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Product datasheet for TA336718

GRP78 (HSPA5) Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	FC, ICC/IF, IHC, Simple Western, WB
Recommended Dilution:	Flow Cytometry: 1:150, Immunocytochemistry/ Immunofluorescence: 1:50, Immunohistochemistry-Paraffin, Immunohistochemistry Free-Floating, Western Blot: 0.5 ug/ml, Simple Western: 1:25, Immunohistochemistry: 1:200
Reactivity:	Human, Mouse, Rat, Chicken, Sheep
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Synthetic peptide made to an internal portion of human GRP78 (within residues 250-300). [Swiss-Prot# P11021]
Formulation:	PBS, 0.05% Sodium Azide. Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Concentration:	lot specific
Purification:	Immunogen affinity purified
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Predicted Protein Size:	78 kDa
Gene Name:	heat shock protein family A (Hsp70) member 5
Database Link:	NP_005338 Entrez Gene 14828 MouseEntrez Gene 25617 RatEntrez Gene 3309 Human P11021

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Background: HSP70 family member GRP78 (78 kD glucose-regulated protein) is localized in ER lumen as well as melanosomes (stage I to stage IV) where it facilitates protein folding/assembly, protein quality control, Ca2+ binding, and regulates ER stress signaling. GRP78 interacts with DNAJC1 and is a component of EIF2 complex (CELF1/CUGBP1, CALR, CALR3, EIF2S1, EIF2S2, HSP90B1 and HSPA5) as well as chaperone multiprotein complex (DNAJB11, HSP90B1, HSPA5, HYOU, PDIA2, PDIA4, PDIA6, PPIB, SDF2L1, UGT1A1, ERP29). GRP78 also interacts with TMEM132A as well as TRIM21, and may form a complex with ERLEC1, OS9, SEL1L and SYVN1. In cancerous cells, GRP78 overexpression is associated with UPR activation, including upregulation of associated proteins such as PERK, ATF6, CHOP etc that further regulate JNK and NF-kB untimately leading to survival, tumor progression, angiogenesis, resistance to therapy and metastasis. GRP78 is a signaling receptor for activated alpha2-macroglobulin, plasminogen kringle 5, and microplasminogen, and plays role in viral entry of coxsackie B as well as dengue fever viruses. GRP78 is also involved in regulation of tissue factor procoagulant activity and functions as a receptor for angiogenic peptides via VEGFRs independent mechanism. Cell surface GRP78 is found associated with diverse proteins including VDAC, MHC-I, Cripto and DnaJ-like protein MTJ-1. Because GRP78 is present on the surface of cancer cells but not on normal cells in vivo, it provide an exciting opportunity for cancer targeting.

Synonyms: BIP; GRP78; HEL-S-89n; MIF2

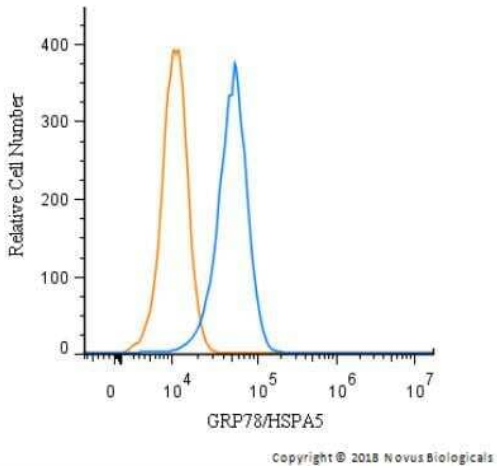
Note: This GRP78 antibody is useful for immunocytochemistry/immunofluorescence and western blot where a band is seen at ~78 kDa. For information on the flow cytometry application, see the publication PMID: 20208072. Use in Immunocytochemistry/immunofluorescence reported in scientific literature (PMID 24089213)

