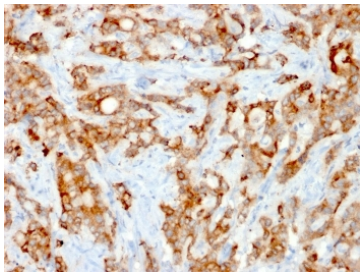
Recombinant MOUSE MONOCLONAL

Bulk quote request

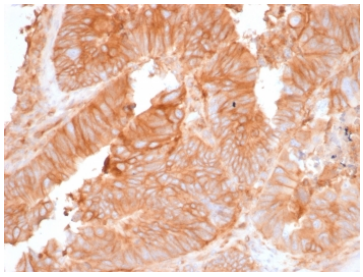
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG2b, kappa
Clone Name	rB2M/961
Purity	Protein G affinity chromatography
UniProt	P61769
Localization	Cytoplasmic
Applications	Flow cytometry: 1-2ug/million cells Immunofluorescence: 1-2ug/ml Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT Western blot: 1-2ug/ml
Limitations	This Beta-2 Microglobulin Antibody rB2M/961 / MHC Class I Component Antibody is available for research use only.



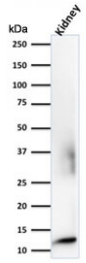
Beta-2 Microglobulin Antibody rB2M/961 in HeLa Cells FACS. Flow cytometry analysis of PFA-fixed human HeLa cervical cancer cells with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. Red represents the isotype control and blue represents rB2M/961 antibody staining. Antibody-associated fluorescence demonstrates detection of beta-2 microglobulin in HeLa cells by FACS.



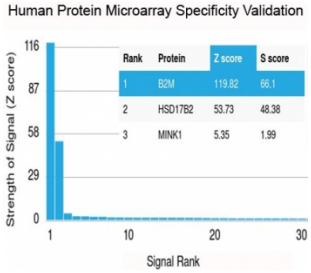
Beta-2 Microglobulin Antibody rB2M/961 in Human Lung Carcinoma IHC. Immunohistochemistry staining of FFPE human lung carcinoma tissue with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. HIER was performed by boiling tissue sections in 10 mM Tris with 1 mM EDTA, pH 9, for 10-20 min followed by cooling at RT for 20 min. The observed staining demonstrates beta-2 microglobulin expression in human lung carcinoma tissue.



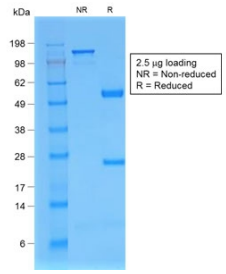
Beta-2 Microglobulin Antibody rB2M/961 in Human Colon Carcinoma IHC. Immunohistochemistry analysis of FFPE human colon carcinoma tissue with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. Tissue sections underwent HIER by boiling in 10 mM Tris with 1 mM EDTA, pH 9, for 10-20 min and were allowed to cool at RT for 20 min. B2M staining is observed within the human colon carcinoma tissue.



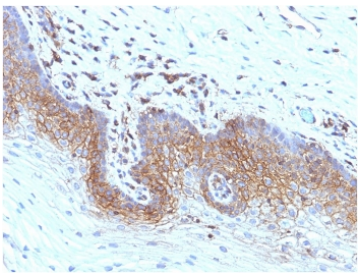
Beta-2 Microglobulin Antibody rB2M/961 in Human Kidney WB. Western blot testing of human kidney lysate with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. A band is detected within the expected molecular weight range of approximately 12-14 kDa, consistent with beta-2 microglobulin. This Beta-2 Microglobulin Antibody demonstrates B2M detection in human kidney tissue.



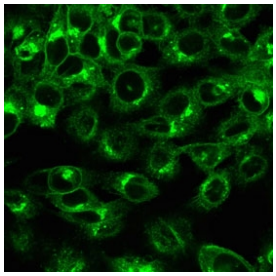
Beta-2 Microglobulin Antibody rB2M/961 Protein Microarray Validation. Protein microarray analysis of Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961, using a HuProt array containing more than 19,000 full-length human proteins. The antibody demonstrates prominent recognition of the intended B2M target. The Z-score represents signal strength in standard deviations above the array mean, while the S-score measures separation between the intended target and the next strongest signal, providing an assessment of relative target specificity.



