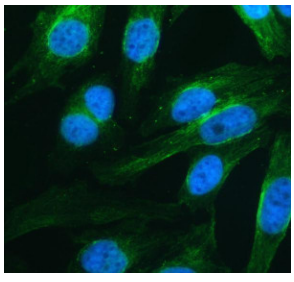
GRP78 Antibody / Endoplasmic Reticulum Chaperone Antibody (R31939)

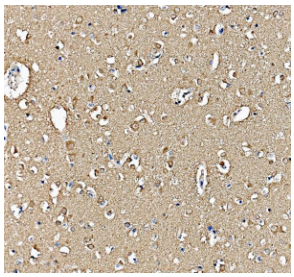
Catalog No.	Formulation	Size
R31939	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

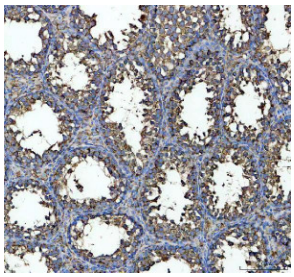
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P11021
Localization	Cytoplasmic, membrane
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This GRP78 Antibody / Endoplasmic Reticulum Chaperone Antibody is available for research use only.



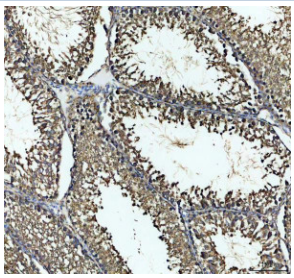
GRP78 Antibody HeLa Cell IF. GRP78 was detected in HeLa cells following enzyme-mediated antigen retrieval for 15 minutes. The cells were blocked with 10% goat serum and incubated overnight at 4Â°C with rabbit anti-HSPA5 antibody at 5 ug/ml. A Fluoro488-conjugated goat anti-rabbit IgG secondary antibody was used at 1:500, and nuclei were counterstained with DAPI. GRP78 staining appears green and is distributed throughout the cytoplasm, including prominent perinuclear signal, while nuclei appear blue. GRP78 Antibody, an endoplasmic reticulum chaperone antibody, supports cellular localization studies involving protein folding, endoplasmic reticulum homeostasis and stress-response pathways.



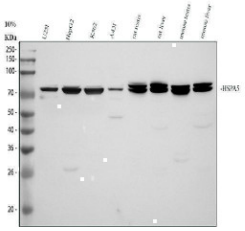
GRP78 Antibody Human Cerebral Cortex IHC. GRP78 was detected in a paraffin-embedded section of human cerebral cortex tissue following heat-mediated antigen retrieval in EDTA buffer, pH 8.0. The section was blocked with 10% goat serum and incubated overnight at 4Â°C with rabbit anti-HSPA5 antibody at 2 ug/ml. An HRP-conjugated goat anti-rabbit IgG secondary antibody and DAB chromogen were used for visualization. The staining demonstrates broadly distributed GRP78 expression within the cerebral cortex, including cytoplasmic signal in neuronal cells and surrounding neuropil. GRP78 Antibody, an endoplasmic reticulum chaperone antibody, supports studies of protein-folding homeostasis and cellular stress responses in human brain tissue.



GRP78 Antibody Mouse Testis IHC. GRP78 was detected in a paraffin-embedded section of mouse testis tissue following heat-mediated antigen retrieval in EDTA buffer, pH 8.0. The section was blocked with 10% goat serum and incubated overnight at 4Â°C with rabbit anti-HSPA5 antibody at 2 ug/ml. An HRP-conjugated goat anti-rabbit IgG secondary antibody and DAB chromogen were used for visualization. Cytoplasmic GRP78 staining is visible within the seminiferous tubules, with prominent signal among populations of developing germ cells and weaker staining in the interstitial tissue. GRP78 Antibody, an endoplasmic reticulum chaperone antibody, supports studies of protein folding and cellular stress responses in male reproductive tissue.



GRP78 Antibody Rat Testis Germ Cell IHC. GRP78 expression was examined in a paraffin-embedded section of rat testis tissue. Heat-mediated antigen retrieval was performed in EDTA buffer, pH 8.0, followed by blocking with 10% goat serum. The section was incubated overnight at 4Â°C with rabbit anti-HSPA5 antibody at 2 ug/ml, then developed using an HRP-conjugated goat anti-rabbit IgG secondary antibody and DAB chromogen. Strong cytoplasmic staining is visible among developing germ cell populations within the seminiferous tubules. GRP78 Antibody, an endoplasmic reticulum chaperone antibody, supports studies of protein folding and cellular stress regulation in rat reproductive tissue.



