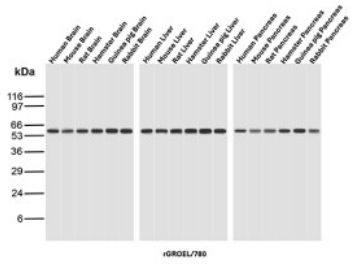
HSP60 Antibody / Heat Shock Protein 60 Antibody [clone rGROEL/780] (V3576)

Catalog No.	Formulation	Size
V3576-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3576-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3576SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V3576IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

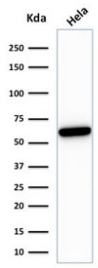
Recombinant MOUSE MONOCLONAL

Bulk quote request

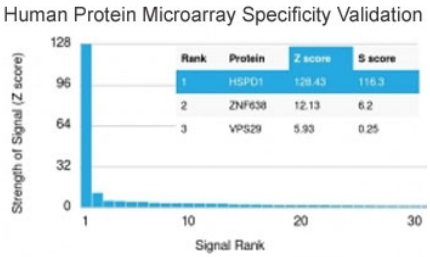
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat, Hamster, Rabbit, Guinea pig
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	rGROEL/780
Purity	Protein G affinity chromatography
UniProt	P10809
Localization	Cytoplasm (mitochondria)
Applications	Western blot: 1-2ug/ml (Human/Mouse/Rat/Hamster/Rabbit/Guinea pig) Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT (Human)
Limitations	This HSP60 Antibody / Heat Shock Protein 60 Antibody is available for research use only.



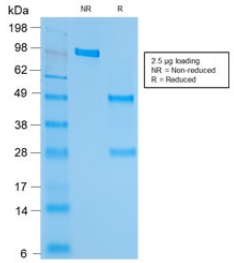
HSP60 Antibody / Heat Shock Protein 60 Antibody Multi-Species Tissue Expression WB. Western blot testing of brain, liver and pancreas tissue lysates from human, mouse, rat, hamster, guinea pig and rabbit with HSP60 Antibody clone rGROEL/780 shows a strong predominant band at approximately 60 kDa across all tested samples. The observed band is consistent with the expected molecular weight of HSP60 and demonstrates recognition across multiple mammalian species and tissue types.



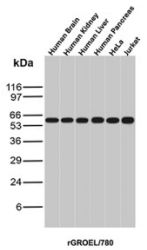
HSP60 Antibody / Heat Shock Protein 60 Antibody in HeLa Cervical Cancer Cells WB. Western blot testing of human HeLa cervical cancer cell lysate with HSP60 Antibody clone rGROEL/780 shows a strong, specific band at approximately 60 kDa. The observed band is consistent with the predicted molecular weight of HSPD1 and demonstrates detection of HSP60 in this human cervical cancer cell line.



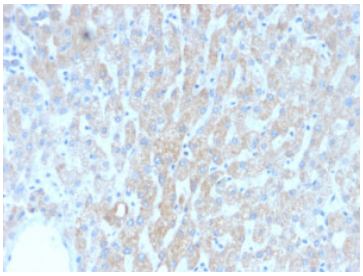
Protein Microarray Validated HSP60 Antibody Specificity. HuProt protein microarray analysis of HSP60 Antibody clone rGROEL/780 against more than 19,000 full-length human proteins identifies HSPD1 as the highest-ranked target, with a Z-score of 128.43 and S-score of 116.3. The Z-score represents signal strength in standard deviations above the mean array signal, while the S-score represents the difference between the intended target Z-score and the next highest signal. The substantial separation of HSPD1 from the next-ranked proteins demonstrates strong relative target specificity.



Purified HSP60 Antibody rGROEL/780 SDS-PAGE. SDS-PAGE analysis of purified, BSA-free HSP60 Antibody clone rGROEL/780 under non-reduced (NR) and reduced (R) conditions. The non-reduced antibody migrates predominantly at approximately 90 kDa, while reduction produces prominent heavy- and light-chain bands at approximately 50 kDa and 25-28 kDa, respectively. A 2.5 ug antibody sample was loaded for analysis, demonstrating the integrity and purity of the recombinant monoclonal preparation.



