

## Reagents Provided

**Allophycocyanin (APC)-conjugated sheep polyclonal anti-human Integrin  $\alpha$ 1/CD49a:** Supplied as 5  $\mu$ g of antibody in 1 mL saline containing up to 0.5% BSA and 0.1% sodium azide.

**Isotype:** sheep IgG

## Reagents Not Provided

- Flow Cytometry Staining Buffer (Catalog # FC001) or other BSA-supplemented saline buffer.

## Storage

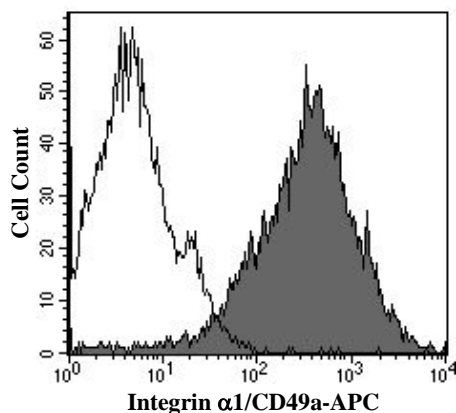
Reagents are stable for **twelve months** from the date of receipt when stored in the dark at 2° - 8° C.

## Intended Use

Designed to quantitatively determine the percentage of cells bearing Integrin  $\alpha$ 1/CD49a within a population and qualitatively determine the density of Integrin  $\alpha$ 1/CD49a on cell surfaces by flow cytometry.

## Product Description

This antibody was produced in goats immunized with purified, CHO-derived, recombinant human Integrin  $\alpha$ 1/CD49a (rhITGA1; Accession # P56199). Human ITGA1 specific IgG was purified by human ITGA1 affinity chromatography. The purified antibody was then conjugated to APC fluorochrome. Cell surface expression of Integrin  $\alpha$ 1/CD49a is determined by flow cytometry using 620 - 650 nm wavelength excitation and monitoring emitted fluorescence with a detector optimized to collect peak emissions at 660 - 670 nm.



HeLa cells were stained with APC-conjugated anti-human Integrin  $\alpha$ 1/CD49a (Catalog # FAB5676A, filled histogram) or APC-conjugated isotype control (Catalog # IC016A, open histogram).

## Background Information

Integrin  $\alpha$ 1 (also VLA1, CD49a and Laminin and Collagen Receptor) is a 190 - 210 kDa member of the integrin alpha chain family of molecules. It is found on smooth muscle cells, osteoblasts, adipocytes, and intestinal epithelium. Integrin  $\alpha$ 1 forms a noncovalent heterodimer with Integrin  $\beta$ 1, and serves as a divalent cation-dependent receptor for collagen types I, IV, VI, XIII, and XVI. It also binds the diarrhea-associated NSP4 enterotoxin of rotavirus. Mature human Integrin  $\alpha$ 1 is a 1151 amino acid (aa) type I transmembrane glycoprotein that contains a 1113 aa extracellular domain (ECD) and a 15 aa cytoplasmic tail. The ECD contains one vWFA/I domain (aa 147 - 360) that binds collagen, plus multiple divalent cation binding sites. Potential splice variants exist that show a two and four aa substitution for aa 765 - 1179. Over aa 291 - 141 (the ECD), human Integrin  $\alpha$ 1 shares 88% aa identity with mouse Integrin  $\alpha$ 1.

## Flow Cytometry Validation

This antibody has been tested for flow cytometry using HeLa cells.

- Cells may be Fc-blocked with 1  $\mu$ g of human IgG/ $10^5$  cells for 15 minutes at room temperature. Do not wash excess blocking IgG from this reaction.
- After blocking, 10  $\mu$ L of conjugated antibody was added to up to  $1 \times 10^6$  cells and incubated for 30 minutes at room temperature.
- Unbound antibody was removed by washing the cells twice in Flow Cytometry Staining Buffer (Catalog # FC001). Note that whole blood requires a RBC lysis step at this point using Flow Cytometry Human Lyse Buffer (Catalog # FC002).
- The cells were resuspended in Flow Cytometry Staining Buffer for final flow cytometric analysis. As a control for this analysis, cells in a separate tube should be treated with APC-labeled sheep IgG antibody. This procedure may need to be modified, depending upon the cell type and final utilization. Individual users may need to titrate to determine the optimal reagent amount for their specific use.

**Warning:** Contains sodium azide as a preservative - sodium azide may react with lead and copper plumbing to form explosive metal azides. Flush with large volumes of water during disposal.