Protein Families: Druggable Genome

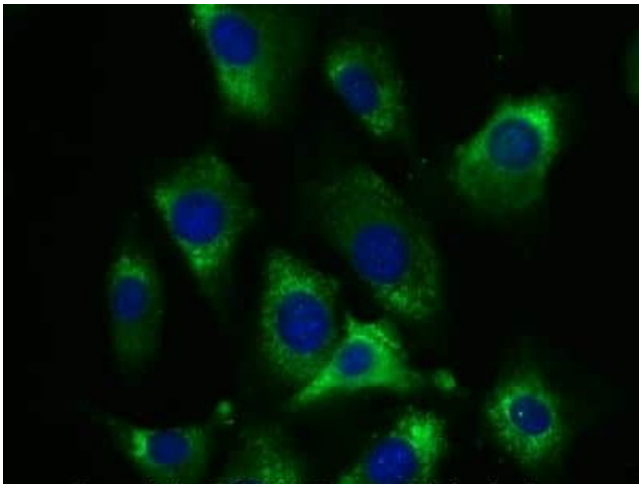
Protein Pathways: Antigen processing and presentation, Prion diseases

Product images:

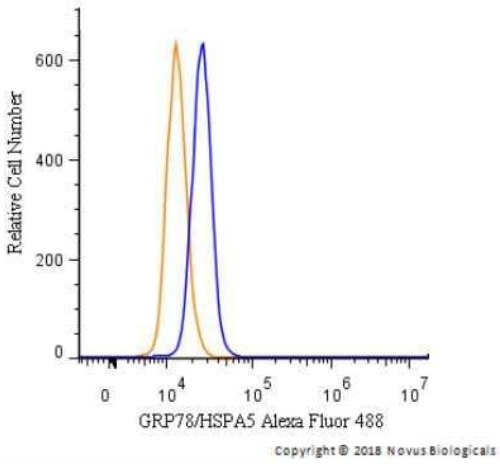
Simple Western: GRP78/HSPA5 Antibody TA336718 - Image shows a specific band for GRP78 in 0.1 mg/mL of HeLa lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.



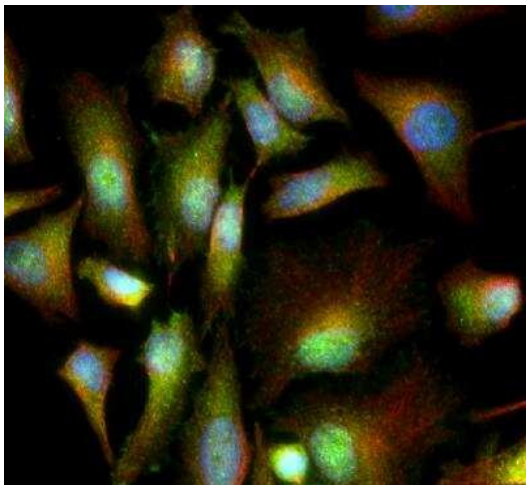
Flow Cytometry: GRP78/HSPA5 Antibody TA336718 - An intracellular stain was performed on HeLa with TA336718 and a matched isotype control. Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. Cells were incubated in an antibody dilution of 1 ug/mL for 30 minutes at room temperature, followed by Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Dylight 550.



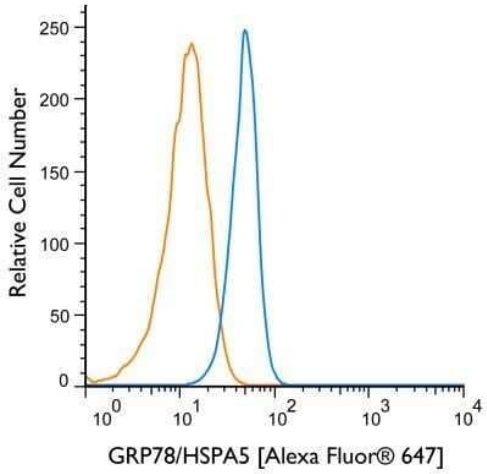
Immunocytochemistry/Immunofluorescence: GRP78/HSPA5 Antibody TA336718 - NIH-3T3 cells were fixed and permeabilized for 10 minutes using -20C MeOH. The cells were incubated with anti-GRP78/HSPA5 at 2 ug/mL overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.



