

Product datasheet

Anti-HSF1 antibody [4D5F4] ab201978

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Overview

Product name	Anti-HSF1 antibody [4D5F4]
Description	Mouse monoclonal [4D5F4] to HSF1
Host species	Mouse
Tested applications	Suitable for: IHC-P, WB, ICC/IF
Species reactivity	Reacts with: Human
Immunogen	Recombinant fragment corresponding to Human HSF1 aa 256-359. Sequence: DAVASSGPPIISDITELAPASPMASPGGSIDERPLSSSPLVR VKEEPPSPP QSPRVVEASPGRPSSVDTLLSPTALIDSILRESEPAPASVT ALTDARGHT DTEG
Database link: Q00613	
 Run BLAST with Run BLAST with	
Positive control	Human rectum cancer tissue. A431 cells. HSF1 transected HEK293 cell lysates and recombinant HSF1 protein.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.05% Sodium azide Constituent: 99% PBS
Purity	Protein G purified
Purification notes	Purified from tissue culture supernatant.
Clonality	Monoclonal
Clone number	4D5F4
Isotype	IgG2b

Applications

The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab201978 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/200 - 1/1000.
WB		1/500 - 1/2000. Predicted molecular weight: 57 kDa.
ICC/IF		1/200 - 1/1000.

Target

Function

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.

Sequence similarities

Belongs to the HSF family.

Domain

the 9aaTAD motif is a transactivation domain present in a large number of yeast and animal transcription factors.

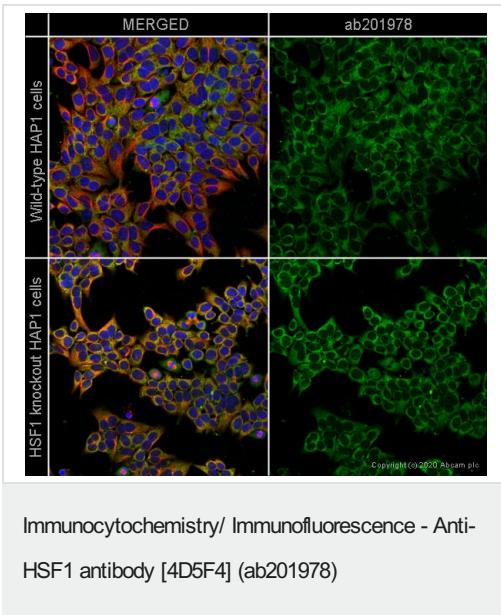
Post-translational modifications

Phosphorylated on multiple serine residues, a subset of which are involved in stress-related regulation of transcription activation. Constitutive phosphorylation represses transcriptional activity at normal temperatures. Levels increase on specific residues heat-shock and enhance HSF1 transactivation activity. Phosphorylation on Ser-307 derepresses activation on heat-stress and in combination with Ser-303 phosphorylation appears to be involved in recovery after heat-stress. Phosphorylation on Ser-230 by CAMK2, *in vitro*. Cadmium also enhances phosphorylation at this site. Phosphorylation on Ser-303 is a prerequisite for HSF1 sumoylation. Phosphorylation on Ser-121 inhibits transactivation and promotes HSP90 binding. Phosphorylation on Thr-142 also mediates transcriptional activity induced by heat. Phosphorylation on Ser-326 plays an important role in heat activation of HSF1 transcriptional activity.
Sumoylated with SUMO1 and SUMO2 on heat-shock. Heat-inducible sumoylation occurs after 15 min of heat-shock, after which levels decrease and at 4 hours, levels return to control levels.
Sumoylation has no effect on HSE binding nor on transcriptional activity. Phosphorylation on Ser-303 is a prerequisite for sumoylation.

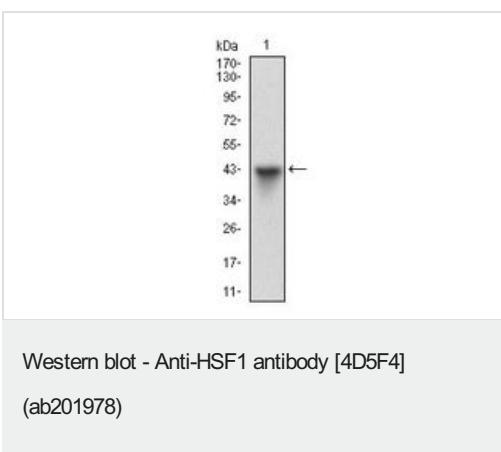
Cellular localization

Cytoplasm. Nucleus. Cytoplasmic during normal growth. On activation, translocates to nuclear stress granules. Colocalizes with SUMO1 in nuclear stress granules.

Images

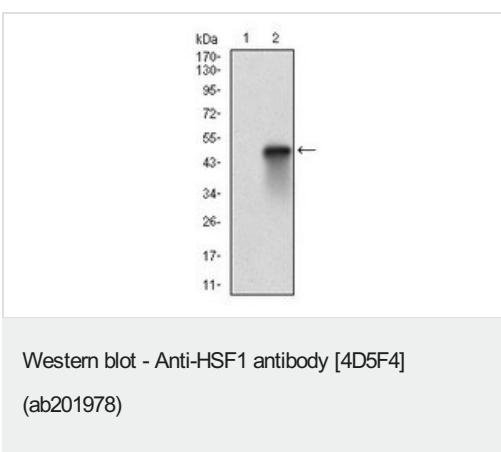


ab201978 staining HSF1 in wild-type Hap1 cells (top panel) and HSF1 knockout Hap1 cells (bottom panel). The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab201978 at 1/1000 dilution and **ab6046** (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (**ab150117**) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (**ab150080**) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Anti-HSF1 antibody [4D5F4] (ab201978) at 1/500 dilution + recombinant Human HSF1 protein

Predicted band size: 57 kDa

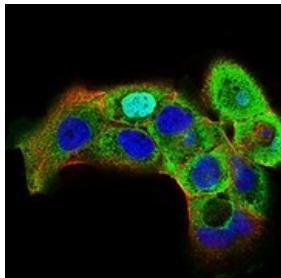


All lanes : Anti-HSF1 antibody [4D5F4] (ab201978) at 1/500 dilution

Lane 1 : Non-transfected HEK293 cell lysates

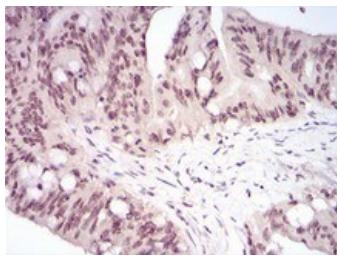
Lane 2 : HSF1 transfected HEK293 cell lysates

Predicted band size: 57 kDa



Immunofluorescence analysis of A431 cells labeling HSF1 using ab201978 at 1/200 dilution (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HSF1 antibody [4D5F4] (ab201978)



Immunohistochemical analysis of paraffin-embedded human rectum cancer tissues labeling HSF1 using ab201978 at 1/200 dilution followed by DAB staining.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HSF1 antibody [4D5F4] (ab201978)

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