

Datasheet for ABIN361785

## anti-HSPD1 antibody

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### Overview

Quantity:	200 µg
Target:	HSPD1
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This HSPD1 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), Flow Cytometry (FACS), ELISA, Immunoprecipitation (IP)

### Product Details

Immunogen:	Recombinant human HSP60
Clone:	LK1
Isotype:	IgG1
Specificity:	Detects ~60 kDa.
Cross-Reactivity:	Bombyx mori, Chicken, Cow, Dog, Drosophila melanogaster, Guinea Pig, Hamster, Human, Monkey, Mouse, Pig, Plant, Rabbit, Rat, Sheep, Xenopus laevis
Purification:	Protein G Purified

### Target Details

Target:	HSPD1
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## Target Details

Alternative Name: HSP60 ([HSPD1 Products](#))

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  $Mg^{2+}$  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).

Gene ID: 3329

NCBI Accession: [NP\\_002147](#)

UniProt: [P10809](#)

Pathways: [Activation of Innate immune Response](#), [Regulation of Leukocyte Mediated Immunity](#), [Positive Regulation of Immune Effector Process](#), [Production of Molecular Mediator of Immune Response](#), [Positive Regulation of Endopeptidase Activity](#)

## Application Details

Application Notes: • WB (1:20000)

## Application Details

- IHC (1:100)
- ICC/IF (1:100)
- IP (1:200)
- optimal dilutions for assays should be determined by the user.

Comment: 0.05 µg/ml of ABIN361784 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.

Restrictions: For Research Use only

## Handling

Format: Liquid

Concentration: 1 mg/mL

Buffer: PBS, 50 % glycerol, 0.09 % sodium azide, Storage buffer may change when conjugated

Preservative: Sodium azide

Precaution of Use: This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.

Storage: -20 °C

Storage Comment: -20°C

## Publications

Product cited in: Hangas, Kekäläinen, Potter, Michell, Aho, Rutanen, Spelbrink, Pohjoismäki, Goffart: "Top3α is the replicative topoisomerase in mitochondrial DNA replication." in: **Nucleic acids research**, Vol. 50, Issue 15, pp. 8733-8748, (2022) ([PubMed](#)).

Schuster, Anton, Simões, Altin, den Brave, Hermanns, Hospenthal, Komander, Dittmar, Dohmen, Escobar-Henriques: "Dual role of a GTPase conformational switch for membrane fusion by mitofusin ubiquitylation." in: **Life science alliance**, Vol. 3, Issue 1, (2020) ([PubMed](#)).

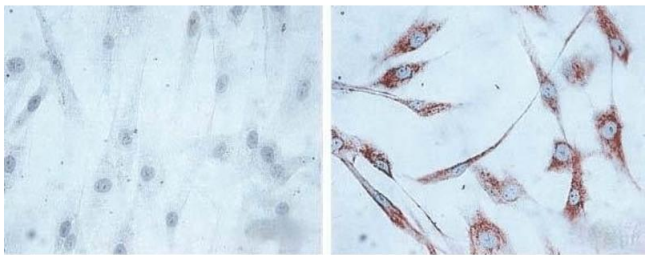
Hangas, Aasumets, Kekäläinen, Paloheinä, Pohjoismäki, Gerhold, Goffart: "Ciprofloxacin impairs mitochondrial DNA replication initiation through inhibition of Topoisomerase 2." in: **Nucleic acids research**, Vol. 46, Issue 18, pp. 9625-9636, (2019) ([PubMed](#)).

Dogan, Pujol, Maiti, Kukat, Wang, Hermans, Senft, Wibom, Rugarli, Trifunovic: "Tissue-specific loss of DARS2 activates stress responses independently of respiratory chain deficiency in the heart." in: **Cell metabolism**, Vol. 19, Issue 3, pp. 458-69, (2014) ([PubMed](#)).

