

## HSP60 Antibody

Catalog # ASM10360

### Specification

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#### HSP60 Antibody - Product Information

|                                    |  |
|------------------------------------|--|
| Application                        | <b>WB</b>  |
| Primary Accession                  | <a href="#">P10809</a>                                 |
| Other Accession                    | <a href="#">NP_002147.2</a>                            |
| Host                               | <b>Rabbit</b>  |
| Reactivity                         | <b>Human, Mouse, Rat, Rabbit, Chicken, Bovine, Dog</b> |
| Clonality                          | <b>Polyclonal</b>                                      |
| <b>Description</b>                 |  |
| Rabbit Anti-Human HSP60 Polyclonal |  |

#### 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

Human HSP60 produced through recombinant DNA methods in E.coli

#### Purification

Protein A Purified

Storage **-20°C**

#### Storage Buffer

PBS, 50% glycerol, 0.09% sodium azide

Shipping Temperature

**Blue Ice or 4°C**

#### Certificate of Analysis

1 µg/ml of SPC-105 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

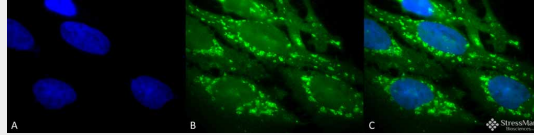
#### HSP60 Antibody - Protocols

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

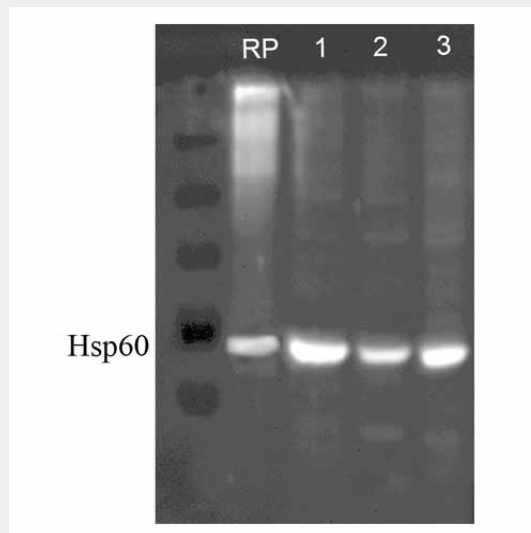
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)

- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

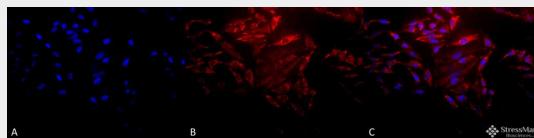
### HSP60 Antibody - Images



Immunocytochemistry/Immunofluorescence analysis using Rabbit Anti-Hsp60 Polyclonal Antibody (ASM10360). Tissue: Heat Shocked HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rabbit Anti-Hsp60 Polyclonal Antibody (ASM10360) at 1:100 for 12 hours at 4°C. Secondary Antibody: FITC Goat Anti-Rabbit (green) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Mitochondrion matrix. Magnification: 100x. (A) DAPI (blue) nuclear stain. (B) Anti-Hsp60 Antibody. (C) Composite. Heat Shocked at 42°C for 1h.



Western blot analysis of Human, Dog, Mouse SKBR3, MDCK, and MEF cell line lysates showing detection of HSP60 protein using Rabbit Anti-HSP60 Polyclonal Antibody (ASM10360). Lane 1: Recom. Human Hsp60 (100ng), Lane 2, 3 and 4: SKBR3 lysate (human), MDCK lysate (dog) and MEF lysate (mouse) (all at 7.5ug). Primary Antibody: Rabbit Anti-HSP60 Polyclonal Antibody (ASM10360) at 1:1000.



Immunocytochemistry/Immunofluorescence analysis using Rabbit Anti-Hsp60 Polyclonal Antibody (ASM10360). Tissue: Heat Shocked HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rabbit Anti-Hsp60 Polyclonal Antibody (ASM10360) at 1:100 for 12 hours at 4°C. Secondary Antibody: APC Goat Anti-Rabbit (red) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Mitochondrion matrix. Magnification: 20x. (A) DAPI (blue) nuclear stain. (B) Anti-Hsp60 Antibody. (C) Composite. Heat Shocked at 42°C for 1h.

### 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). 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.