Human/Mouse/Rat Integrin αV/CD51 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1219

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human Integrin αV in direct ELISAs and Western blots. Detects human, mouse and rat Integrin αV in Simple Western application.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Integrin αV/CD51 Phe31-Val992 Accession # P06756
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

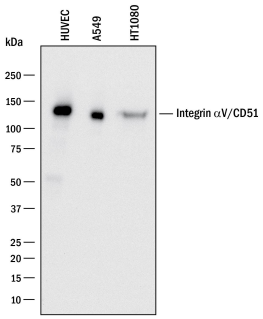
APPLICATIONS

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
Western Blot	0.5 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	Human peripheral blood mononuclear cells
Immunocytochemistry	5-15 µg/mL	See Below
Simple Western	20 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Knockout Validated	Integrin αV/CD51 is specifically detected in A549 human lung carcinoma parental cell line but is not detectable in Integrin αV/CD51 knockout A549 cell line.	

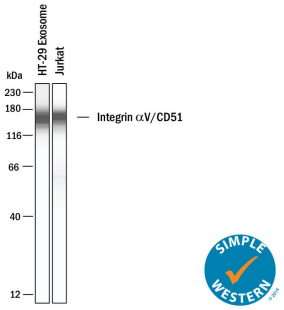
DATA

Western Blot



Detection of Human Integrin αV/CD51 by Western Blot. Western blot shows lysates of HUVEC human umbilical vein endothelial cells, A549 human lung carcinoma cell line, and HT1080 human fibrosarcoma cell line. PVDF membrane was probed with 0.5 µg/mL of Goat Anti-Human Integrin aV/CD51 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1219) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF017). A specific band was detected for Integrin aV/CD51 at approximately 130 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Simple Western



Detection of Human Integrin αV/CD51 by Simple Western™. Simple Western shows lysates of Exosome Standards (HT-29) (Catalog # NBP3-11685) and Jurkat human acute T cell leukemia cell line, loaded at 0.5 mg/ml. A specific band was detected for Integrin αV/CD51 at approximately 150 kDa (as indicated) using 20 µg/mL of Goat Anti-Human/Mouse/Rat Integrin αV/CD51 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1219). This experiment was conducted under reducing conditions and using the 12-230kDa separation system.

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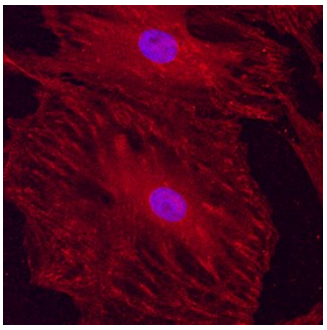
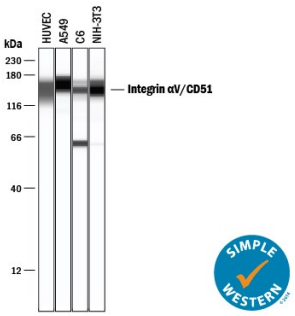
Immunocytochemistry



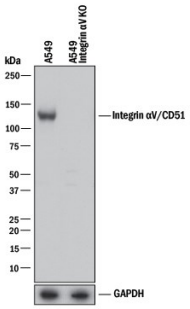
Integrin αV/CD51 in Rat Mesenchymal Stem Cells. Integrin aV/CD51 was detected in immersion fixed undifferentiated rat mesenchymal stem cells using Goat Anti-Human/Mouse/Rat Integrin aV/CD51 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1219) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Simple Western



Detection of Human, Mouse, and Rat Integrin αV/CD51 by Simple Western™. Simple Western lane view shows lysates of HUVEC human umbilical vein endothelial cells, A549 human lung carcinoma cell line, C6 rat glioma cell line, and NIH-3T3 mouse embryonic fibroblast cell line, loaded at 0.2 mg/mL. A specific band was detected for Integrin aV/CD51 at approximately 149-161 kDa (as indicated) using 20 µg/mL of Goat Anti-Human/Mouse/Rat Integrin aV/CD51 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1219) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

Knockout Validated



Western Blot Shows Human Integrin αV/CD51 Specificity by Using Knockout Cell Line. Western blot shows lysates of A549 human lung carcinoma parental cell line and Integrin aV/CD51 knockout A549 cell line (KO). PVDF membrane was probed with 0.5 µg/mL of Goat Anti-Human/Mouse/Rat Integrin aV/CD51 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1219) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF017). A specific band was detected for Integrin aV/CD51 at approximately 120 kDa (as indicated) in the parental A549 cell line, but is not detectable in knockout A549 cell line. GAPDH (Catalog # Catalog # AF5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Integrin αV, also known as CD51 and vitronectin receptor subunit α, is a 140-150 kDa integrin alpha chain that forms dimers with at least five beta chains including β1, 3, 5, 6, and 8. It is a 1018 amino acid (aa) residue type I membrane protein with a large (962 aa) extracellular domain (ECD) and a short (32 aa) cytoplasmic tail. The N-terminal region of αV, which is important for ligand binding, contains seven FG-GAP (phenylalanyl-glycyl and glycyl-alanyl-prolyl) concensus repeats that fold into a β-propellar domain. Furin cleavage of the αV ECD occurs after Gly 889, generating a disulfide-linked, heteromeric subunit αV chain. αV-containing integrins bind multiple ECM molecules, including vitronectin, osteopontin, MMP-2, and TSP. The ECD of human Integrin αV shares 92% aa sequence identity with mouse Integrin αV ECD.

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