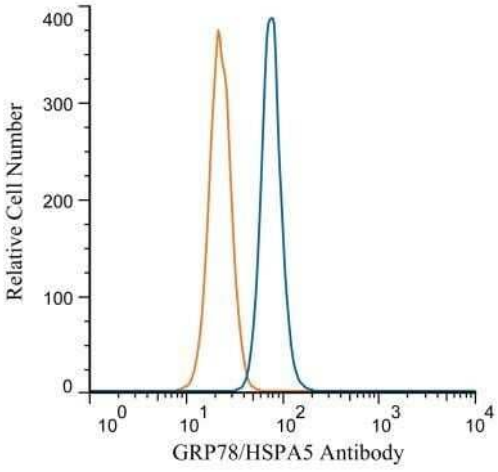
Flow Cytometry: GRP78/HSPA5 Antibody TA336718 - An intracellular stain was performed on NIH3T3 cells with GRP78/HSPA5 Antibody TA336718AF488 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 488.



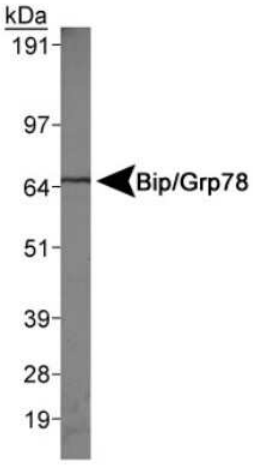
Immunocytochemistry/Immunofluorescence: GRP78/HSPA5 Antibody TA336718 - HeLa cells were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X PBS + 0.05% Triton-X100. The cells were incubated with anti-GRP78/HSPA5 at 5 ug/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:500 dilution. Alpha tubulin (DM1A) NB100-690 was used as a co-stain at a 1:1000 dilution and detected with an anti-mouse Dylight 550 (Red) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.



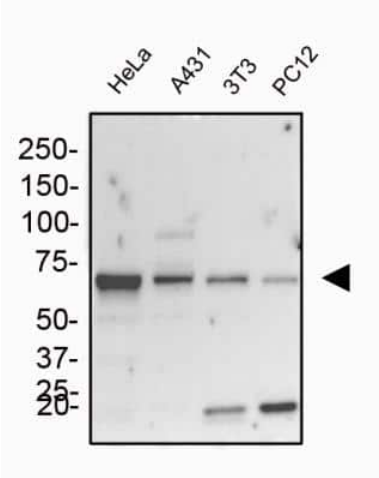
Flow Cytometry: GRP78/HSPA5 Antibody TA336718 - An intracellular stain was performed on Jurkat cells with Alexa Fluor 647 conjugate of GPR78/HSPA5 antibody TA336718AF647 (blue) and a matched isotype control NBP2-24893AF647 (orange). Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. Cells were incubated in an antibody dilution of 2 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 647.



Flow Cytometry: GRP78/HSPA5 Antibody TA336718 - Analysis using Alexa Fluor (R) 488 conjugate of TA336718. An intracellular stain was performed on HeLa cells with GPR78/HSPA5 antibody TA336718 (blue) and a matched isotype control NBP2-24893 (orange). Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. 1 ug of antibody was added to 100 uL of staining buffer and cells were incubated for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 488.



Western Blot: GRP78/HSPA5 Antibody TA336718 - Detection of Bip/Grp78 on HeLa whole cell extracts using TA336718.



Western Blot: GRP78/HSPA5 Antibody TA336718 - Total protein from human HeLa and A431 cells, mouse 3T3 cells and rat PC12 cells was separated on a 7.5% gel by SDS-PAGE, transferred to PVDF membrane and blocked in 5% non-fat milk in TBST. The membrane was probed with 1.0 ug/mL anti-GPR78 in blocking buffer and detected with an anti-rabbit HRP secondary antibody using chemiluminescence.