

**Anti-HSF1 Rabbit Monoclonal Antibody**  
**Catalog # ABO15574****Specification****Anti-HSF1 Rabbit Monoclonal Antibody - Product Information**

Application	WB, IHC, IF, ICC, IP, FC
Primary Accession	<a href="#">Q00613</a>
Host	Rabbit
Isotype	IgG
Reactivity	Human
Clonality	Monoclonal
Format	Liquid

**Description**

Anti-HSF1 Rabbit Monoclonal Antibody . Tested in WB, IHC, ICC/IF, IP, Flow Cytometry applications. This antibody reacts with Human.

**Anti-HSF1 Rabbit Monoclonal Antibody - Additional Information**

**Gene ID** 3297

**Other Names**

Heat shock factor protein 1, HSF 1, Heat shock transcription factor 1  
{ECO:0000312|HGNC:HGNC:5224}, HSTF 1, HSF1 ([http://www.genenames.org/cgi-bin/gene\\_symbol\\_report?hgnc\\_id=5224](http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=5224))  
target="\_blank">HGNC:5224</a>), HSTF1

**Calculated MW**

80 kDa KDa

**Application Details**

WB 1:500-1:2000<br>IHC 1:50-1:200<br>ICC/IF 1:50-1:200<br>IP 1:50<br>FC 1:50

**Contents**

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

**Immunogen**

A synthesized peptide derived from human HSF1

**Purification**

Affinity-chromatography

Storage

**Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.**

**Anti-HSF1 Rabbit Monoclonal Antibody - Protein Information**

**Name** HSF1 ([HGNC:5224](#))

**Synonyms** HSTF1

### Function

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](http://www.uniprot.org/citations/11447121))

(PubMed:[12659875](http://www.uniprot.org/citations/12659875))

(PubMed:[12917326](http://www.uniprot.org/citations/12917326))

(PubMed:[15016915](http://www.uniprot.org/citations/15016915))

(PubMed:[18451878](http://www.uniprot.org/citations/18451878))

(PubMed:[1871105](http://www.uniprot.org/citations/1871105))

(PubMed:[1986252](http://www.uniprot.org/citations/1986252))

(PubMed:[25963659](http://www.uniprot.org/citations/25963659))

(PubMed:[26754925](http://www.uniprot.org/citations/26754925))

(PubMed:[7623826](http://www.uniprot.org/citations/7623826))

(PubMed:[7760831](http://www.uniprot.org/citations/7760831))

(PubMed:[8940068](http://www.uniprot.org/citations/8940068))

(PubMed:[8946918](http://www.uniprot.org/citations/8946918))

(PubMed:[9121459](http://www.uniprot.org/citations/9121459))

(PubMed:[9341107](http://www.uniprot.org/citations/9341107))

(PubMed:[9499401](http://www.uniprot.org/citations/9499401))

(PubMed:[9535852](http://www.uniprot.org/citations/9535852))

(PubMed:[9727490](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/11583998)),

(PubMed:[16278218](http://www.uniprot.org/citations/16278218)),

(PubMed:[9727490](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/10359787))

(PubMed:[11583998](http://www.uniprot.org/citations/11583998))

(PubMed:[12659875](http://www.uniprot.org/citations/12659875))

(PubMed:[16278218](http://www.uniprot.org/citations/16278218))

(PubMed:[1871105](http://www.uniprot.org/citations/1871105))

(PubMed:[1986252](http://www.uniprot.org/citations/1986252))

(PubMed:[25963659](http://www.uniprot.org/citations/25963659))

(PubMed:[26754925](http://www.uniprot.org/citations/26754925))

(PubMed:[7623826](http://www.uniprot.org/citations/7623826))

(PubMed:[7935471](http://www.uniprot.org/citations/7935471))

(PubMed:[8455624](http://www.uniprot.org/citations/8455624))

(PubMed:[8940068](http://www.uniprot.org/citations/8940068))

(PubMed:[9499401](http://www.uniprot.org/citations/9499401))

(PubMed:[9727490](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/18451878)).

Activation is reversible, and during the attenuation and recovery phase period of the HSR, returns to its unactivated form (PubMed:[11583998](http://www.uniprot.org/citations/11583998))

(PubMed:[16278218](http://www.uniprot.org/citations/16278218))

(PubMed:[16278218](http://www.uniprot.org/citations/16278218)). Binds to inverted 5'-NGAAN-3' pentamer DNA sequences

