

Product Information

MONOCLONAL ANTI-HEAT SHOCK PROTEIN 60 (HSP-60)

Clone LK2

Mouse Ascites Fluid

Product No. H 3524

Monoclonal anti-Heat Shock Protein 60 (mouse IgG1 isotype) is derived from the LK2 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with recombinant human heat shock protein 60.¹ The isotype is determined using the 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 60 (HSP60), clone LK2, recognizes an epitope located between amino acid residues 383-419 of the human (corresponding to a.a. residues 356-393 of the mycobacterial) HSP60.¹ The antibody is reactive against the mammalian (e.g., human, rat), avian (e.g., chicken), bacterial (e.g., *E. coli*), helminths and spinach HSP60. In immunoblotting, the antibody may label additional bands at approx. 38 and 97 kDa. It is reactive with both the constitutive and the inducible HSP60. It shows a raised level of staining in immunohistochemistry of formalin-fixed, paraffin-embedded synovial membranes taken from patients with juvenile chronic arthritis.¹ The product may be used in ELISA, immunoblotting and immunocytochemistry.

Monoclonal Anti-Heat Shock Protein 60 may be used in ELISA, immunoblotting, immunocytochemistry and immunoelectron microscopy.

A wide variety of environmental perturbations, such as a sudden increase in temperature, induce cells to rapidly synthesize a group of polypeptides known as the heat shock (stress) proteins.²⁻⁴ These proteins are produced by prokaryotic and eukaryotic cells, and HSPs are among the most conserved molecules in phylogeny. The HSPs have been grouped into several classes on the basis of their size and sequence

homology. The 60 kDa HSP family (HSP60) which retained a uniquely high level of sequence conservation during evolution, is a focus of interest as a potential antigen in a number of autoimmune diseases.¹ Abnormal immune reactivity involving HSP60 has also been implicated in the pathogenesis of schizophrenia.⁵ In human arthritis and experimentally-induced arthritis in animals, disease development was seen to coincide with development of immune reactivity directed against not only bacterial HSP60, but also against its mammalian homologue. A human mitochondrial protein, originally designated P1, has been described as the human homologue of the bacterial HSP60, and >45% of the protein has sequence identity with its bacterial homologue (groEL, HSP65). Studies, using anti-mycobacterial HSP60 antibodies that are cross reactive with human HSP60, have shown increased expression of HSP60 in inflamed tissue. However, because of this cross reactivity, it was impossible to distinguish between the expression of HSP60 from bacterial origin (e.g., after a bacterial infection) or endogenous self-HSP60. The availability of monoclonal antibody that is reactive with both the mammalian and bacterial HSP60, together with monoclonal antibody which has a unique specificity for mammalian HSP60 (clone LK1), enable the differentiation between the HSP60 of mammalian and bacterial origin.

Reagents

The product is provided as ascites fluid with 0.1% 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 minimum antibody titer of 1:100 was determined by immunoblotting of cultured human foreskin fibroblasts and bacterial extracts.

In order to obtain best results in different techniques or preparations, it is recommended that each individual user determine their optimal working dilutions 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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3. Morimoto, R., et al., (eds.), in: Stress Proteins in Biology and Medicine, Cold Spring Harbor Lab., Cold Spring Harbor, N.Y., pp. 1-36 (1990).
4. Welch, W., in: Stress Proteins in Biology and Medicine, Morimoto, R.I., et al., (eds), Cold Spring Harbor Lab., Cold Spring Harbor, N.Y., pp. 223-278 (1990).
5. Kilidireas, K., et al., Lancet, **340**, 569-572 (1992).

PCS 7/01