



HSF1 Recombinant Monoclonal Antibody

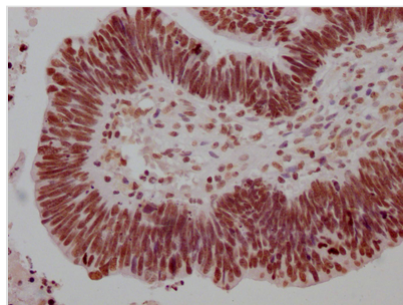
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| Product Code | CSB-RA279005A0HU |
| Storage | Upon receipt, store at -20°C or -80°C. Avoid repeated freeze. |
| Uniprot No. | Q00613 |
| Immunogen | A synthesized peptide derived from human HSF1 |
| Species Reactivity | Human |
| Tested Applications | ELISA, IHC; Recommended dilution: IHC:1:50-1:200 |
| Relevance | <p>Function 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 insults' damage (PubMed:1871105, PubMed:11447121, PubMed:1986252, PubMed:7760831, PubMed: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). 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). 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). Binds to chromatin at heat shock gene promoters (PubMed:25963659). Plays also 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). Plays also 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).</p> |
| Form | Liquid |
| Conjugate | Non-conjugated |
| Storage Buffer | Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium |



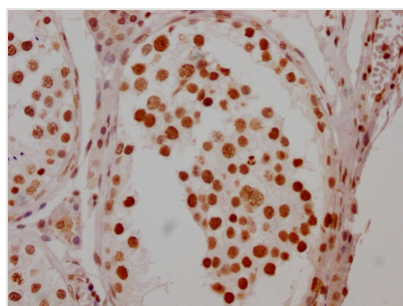
azide and 50% glycerol.

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| Purification Method | Affinity-chromatography |
| Isotype | Rabbit IgG |
| Clonality | Monoclonal |
| Product Type | Recombinant Antibody |
| Immunogen Species | Homo sapiens (Human) |
| Research Area | Epigenetics and Nuclear Signaling; Cardiovascular; Tags & Cell Markers |
| Gene Names | HSF1 |
| Clone No. | 5C7 |

Image



IHC image of CSB-RA279005A0HU diluted at 1:100 and staining in paraffin-embedded human ovarian cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA279005A0HU diluted at 1:100 and staining in paraffin-embedded human testis tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

To produce the HSF1 recombinant monoclonal antibody, several intricate and sequential steps are required. The first step involves harvesting the HSF1 monoclonal antibody and sequencing its gene. Next, a vector containing the HSF1 monoclonal antibody gene is constructed and transfected into a host cell line for culturing. The HSF1 monoclonal antibody is then produced by synthesizing a peptide derived from human HSF1 as an immunogen. Afterward, the HSF1 recombinant monoclonal antibody is purified through affinity chromatography to ensure high purity. Finally, the specificity of the antibody is confirmed through ELISA and IHC assays, which test its capacity to identify HSF1 accurately. It only detects HSF1 human protein.

The HSF1 protein is a transcription factor that plays a critical role in the cellular response to stress by regulating the expression of genes involved in the heat shock response and proteostasis. HSF1 regulates the expression of genes that



encode heat shock proteins (HSPs) in response to elevated temperatures. HSPs are molecular chaperones that help protect cells from the deleterious effects of stress by facilitating protein folding and preventing protein aggregation. HSF1 promotes the expression of genes involved in protein folding, degradation, and autophagy, thereby maintaining proteostasis under stress conditions. It is also involved in the regulation of cell growth and survival. Dysregulation of HSF1 has been associated with various diseases, including cancer, neurodegenerative diseases, and cardiovascular diseases.