(PubMed:[1986252](http://www.uniprot.org/citations/1986252)),

(PubMed:[26727489](http://www.uniprot.org/citations/26727489)). Binds to chromatin at heat shock gene promoters (PubMed:[18451878](http://www.uniprot.org/citations/18451878))

href="http://www.uniprot.org/citations/25963659" target="\_blank">25963659</a>). 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:<a href="http://www.uniprot.org/citations/34723967" target="\_blank">34723967</a>). 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:<a href="http://www.uniprot.org/citations/9341107" target="\_blank">9341107</a>). Positively regulates pre-mRNA 3'-end processing and polyadenylation of HSP70 mRNA upon heat-stressed cells in a symplekin (SYMPK)-dependent manner (PubMed:<a href="http://www.uniprot.org/citations/14707147" target="\_blank">14707147</a>). Plays a role in nuclear export of stress- induced HSP70 mRNA (PubMed:<a href="http://www.uniprot.org/citations/17897941" target="\_blank">17897941</a>). Plays a role in the regulation of mitotic progression (PubMed:<a href="http://www.uniprot.org/citations/18794143" target="\_blank">18794143</a>). Also plays a role as a negative regulator of non-homologous end joining (NHEJ) repair activity in a DNA damage-dependent manner (PubMed:<a href="http://www.uniprot.org/citations/26359349" target="\_blank">26359349</a>). Involved in stress-induced cancer cell proliferation in a IER5-dependent manner (PubMed:<a href="http://www.uniprot.org/citations/26754925" target="\_blank">26754925</a>).

### 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).

### Anti-HSF1 Rabbit Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Anti-HSF1 Rabbit Monoclonal Antibody - Images

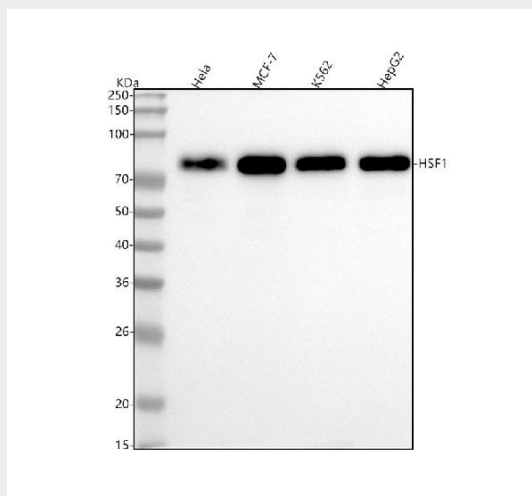


Figure 1. Western blot analysis of HSF1 using anti-HSF1 antibody (M00250-1).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: human HeLa whole cell lysates,

Lane 2: human MCF-7 whole cell lysates,

Lane 3: human K562 whole cell lysates,

Lane 4: human HepG2 whole cell lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HSF1 antigen affinity purified monoclonal antibody (Catalog # M00250-1) at 1:500 overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for HSF1 at approximately 80 kDa. The expected band size for HSF1 is at 57 kDa.

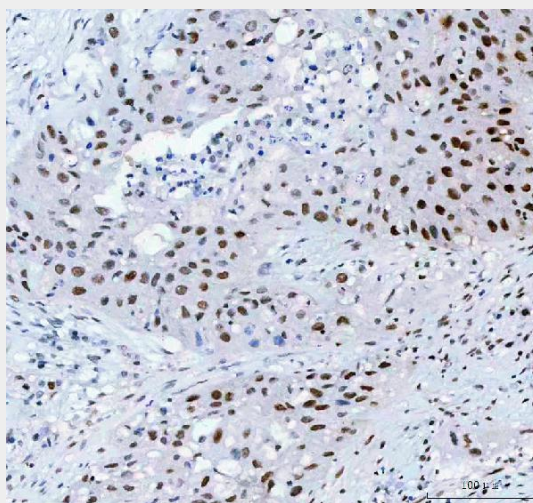


Figure 2. IHC analysis of HSF1 using anti-HSF1 antibody (M00250-1).

HSF1 was detected in a paraffin-embedded section of human bladder cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:50

rabbit anti-HSF1 Antibody (M00250-1) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

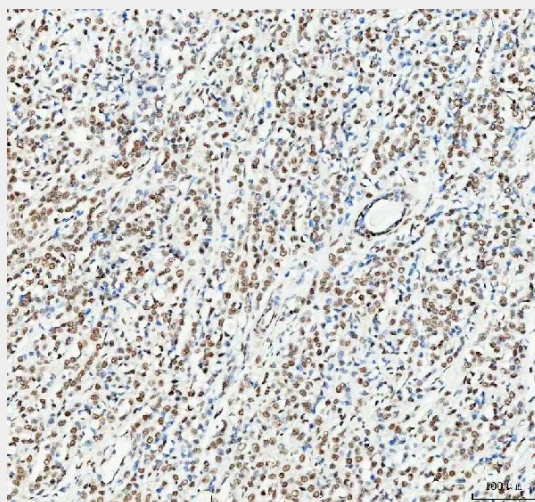


Figure 3. IHC analysis of HSF1 using anti-HSF1 antibody (M00250-1). HSF1 was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:50 rabbit anti-HSF1 Antibody (M00250-1) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.