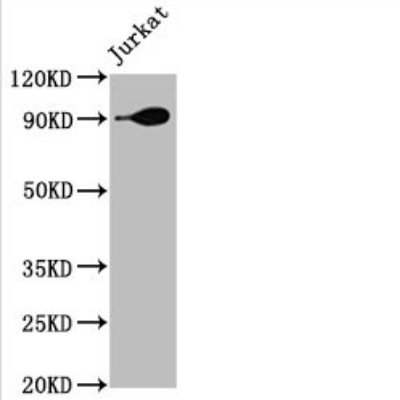
HSP90AA1 Recombinant Monoclonal Antibody

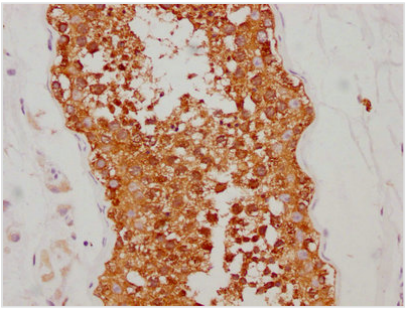
Product Code	CSB-RA011087A2HU
Abbreviation	Heat shock protein HSP 90-alpha
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P07900
Immunogen	A synthesized peptide derived from human HSP90AA1
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC, IF; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200, IF:1:20-1:200
Relevance	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: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:27295069, PubMed:26991466). 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).
Form	Liquid
Conjugate	Non-conjugated

Storage Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Heat shock protein HSP 90-alpha, Heat shock 86 kDa, HSP 86, HSP86, Lipopolysaccharide-associated protein 2, LAP-2, LPS-associated protein 2, Renal carcinoma antigen NY-REN-38, HSP90AA1, HSP90A, HSPC1, HSPCA
Immunogen Species	Homo sapiens (Human)
Research Area	Signal Transduction
Gene Names	HSP90AA1
Clone No.	4D1

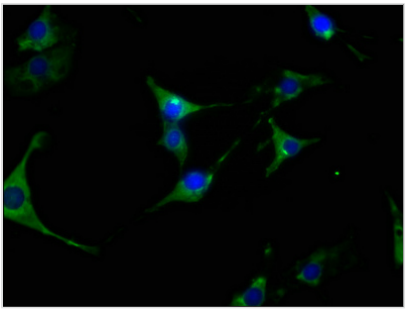
Image



Western Blot
Positive WB detected in: Jurkat whole cell lysate
All lanes: Hsp90 alpha antibody at 1.9µg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 85, 99 KDa
Observed band size: 90 KDa



IHC image of CSB-RA011087A2HU diluted at 1:190 and staining in paraffin-embedded human testis tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.



Immunofluorescence staining of NIH/3T3 cells with CSB-RA011087A2HU at 1:63, counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4?. The secondary antibody was Alexa Fluor 488-congugated AffiniPure Goat Anti-Rabbit IgG (H+L).

Description

The production of the HSP90AA1 recombinant monoclonal antibody involves the application of DNA recombinant technology and in vitro genetic manipulation. Initially, an animal is immunized with a synthesized peptide derived from human HSP90AA1, leading to the isolation and selection of B cells that produce the desired antibody. These positive B cells undergo screening and single clone identification to ensure their specificity. Next, the light and heavy chains of the HSP90AA1 antibody are amplified through PCR and inserted into a plasmid vector, creating a recombinant vector. This vector is then introduced into a host cell line for efficient antibody expression. The HSP90AA1 recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography. With its ability to selectively bind to human HSP90AA1 protein, this antibody is well-suited for ELISA, WB, IHC, and IF applications.

The HSP90AA1 protein is a chaperone protein that plays an important role in cellular protein folding, maturation, and stability. It is involved in the folding and maintenance of a wide variety of client proteins, including kinases, transcription factors, and steroid hormone receptors, among others. In addition to its chaperone activity, HSP90AA1 also plays a role in signal transduction pathways by interacting with various signaling proteins and modulating their activity. It has been shown to play a critical role in the regulation of many key cellular processes, including cell cycle progression, cell survival, and apoptosis.