

Technical Data Sheet

PE Mouse anti-Myogenin

Product Information

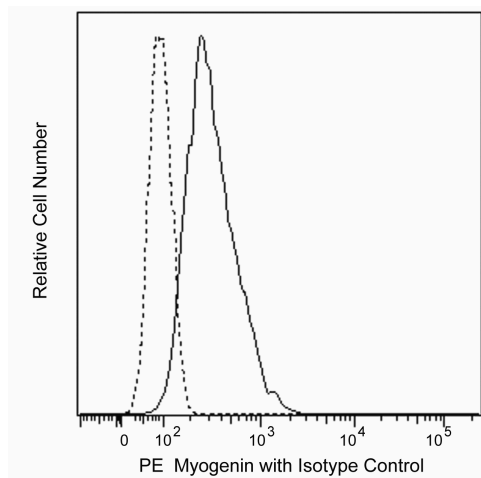
Material Number:	563120
Alternate Name:	bHLHc3, Myf-4
Size:	50 tests
Vol. per Test:	5 µl
Clone:	F5D
Immunogen:	Rat Myogenin aa. 30-224 Recombinant Protein
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Tested in Development: Mouse, Rat, Cat Reported Reactivity: Mouse, Rat Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Storage Buffer:

Description

Myogenin is a member of the MyoD family of myogenic basic helix-loop-helix (bHLH) transcription factors that also includes MyoD, Myf-5, and MRF4 (also known as herculin or Myf-6). MyoD family members are expressed exclusively in skeletal muscle and play a key role in activating myogenesis by binding to enhancer sequences of muscle-specific genes. The regulatory domain of MyoD is approximately 70 amino acids in length and includes both a basic DNA binding motif and a bHLH dimerization motif. MyoD family members share about 80% amino acid homology in their bHLH motifs. Transfection of myogenin and other family members into a variety of non-muscle cells has been shown to either convert these cells to myogenic cells or to transcriptionally activate a set of otherwise unexpressed muscle-specific genes. In addition to activating muscle-specific genes, members of the MyoD family members activate their own transcription and transactivate the transcription of other MyoD family members. For example, transfection of myogenin into 10T1/2 cells or Swiss 3T3 cells results in the activation of the endogenous myogenin gene as well as transactivation of MyoD. Likewise, the transfection of MyoD into these cells results in the activation of MyoD as well as the transactivation of myogenin. Each member of the MyoD family has distinct roles in muscle development; myogenin plays a key role in muscle maturation. Myogenin migrates at a molecular weight of ~34 kDa by SDS-PAGE.

The F5D monoclonal antibody recognizes human, mouse, rat and cat myogenin. Mapping studies suggest that F5D reacts with an epitope between amino acids 138 and 158 of myogenin.



Flow cytometric analysis of myogenin expression in human rhabdomyosarcoma cells. Human RH-30 rhabdomyosarcoma cells (DSMZ, Cat. No. ACC 489) were harvested with Accutase™ Cell Detachment Solution (Cat. No. 561527), fixed with BD Cytofix™ Fixation Buffer (Cat. No. 554655) and permeabilized with BD Phosflow™ Perm/Wash Buffer I (Cat. No. 557885). The cells were stained with either PE Mouse IgG1, κ Isotype Control (Cat. No. 554680; dashed line histogram) or PE Mouse Anti-Myogenin antibody (Cat. No. 563120; solid line histogram) at matched concentrations. The histograms were derived from gated events with the light scattering characteristics of intact RH-30 cells. Flow cytometry was performed using a BD LSRFortessa™ II Flow Cytometry System. BD Phosflow™ Perm Buffer III (Cat. No. 558050) is also suitable for permeabilization of fixed cells. However, a small increase in non-specific background staining may occur in some negative cell lines.

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with R-PE under optimum conditions, and unconjugated antibody and free PE were removed.

Application Notes

Application

Intracellular staining (flow cytometry)

Routinely Tested

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554680	PE Mouse IgG1, κ Isotype Control	0.1 mg	MOPC-21
561527	Accutase™ Cell Detachment Solution	100 ml	(none)
554655	Fixation Buffer	100 ml	(none)
557885	Perm/Wash Buffer I	125 ml	(none)
558050	Perm Buffer III	125 ml	(none)

Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1×10^6 cells in a 100- μ l experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Species testing during development may have been performed with a different format of the same clone. Selected applications have been tested for cross-reactivity.
4. Accutase is a registered trademark of Innovative Cell Technologies, Inc.
5. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
6. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Please refer to www.bdbiosciences.com/pharming/protocols for technical protocols.

References

Dias P, Dilling M, Houghton P. The molecular basis of skeletal muscle differentiation. *Semin Diagn Pathol.* 1994; 11(1):3-14. (Biology)

Gang EJ, Jeong JA, Hong SH, Hwang SH, Kim SW, Yang IH, Ahn C, Han H, Kim H. Skeletal myogenic differentiation of mesenchymal stem cells isolated from human umbilical cord blood. *Stem Cells.* 2004; 22(4):617-624. (Clone-specific: Flow cytometry)

Meadows E, Cho JH, Flynn JM, Klein WH. Myogenin regulates a distinct genetic program in adult muscle stem cells. *Dev Biol.* 2008; 322(2):406-414. (Biology)

Ryan T, Liu J, Chu A, Wang L, Blais A, Skerjanc IS. Retinoic acid enhances skeletal myogenesis in human embryonic stem cells by expanding the premyogenic progenitor population. *Stem Cell Rev.* 2012; 8(2):482-493. (Biology)

Wang NP, Marx J, McNutt MA, Rutledge JC, Gown AM. Expression of myogenic regulatory proteins (myogenin and MyoD1) in small blue round cell tumors of childhood. *Am J Pathol.* 1994; 147(6):1799-1810. (Clone-specific: Immunohistochemistry)

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