

Product datasheet for **TA399829**

HSPA1A Mouse Monoclonal Antibody [Clone ID: cmhsp70.1 (C92F3B1)]

Product data:

Product Type:	Primary Antibodies
Clone Name:	cmhsp70.1 (C92F3B1)
Applications:	ELISA, FC, IF, IHC, WB
Reactivity:	Human
Host:	Mouse
Isotype:	IgG1, lambda
Clonality:	Monoclonal
Immunogen:	The original antibody was generated by grafting the CDRs of the mouse antibody on human framework regions. The parental mouse antibody was generated by immunizing mice with an SBD-derived synthetic peptide TKDNNLLGRFELSG (TKD peptide; aa 450–463) with complete Freud's adjuvants.



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Specificity:	<p>This antibody binds a region including amino acids 473-504 (TKDNNLLGRFELSG) of the C-terminal substrate-binding domain (SBD) of membrane bound Hsp70 (mHsp70). It binds a 14-mer peptide termed". This protein is located intracellularly and plays an important part in various cellular processes, including protection of the proteome from stress, folding and transport of newly synthesized polypeptides, activation of proteolysis of misfolded proteins and the formation and dissociation of protein complexes. It plays a pivotal role in the protein quality control system, ensuring the correct folding of proteins, the re-folding of misfolded proteins and controlling the targeting of proteins for subsequent degradation. It maintains protein homeostasis during cellular stress through two opposing mechanisms: protein refolding and degradation. Membrane bound Hsp70s is frequently over-expressed in patients affected by leukemia and has been identified as a potential target for cancer therapies.</p> <p>The IgG1 version of this antibody binds the C-terminal substrate-binding domain (SBD) of the human membrane heat shock protein mHsp70 with an affinity of 3nM. The binding characterization of this antibody was done using ELISA. This antibody can detect aa 473–504 fused to domain III of HSA in a western blot assay (PMID: 20556545). The Fab version of this antibody binds mHsp70 with an affinity of 35 nM. The fab version can successfully identify membrane-associated Hsp70 on tumor cell lines both in immunofluorescence staining and flow cytometry (PMID: 20123884). The original mouse antibody cmHsp70.1 can selectively induce antibody-dependent cellular cytotoxicity (ADCC) of membrane Hsp70+ mouse tumor cells by unstimulated mouse spleen cells. Tumor killing could be further enhanced by activating the effector cells with TKD and IL-2 (PMID: 21187371). Cy5.5-conjugated cmHsp70.1 was capable of being endocytosed and accumulated in the tumor and was used for near-infrared fluorescence imaging of tumors. The tumor-selective internalization of mAb cmHsp70.1 might enable targeted uptake of toxins or radionuclides into Hsp70 membrane-positive tumors (PMID: 20406322). cmHsp70.1 antibody-conjugated gold nanoparticles were used in the real time imaging of small tumors (PMID: 26392771). This antibody was also used in the immunohistochemical and flow cytometric analysis of mHsp70 expressed on glioblastoma multiforme tumors (PMID: 29177668).</p>
Formulation:	PBS with 0.02% Proclin 300.
Concentration:	lot specific
Conjugation:	Unconjugated
Storage:	Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.
Database Link:	P0DMV8
Synonyms:	Heat shock 70 kDa protein 1; Heat shock 70 kDa protein 1A; HSP70-1; HSP70.1; HSP72; HSPA1A; HSX70; mHsp70