

## HSF1 (phospho Ser303) Polyclonal Antibody Catalog # AP67065

### Specification

---

#### HSF1 (phospho Ser303) Polyclonal Antibody - Product Information

Application	WB
Primary Accession	<a href="#">Q00613</a>
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal

#### HSF1 (phospho Ser303) Polyclonal Antibody - Additional Information

Gene ID 3297

#### Other Names

HSF1; HSTF1; Heat shock factor protein 1; HSF 1; Heat shock transcription factor 1; HSTF 1

#### Dilution

WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/20000. Not yet tested in other applications.

#### Format

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

#### Storage Conditions

-20°C

#### HSF1 (phospho Ser303) Polyclonal 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))

target="\_blank">11447121</a>, PubMed: [12659875](http://www.uniprot.org/citations/12659875) target="\_blank">12659875</a>, PubMed: [12917326](http://www.uniprot.org/citations/12917326) target="\_blank">12917326</a>, PubMed: [15016915](http://www.uniprot.org/citations/15016915) target="\_blank">15016915</a>, PubMed: [18451878](http://www.uniprot.org/citations/18451878) target="\_blank">18451878</a>, PubMed: [1871105](http://www.uniprot.org/citations/1871105) target="\_blank">1871105</a>, PubMed: [1986252](http://www.uniprot.org/citations/1986252) target="\_blank">1986252</a>, PubMed: [25963659](http://www.uniprot.org/citations/25963659) target="\_blank">25963659</a>, PubMed: [26754925](http://www.uniprot.org/citations/26754925) target="\_blank">26754925</a>, PubMed: [7623826](http://www.uniprot.org/citations/7623826)

target="\_blank">7623826</a>, PubMed:<a href="http://www.uniprot.org/citations/7760831" target="\_blank">7760831</a>, PubMed:<a href="http://www.uniprot.org/citations/8940068" target="\_blank">8940068</a>, PubMed:<a href="http://www.uniprot.org/citations/8946918" target="\_blank">8946918</a>, PubMed:<a href="http://www.uniprot.org/citations/9121459" target="\_blank">9121459</a>, PubMed:<a href="http://www.uniprot.org/citations/9341107" target="\_blank">9341107</a>, PubMed:<a href="http://www.uniprot.org/citations/9499401" target="\_blank">9499401</a>, PubMed:<a href="http://www.uniprot.org/citations/9535852" target="\_blank">9535852</a>, PubMed:<a href="http://www.uniprot.org/citations/9727490" target="\_blank">9727490</a>). In unstressed cells, is present in a HSP90-containing multichaperone complex that maintains it in a non-DNA-binding inactivated monomeric form (PubMed:<a href="http://www.uniprot.org/citations/11583998" target="\_blank">11583998</a>, PubMed:<a href="http://www.uniprot.org/citations/16278218" target="\_blank">16278218</a>, PubMed:<a href="http://www.uniprot.org/citations/9727490" target="\_blank">9727490</a>). 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:<a href="http://www.uniprot.org/citations/10359787" target="\_blank">10359787</a>, PubMed:<a href="http://www.uniprot.org/citations/11583998" target="\_blank">11583998</a>, PubMed:<a href="http://www.uniprot.org/citations/12659875" target="\_blank">12659875</a>, PubMed:<a href="http://www.uniprot.org/citations/16278218" target="\_blank">16278218</a>, PubMed:<a href="http://www.uniprot.org/citations/1871105" target="\_blank">1871105</a>, PubMed:<a href="http://www.uniprot.org/citations/1986252" target="\_blank">1986252</a>, PubMed:<a href="http://www.uniprot.org/citations/25963659" target="\_blank">25963659</a>, PubMed:<a href="http://www.uniprot.org/citations/26754925" target="\_blank">26754925</a>, PubMed:<a href="http://www.uniprot.org/citations/7623826" target="\_blank">7623826</a>, PubMed:<a href="http://www.uniprot.org/citations/7935471" target="\_blank">7935471</a>, PubMed:<a href="http://www.uniprot.org/citations/8455624" target="\_blank">8455624</a>, PubMed:<a href="http://www.uniprot.org/citations/8940068" target="\_blank">8940068</a>, PubMed:<a href="http://www.uniprot.org/citations/9499401" target="\_blank">9499401</a>, PubMed:<a href="http://www.uniprot.org/citations/9727490" target="\_blank">9727490</a>). Upon heat shock stress, forms a chromatin-associated complex with TTC5/STRAP and p300/EP300 to stimulate HSR transcription, therefore increasing cell survival (PubMed:<a href="http://www.uniprot.org/citations/18451878" target="\_blank">18451878</a>). Activation is reversible, and during the attenuation and recovery phase period of the HSR, returns to its unactivated form (PubMed:<a href="http://www.uniprot.org/citations/11583998" target="\_blank">11583998</a>, PubMed:<a href="http://www.uniprot.org/citations/16278218" target="\_blank">16278218</a>). Binds to inverted 5'-NGAAN-3' pentamer DNA sequences (PubMed:<a href="http://www.uniprot.org/citations/1986252" target="\_blank">1986252</a>, PubMed:<a href="http://www.uniprot.org/citations/26727489" target="\_blank">26727489</a>). Binds to chromatin at heat shock gene promoters (PubMed:<a 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>).

