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KD-Validated Anti-Heat shock transcription factor 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1240

Specification

KD-Validated Anti-Heat shock transcription factor 1 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	Q00613
Reactivity	**Human**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 57 kDa , observed, 80 kDa KDa**
Gene Name	**HSF1**
Aliases	**HSF1; Heat Shock Transcription Factor 1; HSTF1; Heat Shock Factor Protein 1; HSTF; HSF**
Immunogen	**A synthesized peptide derived from human HSF1**

KD-Validated Anti-Heat shock transcription factor 1 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 (HGNC:5224), HSTF1

KD-Validated Anti-Heat shock transcription factor 1 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, PubMed:12659875, PubMed:12917326, PubMed:15016915, PubMed:18451878, PubMed:1871105, PubMed:<a href="http://www.uniprot.org/citations/1986252"

target="_blank">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).

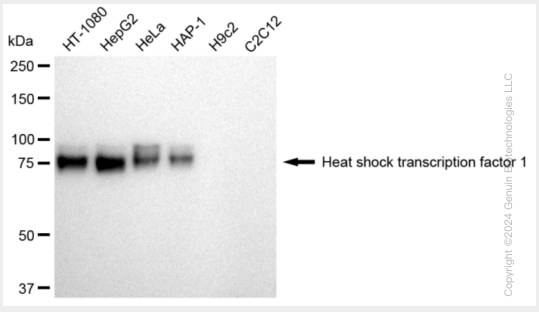
Cellular Location
Nucleus. Cytoplasm. Nucleus, nucleoplasm. Cytoplasm, perinuclear region. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Chromosome, centromere, kinetochore Note=The monomeric form is cytoplasmic in unstressed cells (PubMed:26159920,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

KD-Validated Anti-Heat shock transcription factor 1 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 Cytomety
- Cell Culture

KD-Validated Anti-Heat shock transcription factor 1 Rabbit Monoclonal Antibody - Images



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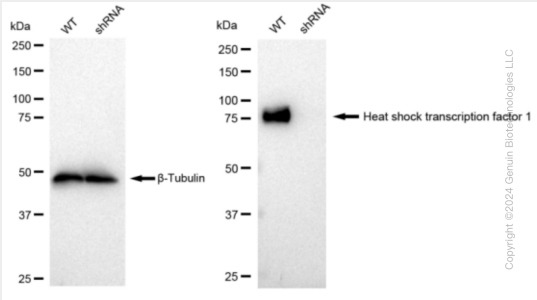
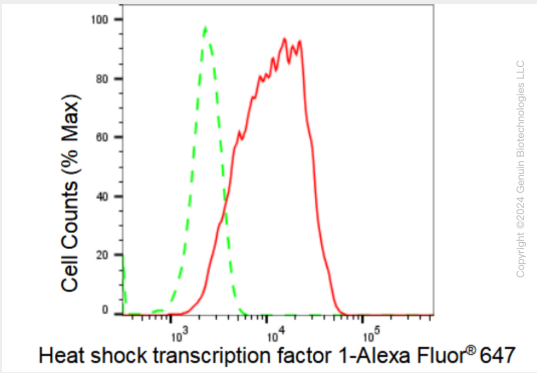
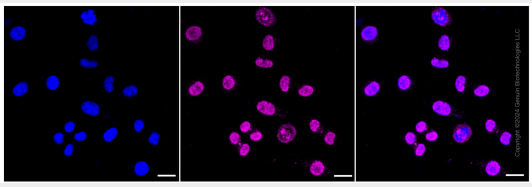
Western blotting analysis using anti-Heat shock transcription factor 1 antibody (Cat#AGI1240). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Heat shock transcription factor 1 antibody (Cat#AGI1240, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-Heat shock transcription factor 1 antibody (Cat#AGI1240). Heat shock transcription factor 1 expression in wild type (WT) and heat shock transcription factor 1 shRNA knockdown (KD) 293T cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-Heat shock transcription factor 1 antibody (Cat#AGI1240, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of Heat shock transcription factor 1 expression in HepG2 cells using Heat shock transcription factor 1 antibody (Cat#AGI1240, 1:2,000). Green, isotype control; red, Heat shock transcription factor 1.



Immunocytochemical staining of HepG2 cells with Heat shock transcription factor 1 antibody (Cat#AGI1240, 1:1,000). Nuclei were stained blue with DAPI; Heat shock transcription factor 1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.