abcam

ab233878

Anti-Hsp60 antibody [LK1] - Mitochondrial Marker

Lab Essentials

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: PBS, 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human HSPD1. Database link P10809
Clone number	LK1
Purification technique	Affinity purification Protein A/G
Light chain type	kappa
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from Bioreactor Concentrate by Protein A/G.

Reactivity data

ICC

Tested

Species	Human

Dilution info	1-2 µg/mL
Notes	-

Not recommended

Species	Bacteria, Spinacia oleracea, Mouse, Rat, Sheep, Rabbit, Chicken, Hamster, Cow, Dog, Pig, Xenopus laevis, Drosophila melanogaster, Monkey
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1-2 µg for 10^6 Cells
Notes	-

Not recommended

Species	Bacteria, Spinacia oleracea, Mouse, Rat, Sheep, Rabbit, Chicken, Hamster, Cow, Dog, Pig, Xenopus laevis, Drosophila melanogaster, Monkey
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	0.25-0.5 µg/mL
Notes	-

Not recommended

Species	Bacteria, Spinacia oleracea, Mouse, Rat, Sheep, Rabbit, Chicken, Hamster, Cow, Dog, Pig, Xenopus laevis, Drosophila melanogaster, Monkey

Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	Primary incubation for 30 minutes at RT.

Not recommended

Species	Bacteria
Dilution info	-
Notes	Primary incubation for 30 minutes at RT.

Species	Spinacia oleracea
Dilution info	-
Notes	Primary incubation for 30 minutes at RT.

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

Species	Sheep
Dilution info	-
Notes	-

Species	Rabbit
Dilution info	-
Notes	-

Species	Chicken
Dilution info	-
Notes	-

Species	Hamster
Dilution info	-
Notes	-

Species	Cow
Dilution info	-
Notes	-

Species	Dog
Dilution info	-
Notes	-

Species	Pig
Dilution info	-
Notes	-

Species	Xenopus laevis
Dilution info	-
Notes	-

Species	Drosophila melanogaster
Dilution info	-
Notes	-

Species	Monkey
Dilution info	-
Notes	-

Target data

See full target information HSPD1

Function	Chaperonin implicated in mitochondrial protein import and macromolecular assembly. Together with Hsp10, facilitates the correct folding of imported proteins. May also prevent misfolding and promote the refolding and proper assembly of unfolded polypeptides generated under stress conditions in the mitochondrial matrix (PubMed:11422376, PubMed:1346131). The functional units of these chaperonins consist of heptameric rings of the large subunit Hsp60, which function as a back-to-back double ring. In a cyclic reaction, Hsp60 ring complexes bind one unfolded substrate protein per ring, followed by the binding of ATP and association with 2 heptameric rings of the co-chaperonin Hsp10. This leads to sequestration of the substrate protein in the inner cavity of Hsp60 where, for a certain period of time, it can fold undisturbed by other cell components. Synchronous hydrolysis of ATP in all Hsp60 subunits results in the dissociation of the chaperonin rings and the release of ADP and the folded substrate protein (Probable).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Hsp60 also known as HSPD1 and heat shock protein 60 is a significant chaperonin with a molecular weight of approximately 60 kDa. It resides predominantly in the mitochondria and functions to assist in the proper folding of proteins preventing their aggregation. Hsp60 is expressed mainly in cells with high metabolic activity. Its presence as a mitochondrial marker highlights its essential role in maintaining cellular homeostasis and function.
Biological function summary	The protein ensures mitochondrial protein stability by facilitating the refolding of misfolded proteins and cooperating with other chaperonins like Hsp10. Hsp60 participates in forming a complex with these proteins to create a conducive environment for protein folding. It plays a part in regulating mitochondrial homeostasis impacting cell survival and apoptosis processes.

Pathways	Hsp60 links to the ATP synthesis and apoptosis pathways showcasing its importance as a mitochondrial marker. It interacts with proteins like caspase-3 to modulate cell death mechanisms highlighting its influence beyond simple protein folding. In the ATP synthesis pathway it contributes indirectly to energy production by maintaining mitochondrial function.
Associated diseases and disorders	Hsp60 shows a connection to neurodegenerative diseases and cancer. Altered Hsp60 levels correlate with increased apoptosis in neurodegenerative conditions like Alzheimer's disease. Additionally in cancer interactions with proteins such as AKT suggest its potential role in cell proliferation and survival. Understanding its role could aid in the development of therapeutic interventions targeting mitochondrial dysfunction.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

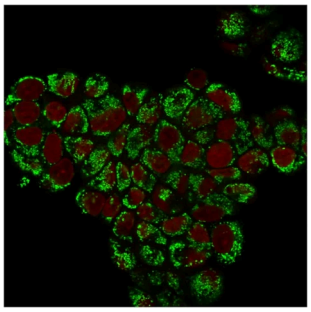
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

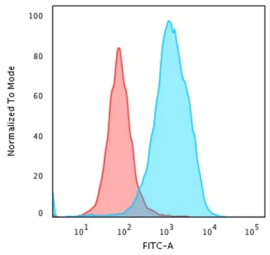
4 product images



Immunocytochemistry - Anti-Hsp60 antibody [LK1] - Mitochondrial Marker (ab233878)

Hsp60 Immunocytochemistry staining using mouse Anti-Hsp60 antibody

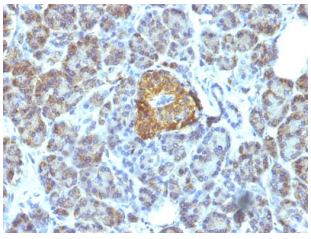
Immunocytochemistry analysis of PFA-fixed MCF-7 (human breast adenocarcinoma cell line) cells labeling Hsp60 with ab233878 at 2 µg/mL followed by goat anti-Mouse IgG-CF488 (green). Nuclei are labeled with Reddot (red).



Flow Cytometry - Anti-Hsp60 antibody [LK1] - Mitochondrial Marker (ab233878)

Hsp60 Flow Cytometry staining using mouse Anti-Hsp60 antibody

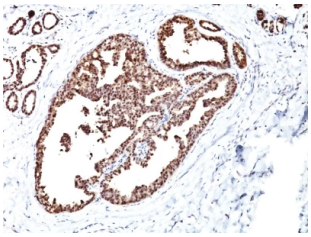
Flow Cytometry analysis of paraformaldehyde-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling Hsp60 with ab233878 at 2 µg/10^6 cells followed by goat anti-Mouse IgG-CF488 (Blue); Isotype Control (Red).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody [LK1] - Mitochondrial Marker (ab233878)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Hsp60 antibody

Formalin-fixed paraffin-embedded human pancreas tissue stained for Hsp60 using ab233878 at 1 µg/ml in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody [LK1] - Mitochondrial Marker (ab233878)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Hsp60 antibody

Formalin-fixed paraffin-embedded human breast carcinoma tissue stained for Hsp60 using ab233878 at 1 µg/ml in immunohistochemical analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.