

# HSF1 Antibody

Purified Mouse Monoclonal Antibody

Catalog # AO1966a

## Product Information

---

<b>Application</b>	WB, IHC, ICC, E
<b>Primary Accession</b>	<a href="#">Q00613</a>
<b>Reactivity</b>	Human
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal
<b>Clone Names</b>	4D5F4
<b>Isotype</b>	IgG2b
<b>Calculated MW</b>	57260
<b>Description</b>	The product of this gene is a heat-shock transcription factor. Transcription of heat-shock genes is rapidly induced after temperature stress. Hsp90, by itself and/or associated with multichaperone complexes, is a major repressor of this gene.
<b>Immunogen</b>	Purified recombinant fragment of human HSF1 (AA: 256-359) expressed in E. Coli.
<b>Formulation</b>	Purified antibody in PBS with 0.05% sodium azide.

## Additional Information

---

<b>Gene ID</b>	3297
<b>Other Names</b>	Heat shock factor protein 1, HSF 1, Heat shock transcription factor 1, HSTF 1, HSF1, HSTF1
<b>Dilution</b>	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 ICC~~N/A E~~1/10000
<b>Storage</b>	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
<b>Precautions</b>	HSF1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

---

<b>Name</b>	HSF1 ( <a href="#">HGNC:5224</a> )
<b>Synonyms</b>	HSTF1
<b>Function</b>	Functions as a stress-inducible and DNA-binding transcription factor that

plays a central role in the transcriptional activation of the heat shock response (HSR), leading to the expression of a large class of molecular chaperones, heat shock proteins (HSPs), that protect cells from cellular insult damage (PubMed:[11447121](#), PubMed:[12659875](#), PubMed:[12917326](#), PubMed:[15016915](#), PubMed:[18451878](#), PubMed:[1871105](#), PubMed:[1986252](#), PubMed:[25963659](#), PubMed:[26754925](#), PubMed:[7623826](#), PubMed:[7760831](#), PubMed:[8940068](#), PubMed:[8946918](#), PubMed:[9121459](#), PubMed:[9341107](#), PubMed:[9499401](#), PubMed:[9535852](#), PubMed:[9727490](#)). In unstressed cells, is present in a HSP90-containing multichaperone complex that maintains it in a non-DNA-binding inactivated monomeric form (PubMed:[11583998](#), PubMed:[16278218](#), PubMed:[9727490](#)). Upon exposure to heat and other stress stimuli, undergoes homotrimerization and activates HSP gene transcription through binding to site-specific heat shock elements (HSEs) present in the promoter regions of HSP genes (PubMed:[10359787](#), PubMed:[11583998](#), PubMed:[12659875](#), PubMed:[16278218](#), PubMed:[1871105](#), PubMed:[1986252](#), PubMed:[25963659](#), PubMed:[26754925](#), PubMed:[7623826](#), PubMed:[7935471](#), PubMed:[8455624](#), PubMed:[8940068](#), PubMed:[9499401](#), PubMed:[9727490](#)). Upon heat shock stress, forms a chromatin-associated complex with TTC5/STRAP and p300/EP300 to stimulate HSR transcription, therefore increasing cell survival (PubMed:[18451878](#)). Activation is reversible, and during the attenuation and recovery phase period of the HSR, returns to its unactivated form (PubMed:[11583998](#), PubMed:[16278218](#)). Binds to inverted 5'-NGAAN-3' pentamer DNA sequences (PubMed:[1986252](#), PubMed:[26727489](#)). Binds to chromatin at heat shock gene promoters (PubMed:[25963659](#)). Activates transcription of transcription factor FOXR1 which in turn activates transcription of the heat shock chaperones HSPA1A and HSPA6 and the antioxidant NADPH-dependent reductase DHRS2 (PubMed:[34723967](#)). Also serves several other functions independently of its transcriptional activity. Involved in the repression of Ras-induced transcriptional activation of the c-fos gene in heat-stressed cells (PubMed:[9341107](#)). Positively regulates pre-mRNA 3'-end processing and polyadenylation of HSP70 mRNA upon heat-stressed cells in a symplekin (SYMPK)-dependent manner (PubMed:[14707147](#)). Plays a role in nuclear export of stress- induced HSP70 mRNA (PubMed:[17897941](#)). Plays a role in the regulation of mitotic progression (PubMed:[18794143](#)). Also plays a role as a negative regulator of non-homologous end joining (NHEJ) repair activity in a DNA damage-dependent manner (PubMed:[26359349](#)). Involved in stress-induced cancer cell proliferation in a IER5-dependent manner (PubMed:[26754925](#)).

