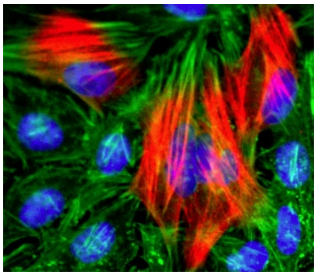
Recombinant Calponin Antibody [clone RM262] (R20275)

Catalog No.	Formulation	Size
R20275-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

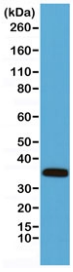
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM262
Purity	Protein A purified from animal origin-free supernatant
UniProt	P51911
Gene ID	1264
Applications	Western Blot : 1:1000-1:2000 Immunocytochemistry : 1:100-1:200
Limitations	This recombinant Calponin antibody is available for research use only.



ICC/IF of human HeLa cells using recombinant Calponin antibody (red). Actin filaments have been labeled with fluorescein phalloidin (green), and nucleus stained with DAPI (blue).



Western blot testing of mouse heart lysate with recombinant Calponin antibody. Predicted molecular weight ~33 kDa.

Description

The Recombinant Calponin antibody is a recombinant reagent engineered to detect calponin, a smooth muscleÃ¢Â€Â“associated actin-binding protein that regulates contractility and cytoskeletal organization. Calponin belongs to a family of thin filamentÃ¢Â€Â“associated proteins expressed in smooth muscle cells and certain non-muscle cell types. It plays an important role in modulating actomyosin interactions by inhibiting the ATPase activity of myosin, thereby reducing cross-bridge cycling and contraction. The Recombinant Calponin antibody provides precise and reproducible detection of this protein in both research and diagnostic applications.

Calponin is encoded by the CNN gene family, with three isoforms identified in vertebrates: calponin-1 (CNN1, basic calponin), calponin-2 (CNN2, neutral calponin), and calponin-3 (CNN3, acidic calponin). Calponin-1 is highly expressed in differentiated smooth muscle, while calponin-2 and calponin-3 are expressed more broadly, including in fibroblasts, endothelial cells, and certain neuronal populations. The protein contains actin-binding domains that allow it to stabilize actin filaments and regulate cytoskeletal remodeling. The Recombinant Calponin antibody recognizes conserved epitopes, ensuring broad applicability across isoforms and tissue types.

In immunohistochemistry, the Recombinant Calponin antibody is widely used as a diagnostic marker for smooth muscle tumors such as leiomyomas and leiomyosarcomas. It also helps distinguish myoepithelial cells in breast and salivary gland pathology. In immunofluorescence, the antibody highlights filamentous cytoplasmic structures, consistent with actin-associated localization. In western blotting, it detects calponin isoforms in tissue lysates, providing a reliable method for quantifying expression. Recombinant production ensures high lot-to-lot consistency, overcoming the variability that can occur with hybridoma-derived antibodies.

Calponin is also studied in the context of vascular biology, where it contributes to smooth muscle contractile function and differentiation. Its expression is often downregulated during vascular injury and remodeling, correlating with a shift from a contractile to a synthetic smooth muscle phenotype. In addition, calponin has been implicated in cell migration, proliferation, and extracellular matrix interactions, making it a focus in studies of wound healing and fibrosis. Synonym phrases such as recombinant CNN1 antibody, recombinant smooth muscle calponin antibody, and recombinant actin-binding calponin antibody broaden product discoverability for diverse research communities.

By delivering validated and reproducible detection, the Recombinant Calponin antibody supports a wide range of applications in muscle biology, pathology, and cytoskeletal research. NSJ Bioreagents validates this antibody under stringent quality standards, ensuring dependable results in immunohistochemistry, immunofluorescence, and western blotting. With specificity for calponin, the Recombinant Calponin antibody is an indispensable tool for investigating smooth muscle physiology, cytoskeletal regulation, and tumor diagnostics.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant Calponin antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A peptide corresponding to the C-terminus of human Calponin-1 was used as the immunogen for this recombinant Calponin antibody.

Storage

Store the recombinant Calponin antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

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