target="\_blank">26754925</a>).

### Cellular Location

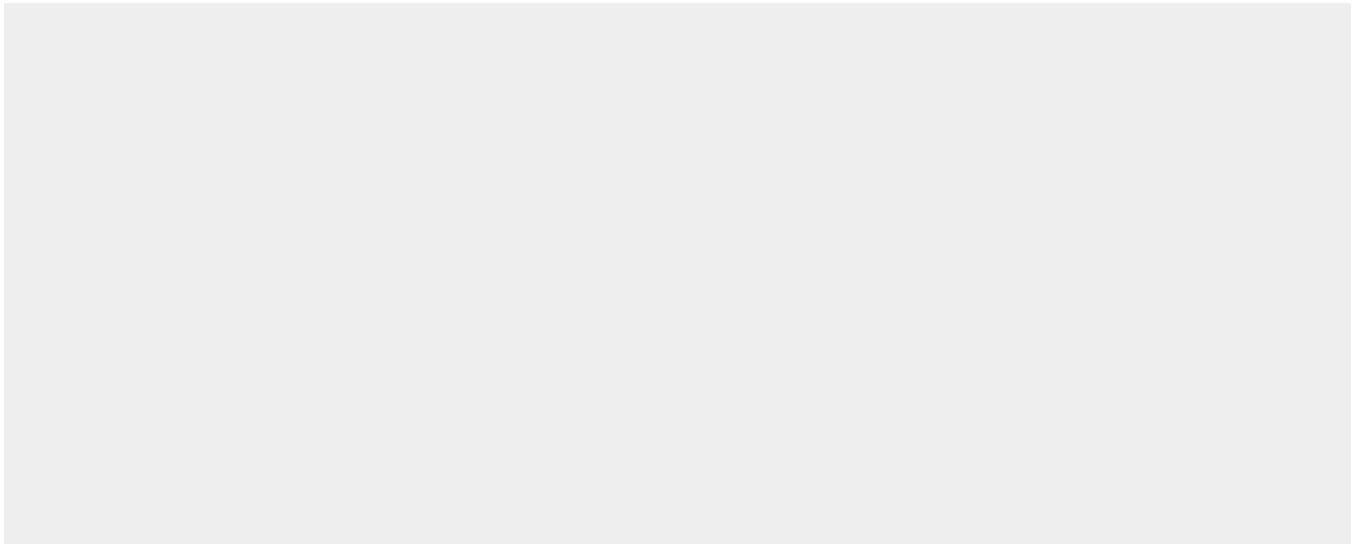
Nucleus. Cytoplasm. Nucleus, nucleoplasm. Cytoplasm, perinuclear region. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Chromosome, centromere, kinetochore Note=The monomeric form is cytoplasmic in unstressed cells (PubMed:26159920, PubMed:8455624). 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).

