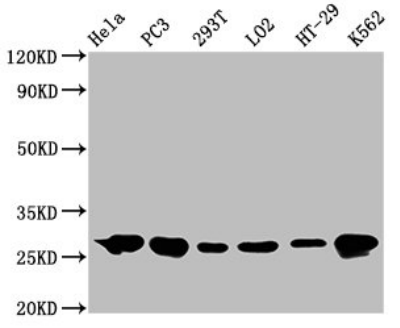
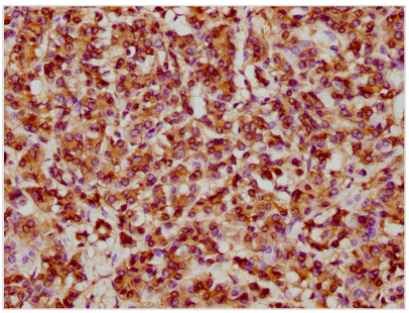
HSPB1 Recombinant Monoclonal Antibody

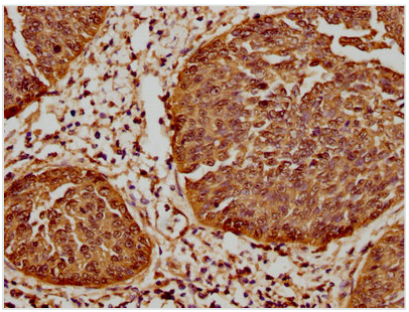
Product Code	CSB-RA010833A0HU
Abbreviation	Heat shock protein beta-1
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P04792
Immunogen	A synthesized peptide derived from human HSPB1
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC, IF, FC, IP; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200, IF:1:20-1:200, IP:1:200-1:1000
Relevance	Small heat shock protein which functions as a molecular chaperone probably maintaining denatured proteins in a folding-competent state (PubMed:10383393, PubMed:20178975). Plays a role in stress resistance and actin organization (PubMed:19166925). Through its molecular chaperone activity may regulate numerous biological processes including the phosphorylation and the axonal transport of neurofilament proteins (PubMed:23728742).
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 beta-1, HspB1, 28 kDa heat shock protein, Estrogen-regulated 24 kDa protein, Heat shock 27 kDa protein, HSP 27, Stress-responsive protein 27, SRP27, HSPB1, HSP27, HSP28
Immunogen Species	Homo sapiens (Human)
Research Area	Signal Transduction
Gene Names	HSPB1
Clone No.	10C11
Image	



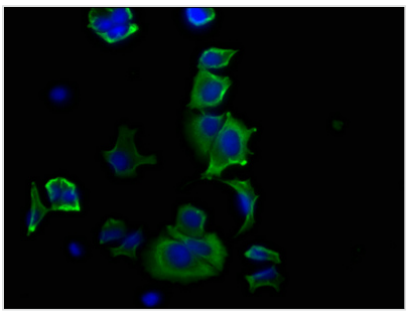
Western Blot
Positive WB detected in: Hela whole cell lysate, PC3 whole cell lysate, 293T whole cell lysate, LO2 whole cell lysate, HT-29 whole cell lysate, K562 whole cell lysate
All lanes: Hsp27 antibody at 0.62μg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 23 KDa
Observed band size: 27 KDa



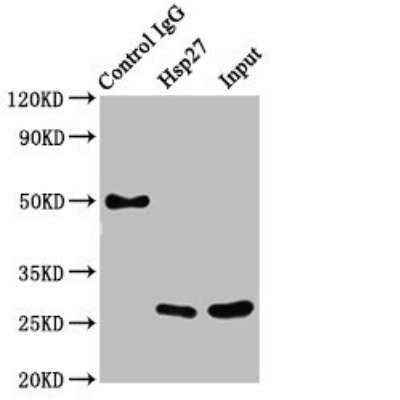
IHC image of CSB-RA010833A0HU diluted at 1:61.9 and staining in paraffin-embedded human pancreatic tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min 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.



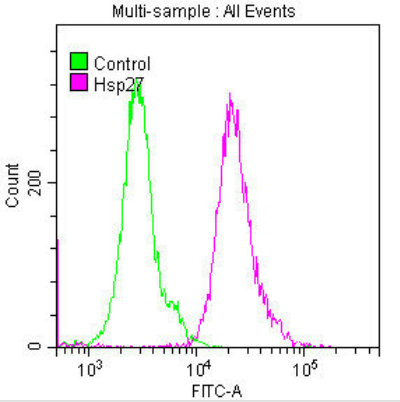
IHC image of CSB-RA010833A0HU diluted at 1:61.9 and staining in paraffin-embedded human cervical cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min 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 MCF-7 cells with CSB-RA010833A0HU at 1:20, 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).



Immunoprecipitating Hsp27 in Hela whole cell lysate
Lane 1: Rabbit control IgG instead of CSB-RA010833A0HU in Hela whole cell lysate. For western blotting, a HRP-conjugated Protein G antibody was used as the secondary antibody (1/2000)
Lane 2: CSB-RA010833A0HU (3μg) + Hela whole cell lysate (500μg)
Lane 3: Hela whole cell lysate (20μg)



Overlay histogram showing Hela cells stained with CSB-RA010833A0HU (red line) at 1:50. The cells were fixed with 70% Ethylalcohol (18h) and then permeabilized with 0.3% Triton X-100 for 2 min. The cells were then incubated in 1x PBS /10% normal goat serum to block non-specific protein-protein interactions followed by primary antibody for 1 h at 4?. The secondary antibody used was FITC goat anti-rabbit IgG (H+L) at 1/200 dilution for 1 h at 4?. Control antibody (green line) was used under the same conditions. Acquisition of >10,000 events was performed.

Description

The production of the HSPB1 recombinant monoclonal antibody employs DNA recombinant technology and in vitro genetic manipulation. Initially, an animal is immunized with a synthesized peptide derived from human HSPB1, and positive B cells are isolated and selected. The selected B cells undergo screening and single clone identification. The genes encoding the light and heavy chains of the HSPB1 antibody are then amplified through PCR and inserted into a plasmid vector to create a recombinant vector, which is introduced into a host cell line for antibody expression. The HSPB1 recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography. It exhibits specific reactivity towards human HSPB1 protein and is recommended for multiple applications, including ELISA, WB, IHC, IF, FC, and IP.

The HSPB1, also known as HSP27, acts as a molecular chaperone, helping to prevent protein aggregation and maintaining the proper conformation of proteins in the cell. It is involved in various cellular processes such as stress response, apoptosis, and protein quality control. HSPB1 plays a key role in protecting cells from various stressors, such as heat, oxidative stress, radiation, and toxic chemicals. HSPB1 has been shown to regulate apoptosis by inhibiting the activity of caspases.