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ProductInformation

Anti-Heat Shock Protein 27/25
Produced in Rabbit, Affinity Isolated Antibody

Product Number **H 2289**

Product Description

Anti-Heat Shock Protein 27/25 (HSP27/25) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 190-209 located at the C-terminus of mouse HSP27/25, conjugated to KLH. This sequence is identical in dog and Chinese hamster, highly conserved in rat HSP27 (85% identity), and to a lesser extent in human HSP27 (65% identity). The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Heat Shock Protein 27/25 (HSP27/25) recognizes HSP27 (27 kDa) (mouse HSP25). Applications include the detection of HSP27 by immunoblotting and immunofluorescence. Staining of the HSP27 band in immunoblotting is specifically inhibited with the HSP27 immunizing peptide (mouse, amino acids 190-209).

Heat shock proteins (HSPs) consist of a large family of proteins that are produced by all organisms and 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 localizes 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] 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 antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~2.0 mg/mL

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 hazards 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 also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile
By immunoblotting, a working antibody concentration of 0.5-1 µg/m is recommended using a whole extract of rat fibroblast Rat-1 cell line and Madin-Darby canine kidney (MDCK) cell line.

By immunoblotting, a working antibody concentration of 1-2 µg/mL is recommended using a mouse brain extract (S1 fraction) and the human epitheloid carcinoma HeLa cell line.

By indirect immunofluorescence, a working antibody concentration of 4-8 µg/mL is recommended using the MDCK cell line.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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