

BACKGROUND

The 70 kilodalton heat shock family of proteins, Hsp70s, contains 26 members. Some of these are only expressed under stress conditions (strictly inducible), while some are present in cells under normal growth conditions and are not heat-inducible (constitutive or cognate). They can be found in different cellular compartments (nuclear, cytosolic, mitochondrial, endoplasmic reticulum, etc.).¹ Hsp70 is one of central components of the cellular network of molecular chaperones and folding catalysts. It assists a large variety of protein folding processes in the cell by transient association of its substrate binding domain with short hydrophobic peptide segments within its substrate proteins. The substrate binding and release cycle is driven by the switching of Hsp70 between the low-affinity ATP bound state and the high-affinity ADP bound state. Thus, ATP binding and hydrolysis are essential *in vitro* and *in vivo* for the chaperone activity of Hsp70 protein. This ATPase cycle is controlled by co-chaperones of the family of J-domain proteins, which target Hsp70 to their substrates, and by nucleotide exchange factors, which determine the lifetime of the Hsp70-substrate complex. Additional co-chaperones fine-tune this chaperone cycle.² For specific tasks the Hsp70 cycle is coupled to the action of other chaperones, such as Hsp90 and Hsp100.³

References:

1. Burston SG & Clarke AR: *Essays Biochem.* 29:125-36, 1995.
2. Bukau B & Horwich AL: *Cell*, 93: 351-366, 1998.
3. Pratt WB & Toft DO: *Exp. Biol. Med.*, 228: 111-33, 2003.

TECHNICAL INFORMATION

Source:

Hsp70 Antibody is a mouse monoclonal antibody raised against the purified recombinant fragment of human Hsp70 carboxyl-terminal sequence expressed in *E. coli*.

Specificity and Sensitivity:

This monoclonal antibody detects endogenous levels of Hsp70 proteins in various cell lysates.

Storage Buffer: PBS and 30% glycerol

Storage:

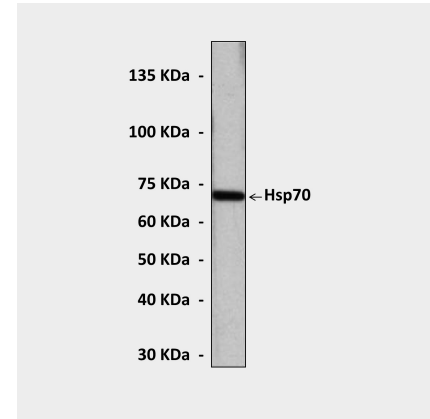
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	n/d
ICC	n/d
FACS	n/d

*Optimal dilutions must be determined by end user.

QUALITY CONTROL DATA



HUVEC cell lysates subjected to Western Blot analysis using Hsp70 Antibody.

