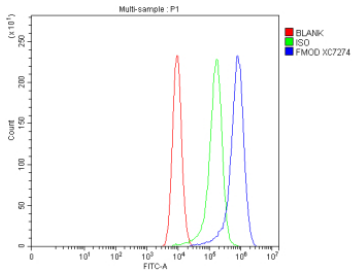
FMOD Antibody / Fibromodulin (FY12023)

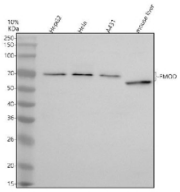
Catalog No.	Formulation	Size
FY12023	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q06828
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This FMOD antibody is available for research use only.



Flow Cytometry analysis of Caco-2 cells using anti-FMOD antibody. Overlay histogram showing Caco-2 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-FMOD antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of FMOD using anti-FMOD antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human HepG2 whole cell lysates, Lane 2: human Hela whole cell lysates, Lane 3: human whole cell lysates, Lane 4: mouse liver tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-FMOD antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. Expected size of FMOD ~43 kDa (core protein). Observed bands at ~70 kDa (human) and ~60 kDa (mouse) reflect the mature, glycosylated/keratan-sulfate-modified extracellular form of fibromodulin, consistent with published Western blot data showing 70-110 kDa for FMOD in human tissues.

Description

FMOD antibody detects Fibromodulin, encoded by the FMOD gene. Fibromodulin is a small leucine-rich repeat proteoglycan of the extracellular matrix that regulates collagen fibrillogenesis and tissue organization. FMOD antibody provides researchers with a specific reagent to study extracellular matrix biology, connective tissue remodeling, and disease processes involving abnormal matrix composition.

Fibromodulin is secreted by fibroblasts and chondrocytes and associates with collagen fibrils. Research using FMOD antibody has shown that it binds to type I and type II collagen fibrils, regulating their diameter and spacing. This interaction ensures proper biomechanical properties of tissues such as cartilage, tendons, and skin. Without Fibromodulin, collagen fibrils are irregular in size and arrangement, leading to impaired tissue strength and function.

Studies with FMOD antibody have revealed roles in tissue repair and wound healing. Fibromodulin is upregulated following injury and promotes scar formation by modulating collagen deposition and organization. It also influences the recruitment of macrophages and fibroblasts, linking extracellular matrix remodeling with immune responses. These findings highlight the importance of Fibromodulin in regenerative biology.

Fibromodulin is also involved in angiogenesis. Research using FMOD antibody has demonstrated that it binds to growth factors and modulates endothelial cell function. By interacting with transforming growth factor beta and vascular endothelial growth factor pathways, Fibromodulin regulates angiogenic responses during development and repair. Dysregulation can contribute to impaired healing or pathological angiogenesis in tumors.

Disease studies have connected Fibromodulin with osteoarthritis, fibrosis, and cancer. Research using FMOD antibody has shown that altered Fibromodulin expression affects cartilage integrity and progression of degenerative joint disease. Elevated expression has been associated with fibrotic disorders, while aberrant expression in tumors may contribute to cancer progression by modifying extracellular matrix stiffness and promoting invasion.

FMOD antibody is widely applied in immunohistochemistry, western blotting, and immunofluorescence. Immunohistochemistry identifies expression in connective tissues, western blotting quantifies protein levels and isoforms, and immunofluorescence reveals localization within matrix-rich environments. These methods make FMOD antibody valuable in extracellular matrix research.

By supplying validated FMOD antibody reagents, NSJ Bioreagents supports studies into collagen biology, tissue repair, and disease. Detection of Fibromodulin provides insight into how small leucine-rich proteoglycans regulate extracellular matrix function and pathology.

Application Notes

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

Immunogen

E.coli-derived human Fibromodulin/FMOD recombinant protein (Position: Q19-I376) was used as the immunogen for the FMOD antibody.

Storage

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

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