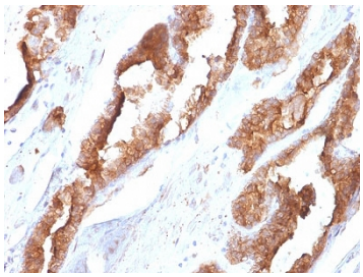
HSPB1 Antibody / Heat Shock Protein Beta-1 Antibody [clone CPTC-HSPB1-2] (V7422)

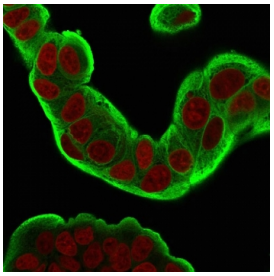
Catalog No.	Formulation	Size
V7422-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7422-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7422SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V7422IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Bulk quote request

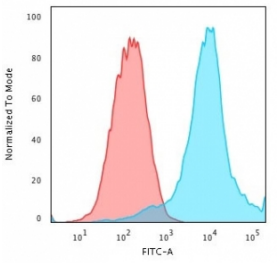
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	CPTC-HSPB1-2
Purity	Protein G affinity chromatography
UniProt	P04792
Localization	Predominantly cytoplasmic with some nuclear
Applications	Flow cytometry: 1-2ug/10^6 cells Immunofluorescence: 1-2ug/ml Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT Western blot: 1-2ug/ml
Limitations	This HSPB1 Antibody / Heat Shock Protein Beta-1 Antibody is available for research use only.



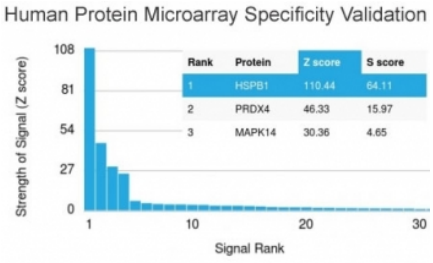
HSPB1 Antibody CPTC-HSPB1-2 Staining of Human Prostate IHC. Immunohistochemistry testing of FFPE human prostate tissue with HSPB1 Antibody clone CPTC-HSPB1-2 shows strong brown immunoreactivity with a predominantly cytoplasmic staining pattern. HIER was performed by boiling tissue sections in pH 9, 10 mM Tris with 1 mM EDTA for 10-20 min followed by cooling before antibody testing.



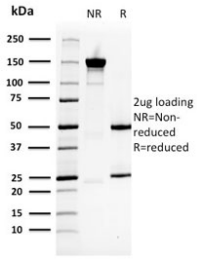
HSPB1 Antibody CPTC-HSPB1-2 Staining of MCF7 Breast Cancer Cells IF. Immunofluorescence staining of PFA-fixed human MCF7 breast cancer cells with HSPB1 Antibody clone CPTC-HSPB1-2 shows strong green signal predominantly throughout the cytoplasm, surrounding nuclei counterstained red with Reddot nuclear stain.



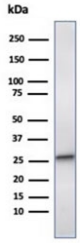
HSPB1 Antibody CPTC-HSPB1-2 Detection in MCF7 Breast Cancer Cells FACS. Flow cytometry testing of PFA-fixed human MCF7 breast cancer cells with HSPB1 Antibody clone CPTC-HSPB1-2 shows a pronounced rightward fluorescence shift of the antibody-stained population (blue) relative to the isotype control (red), demonstrating strong detection of HSPB1.



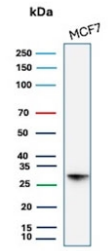
HSPB1 Antibody CPTC-HSPB1-2 Protein Microarray Specificity. Protein microarray analysis of more than 19,000 full-length human proteins using HSPB1 Antibody clone CPTC-HSPB1-2 identifies HSPB1 as the highest-ranked target, with a Z-score of approximately 113.44 and S-score of approximately 96.17. The Z-score represents binding signal relative to the mean signal across the array, while the S-score measures separation between HSPB1 and the next-highest protein signal. This antibody is Protein Microarray Validated.