GRP78 Antibody Human, Rat and Mouse Cell and Tissue WB. Western blot analysis was performed under reducing conditions using 30 ug of lysate per lane. Lane 1: human U251 cells; Lane 2: human HepG2 cells; Lane 3: human K562 cells; Lane 4: human A431 cells; Lane 5: rat testis; Lane 6: rat liver; Lane 7: mouse testis; Lane 8: mouse liver. The membrane was incubated overnight at 4Â°C with rabbit anti-HSPA5 antibody at 0.5 ug/ml, followed by HRP secondary antibody and ECL detection. A prominent band was detected at approximately 78 kDa, near the expected 72 kDa size. GRP78 Antibody, an endoplasmic reticulum chaperone antibody, supports multi-species expression analysis.

Description

GRP78 Antibody recognizes the 78 kDa glucose-regulated protein, an endoplasmic reticulum molecular chaperone encoded by the HSPA5 gene. GRP78 is also widely known as BiP because it was originally identified as an immunoglobulin heavy chain binding protein. It belongs to the HSP70 family and contains an amino-terminal ATPase domain, a substrate-binding domain and a carboxy-terminal KDEL retention sequence that supports localization within the endoplasmic reticulum. GRP78 binds newly synthesized and incompletely folded proteins, prevents inappropriate aggregation and assists proteins in reaching conformations suitable for transport through the secretory pathway.

GRP78 is a central regulator of endoplasmic reticulum protein quality control and the unfolded protein response. Under normal conditions, GRP78 associates with the luminal domains of the stress sensors PERK, IRE1 and ATF6, helping maintain them in inactive states. When unfolded or misfolded proteins accumulate, GRP78 is recruited away from these sensors to assist with protein folding. The released sensors then activate signaling pathways that reduce new protein

synthesis, increase production of chaperones and promote clearance of damaged proteins. A GRP78 Antibody can therefore help researchers monitor an important indicator and functional regulator of endoplasmic reticulum stress.

In addition to assisting protein folding, GRP78 contributes to endoplasmic reticulum-associated degradation by directing terminally misfolded proteins toward disposal pathways. It also participates in calcium homeostasis, secretory protein assembly and cellular adaptation to glucose deprivation, hypoxia, oxidative stress and other conditions that disrupt endoplasmic reticulum function. Persistent or severe stress can shift the unfolded protein response from a protective program toward apoptosis, making GRP78 relevant to studies of the balance between cell survival and death. Changes in GRP78 abundance are commonly examined alongside markers such as CHOP, ATF4, phosphorylated PERK, phosphorylated eIF2 alpha, spliced XBP1 and cleaved ATF6.

Elevated GRP78 expression has been reported in cancers and other disease models characterized by high secretory demand, nutrient limitation or proteotoxic stress. Increased chaperone capacity can help tumor cells survive unfavorable microenvironments and may influence treatment resistance. Although GRP78 is predominantly located in the endoplasmic reticulum, selected stressed or malignant cells have also been reported to display GRP78 at the cell surface, where it may participate in signaling interactions. Researchers may use GRP78 Antibody products in western blot, immunohistochemistry, immunofluorescence, flow cytometry or other validated applications to examine protein abundance and localization. NSJ Bioreagents supplies GRP78 Antibody options for studying protein folding, endoplasmic reticulum homeostasis, unfolded protein response signaling, cancer biology and cellular stress adaptation.

Explore our Cell Biology Antibodies page for additional reagents targeting protein folding, endoplasmic reticulum stress and cellular quality-control pathways.

Application Notes

Optimal dilution of the GRP78 Antibody / Endoplasmic Reticulum Chaperone Antibody should be determined by the researcher.

Immunogen

Amino acids ETMEKAVEEKIEWLESHQDADIEDFKAKKKELE of human GRP78/BiP were used as the immunogen for the GRP78 antibody.

Storage

After reconstitution, the GRP78 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

BiP Antibody, HSPA5 Antibody, Glucose-Regulated Protein 78 Antibody, 78 kDa Glucose-Regulated Protein Antibody, Endoplasmic Reticulum Chaperone BiP Antibody, Immunoglobulin Heavy Chain Binding Protein Antibody, Heat Shock Protein Family A Member 5 Antibody

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