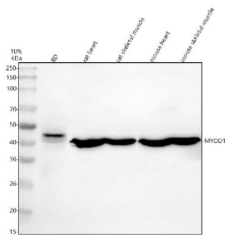
MYOD1 Antibody / Myoblast determination protein 1 (FY13124)

Catalog No.	Formulation	Size
FY13124	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, Rat
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	P15172
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This MYOD1 antibody is available for research use only.



Western blot analysis of MYOD1 using anti-MYOD1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human RD whole cell lysates, Lane 2: rat heart tissue lysates, Lane 3: rat skeletal muscle tissue lysates, Lane 4: mouse heart tissue lysates, Lane 5: mouse skeletal muscle 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-MYOD1 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. MYOD1 antibody detects a dominant band at ~45 kDa in human RD cells and at ~40 kDa in mouse and rat tissues. Although the theoretical molecular weight is ~35 kDa, MYOD1 typically migrates slower due to phosphorylation and its basic DNA-binding domain. The weaker lower band in the human sample likely represents a dephosphorylated or partially cleaved form.

Description

MYOD1 antibody detects Myoblast determination protein 1, a master transcription factor that controls skeletal muscle differentiation. The UniProt recommended name is Myoblast determination protein 1 (MYOD1). This basic helix-loop-helix (bHLH) transcription factor binds DNA at E-box motifs to activate muscle-specific gene expression, converting multipotent mesodermal cells into myoblasts.

Functionally, MYOD1 antibody identifies a 320-amino-acid nuclear protein that dimerizes with E proteins to regulate the transcription of myogenic regulatory genes such as MYOG and MYF5. MYOD1 acts as a pioneer factor, remodeling chromatin to establish muscle-specific transcriptional programs. It is indispensable for myogenic lineage commitment and muscle regeneration following injury.

The MYOD1 gene is located on chromosome 11p15.1 and is expressed in skeletal muscle progenitor cells and differentiating myoblasts. MYOD1 operates in coordination with MEF2 family transcription factors to control muscle fiber formation and repair. During development, its expression defines the onset of the myogenic program.

Pathologically, MYOD1 dysregulation is associated with muscle developmental disorders and certain sarcomas. Mutations in MYOD1 have been identified in rhabdomyosarcoma, where aberrant transcriptional activation promotes tumorigenesis. Research using MYOD1 antibody supports studies in muscle development, differentiation, and cancer biology.

MYOD1 antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect myogenic transcription factors. NSJ Bioreagents provides MYOD1 antibody reagents optimized for skeletal muscle biology, stem cell differentiation, and gene regulation research.

Structurally, Myoblast determination protein 1 contains a bHLH domain that mediates DNA binding and dimerization. Its N-terminal activation domain recruits chromatin remodeling complexes to activate transcription. This antibody facilitates detailed examination of MYOD1's regulatory network in muscle cell fate determination.

Application Notes

Optimal dilution of the MYOD1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human MYOD1 recombinant protein (Position: M1-R120) was used as the immunogen for the MYOD1 antibody.

Storage

After reconstitution, the MYOD1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.