

MONOCLONAL ANTIBODY

# Anti-Integrin $\alpha 7$ (Mouse) mAb-FITC

Code No.	Clone	Subclass	Quantity	Concentration
K0046-4	3C12	Mouse IgG1	100 $\mu$ L	500 $\mu$ g/mL

**BACKGROUND:** The integrin family of adhesion molecules participate in important cell-cell and cell-extracellular matrix interactions in a diverse range of biological processes. Integrins are heterodimers consisting of  $\alpha$  subunit and  $\beta$  subunit. Both  $\alpha$  and  $\beta$  subunit are transmembrane proteins with large extracellular domains (>100 kDa for  $\alpha$  subunit and >75 kDa for  $\beta$  subunit) that interact with extracellular matrix proteins and relatively small cytoplasmic domains (50 amino acids or less, except for the  $\beta 4$  subunit) that interact with cytoskeletal proteins. The adhesiveness of integrins is dynamically regulated in response to cytoplasmic signals, termed “inside-out” signaling. It has been reported that, upon ligand binding, integrins regulate many intracellular signaling pathways that involve cytoplasmic alkalization, intracellular  $\text{Ca}^{2+}$  fluctuation, inositol lipid metabolism, protein kinase C, MAP kinase and phosphatidylinositol kinase. Integrin  $\alpha 7$  is a specific cellular receptor for the basement membrane protein laminin-1, as well as for the laminin isoforms-2 and -4. The  $\alpha 7$  subunit is expressed mainly in skeletal and cardiac muscle and may be involved in differentiation and migration processes during myogenesis. Absence of integrin  $\alpha 7$  results in muscular dystrophy is revealed.

**SOURCE:** This antibody was purified from hybridoma using protein A agarose. This hybridoma was established by fusion of mouse myeloma cell SP2/0 with Integrin  $\alpha 7$  knockout C57B/6 mouse splenocyte immunized with mouse myoblasts.

**FORMULATION:** 50  $\mu$ g IgG in 100  $\mu$ L volume of PBS containing 1% BSA and 0.1% ProClin 150.

**STORAGE:** This antibody solution is stable for one year from the date of purchase when stored at 4°C.

**REACTIVITY:** This antibody reacts with mouse Integrin  $\alpha 7$  on Flow cytometry.

## APPLICATION:

Flow cytometry; 25-50  $\mu$ g/mL (final concentration)

\*Please refer to the data sheet (MBL; code no. K0046-3) for other applications.

Detailed procedure is provided in the following **PROTOCOL**.

## INTENDED USE:

For Research Use Only. Not for use in diagnostic procedures.

## SPECIES CROSS REACTIVITY:

Species	Human	Mouse	Rat
Cell	Not tested	C2C12	Not tested
Reactivity on FCM		+	

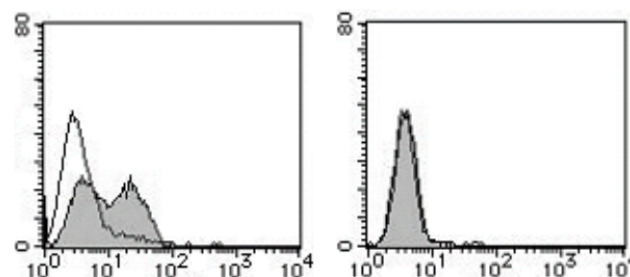
## REFERENCES:

- 1) Yoshida, T., *et al.*, *J. Biol. Chem.* **288**, 23823-23832 (2013) [FCM]
- 2) Acharyya, S., *et al.*, *PLoS One.* **5**, e12479 (2010) [FCM]
- 3) Samson, T., *et al.*, *J. Biol. Chem.* **282**, 15730-15742 (2007)
- 4) Samson, T., *et al.*, *J. Biol. Chem.* **279**, 28641-28652 (2004)
- 5) Volpers, C., *et al.*, *J. Virol.* **77**, 2093-2104 (2003)
- 6) Rosbottom, A., *et al.*, *J. Immunol.* **169**, 5689-5695 (2002)
- 7) von der Mark, H., *et al.*, *J. Biol. Chem.* **277**, 6012-6016 (2002)
- 8) Mielenz, D., *et al.*, *J. Biol. Chem.* **276**, 13417-13426 (2001)

Clone 3C12 is used in these references.

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**Flow cytometric analysis of mouse Integrin  $\alpha 7$  expression on C2C12 (left) and NIH/3T3 (right). Open histogram indicates the reaction of isotypic control to the cells. Shaded histograms indicate the reaction of K0046-4 to the cells.**

The descriptions of the following protocols are examples. Each user should determine the appropriate condition.

## PROTOCOL:

### Flow cytometric analysis for floating cells

We usually use Fisher tubes or equivalents as reaction tubes for all step described below.

- 1) Wash the cells 3 times with washing buffer [PBS containing 2% fetal calf serum (FCS) and 0.09% NaN<sub>3</sub>].  
\*Azide may react with copper or lead in plumbing system to form explosive metal azides. Therefore, always flush plenty of water when disposing materials containing azide into drain.
- 2) Resuspend the cells with washing buffer (5x10<sup>6</sup> cells/mL).
- 3) Add 50 µL of the cell suspension into each tube, and centrifuge at 500 x g for 1 minute at room temperature (20~25°C). Remove supernatant by careful aspiration.
- 4) Add 10 µL of normal goat serum containing 1 mg/mL normal human IgG and 0.09% NaN<sub>3</sub> to the cell pellet after tapping. Mix well and incubate for 10 minutes at room temperature.
- 5) Add 40 µL of the primary antibody at the concentration of as suggest in the **APPLICATIONS** diluted in the washing buffer. Mix well and incubate for 30 minutes at room temperature.
- 6) Add 1 mL of the washing buffer followed by centrifugation at 500 x g for 1 minute at room temperature. Remove supernatant by careful aspiration.
- 7) Resuspend the cells with 500 µL of the washing buffer and analyze by a flow cytometer.

(Positive control for Flow cytometry; C2C12)