

Product Information

MONOCLONAL ANTI-HEAT SHOCK PROTEIN 70 (HSP70) CLONE BRM-22

Mouse Ascites Fluid

Product No. **H 5147**

Product Description

Monoclonal Anti-Heat Shock Protein 70 (mouse IgG1 isotype) is derived from the BRM-22 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with purified bovine brain HSP70. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Heat Shock Protein 70 (HSP70) 70 reacts specifically against HSP70 in ELISA and immunoblotting. In immunoblotting the antibody localizes both the constitutive (HSP73) and inducible (HSP72) forms of HSP70. The antibody recognizes brain HSP70 of bovine, human, rat, rabbit, chicken, and guinea pig.

It also recognizes HSP70 in Drosophila cell extract, nematode and plant⁹ as well as human fibroblast cell extract. Immunofluorescent staining demonstrates a rapid and reversible accumulation of the HSP70 protein within the nucleus of heat-stressed (42 °C, 1 hr.) human fibroblasts.

Monoclonal Anti-Heat Shock Protein 70 may be used for the localization of Heat Shock Protein 70 by various immunochemical assays such as ELISA, immunoblot, dot blot, and immunocytochemistry.

A variety of environmental disruptions, such as a sudden increase in temperature, induce cells to rapidly synthesize a group of polypeptides known as heat shock (stress) proteins.¹ These proteins are produced by prokaryotic and eukaryotic cells, and are among the most conserved molecules in phylogeny. Eukaryotic cells contain a multigene family that encodes several closely related 70 kD stress proteins (the HSP70 family) that differ in their intracellular location and regulation.^{2,3}

These include four proteins: the constitutive (or cognate) HSP73, the stress-inducible HSP72 and the glucose regulated proteins grp78 (or BiP) and grp75. Members of the HSP70 family play a major role in the folding, unfolding and translocation of polypeptides as well as in the assembly and disassembly of oligomeric protein complexes.⁴ In addition, several possible roles have been attributed to the HSP70 family of proteins, in the immune response.⁵ It has been shown that alcoholic liver disease is associated with intracytoplasmic accumulation of HSP70.⁶ HSP72 was found to increase dramatically in the brains of Alzheimer's disease patient, and was localized exclusively in neuritic plaques and neurofibrillary tangles.⁷ HSP70 concentrates in nuclei during heat shock and returns to the cytoplasm when the shock is removed.⁸

Reagents

The product is provided as ascites fluid with 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.

Product Profile

The antibody titer of at least 1:5,000 was determined by immunoblotting using bovine brain extract.

In order to obtain best results in different techniques and preparations, it is recommended that each individual user determine their optimum working dilution by titration assay.

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, the solution may be frozen 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.

References

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