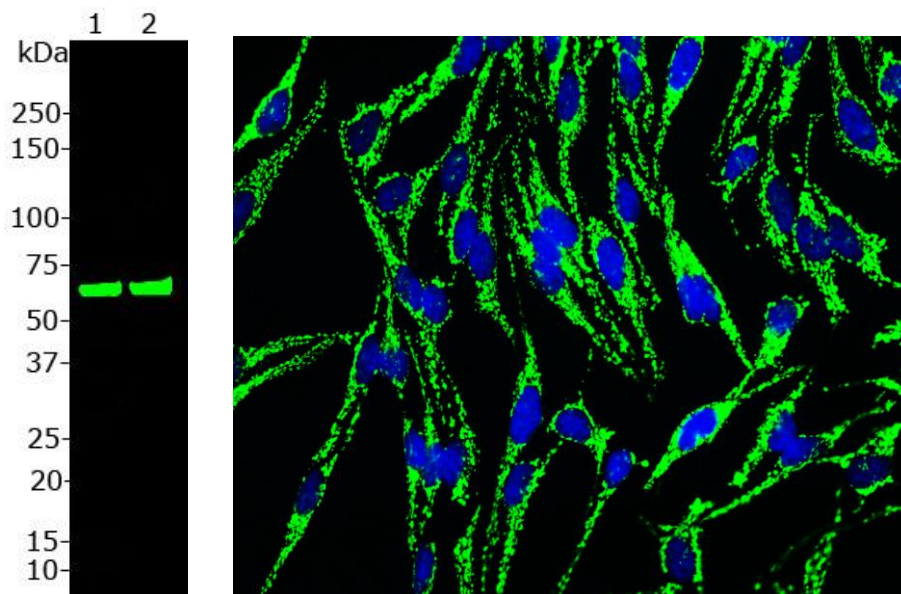


**Catalogue# CPCA-HSP60: Chicken Polyclonal Antibody to HSP60: HSBD1**

**The Immunogen:** The heat shock proteins were discovered, as the name suggests, since they are heavily upregulated when cells are stressed by temperatures above the normal physiological range. They are expressed in unstressed cells also and have a normal function as chaperones, helping other proteins to fold correctly, and are required in much greater amounts if the cell or tissue is stressed by heat. The increased levels are generated transcriptionally under the influence of a powerful transcription factor, the heat shock factor 1 (HSF1).

The different heat shock proteins were originally named based on their SDS-PAGE mobility, so HSP60 has an apparent molecular weight of 60 kDa. It is an abundant protein in mitochondria and is typically responsible for the transportation and refolding of proteins from the cytoplasm into the mitochondrial matrix. HSP60 aids in the folding and conformation maintenance of approximately 15-30% of all cellular proteins (1). In addition to its role as a heat shock protein, HSP60 plays an important role in the transport and maintenance of mitochondrial proteins as well as the transmission and replication of mitochondrial DNA (2, 3). HSP60 has been implicated in the initiation and/or progression of some subtypes of Cardiovascular Disease (CVD), implying its potential as a biomarker with applications for diagnosis, assessing prognosis and response to treatment, as well as for preventing and treating CVD (4). The HGNC name for this protein is [HSBD1](#).



**Left:** Western blot analysis of CPCA-HSP60. Blot of SHSY-5Y cell lysate (lane 1) and HeLa cell lysate (lane 2) was probed with CPCA-HSP60 at 1: 20,000. This antibody recognizes cleanly and strongly the Hsp60 protein at 60 kDa. **Right:** HeLa cells were stained with CPCA-HSP60 (green). Blue is DAPI staining of DNA. The CPCA-HSP60 antibody reveals strong staining in mitochondria.

**Antibody characteristics:** Antibody was raised in chicken against recombinant full length purified HSP60 from *E. coli*. This antibody is an IgY prep at a total protein concentration of 16mg/ml. The preparation contains 0.02% sodium azide as a preservative. This antibody is known to react with HSP60 from human, mouse, rat and other mammals. Since HSP60 is highly conserved, it is likely that the antibody is effective on other species also.

**Suggestions for use:** The antibody solution can be used at dilutions of at least 1:2,000 in immunofluorescence experiments. In western blotting, it can be used at dilutions of 1: 10,000 or lower. Avoid repeated freezing and thawing, store at 4°C or -20°C.

**Limitations:** This product is for research use only and is not approved for use in humans or in clinical diagnosis.

**References:**

1. Ranford JC, Coates AR, Henderson B. "Chaperonins are cell-signalling proteins: the unfolding biology of molecular chaperones". [Expert Rev Mol Med 2:1-17 \(2000\)](#).
2. Koll H, Guiard B, Rassow J, Ostermann J, Horwich AL, Neupert W, Hartl FU. "Antifolding activity of hsp60 couples protein import into the mitochondrial matrix with export to the intermembrane space". [Cell 68:1163-75 \(1992\)](#).
3. Kaufman BA, Kolesar JE, Perlman PS, Butow RA. A function for the mitochondrial chaperonin Hsp60 in the structure and transmission of mitochondrial DNA nucleoids in *Saccharomyces cerevisiae*. [J Cell Biol. 163:457-61 \(2003\)](#).
4. Rizzo M, Macario AJ, de Macario EC, Gouni-Berthold I, Berthold HK, Rini GB, Zummo G, Cappello F. Heat shock protein-60 and risk for cardiovascular disease. [Curr Pharm Des 33:3662-8 \(2011\)](#).

**Availability and Price:** Available for shipping now, \$200 US per aliquot of 100 µL of IgY preparation , enough for hundreds of experiments.

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