abcam

ab128483

Anti-Hsp90 alpha antibody [5G5]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human HSP90AA1. The exact immunogen used to generate this antibody is proprietary information. Database link P07900
Clone number	5G5
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	African green monkey, Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide, Recombinant fragment - Human
Dilution info	-
Notes	-

ELISA

Tested

Species	Synthetic peptide
Dilution info	1/10000
Notes	-

Expected

Species	Human, African green monkey, Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	African green monkey
Dilution info	1/500 - 1/2000
Notes	-

Species	Rat
Dilution info	1/500 - 1/2000
Notes	-

Species	Recombinant fragment - Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Mouse
Dilution info	1/500 - 1/2000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Expected

Species	African green monkey, Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information HSP90AA1

Function

Molecular chaperone that promotes the maturation, structural maintenance and proper regulation of specific target proteins involved for instance in cell cycle control and signal transduction. Undergoes a functional cycle that is linked to its ATPase activity which is essential for its chaperone activity. This cycle probably induces conformational changes in the client proteins, thereby causing their activation. Interacts dynamically with various co-chaperones that modulate its substrate recognition, ATPase cycle and chaperone function (PubMed:11274138, PubMed:12526792, PubMed:15577939, PubMed:15937123, PubMed:27353360, PubMed:29127155). Engages with a range of client protein classes via its interaction with various co-chaperone proteins or complexes, that act as adapters, simultaneously able to interact with the specific client and the central chaperone itself (PubMed:29127155). Recruitment of ATP and co-chaperone followed by client protein forms a functional chaperone. After the completion of the chaperoning process, properly folded client protein and co-chaperone leave HSP90 in an ADP-bound partially open conformation and finally, ADP is released from HSP90 which acquires an open conformation for the next cycle (PubMed:26991466, PubMed:27295069). Plays a critical role in mitochondrial import, delivers preproteins to the mitochondrial import receptor TOMM70 (PubMed:12526792). Apart from its chaperone activity, it also plays a role in the regulation of the transcription machinery. HSP90 and its co-chaperones modulate transcription at least at three different levels (PubMed:25973397). In the first place, they alter the steady-state levels of certain transcription factors in response to various physiological cues (PubMed:25973397). Second, they modulate the activity of certain epigenetic modifiers, such as histone deacetylases or DNA methyl transferases, and thereby respond to the change in the environment (PubMed:25973397). Third, they participate in the eviction of histones from the promoter region of certain genes and thereby turn on gene expression (PubMed:25973397). Binds bacterial lipopolysaccharide (LPS) and mediates LPS-induced inflammatory response, including TNF secretion by monocytes (PubMed:11276205). Antagonizes STUB1-mediated inhibition of TGF-beta signaling

via inhibition of STUB1-mediated SMAD3 ubiquitination and degradation (PubMed:24613385). Mediates the association of TOMM70 with IRF3 or TBK1 in mitochondrial outer membrane which promotes host antiviral response (PubMed:20628368, PubMed:25609812). (Microbial infection) Seems to interfere with N.meningitidis NadA-mediated invasion of human cells. Decreasing HSP90 levels increases adhesion and entry of E.coli expressing NadA into human Chang cells; increasing its levels leads to decreased adhesion and invasion.

Storage

Shipped at conditions	Blue Ice
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	Hsp90 alpha also known as Hsp90AA1 or 5G5 is a molecular chaperone with an approximate molecular weight of 90 kDa. It plays an important role in the folding stability and function of many client proteins. This protein is expressed ubiquitously in eukaryotic cells with high levels in the cytoplasm and the endoplasmic reticulum. Hsp90 alpha operates through a unique ATPase-driven chaperone cycle that modulates protein conformations helping in the assembly and disassembly of protein complexes.
Biological function summary	Hsp90 alpha assists in maintaining protein homeostasis and is part of a larger chaperome complex including co-chaperones and other chaperones such as Hsp70. It plays an important role in stress response by stabilizing proteins and preventing aggregation. Hsp90 alpha is essential for the normal function of several kinases and transcription factors which are important for cell signaling and regulation processes. It functions as a mediator for cellular response to environmental cues.
Pathways	Hsp90 alpha is an integral component in the signal transduction and cell cycle control pathways. It interacts with various signaling proteins and receptors like AKT and steroid hormone receptors to facilitate their proper folding and activation. Furthermore Hsp90 alpha influences the MAPK/ERK pathway playing a role in cell proliferation and differentiation. Its interaction with Hsp90 protein clients creates a regulatory framework across multiple pathways allowing precise control over cellular function.