## Cellular Location

Nucleus. Cytoplasm. Nucleus, nucleoplasm. Cytoplasm, perinuclear region. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Chromosome, centromere, kinetochore  
 Note=The monomeric form is cytoplasmic in unstressed cells (PubMed:[26159920](#), PubMed:[8455624](#)). Predominantly nuclear protein in both unstressed and heat shocked cells (PubMed:[10359787](#), PubMed:[10413683](#)). Translocates in the nucleus upon heat shock (PubMed:[8455624](#)). Nucleocytoplasmic shuttling protein (PubMed:[26159920](#)). Colocalizes with IER5 in the nucleus (PubMed:[27354066](#)). Colocalizes with BAG3 to the nucleus upon heat stress (PubMed:[26159920](#), PubMed:[8455624](#)). Localizes in subnuclear granules called nuclear stress bodies (nSBs) upon heat shock (PubMed:[10359787](#), PubMed:[10747973](#), PubMed:[11447121](#), PubMed:[11514557](#), PubMed:[19229036](#), PubMed:[24581496](#), PubMed:[25963659](#)). Colocalizes with SYMPK and SUMO1 in nSBs upon heat shock (PubMed:[10359787](#), PubMed:[11447121](#), PubMed:[11514557](#), PubMed:[12665592](#), PubMed:[14707147](#)) Colocalizes with PRKACA/PKA in the nucleus and nSBs upon heat shock (PubMed:[21085490](#)). Relocalizes from the nucleus to the cytoplasm during the attenuation and recovery phase period of the heat shock response (PubMed:[26159920](#)). Translocates in the cytoplasm in a YWHAE- and XPO1/CRM1-dependent manner (PubMed:[12917326](#)).

Together with histone H2AX, redistributed in discrete nuclear DNA damage-induced foci after ionizing radiation (IR) (PubMed:26359349). Colocalizes with calcium- responsive transactivator SS18L1 at kinetochore region on the mitotic chromosomes (PubMed:18794143). Colocalizes with gamma tubulin at centrosome (PubMed:18794143). Localizes at spindle pole in metaphase (PubMed:18794143). Colocalizes with PLK1 at spindle poles during prometaphase (PubMed:18794143).

## Background

Calmegin is a testis-specific endoplasmic reticulum chaperone protein. CLGN may play a role in spermatogenesis and infertility. ; ;

## References

1. Cell. 2012 Aug 3;150(3):549-62.2. Cancer Lett. 2012 May 28;318(2):145-53.

## Images

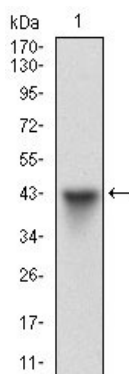


Figure 1: Western blot analysis using HSF1 mAb against human HSF1 (AA: 256-359) recombinant protein. (Expected MW is 36.5 kDa)

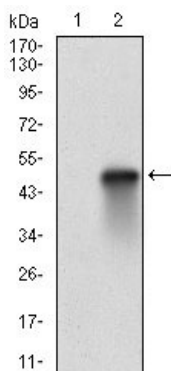


Figure 2: Western blot analysis using HSF1 mAb against HEK293 (1) and HSF1 (AA: 256-359)-hIgGFc transfected HEK293 (2) cell lysate.

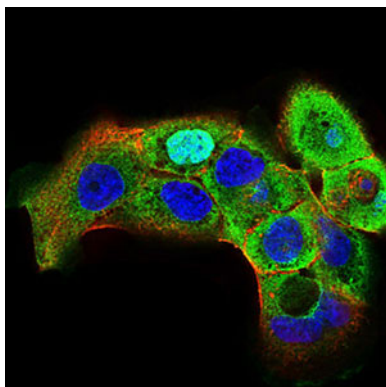
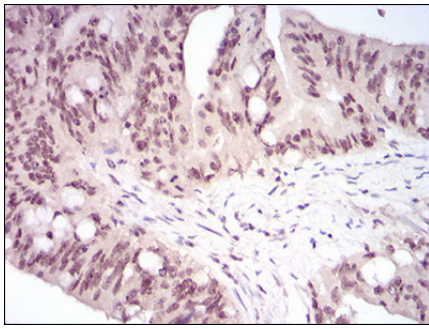


Figure 3: Immunofluorescence analysis of A431 cells using HSF1 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)

Figure 4: Immunohistochemical analysis of paraffin-embedded rectum cancer tissues using HSF1 mouse mAb with DAB staining.



Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.