

HSF1 Antibody (clone 10H8)
Rat Monoclonal Antibody
Catalog # ALS15316**Specification**

HSF1 Antibody (clone 10H8) - Product Information

Application	IF, IHC
Primary Accession	Q00613
Reactivity	Human, Mouse, Rat, Rabbit, Hamster, Monkey, Bovine, Guinea Pig
Host	Rat
Clonality	Monoclonal
Calculated MW	57kDa KDa

HSF1 Antibody (clone 10H8) - Additional Information**Gene ID** 3297**Other Names**

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

Target/Specificity

Detects an ~85kDa protein in unstressed cell lysates, and an ~95kDa protein in heat shocked cell lysates, corresponding to the molecular mass of inactive and active forms of HSF1 on SDS-PAGE immunoblots.

Reconstitution & Storage

Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

Precautions

HSF1 Antibody (clone 10H8) is for research use only and not for use in diagnostic or therapeutic procedures.

HSF1 Antibody (clone 10H8) - 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: [1871105](http://www.uniprot.org/citations/1871105), PubMed: [11447121](http://www.uniprot.org/citations/11447121), PubMed: [1986252](http://www.uniprot.org/citations/1986252), PubMed: [7760831](http://www.uniprot.org/citations/7760831), PubMed: [7623826](http://www.uniprot.org/citations/7623826))

[target="_blank">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, PubMed:18451878). 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). 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:17897941).

<http://www.uniprot.org/citations/18794143> target="_blank">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

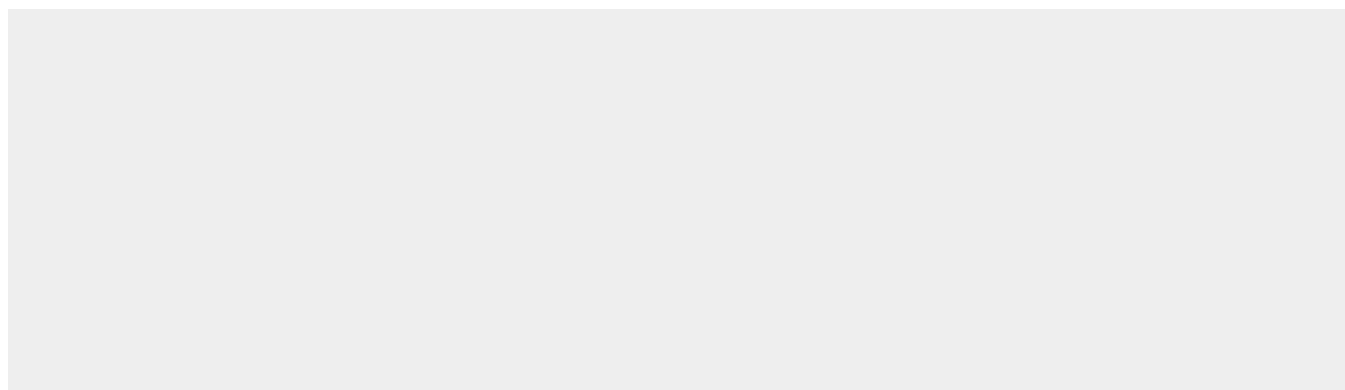
Nucleus. Cytoplasm. Nucleus, nucleoplasm. Cytoplasm, perinuclear region. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Chromosome, centromere, kinetochore Note=The monomeric form is cytoplasmic in unstressed cells (PubMed:8455624, PubMed:26159920). Predominantly nuclear protein in both unstressed and heat shocked cells (PubMed:10413683, PubMed:10359787). 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:8455624, PubMed:26159920). Localizes in subnuclear granules called nuclear stress bodies (nSBs) upon heat shock (PubMed:11447121, PubMed:11514557, PubMed:10359787, PubMed:25963659, PubMed:10747973, PubMed:24581496, PubMed:19229036). Colocalizes with SYMPK and SUMO1 in nSBs upon heat shock (PubMed:11447121, PubMed:12665592, PubMed:11514557, PubMed:14707147, PubMed:10359787) 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).

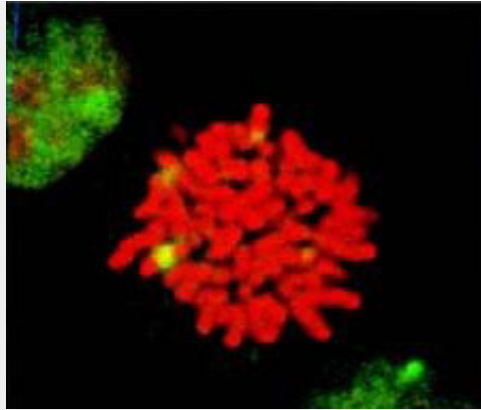
HSF1 Antibody (clone 10H8) - Protocols

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

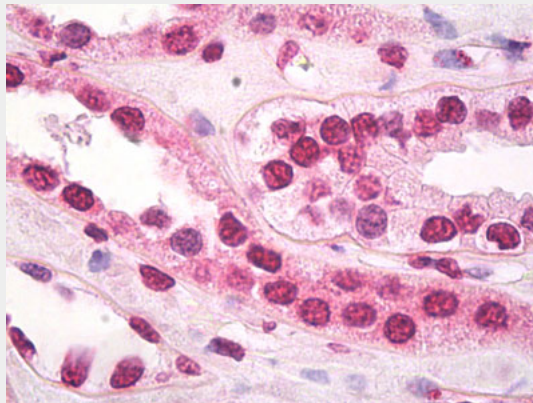
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

HSF1 Antibody (clone 10H8) - Images

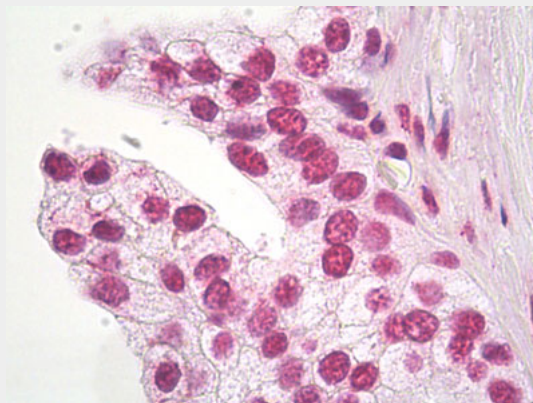




HSF1 granules present in heat-shocked mitotic cells (green) detected by IF in mitotic heat...



Anti-HSF1 antibody IHC of human kidney.



Anti-HSF1 antibody IHC of human prostate.

HSF1 Antibody (clone 10H8) - Background

DNA-binding protein that specifically binds heat shock promoter elements (HSE) and activates transcription. In higher eukaryotes, HSF is unable to bind to the HSE unless the cells are heat shocked.

HSF1 Antibody (clone 10H8) - References

Rabindran S.K.,et al.Proc. Natl. Acad. Sci. U.S.A. 88:6906-6910(1991).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Kalnina N.,et al.Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.
Nusbaum C.,et al.Nature 439:331-335(2006).

Schuetz T.J., et al. Proc. Natl. Acad. Sci. U.S.A. 88:6911-6915(1991).