

# Anti-Phospho-HSF1 (S326) Rabbit Monoclonal Antibody

Catalog # ABO13126

## Product Information

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| <b>Application</b>       | WB, IHC, IF, ICC, IP, FC                                                                                                                           |
| <b>Primary Accession</b> | <a href="#">Q00613</a>                                                                                                                             |
| <b>Host</b>              | Rabbit                                                                                                                                             |
| <b>Isotype</b>           | Rabbit IgG                                                                                                                                         |
| <b>Reactivity</b>        | Human                                                                                                                                              |
| <b>Clonality</b>         | Monoclonal                                                                                                                                         |
| <b>Format</b>            | Liquid                                                                                                                                             |
| <b>Description</b>       | Anti-Phospho-HSF1 (S326) Rabbit Monoclonal Antibody . Tested in WB, IHC, ICC/IF, IP, Flow Cytometry applications. This antibody reacts with Human. |

## Additional Information

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| <b>Gene ID</b>                  | 3297                                                                                                                                                             |
| <b>Other Names</b>              | Heat shock factor protein 1, HSF 1, Heat shock transcription factor 1 {ECO:0000312 HGNC:HGNC:5224}, HSTF 1, HSF1 ( <a href="#">HGNC:5224</a> ), HSTF1            |
| <b>Calculated MW</b>            | 57260                                                                                                                                                            |
| <b>Application Details</b>      | 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                                                                                     |
| <b>Subcellular Localization</b> | Cytoplasm. Nucleus. Cytoplasmic during normal growth. On activation, translocates to nuclear stress granules. Colocalizes with SUMO1 in nuclear stress granules. |
| <b>Source</b>                   | Eukaryota                                                                                                                                                        |
| <b>Contents</b>                 | Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.                                              |
| <b>Clone Names</b>              | Clone: BHI-8                                                                                                                                                     |
| <b>Immunogen</b>                | A synthesized peptide derived from human Phospho-HSF1 (S326)                                                                                                     |
| <b>Purification</b>             | Affinity-chromatography                                                                                                                                          |
| <b>Storage</b>                  | 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.                       |

## Protein Information

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| <b>Name</b>              | HSF1 ( <a href="#">HGNC:5224</a> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Synonyms</b>          | HSTF1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Function</b>          | <p>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:<a href="#">11447121</a>, PubMed:<a href="#">12659875</a>, PubMed:<a href="#">12917326</a>, PubMed:<a href="#">15016915</a>, PubMed:<a href="#">18451878</a>, PubMed:<a href="#">1871105</a>, PubMed:<a href="#">1986252</a>, PubMed:<a href="#">25963659</a>, PubMed:<a href="#">26754925</a>, PubMed:<a href="#">7623826</a>, PubMed:<a href="#">7760831</a>, PubMed:<a href="#">8940068</a>, PubMed:<a href="#">8946918</a>, PubMed:<a href="#">9121459</a>, PubMed:<a href="#">9341107</a>, PubMed:<a href="#">9499401</a>, PubMed:<a href="#">9535852</a>, PubMed:<a href="#">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="#">11583998</a>, PubMed:<a href="#">16278218</a>, PubMed:<a href="#">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="#">10359787</a>, PubMed:<a href="#">11583998</a>, PubMed:<a href="#">12659875</a>, PubMed:<a href="#">16278218</a>, PubMed:<a href="#">1871105</a>, PubMed:<a href="#">1986252</a>, PubMed:<a href="#">25963659</a>, PubMed:<a href="#">26754925</a>, PubMed:<a href="#">7623826</a>, PubMed:<a href="#">7935471</a>, PubMed:<a href="#">8455624</a>, PubMed:<a href="#">8940068</a>, PubMed:<a href="#">9499401</a>, PubMed:<a href="#">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="#">18451878</a>). Activation is reversible, and during the attenuation and recovery phase period of the HSR, returns to its unactivated form (PubMed:<a href="#">11583998</a>, PubMed:<a href="#">16278218</a>). Binds to inverted 5'-NGAAN-3' pentamer DNA sequences (PubMed:<a href="#">1986252</a>, PubMed:<a href="#">26727489</a>). Binds to chromatin at heat shock gene promoters (PubMed:<a href="#">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="#">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="#">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="#">14707147</a>). Plays a role in nuclear export of stress- induced HSP70 mRNA (PubMed:<a href="#">17897941</a>). Plays a role in the regulation of mitotic progression (PubMed:<a href="#">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="#">26359349</a>). Involved in stress-induced cancer cell proliferation in a IER5-dependent manner (PubMed:<a href="#">26754925</a>).</p> |
| <b>Cellular Location</b> | <p>Nucleus. Cytoplasm. Nucleus, nucleoplasm. Cytoplasm, perinuclear region. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Chromosome, centromere, kinetochore<br/> Note=The monomeric form is cytoplasmic in unstressed cells (PubMed:<a href="#">26159920</a>, PubMed:<a href="#">8455624</a>). Predominantly nuclear protein in both unstressed and heat shocked cells (PubMed:<a href="#">10359787</a>, PubMed:<a href="#">10413683</a>). Translocates in the nucleus upon heat shock (PubMed:<a href="#">8455624</a>). Nucleocytoplasmic shuttling protein (PubMed:<a href="#">26159920</a>). Colocalizes with IER5 in the nucleus (PubMed:<a href="#">27354066</a>). Colocalizes with BAG3 to the nucleus upon heat stress (PubMed:<a href="#">26159920</a>, PubMed:<a href="#">8455624</a>). Localizes in subnuclear granules called nuclear stress bodies (nSBs) upon heat shock (PubMed:<a href="#">10359787</a>, PubMed:<a href="#">10747973</a>, PubMed:<a href="#">11447121</a>, PubMed:<a href="#">11514557</a>, PubMed:<a href="#">19229036</a>, PubMed:<a href="#">24581496</a>, PubMed:<a href="#">25963659</a>). Colocalizes with SYMPK and SUMO1 in nSBs upon heat shock (PubMed:<a href="#">10359787</a>, PubMed:<a href="#">11447121</a>, PubMed:<a href="#">11514557</a>,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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).

