

**HSP60 Antibody**  
**HSP60 Antibody, Clone LK1**  
**Catalog # ASM10016**

**Specification**

---

**HSP60 Antibody - Product Information**

|                   |  |
|-------------------|--|
| Application       | <b>IHC, WB</b>   |
| Primary Accession | <a href="#">P10809</a>   |
| Other Accession   | <a href="#">NP_002147.2</a>  |
| Host              | <b>Mouse</b>   |
| Isotype           | <b>IgG1</b>  |
| Reactivity        | <b>Human, Mouse, Rat, Rabbit, Hamster, Monkey, Pig, Chicken, Xenopus, Bovine, Sheep, Guinea Pig, Dog, Drosophila</b> |
| Clonality         | <b>Monoclonal</b>  |

**Description**  
Mouse Anti-Human HSP60 Monoclonal IgG1

**Target/Specificity**  
Detects ~60kDa.

**Other Names**  
CPN60 Antibody, GROEL Antibody, HLD4 Antibody, HSP 60 Antibody, HSP65 Antibody, HSPD1 Antibody, HuCHA60 Antibody, SPG 13 Antibody

**Immunogen**  
Recombinant human HSP60

**Purification**  
Protein G Purified

Storage **-20°C**  
**Storage Buffer**  
PBS, 50% glycerol, 0.09% sodium azide

Shipping Temperature **Blue Ice or 4°C**  
**Certificate of Analysis**  
0.05 µg/ml of SMC-110 was sufficient for detection of HSP60 in 20 µg of heat shocked HeLa cell lysate by colorimetric immunoblot analysis using goat anti-mouse IgG as the secondary antibody.

**Cellular Localization**  
Mitochondrion | Mitochondrion Matrix

**HSP60 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)

- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### HSP60 Antibody - Images



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK-1 (ASM10016). Tissue: HaCaT cells. Species: Human. Fixation: Cold 100% methanol at -20°C for 10 minutes. Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (ASM10016) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Cytoplasmic Staining.



Immunohistochemistry analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK-1 (ASM10016). Tissue: colon carcinoma. Species: Human. Fixation: Formalin. Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (ASM10016) at 1:100000 for 12 hours at 4°C. Secondary Antibody: Biotin Goat Anti-Mouse at 1:2000 for 1 hour at RT. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain at 200 µl for 2 minutes at RT. Localization: Inflammatory cells. Magnification: 40x.



Western Blot analysis of Human Cell line lysates showing detection of Hsp60 protein using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK-1 (ASM10016). Load: 15 µg. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (ASM10016) at 1:1000 for 2 hours at RT. Secondary Antibody: Sheep Anti-Mouse IgG: HRP for 1 hour at RT.



Immunohistochemistry analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK-1 (ASM10016). Tissue: backskin. Species: Mouse. Fixation: Bouin's Fixative and paraffin-embedded. Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (ASM10016) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Epidermis.



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK1, (ASM10016). Tissue: skin Fibroblasts. Species: Human. Fixation: Cold 100% methanol for 30 minutes at -20°C . Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (ASM10016) at 1:1000 for 1 hour at RT. Secondary Antibody: DAKO LSAB2 streptavidin-peroxidase system. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain. Courtesy of: Valentina di Felice, University of Palermo, Italy.

### HSP60 Antibody - Background

In both prokaryotic and eukaryotic cells, the misfolding and aggregation of proteins during biogenesis and under conditions of cellular stress are prevented by molecular chaperones. Members of the HSP60 family of heat shock proteins are some of the best characterized chaperones. HSP60, also known as Cpn60 or GroEL, is an abundant protein synthesized constitutively in the cell that is induced to a higher concentration after brief cell shock. It is present in many species and exhibits a remarkable sequence homology among various counterparts in bacteria, plants, and mammals with more than half of the residues identical between bacterial and mammalian HSP60 (1-3). Whereas mammalian HSP60 is localized within the mitochondria, plant HSP60, or otherwise known as Rubisco-binding protein, is located in plant chloroplasts. It has been indicated that these proteins carry out a very important biological function due to the fact that HSP60 is present in so many different species. The common characteristics of the HSP60s from the divergent species are i) high abundance, ii) induction with environmental stress such as heat shock, iii) homo-oligomeric structures of either 7 or 14 subunits which reversibly dissociate in the presence of Mg<sup>2+</sup> and ATP, iv) ATPase activity and v) a role in folding and assembly of oligomeric protein structures (4). These similarities are supported by recent studies where the single-ring human mitochondrial homolog, HSP60 with its co-chaperonin, HSP10 were expressed in a *E. coli* strain, engineered so that the *groE* operon is under strict regulatory control. This study has demonstrated that expression of HSP60-HSP10 was able to carry out all essential *in vivo* functions of GroEL and its co-chaperonin, GroES (5). Another important function of HSP60 and HSP10 is their protective functions against infection and cellular stress. HSP60 has however been linked to a number of autoimmune diseases, as well as Alzheimer's, coronary artery diseases, MS, and diabetes (6-9).

#### **HSP60 Antibody - References**

1. Hartl, F.U. (1996) *Nature* 381: 571-579.
2. Bukau, B. and Horwich, A.L. (1998) *Cell* 92: 351-366.
3. Hartl, F.U. and Hayer-Hartl, M. (2002) *Science* 295: 1852- 1858.
4. Jindal, S., et al. (1989) *Molecular and Cellular Biology* 9: 2279-2283.
5. La Verda, D., et al (1999) *Infect Dis. Obstet. Gynecol.* 7: 64-71.
6. Itoh, H. et al. (2002) *Eur. J. Biochem.* 269: 5931-5938.
7. Gupta, S. and Knowlton, A.A. *J. Cell Mol Med.* 9: 51-58.
8. Deocaris, C.C. et al. (2006) *Cell Stress Chaperones* 11: 116-128.
9. Lai, H.C. et al. (2007) *Am. J. Physiol. Endocrinol. Metab.* 292: E292-E297.
10. Gao, Y.L., et al (1995) *J. of Immunology* 154: 3548-3556.
11. Neuer, A., et al (1997) *European Society for Human Reproduction and Embryology* 12(5):925-929.
12. Bason, C., et al (2003) *Lancet* 362(9400): 1971-1977.