

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human HSP70/HSPA1A in direct ELISAs. Detects, human, mouse, and rat HSP70/HSPA1A in Western blots.
Source	Monoclonal Mouse IgG _{2A} Clone # 998953
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human HSP70/HSPA1A Met1-Asp641 Accession # PODMV8 and PODMN9
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

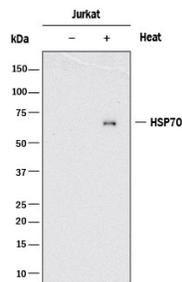
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the [Technical Information](#) section on our website.

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	5-25 µg/mL	See Below
Simple Western	20 µg/mL	See Below

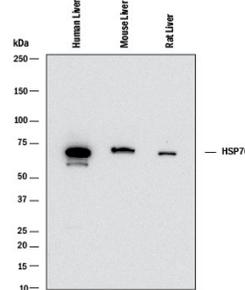
DATA

Western Blot



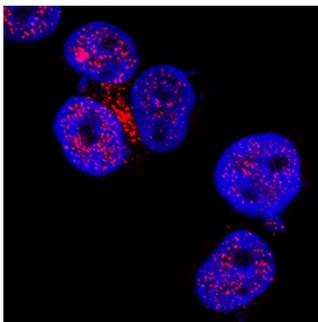
Detection of Human HSP70/HSPA1A by Western Blot. Western blot shows lysates of Jurkat human acute T cell leukemia cell line untreated (-) or treated (+) with 42° C heat shock for 30 minutes and allowed to recover for 3 hours. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human/Mouse/Rat HSP70/HSPA1A Monoclonal Antibody (Catalog # MAB16631) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for HSP70/HSPA1A at approximately 70 kDa (as indicated). This experiment was conducted under reducing conditions and using [Immunoblot Buffer Group 1](#).

Western Blot



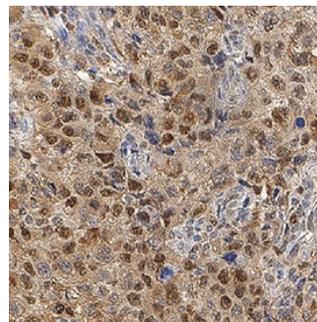
Detection of Human, Mouse, and Rat HSP70/HSPA1A by Western Blot. Western blot shows lysates of human liver tissue, mouse liver tissue, and rat liver tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human/Mouse/Rat HSP70/HSPA1A Monoclonal Antibody (Catalog # MAB16631) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for HSP70/HSPA1A at approximately 70 kDa (as indicated). This experiment was conducted under reducing conditions and using [Immunoblot Buffer Group 1](#).

Immunocytochemistry



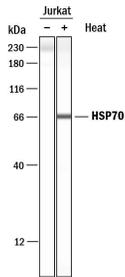
HSP70/HSPA1A in Jurkat Human Cell Line. HSP70/HSPA1A was detected in immersion fixed Jurkat human acute T cell leukemia cell line using Mouse Anti-Human/Mouse/Rat HSP70/HSPA1A Monoclonal Antibody (Catalog # MAB16631) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NLO07) and counterstained with DAPI (blue). Specific staining was localized to nuclei. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

Immunohistochemistry



HSP70/HSPA1A in Human Kidney Cancer Tissue. HSP70/HSPA1A was detected in immersion fixed paraffin-embedded sections of human kidney cancer tissue using Mouse Anti-Human/Mouse/Rat HSP70/HSPA1A Monoclonal Antibody (Catalog # MAB16631) at 5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cell nuclei. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

Simple Western



Detection of Human HSP70/HSPA1A by Simple Western™. Simple Western lane view shows lysates of Jurkat human acute T cell leukemia cell line untreated (-) or treated (+) with 42°C heat shocked (HS) for 30 minutes and allowed to recover for 3 hours, loaded at 0.2 mg/mL. A specific band was detected for HSP70/HSPA1A at approximately 70 kDa (as indicated) using 20 µg/mL of Mouse Anti-Human HSP70/HSPA1A Monoclonal Antibody (Catalog # MAB16631). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Heat shock proteins (HSPs) are a family of highly conserved stress response proteins. Heat shock proteins function primarily as molecular chaperones by facilitating the folding of other cellular proteins, preventing protein aggregation or targeting improperly folded proteins to specific degradative pathways. HSPs are typically expressed at low levels under normal physiological conditions but are dramatically up-regulated in response to cellular stress. HSP70 is a 72 kDa member of the heat shock protein 70 family of proteins. HSP70, also known as HSPA1A, HSP70-1, and HSP72 is a 641 amino acid (aa) heat shock protein. Over aa 1-641, human HSP70 shares 95% and 97% aa identity to mouse and rat HSP70.