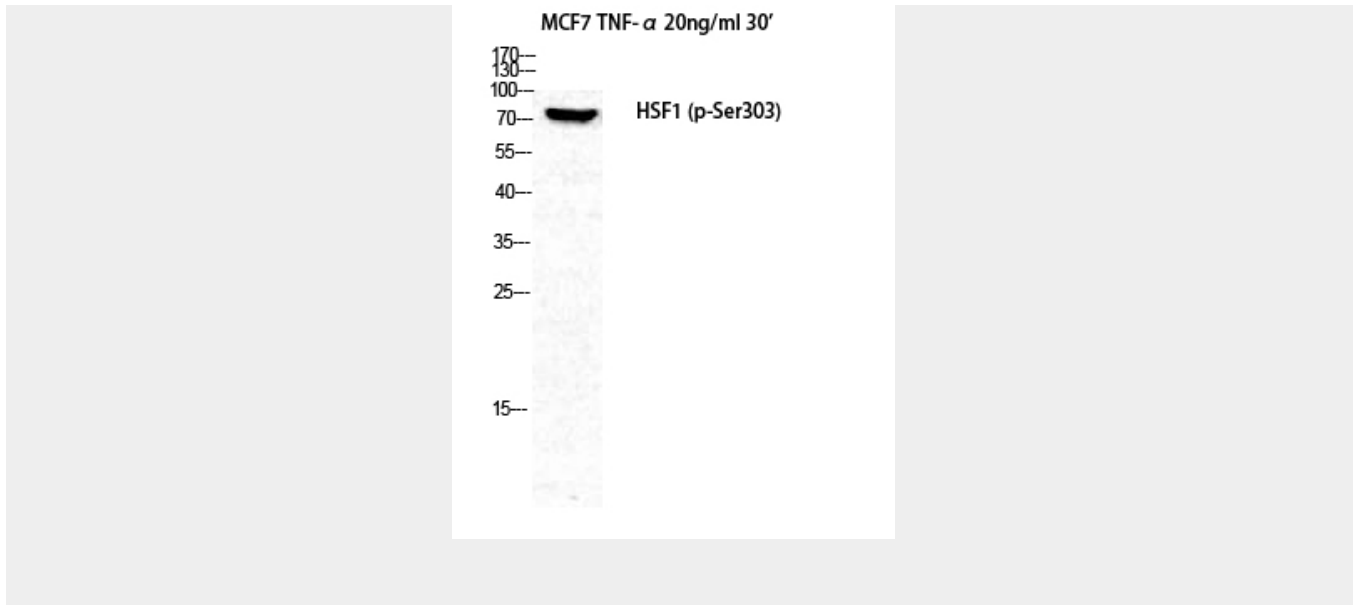
### HSF1 (phospho Ser303) Polyclonal Antibody - Protocols

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](#)

### HSF1 (phospho Ser303) Polyclonal Antibody - Images





### HSF1 (phospho Ser303) Polyclonal Antibody - Background

Function 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 insults' damage (PubMed:1871105, PubMed:11447121, PubMed:1986252, PubMed:7760831, PubMed:7623826, PubMed:8946918, PubMed:8940068, PubMed:9341107, PubMed:9121459, PubMed:9727490, PubMed:9499401, PubMed:9535852, PubMed:12659875, PubMed:12917326, PubMed:15016915, PubMed:25963659, PubMed:26754925). In unstressed cells, is present in a HSP90-containing multichaperone complex that maintains it in a non-DNA-binding inactivated monomeric form (PubMed:9727490, PubMed:11583998, PubMed:16278218). 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:1871105, PubMed:1986252, PubMed:8455624, PubMed:7935471, PubMed:7623826, PubMed:8940068, PubMed:9727490, PubMed:9499401, PubMed:10359787, PubMed:11583998, PubMed:12659875, PubMed:16278218, PubMed:25963659, PubMed:26754925). 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). Plays also 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). Plays also 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).