abcam

ab61382

Anti-HSF1 antibody [10H8]

KO Validated

Key facts

Isotype	IgG1
Host species	Rat
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	10H8
Purification technique	Affinity purification Protein G
Specificity	Detects ~85kDa (unstressed cell lysates), and~95kDa (heat shocked cell lysates).
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells

Notes	ab18407 - Rat monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Hamster, Cow, Monkey
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Hamster, Cow, Monkey
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Hamster, Cow, Monkey
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Predicted

Species	Mouse, Rat, Rabbit, Guinea pig, Hamster, Cow, Monkey
Dilution info	-
Notes	-

Target data

See full target information HSF1

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: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). (Microbial infection) Plays a role in latent human immunodeficiency virus (HIV-1) transcriptional reactivation. Binds to the HIV-1 long terminal repeat promoter (LTR) to reactivate viral transcription by recruiting cellular transcriptional elongation factors, such as CDK9, CCNT1 and EP300.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

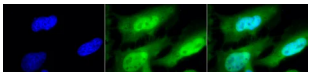
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

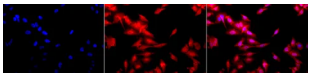
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-HSF1 antibody [10H8] (ab61382)

HSF1 Immunocytochemistry/ Immunofluorescence staining of Heat Shocked cervical cancer cells (HeLa) using rat Anti-HSF1 antibody

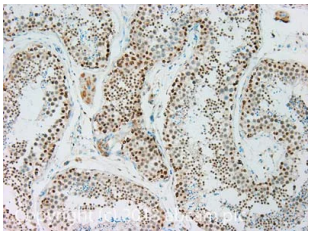
Immunocytochemistry/Immunofluorescence analysis of Heat Shocked cervical cancer cells (HeLa) using ab61382. Fixation: 2% Formaldehyde for 20 min at RT. ab61382 was used as the primary antibody at 1:100 for 12 hours at 4°C. Secondary Antibody: FITC Goat Anti-Rat (green) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Diffuse nuclear and cytoplasmic staining. Magnification: 100x. (Left) DAPI (blue) nuclear stain. (Middle) Anti-HSF1 Antibody. (Right) Composite. Heat Shocked at 42°C for 1h.



Immunocytochemistry/ Immunofluorescence - Anti-HSF1 antibody [10H8] (ab61382)

HSF1 Immunocytochemistry/ Immunofluorescence staining of Heat Shocked cervical cancer cells (HeLa) using rat Anti-HSF1 antibody

Immunocytochemistry/Immunofluorescence analysis of Heat Shocked cervical cancer cells (HeLa) using ab61382. Fixation: 2% Formaldehyde for 20 min at RT. ab61382 was used as the primary antibody at 1:100 for 12 hours at 4°C. Secondary Antibody: APC Goat Anti-Rat (red) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Diffuse nuclear and cytoplasmic staining. Magnification: 20x. (Left) DAPI (blue) nuclear stain. (Middle) Anti-HSF1 Antibody. (Right) Merged. Heat Shocked at 42°C for 1h.



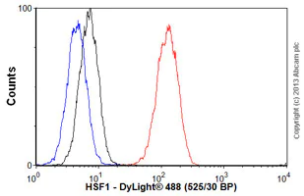
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HSF1 antibody [10H8] (ab61382)

HSF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rat Anti-HSF1 antibody

IHC image of HSF1 staining in Human normal testis formalin fixed paraffin embedded tissue section, performed on a Leica Bond^{TM} system using the standard protocol B. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab61382, 5µg/ml, for 15 mins at room temperature. A Goat anti-Rat biotinylated secondary antibody was used to detect the primary, and visualized using an HRP conjugated ABC system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize

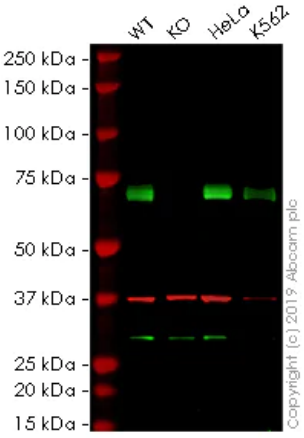
variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry - Anti-HSF1 antibody [10H8] (ab61382)

HSF1 Flow Cytometry staining using rat Anti-HSF1 antibody

Overlay histogram showing HeLa cells stained with ab61382 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab61382, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rat IgG (H+L) (ab98386) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rat IgG1 [RTK2071] (ab18412, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line). Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-HSF1 antibody [10H8] (ab61382)

Lanes 1 - 4: Merged signal (red and green). Green - ab61382 observed at 57 kDa. Red - loading control, ab181602, observed at 37 kDa.
ab61382 was shown to recognize in wild-type HAP1 cells as signal was lost at the expected MW in Hsf1 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and Hsf1 knockout samples were subjected to SDS-PAGE. ab61382 and ab181602 (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rat IgG H&L (IRDye® 800CW) preabsorbed and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed ab216777 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HSF1 antibody [10H8] (ab61382) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
Hsf1 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
K562 whole cell lysate at 20 µg

Predicted band size: 57 kDa

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