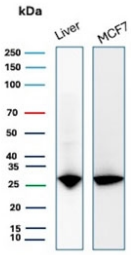
Purified HSPB1 Antibody CPTC-HSPB1-2 SDS-PAGE. SDS-PAGE analysis of 2 ug purified, BSA-free HSPB1 Antibody clone CPTC-HSPB1-2 under non-reducing (NR) and reducing (R) conditions. The non-reduced antibody migrates predominantly near 150 kDa, while reduction produces the expected immunoglobulin heavy and light chain bands at approximately 50 and 25 kDa, respectively, consistent with purified mouse IgG.



HSPB1 Antibody CPTC-HSPB1-2 Detection in Human Liver WB. Western blot testing of human liver tissue lysate with HSPB1 Antibody clone CPTC-HSPB1-2 shows a distinct band at approximately 27-30 kDa, consistent with the expected migration range of HSPB1/HSP27.



HSPB1 Antibody CPTC-HSPB1-2 Detection in MCF7 Breast Cancer Cells WB. Western blot testing of human MCF7 breast cancer cell lysate with HSPB1 Antibody clone CPTC-HSPB1-2 shows a strong, discrete band at approximately 27-30 kDa, consistent with the expected migration range of HSPB1/HSP27.



HSPB1 Antibody CPTC-HSPB1-2 Detection in Human Liver and MCF7 Cells WB. Western blot testing of human liver tissue and MCF7 breast cancer cell lysates with HSPB1 Antibody clone CPTC-HSPB1-2 shows strong bands at approximately 27-30 kDa in both samples, consistent with HSPB1/HSP27. The MCF7 signal is somewhat stronger than the liver signal under the conditions tested.

Description

HSPB1 Antibody / Heat Shock Protein Beta-1 Antibody recognizes HSPB1, a member of the small heat shock protein family commonly known as HSP27. HSPB1 is an ATP-independent molecular chaperone that contributes to protein homeostasis and cellular protection during environmental and physiological stress. Its ability to interact with destabilized proteins helps limit inappropriate aggregation and supports cellular mechanisms responsible for maintaining proteome integrity. HSP27 and HSP28 are well-established alternative names for HSPB1.

HSPB1 contains a conserved alpha-crystallin domain characteristic of the small heat shock protein family. Unlike ATP-dependent chaperones, small heat shock proteins can bind partially unfolded client proteins and maintain them in states that reduce aggregation. These stabilized proteins may subsequently be transferred to other components of the cellular chaperone machinery for refolding or directed toward degradation when recovery is not possible. HSPB1 can also assemble into dynamic oligomeric complexes whose organization is influenced by phosphorylation and cellular conditions.

Heat Shock Protein Beta-1 participates in cellular responses to heat, oxidative stress and other conditions that challenge protein stability. Beyond its chaperone activity, HSPB1 has been investigated for roles in cytoskeletal organization, differentiation, apoptosis and cell survival. Changes in HSPB1 phosphorylation and oligomerization can influence its interactions and functions, allowing the protein to respond dynamically to alterations in the cellular environment.

HSPB1 has received considerable attention in cancer research because its expression is altered in numerous malignancies and can be associated with cellular survival under stressful conditions. Increased HSPB1 activity has been studied in relation to tumor progression, apoptosis resistance and therapeutic response. Pathogenic HSPB1 variants are also associated with inherited peripheral neuropathies, including forms of Charcot-Marie-Tooth disease and distal hereditary motor neuropathy.

NSJ Bioreagents offers this mouse monoclonal HSPB1 Antibody as clone CPTC-HSPB1-2. HSPB1 is one of the best-characterized members of the human small heat shock protein family and is widely studied under its historical HSP27 name. An HSPB1 Antibody provides a research tool for investigating small heat shock protein biology, molecular chaperone activity, proteostasis and cellular responses to stress.

Researchers investigating HSPB1, cellular stress responses and cancer-associated protein homeostasis can explore related targets on our Cancer Marker Antibodies page.

Application Notes

Optimal dilution of the HSPB1 Antibody / Heat Shock Protein Beta-1 Antibody should be determined by the researcher.

1. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

Full length recombinant human protein was used as the immunogen for the HSPB1 Antibody.

Storage

Store the HSPB1 Antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

HSP27 antibody, Heat shock 27 kDa protein antibody, HSP28 antibody, HSP25 antibody, Stress-responsive protein 27 antibody, SRP27 antibody

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