HSP60 Antibody / Heat Shock Protein 60 Antibody in Human Tissues and Cell Lines WB. Western blot testing of human brain, kidney, liver and pancreas tissue lysates and HeLa cervical cancer and Jurkat T-cell leukemia cell lysates with HSP60 Antibody clone rGROEL/780 shows a strong, specific band at approximately 60 kDa across all samples. The observed band is consistent with the expected molecular weight of HSPD1 and demonstrates robust HSP60 detection across the tested human tissues and cell lines.



HSP60 Antibody / Heat Shock Protein 60 Antibody in Human Liver IHC. Immunohistochemistry staining of FFPE human liver tissue with HSP60 Antibody clone rGROEL/780 shows granular cytoplasmic staining of hepatocytes, consistent with the mitochondrial localization of HSP60. Heat-induced epitope retrieval was performed by boiling sections in 10 mM citrate buffer, pH 6, for 10-20 min followed by cooling at RT for 20 min.

Description

HSP60 Antibody / Heat Shock Protein 60 Antibody detects HSP60, a highly conserved molecular chaperone encoded by the HSPD1 gene. HSP60 is primarily localized to the mitochondrial matrix, where it helps maintain protein homeostasis by assisting the folding and assembly of proteins imported into mitochondria. It belongs to the chaperonin family and functions together with the co-chaperonin HSP10 to provide a protected environment in which newly imported or stress-damaged proteins can achieve their proper conformation.

HSP60 is synthesized as a precursor containing an N-terminal mitochondrial targeting sequence that directs transport into

the organelle. Following mitochondrial import, the targeting sequence is removed to generate the mature protein. HSP60 subunits assemble into oligomeric chaperonin complexes that undergo ATP-dependent conformational changes during cycles of protein folding. This activity is particularly important because most mitochondrial proteins are encoded by nuclear genes, synthesized in the cytosol, and subsequently imported into mitochondria.

Although HSP60 is best characterized as a mitochondrial chaperonin, its biological significance extends beyond constitutive protein folding. Changes in HSPD1 expression, localization, and function have been investigated in cellular stress, oxidative stress, mitochondrial dysfunction, inflammation, immunity, neurodegeneration, and cancer. HSP60 can therefore serve as an important subject for studies of mitochondrial biology, proteostasis, stress responses, and disease-associated changes in cellular homeostasis.

Mammalian HSP60 is evolutionarily related to bacterial GroEL, and the substantial conservation among chaperonins has generated interest in their roles in immune recognition and host-pathogen biology. Antibody cross-reactivity with bacterial chaperonins can vary, making the distinction between mammalian HSP60 recognition and bacterial GroEL recognition relevant when selecting reagents for these studies.

This Protein Microarray Validated HSP60 Antibody has been evaluated using the HuProt array containing more than 19,000 full-length human proteins. In protein microarray analysis, the Z-score represents signal intensity in standard deviations above the mean array signal, while the S-score measures the difference between the target Z-score and the next highest signal, providing an indication of relative target specificity.

NSJ Bioreagents offers clone rGROEL/780 as a recombinant monoclonal reagent for investigating mitochondrial chaperone biology. An HSP60 Antibody can support research into mitochondrial protein folding, proteostasis, cellular stress, and the biological functions of Heat Shock Protein 60.

Explore our Mitochondria Marker Antibody page for additional reagents targeting proteins involved in mitochondrial structure, function, metabolism, and protein homeostasis.

Application Notes

Optimal dilution of the HSP60 Antibody / Heat Shock Protein 60 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

Recombinant human protein was used as the immunogen for the recombinant HSP60 Antibody. The Its epitope has been localized between amino acids 383-447.

Storage

Store the HSP60 Antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

HSPD1 antibody, HSP60 antibody, Heat shock protein 60 antibody, 60 kDa heat shock protein mitochondrial antibody, Chaperonin 60 antibody, CPN60 antibody, HSP65 antibody, GROEL antibody

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