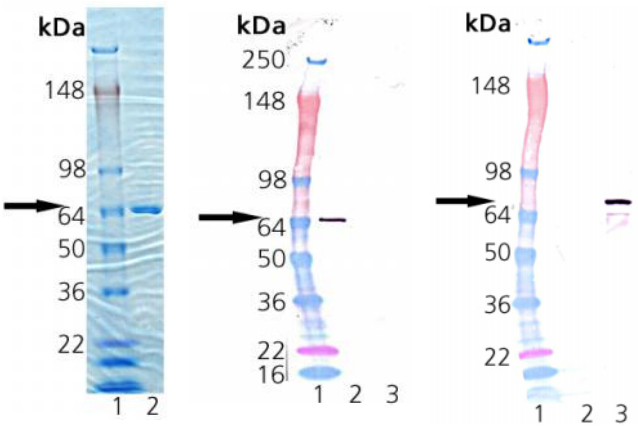
Hsp70-A1 Recombinant Mouse Protein

Product Specifications

Catalog Number:	SPP-502
Product Description:	Mouse Recombinant Hsp70-A1
Format:	Stored in 1x Dulbecco's Phosphate Buffer Saline (DPBS) containing 5.0 mM glutathione, pH-7.4
Application:	WB Control: 10 ng of protein recommended (Colorimetric) ATPase Activity Assay: Positive *The optimal dilution for a specific application must be determined by the investigator.*
Purity:	> 90 % pure as determined by SDS-PAGE and Western blot analyses This protein does not contain DnaK as demonstrated by western blot analysis using product SPA-880.
Molecular Weight:	~70 kDa observed
Concentration:	See product label
Storage:	Store at -70°C *Shipping conditions may differ from the recommended storage temperature.*
Related Products:	
SPA-810	Hsp70 Monoclonal Antibody
LYC-PC101	PC-12 Cell Lysate (Heat Shocked)
SAB-101	Goat anti-mouse Polyclonal Antibody
EKS-700	Hsp70 ELISA Kit



Left: SDS-PAGE Analysis: Lane 1: MWM, Lane 2: 0.5 µg of purified Mouse Hsp70-A1 Protein (SPP-502)

Western Blot Analysis: Lane 1: MWM; Lane 2: 10ng Hsp70-A1 Protein (SPP-502); Lane 3: 100ng *E. coli* DnaK Protein (SPP-630); **Middle:** probed with Hsp70 mAb (SPA-810) at 1 µg/mL. **Right:** probed with DnaK mAb (SPA-880) at 0.1 µg/mL.

Background:

The mouse heat shock protein Hsp70-A1 is one of the three Hsp70 genes located in the central region of the mouse MHC. Similar clusters of MHC-linked Hsp70 genes occur in rat and human. The human Hsp70-A1 shares 98.2% identity in the amino acid sequence to murine Hsp70-A2[1]. A comparison of the nucleotide sequences of the three human Hsp70 genes from various haplotypes reveals only very limited sequence variation not associated with any amino acid polymorphism[2]. Murine Hsp70-A1 belongs to the Hsp70 family of highly-related protein isoforms ranging in size from 66 kDa to 78 kDa. The 70 kDa heat shock cognate protein, Hsc70 m, shares close biochemical and biological ties to Hsp70, and is also part of the Hsp70 family. These proteins include both cognate members found within major intracellular compartments and highly inducible isoforms predominantly cytoplasmic or nuclear in distribution[3]. Members of the Hsp70 family are molecular chaperones involved in such cellular functions as protein folding, transport, maturation and degradation, and they exert their function in an ATP-dependent manner. The molecular chaperones of the Hsp70 family recognize and bind to nascent polypeptide chains as well as partially folded intermediates of proteins, preventing their aggregation and misfolding, and the binding of ATP triggers a critical conformational change leading to the release of the bound substrate protein[4]. Recent data demonstrates that BAG-1, which possesses a ubiquitin-like domain at its amino terminus and which associates with the 26S proteosome in HeLa cells, modulates the chaperone activity of Hsc70 and Hsp70. These findings reveal a role of BAG-1 as a physical link between the Hsc70/hsp70 chaperone system and the proteasome[5]. Experimental data also shows that the ATPase domain and the substrate binding domain of Hsp70 (or Hsc70) cooperate and form a cochaperone-chaperone complex with the synaptic vesicle cysteine string protein (csp) which is essential for normal neurotransmitter release[6].

References:

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2. Milner, C.M. and Campbell, R.D. (1992) Immunogenetics **36**, 357-362.
3. Tavaria, M., *et al*. (1996) Cell Stress & Chaperones **1**, 23-28.
4. Fink A.L. (1999) Physiol Rev. **79**, 425-449.
5. Luders, J., Demand, J. and Hohfeld, J. (2000) J Biol Chem. **275**, 4613-4617.
6. Stahl B., Tobaben, S. and Sudhof, T.C. (1999) Eur J Cell Biol. **78**, 375-381v.

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