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ProductInformation

Anti-Heat Shock Protein 27 (HSP27)
Developed in Rabbit, IgG Fraction of Antiserum

Product Number **P 1498** REH **FXO31656**

Product Description

Anti-Heat Shock Protein 27 (HSP27) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 186-205 located at the C-terminus of human HSP27, conjugated to KLH. This sequence is highly homologous in rat HSP27 (85% identity) and to a lesser extent in mouse HSP27/25 (65% identity). Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti- Heat Shock Protein 27 (HSP27) recognizes HSP27 (27 kDa). Applications include the detection of HSP27 by immunoblotting and immunofluorescence. Staining of HSP27 in immunoblotting is specifically inhibited with the HSP27 immunizing peptide (human, amino acids 186-205).

Heat shock proteins (HSPs) consist of a large family of proteins that are produced by all organisms and are induced by various types of stress stimuli such as temperature shock, cytokines, hormones and chemicals. HSPs function as molecular chaperones by transiently binding unfolded proteins to facilitate their correct folding and preventing uncontrolled protein aggregation. HSP27 (mouse HSP25) is a highly conserved oligomeric protein, phylogenetically related to the α-crystallin proteins and the small 15-30 kDa HSPs.[1] HSP27 is expressed constitutively in many cell types and tissues at specific stages of development and differentiation.[2,3] In malignant cells, HSP27 expression, correlates with the oncogenic status of the cell and plays a role in their tumorigenicity. HSP27 is expressed in the cytoplasm and colocalizes to the nucleus upon stress stimuli.[2,4] HSP27, like other heat shock proteins, accumulates in cells exposed to a short period of hyperthermia, and contributes to the development of a transient state of thermotolerance. In addition to heat shock, the synthesis of HSP27 is stimulated by various cytokines, growth factors, hormones and chemicals. HSP27 shows a rapid phosphorylation, following exposure to stress stimuli.[4,5] It is phosphorylated on multiple serine residues by MAPKAP kinase 2/3 in the p38 MAPK stress-sensitive signaling pathway.[4-7] HSP27 acts as an actin-cap binding protein and can inhibit actin polymerization, thus modulating actin dynamics during stress. This function is regulated by phosphorylation and the oligomerization state of HSP27.[7,8] HSP27 has also been shown to protect against apoptotic cell death triggered by a variety of stimuli including hyperthermia, oxidative stress, Fas ligand and cytotoxic drugs.[9,10] Recent findings indicate that HSP27 interferes specifically with the mitochondrial pathway of caspase-induced cell death,[11,12] by acting as a negative regulator of cytochrome c-dependent activation of caspase-3.[13]

Reagent

The product is provided as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile
A working dilution of 1:4,000-1:8,000 is determined by immunoblotting, using a whole cell extract of human epitheloid carcinoma HeLa cell line or human epidermoid carcinoma A431 cell line.

A working dilution of 1:250-1:500 is determined by immunofluorescence staining of HeLa cells.

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

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