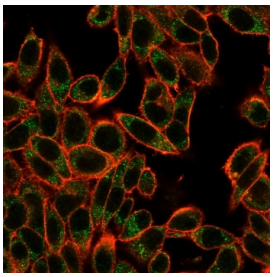
SMAD3 Antibody [clone PCRP-SMAD3-1A2] (V9231)

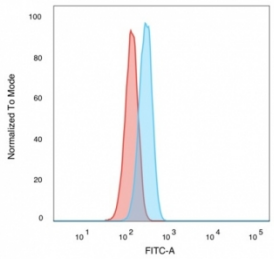
Catalog No.	Formulation	Size
V9231-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V9231-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20
V9231SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100

Bulk quote request

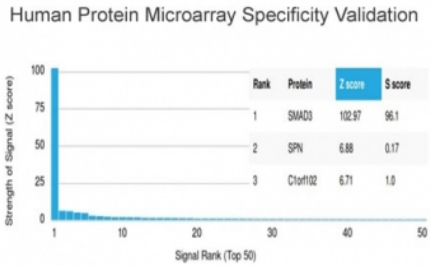
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	PCRP-SMAD3-1A2
Purity	Protein A/G affinity
UniProt	P84022
Localization	Cytoplasm, Nucleus
Applications	Flow Cytometry : 1-2ug/million cells Immunofluorescence : 1-2ug/ml
Limitations	This SMAD3 antibody is available for research use only.



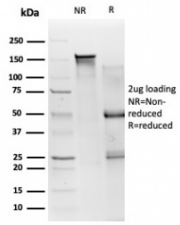
Immunofluorescent staining of PFA-fixed human HeLa cells using SMAD3 antibody (green, clone PCRP-SMAD3-1A2) and phalloidin (red).



FACS staining of PFA-fixed human HeLa cells with SMAD3 antibody (blue, clone PCRP-SMAD3-1A2), and unstained cells (red).



Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using SMAD3 antibody (clone PCRP-SMAD3-1A2). These results demonstrate the foremost specificity of the PCRP-SMAD3-1A2 mAb. Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.



SDS-PAGE analysis of purified, BSA-free SMAD3 antibody (PCRP-SMAD3-1A2) as confirmation of integrity and purity.

Description

SMAD3 is a signal transduction protein that serves as a central mediator of the transforming growth factor-beta (TGF-Î²) signaling cascade. As a receptor-regulated SMAD (R-SMAD), it is directly phosphorylated by activated TGF-Î² receptor kinases, which promotes its association with SMAD4 and subsequent nuclear translocation. Once in the nucleus, SMAD3 regulates the transcription of target genes that govern processes such as cellular proliferation, apoptosis, and immune regulation. A SMAD3 antibody is frequently used to study these pathways and their contributions to health and disease.

The importance of SMAD3 extends across many biological contexts. In development, it plays a role in tissue patterning and differentiation. In adult physiology, SMAD3 is essential for wound healing and extracellular matrix regulation. Dysregulated SMAD3 signaling contributes to pathological conditions such as organ fibrosis, where it drives the overproduction of collagen and fibrotic remodeling. Utilizing a SMAD3 antibody enables researchers to detect its expression and phosphorylation states, making it a powerful tool for fibrosis research.

SMAD3 also has dual roles in cancer biology. In early stages of tumorigenesis, it may suppress proliferation by inducing cell cycle arrest and apoptosis. However, in advanced cancers, SMAD3 signaling can promote tumor progression, epithelial-to-mesenchymal transition, and metastasis. This context-dependent activity underscores its complexity. Researchers employ a SMAD3 antibody to clarify its involvement in cancer development, progression, and therapeutic resistance.

NSJ Bioreagents provides a high-quality SMAD3 antibody validated for use in western blot, immunohistochemistry, and immunofluorescence. Choosing a SMAD3 antibody from NSJ Bioreagents ensures reliability in exploring TGF-Î² signaling, fibrosis, immune regulation, and oncogenic pathways.

Application Notes

Optimal dilution of the SMAD3 antibody should be determined by the researcher.

Immunogen

Recombinant full-length human SMAD3 protein was used as the immunogen for the SMAD3 antibody.

Storage

Aliquot the SMAD3 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.