## Images

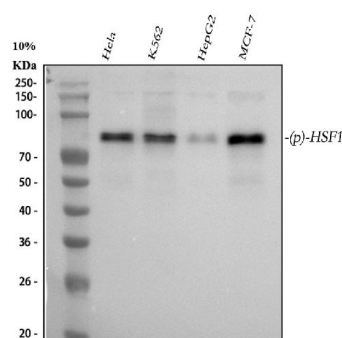


Figure 1. Western blot analysis of HSF1 using anti-HSF1 antibody (P00250).

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 K562 whole cell lysates,  
Lane 3: human HepG2 whole cell lysates,  
Lane 4: human MCF-7 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 # P00250) 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 1:1000 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.

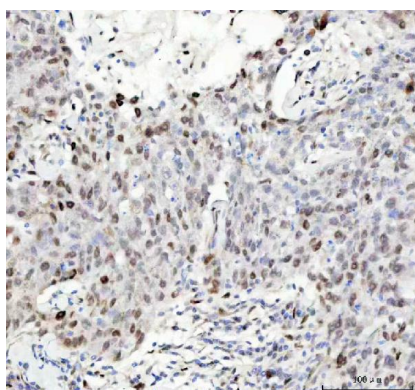
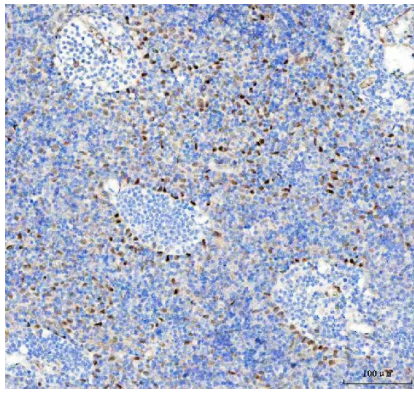


Figure 2. IHC analysis of HSF1 using anti-HSF1 antibody (P00250).

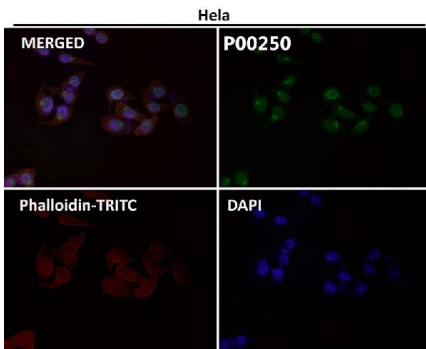
HSF1 was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:50 rabbit anti-HSF1 Antibody (P00250) 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 (P00250).

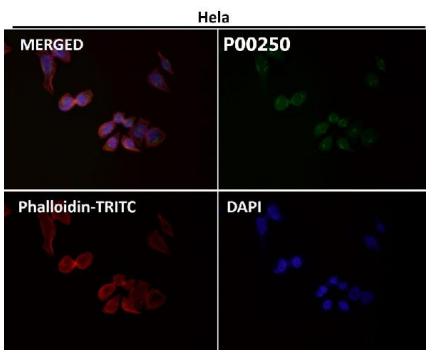
HSF1 was detected in a paraffin-embedded section of



human spleen 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 (P00250) 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.



Immunofluorescent analysis using the Antibody at 1:50 dilution.



Immunofluorescent analysis using the Antibody at 1:150 dilution.

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