Associated diseases and disorders	Hsp90 alpha is linked to cancer and neurodegenerative diseases. Its enhanced expression in tumors correlates with the stabilization of oncogenic client proteins such as HER2 contributing to cancer progression. Additionally Hsp90 alpha relates to disorders like Alzheimer's disease due to its role in handling misfolded proteins. The protein interacts with co-chaperones like H1L1 which may influence its impact on disease outcomes highlighting the therapeutic potential of targeting Hsp90 alpha in these conditions.

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

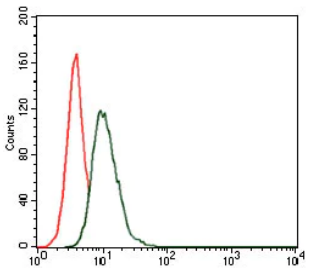
We do not recommend this combination. It is not covered by our product promise.

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.

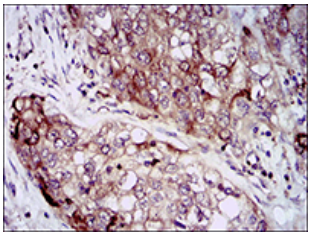
6 product images



Flow Cytometry - Anti-Hsp90 alpha antibody [5G5] (ab128483)

Hsp90 alpha Flow Cytometry staining using mouse Anti-Hsp90 alpha antibody

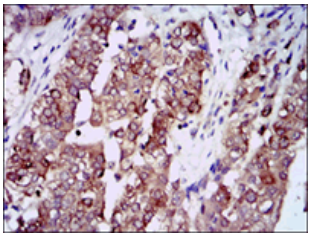
ab128483, at a 1/200 dilution, staining Hsp90 alpha in HeLa cells by Flow Cytometry (green). Negative control is shown in red.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp90 alpha antibody [5G5] (ab128483)

Hsp90 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Hsp90 alpha antibody

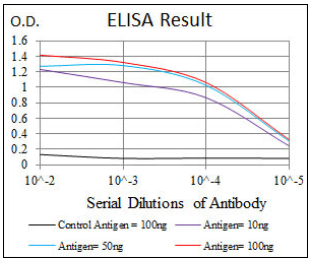
ab128483, at a 1/200 dilution, staining Hsp90 alpha in paraffin embedded lung cancer tissue by Immunohistochemistry, with DAB staining.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp90 alpha antibody [5G5] (ab128483)

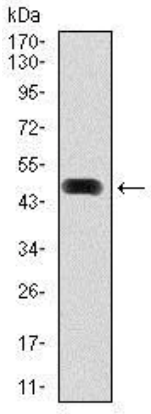
Hsp90 alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Hsp90 alpha antibody

ab128483, at a 1/200 dilution, staining Hsp90 alpha in paraffin embedded lung cancer tissue by Immunohistochemistry, with DAB staining.



ELISA - Anti-Hsp90 alpha antibody [5G5] (ab128483)

ELISA using ab128483.

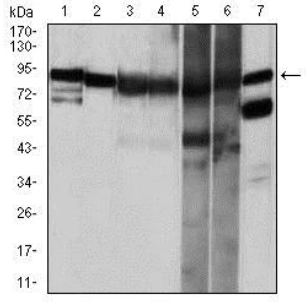


Western blot - Anti-Hsp90 alpha antibody [5G5] (ab128483)

Expected MWt of recombinant protein is 50.5 kDa.
All lanes:
Western blot - Anti-Hsp90 alpha antibody [5G5] (ab128483) at 1/500 dilution

All lanes:
Human Hsp90 alpha (amino acids 275-484) recombinant protein

Predicted band size: 49 kDa, 57 kDa, 72 kDa, 75 kDa, 84 kDa, 85 kDa



Western blot - Anti-Hsp90 alpha antibody [5G5] (ab128483)

All lanes:
Western blot - Anti-Hsp90 alpha antibody [5G5] (ab128483) at 1/500 dilution

Lane 1:
NIH 3T3 cell lysate

Lane 2:
HeLa cell lysate

Lane 3:
HCT116 cell lysate

Lane 4:

HL-60 cell lysate

Lane 5:
SK-Br-3 cell lysate

Lane 6:
C6 cell lysate

Lane 7:
COS7 cell lysate

Predicted band size: 85 kDa

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