Ahsan, Donnart, Nouri, Komatsu: "Tissue-specific defense and thermo-adaptive mechanisms of soybean seedlings under heat stress revealed by proteomic approach." in: **Journal of proteome research**, Vol. 9, Issue 8, pp. 4189-204, (2010) ([PubMed](#)).

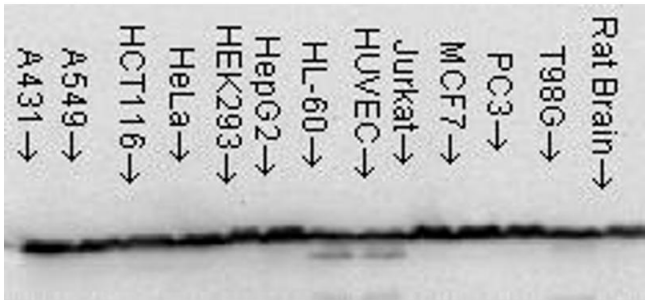
There are more publications referencing this product on: [Product page](#)

Images

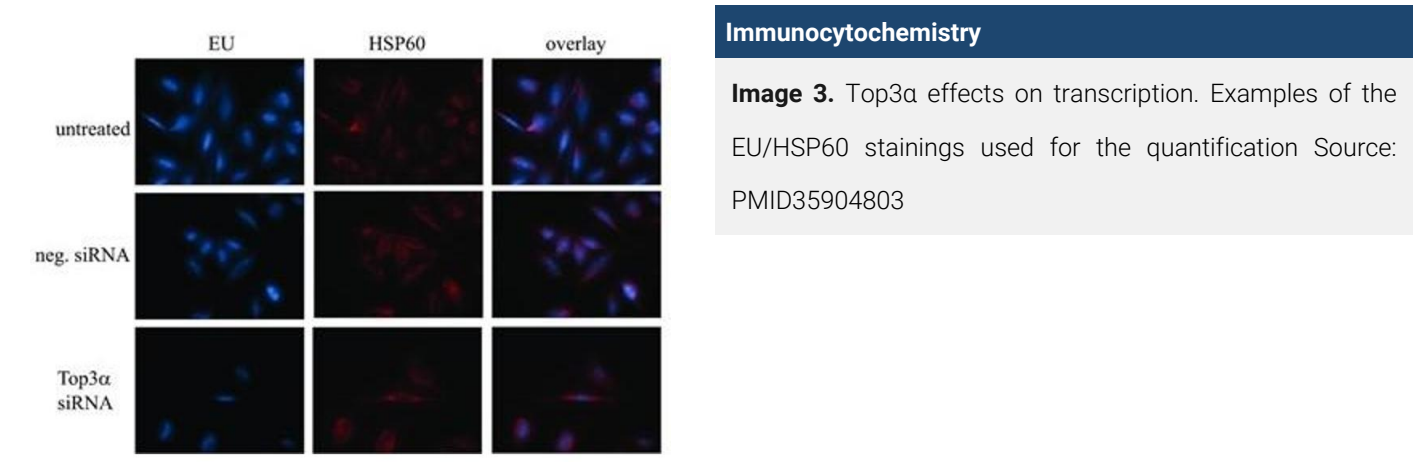


Immunocytochemistry

**Image 1.** Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK1, (ABIN361784 and ABIN361785). Tissue: skin Fibroblasts. Species: Human. Fixation: Cold 100 % methanol for 30 minutes at -20 °C . Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (ABIN361784 and ABIN361785) at 1:1000 for 1 hour at RT. Secondary Antibody: DAKO LSAB2 streptavidin-peroxidase system. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain. Left: control, Right: 24 hours after 7th passage of senescence. Courtesy of: Valentina di Felice, University of Palermo, Italy.



**Image 2.** Hsp60 (LK 1), cell line mix.



Please check the [product details page](#) for more images. Overall 6 images are available for ABIN361785.