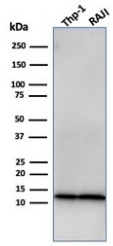
Purified Beta-2 Microglobulin Antibody rB2M/961 SDS-PAGE. Gel run analysis of purified, BSA-free Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. Analysis of the purified recombinant mouse monoclonal antibody provides confirmation of antibody integrity and purity.



Beta-2 Microglobulin Antibody rB2M/961 in Human Cervical Carcinoma IHC. Immunohistochemistry staining of FFPE human cervical carcinoma tissue with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. HIER was performed by boiling tissue sections in 10 mM Tris with 1 mM EDTA, pH 9, for 10-20 min followed by cooling at RT for 20 min. The staining demonstrates beta-2 microglobulin expression in human cervical carcinoma tissue.



Beta-2 Microglobulin Antibody rB2M/961 in HeLa Cells IF. Immunofluorescence staining of permeabilized human HeLa cervical cancer cells with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. Fluorescent staining demonstrates detection of beta-2 microglobulin in HeLa cells by IF.



Beta-2 Microglobulin Antibody rB2M/961 in THP-1 and Raji Cells WB. Western blot testing of human THP-1 monocytic leukemia and Raji B lymphocyte cell lysates with Beta-2 Microglobulin Antibody / MHC Class I Component Antibody, clone rB2M/961. Lane 1: THP-1 cells; Lane 2: Raji cells. A band is detected within the expected 12-14 kDa molecular weight range of beta-2 microglobulin, demonstrating B2M detection in two human immune cell lines.

Description

Beta-2 Microglobulin Antibody rB2M/961 / MHC Class I Component Antibody detects beta-2 microglobulin (B2M), a small protein encoded by the B2M gene and an essential component of major histocompatibility complex class I molecules. B2M associates noncovalently with the polymorphic MHC class I heavy chain and is required for the stable expression and function of classical MHC class I complexes at the cell surface. Through this association, beta-2 microglobulin has a central role in antigen presentation, immune recognition and surveillance of nucleated cells.

MHC class I complexes present intracellularly derived peptide antigens to CD8-positive T cells. Formation of a stable complex requires association between the MHC class I heavy chain, beta-2 microglobulin and an antigenic peptide. B2M does not span the plasma membrane but stabilizes the extracellular structure of the complex and supports its transport and expression at the cell surface. Loss or alteration of B2M can consequently impair MHC class I antigen presentation and affect recognition of cells by the immune system.

Beta-2 microglobulin is widely investigated in immunology, infectious disease and cancer research. Tumor cells can acquire alterations affecting B2M or other components of the antigen presentation machinery, potentially reducing MHC class I surface expression and facilitating escape from cytotoxic T-cell recognition. B2M is therefore studied in tumor immune surveillance, mechanisms of immune evasion and responses or resistance to cancer immunotherapy. Its role in MHC class I biology also makes it relevant to research involving transplantation, viral infection and adaptive immune responses.

B2M can be released from cell surfaces and is detectable as a soluble protein in biological fluids. Circulating beta-2 microglobulin has been extensively investigated as a biomarker in hematologic malignancies, renal function and disorders associated with altered immune-cell turnover. Elevated B2M is particularly well established in research involving multiple myeloma and lymphoid malignancies. These diverse applications connect the protein's fundamental role in MHC class I structure with broader studies of immune function and disease.

Clone rB2M/961 is a recombinant rabbit monoclonal antibody directed against human beta-2 microglobulin. Recombinant production provides a defined antibody sequence and supports consistent performance across manufacturing lots. The antibody has been evaluated for detection of B2M in human samples. NSJ Bioreagents supplies antibodies for immunology, antigen presentation and immune-system research. A Beta-2 Microglobulin Antibody can be used to investigate MHC class I complexes, antigen presentation, immune surveillance and mechanisms affecting B2M expression in normal and disease biology.

For related reagents used to investigate antigen presentation, immune recognition and adaptive immune responses, explore our Immunology Antibodies page.

Application Notes

Optimal dilution of the Beta-2 Microglobulin Antibody rB2M/961 / MHC Class I Component Antibody should be determined by the researcher.

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

Full length recombinant human protein was used as the immunogen for the recombinant Beta-2 Microglobulin antibody.

Storage

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

Alternate Names

Beta-2 Microglobulin antibody, B2M antibody, MHC Class I Component antibody, Beta-2-Microglobulin antibody, Beta-2-Microglobulin Protein antibody

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