

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Integrin α 10 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse Integrin α 2 β 1 was observed.
Source	Monoclonal Rat IgG _{2A} Clone # 885501
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse Integrin α 10 β 1 Phe23-Thr1119 (Integrin α 10) and Gln21-Asp728 (Integrin β 1) Accession # NP_001289400.1 (Integrin α 10) and P09055 (Integrin β 1)
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 μ g/10 ⁶ cells	C2C12 mouse myoblast cell line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Integrin α 10 β 1 is one of twelve integrin family adhesion receptors that share the β 1 subunit (1-3). The non-covalent heterodimer of 160 kDa α 11 and 130 kDa β 1/CD29 type I transmembrane glycoprotein subunits is expressed mainly on chondrocytes within cartilage, but also in fibrous connective tissues such as heart valves and ligaments (3, 4). The α 10 extracellular domain (ECD) contains an I (inserted) domain which includes the ligand binding site (2, 3, 5). The β 1 ECD contains a vWFA domain, which participates in binding. Each subunit then has a transmembrane sequence and a short cytoplasmic tail. The dimer is folded when it is least active. Divalent cations and intracellular (inside-out) signaling convert it to its most active, extended and open conformation (1, 2). The 1100 amino acid (aa) mouse α 10 extracellular domain (ECD) shares 96% aa sequence identity with rat and 88-89% with human, rabbit, porcine, canine and bovine α 10, while the 708 aa mouse β 1 ECD shares 98% aa identity with rat and 93-94% with human, bovine, porcine, ovine, canine and feline β 1. A potential mouse α 10 splice variant diverges at aa 1039 and is terminated prematurely. If translated, this variant would result in a secreted protein (6). I domain-containing β 1 integrins α 1 β 1, α 2 β 1, α 10 β 1 and α 11 β 1 all bind collagens; all but α 11 β 1 also bind laminins (5, 7, 8). During cartilage differentiation, α 10 β 1 is thought to be the main integrin binding type II and IX cartilage collagens (3-5, 7-10). However, deletion of mouse α 10 causes a mild phenotype including slightly shortened bones and narrowed hypertrophic zones, indicating that another collagen-binding integrin, likely α 2 β 1, may compensate for α 10 β 1 functions (11). Migration of melanoma cells has been noted to correlate with α 10 β 1 expression (12).

References:

1. Takada, Y. *et al.* (2007) *Genome Biol.* **8**:215.
2. Luo, B-H. *et al.* (2007) *Annu. Rev. Immunol.* **25**:619.
3. Camper, L. *et al.* (1998) *J. Biol. Chem.* **273**:20383.
4. Camper, L. *et al.* (2001) *Cell Tiss. Res.* **306**:107.
5. Tulla, M. *et al.* (2001) *J. Biol. Chem.* **276**:48206.
6. Bengtsson, T. *et al.* (2001) *Matrix Biol.* **20**:565.
7. McCall-Culbreath, K.D. and M.M. Zutter (2008) *Curr. Drug Targets* **9**:139.
8. Popova, S.N. *et al.* (2007) *Acta Physiol.* **190**:179.
9. Varas, L. *et al.* (2007) *Stem Cells Dev.* **16**:965.
10. Gigout, A. *et al.* (2008) *J. Biol. Chem.* **283**:31522.
11. Bengtsson, T. *et al.* (2004) *J. Cell Sci.* **118**:939.
12. Wenke, A.K. *et al.* (2007) *Cell Oncol.* **29**:373.

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