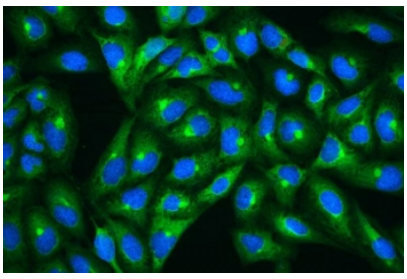
HSP27 Polyclonal Antibody / HSPB1 Antibody (R31650)

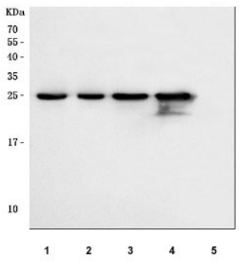
Catalog No.	Formulation	Size
R31650	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

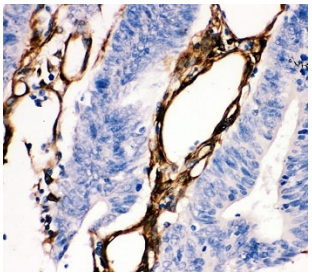
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
Gene ID	3315
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This HSP27 Polyclonal Antibody / HSPB1 Antibody is available for research use only.



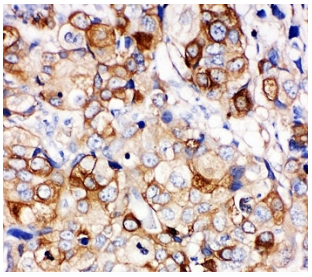
HSP27 Polyclonal Antibody IF Analysis of Human U-2 OS Cells. Immunofluorescence analysis of formalin-fixed, paraffin-embedded human U-2 OS cells using HSPB1 Antibody. Green fluorescence is observed predominantly in the cytoplasm, with DAPI nuclear counterstaining shown in blue. Heat-induced epitope retrieval was performed using citrate buffer (pH 6.0) for 20 minutes.



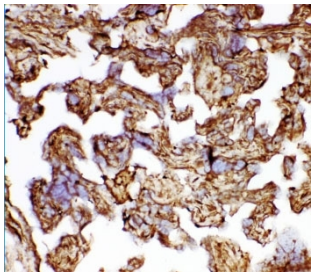
HSP27 Polyclonal Antibody WB Analysis of Human A549, Caco-2, HeLa, MCF7 and HT-1080 Cells. Western blot analysis of human A549 (lane 1), Caco-2 (lane 2), HeLa (lane 3), MCF7 (lane 4), and HT-1080 (lane 5) cell lysates using HSPB1 Antibody. Immunoreactive bands are detected at approximately 25-27 kDa, consistent with the expected migration of HSP27.



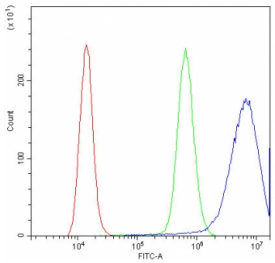
HSP27 Polyclonal Antibody IHC Analysis of Human Intestinal Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human intestinal cancer tissue using HSPB1 Antibody. Brown DAB staining is observed in malignant glandular epithelial cells, predominantly within the cytoplasm and along cellular borders. Heat-induced epitope retrieval was performed using citrate buffer (pH 6.0) for 10-20 minutes.



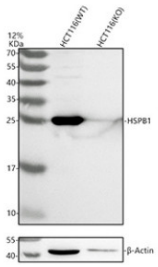
HSP27 Polyclonal Antibody IHC Analysis of Human Breast Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human breast cancer tissue using HSPB1 Antibody. Brown DAB staining is observed predominantly in the cytoplasm of malignant epithelial cells. Heat-induced epitope retrieval was performed using citrate buffer (pH 6.0) for 10-20 minutes.



