Data Sheet (Cat.No.TMPY-02072)

TargetMol

HSF1 Protein, Human, Recombinant (His)

General Information

Synonyms:	HSTF1;heat shock transcription factor 1
Protein Construction:	A DNA sequence encoding the human HSF1 isoform long (Q00613-1) (Asp 2-Ser 529) was expressed, with a polyhistide tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	Q00613-1
Molecular Weight:	58.6 kDa (predicted); 67 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 70 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Heat shock factor protein 1, also known as heat shock transcription factor 1, HSF1, and HSTF1, is a cytoplasm and nucleus protein that belongs to the HSF family. HSF1 is the major transcription factor of HSPs (heat shock proteins) in response to various stresses. Wild type HSF1 (heat shock transcriptional factor 1) is normally inactive. HSF1 / HSTF1 is a 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. HSF1 /

HSTF1 protects cells and organisms against various types of stress, either by triggering a complex response that promotes cell survival or by triggering cell death when stress-induced alterations cannot be rescued. HSF1 / HSTF1 is the key protein in regulating the stress response. It can be activated under heat, oxidative, or other stress conditions. Dominant-positive and dominant-negative HSF1 are two types of HSF1 mutants. Both of them gain DNA binding activity in the absence of stress. Also, dominant-positive HSF1 acquires transcriptional activity, which dominant-negative HSF1 does not acquire. HSF1 / HSTF1 was also reported to contribute to cell resistance against genotoxic stress, such as that caused by doxorubicin, an anticancer drug in common clinical use.

Reference

Holmberg,C.I. et al., 2000, Cell Stress Chaperones.5 (3):219-28.
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Lee,Y.J. et al., 2008, Cancer Res 68 (18): 7550-60.
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