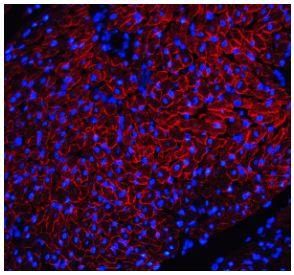
Dystrophin Polyclonal Antibody / DMD Antibody (R31689)

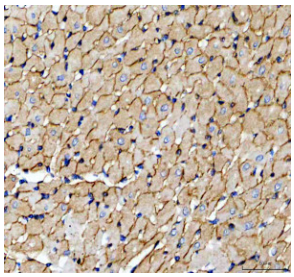
Catalog No.	Formulation	Size
R31689	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

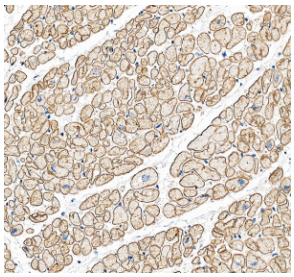
Species Reactivity	Human, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
Gene ID	1756
Applications	Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This Dystrophin Polyclonal Antibody is available for research use only.



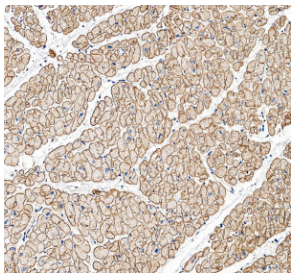
Dystrophin Polyclonal Antibody by IF in Rat Heart Tissue. Immunofluorescence staining of FFPE rat cardiac muscle tissue using rabbit polyclonal Dystrophin antibody at 5 ug/ml. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8.0, followed by blocking with 10% goat serum and overnight primary antibody incubation at 4oC. Cy3-conjugated goat anti-rabbit IgG was applied at 1:500 for 30 minutes at 37oC, and nuclei were counterstained with DAPI. DMD protein immunoreactivity was visualized using Cy3 fluorescence, with DAPI identifying cell nuclei.



Dystrophin Polyclonal Antibody by IHC in Rat Heart Tissue. Immunohistochemistry staining of FFPE rat cardiac muscle tissue using rabbit polyclonal Dystrophin antibody at 2 ug/ml. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8.0, followed by blocking with 10% goat serum. Sections were incubated with primary antibody overnight at 4oC and subsequently with peroxidase-conjugated goat anti-rabbit IgG for 30 minutes at 37oC. DAB was used for chromogenic detection, demonstrating DMD protein immunoreactivity in rat heart tissue.



Dystrophin Polyclonal Antibody by IHC in Human Cardiac Muscle. Immunohistochemistry analysis of FFPE human cardiac muscle tissue using rabbit polyclonal Dystrophin antibody at 2 ug/ml. Following heat-induced antigen retrieval in EDTA buffer at pH 8.0, sections were blocked with 10% goat serum and incubated with primary antibody overnight at 4oC. Detection was performed using peroxidase-conjugated goat anti-rabbit IgG and DAB chromogen. This second human heart preparation provides additional immunohistochemical validation of DMD protein detection.



Dystrophin Polyclonal Antibody by IHC in Human Heart Tissue. Immunohistochemistry staining of FFPE human heart tissue using rabbit polyclonal Dystrophin antibody at 2 ug/ml. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8.0. Tissue sections were blocked with 10% goat serum and incubated with primary antibody overnight at 4oC. Peroxidase-conjugated goat anti-rabbit IgG was applied for 30 minutes at 37oC, followed by DAB chromogenic detection. This experiment demonstrates immunohistochemical detection of DMD protein in human cardiac tissue.

Description

Dystrophin Polyclonal Antibody recognizes dystrophin, a large cytoskeletal protein encoded by the DMD gene that plays an essential role in maintaining muscle fiber integrity. Dystrophin is a central component of the dystrophin-associated glycoprotein complex (DGC), which mechanically connects the intracellular actin cytoskeleton to the extracellular matrix through the muscle cell membrane. This connection helps stabilize the sarcolemma during repeated cycles of muscle contraction and relaxation.

Full-length dystrophin, commonly designated Dp427, has a molecular weight of approximately 427 kDa and contains several functionally distinct regions. Its N-terminal actin-binding domain interacts with filamentous actin, while a central rod domain composed of spectrin-like repeats provides structural flexibility. Cysteine-rich and C-terminal regions mediate interactions with components of the dystrophin-associated protein complex, including beta-dystroglycan, syntrophins, and dystrobrevins. Together, these interactions help distribute mechanical forces across the muscle membrane.

Dystrophin is highly expressed in skeletal and cardiac muscle, where it is concentrated along the sarcolemma. The DMD gene also produces shorter protein isoforms through alternative promoters and transcript processing. These isoforms exhibit tissue-specific expression patterns and contribute to dystrophin-related functions outside skeletal muscle, including roles in the nervous system. The existence of multiple dystrophin isoforms is important when interpreting antibody reactivity and protein expression in different tissues.

Pathogenic variants in the DMD gene cause Duchenne muscular dystrophy and Becker muscular dystrophy, two X-linked disorders characterized by progressive muscle weakness and degeneration. Duchenne muscular dystrophy typically results from variants that eliminate functional dystrophin expression, whereas Becker muscular dystrophy is generally associated with the production of reduced amounts or structurally altered dystrophin. Loss of dystrophin destabilizes the sarcolemma, increasing susceptibility to contraction-induced injury and contributing to inflammation, muscle fiber degeneration, and progressive replacement of muscle tissue by fibrotic and fatty tissue.

Dystrophin research also encompasses cardiac dysfunction, muscle regeneration, and therapeutic approaches designed to restore dystrophin expression. These include exon-skipping strategies, gene replacement approaches, and interventions intended to improve muscle membrane stability. Antibody-based methods support investigations of dystrophin expression, molecular weight, and tissue distribution in experimental models.

A Dystrophin Polyclonal Antibody from NSJ Bioreagents supports research investigating DMD protein expression, dystrophin-associated complexes, skeletal and cardiac muscle biology, and molecular mechanisms underlying muscular dystrophy.

This DMD antibody can be compared with our Dystrophin Antibody (clone DMD/3241) for analysis of dystrophin expression across muscle structure and neuromuscular disease studies.

Application Notes

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

Immunogen

Human partial recombinant protein (AA 3076-3404) was used as the immunogen for this Dystrophin Polyclonal Antibody.

Storage

After reconstitution, the Dystrophin Polyclonal 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

DMD antibody, Dystrophin Protein antibody, Dystrophin Muscle Protein antibody, Dystrophin Dp427 antibody

Copyright © NSJ Bioreagents. All rights reserved.