HSP27 Polyclonal Antibody IHC Analysis of Human Placental Tissue. Immunohistochemical analysis of frozen human placental tissue using HSPB1 Antibody. Brown DAB staining is observed in placental cells, predominantly within the cytoplasm.



HSP27 Polyclonal Antibody FACS Staining of Human A431 Cells. Flow cytometry analysis of fixed and permeabilized human A431 cells using HSPB1 Antibody at 1 ug per million cells following blocking with goat serum. The antibody-stained population (blue) shows increased fluorescence relative to the isotype control (green) and cells-only control (red).



HSP27 Polyclonal Antibody WB Analysis of Human HCT116 WT and HSPB1 KO Cells. Western blot analysis of wild-type (WT) HCT116 cell lysate (lane 1) and HSPB1 knockout (KO) HCT116 cell lysate (lane 2) using HSPB1 Antibody. A prominent band is detected at approximately 27 kDa in WT cells and is markedly reduced in HSPB1 KO cells, consistent with knockout-dependent loss of HSP27 signal. Although the calculated molecular weight of HSP27 is approximately 23 kDa, migration near 27 kDa is commonly observed.

Description

HSP27 Polyclonal Antibody / HSPB1 Antibody targets heat shock protein beta-1, a member of the small heat shock protein family encoded by the HSPB1 gene. Commonly known as HSP27, this ATP-independent molecular chaperone contributes to cellular protection against environmental and physiological stress. Unlike larger ATP-dependent heat shock proteins, HSP27 helps maintain protein stability through interactions with partially unfolded proteins, limiting aggregation and supporting cellular proteostasis.

HSP27 contains a conserved alpha-crystallin domain that facilitates protein interactions and oligomer formation. The

protein assembles into dynamic oligomeric complexes whose size and organization are influenced by phosphorylation and cellular conditions. Phosphorylation at several serine residues, particularly Ser15, Ser78, and Ser82, is associated with changes in oligomerization and chaperone-related functions. These modifications are regulated in part through the p38 MAPK-MAPKAPK2 signaling pathway during cellular stress.

Beyond its chaperone activity, HSP27 participates in actin cytoskeleton regulation, cell migration, and maintenance of cellular structure. Its interactions with cytoskeletal components influence actin filament dynamics and contribute to cellular adaptation during mechanical or oxidative stress. HSP27 also participates in signaling pathways associated with apoptosis, helping regulate cellular responses to potentially damaging conditions.

Expression of HSPB1 can increase following heat exposure, oxidative stress, and other cellular challenges. Its protective functions are particularly important in tissues exposed to repeated physiological stress. HSP27 is also involved in neuronal maintenance, and pathogenic variants in HSPB1 have been associated with inherited peripheral neuropathies, including Charcot-Marie-Tooth disease type 2F and distal hereditary motor neuropathy.

Altered HSP27 expression and phosphorylation have been investigated in cancer, where the protein can influence cellular survival, migration, and resistance to stress. Elevated expression has been reported in several malignancies, although its biological significance depends on tumor type and cellular context. These observations have generated interest in HSP27 as a regulator of stress adaptation and disease-associated signaling.

Understanding HSPB1 function provides insight into protein quality control, cytoskeletal organization, and cellular responses to environmental challenges. HSP27 Polyclonal Antibody supports research into the molecular mechanisms connecting small heat shock proteins with stress signaling, neuronal function, and cellular homeostasis.

For an additional monoclonal antibody to HSPB1 with Protein Microarray Validated specificity data, see our HSPB1 Antibody / Heat Shock Protein Beta-1 Antibody page.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the HSP27 Polyclonal Antibody / HSPB1 Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

Human partial recombinant protein (AA 1-205) was used as the immunogen for this HSP27 antibody.

Storage

After reconstitution, the HSP27 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

HSPB1 antibody, Heat shock protein beta-1 antibody, Heat shock 27 kDa protein antibody, HSP28 antibody, HSP25 antibody, Small heat shock protein 27 antibody

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