Revision 3

Store at -20C

#8440

Integrin α4 (D2E1) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC, FC-FP	H M R	Endogenous	70, 140, 150,	Rabbit IgG	#P13612	3676

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunofluorescence (Immunocytochemistry)	1:200
Flow Cytometry (Fixed/Permeabilized)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #29873.

Specificity/Sensitivity

Integrin α4 (D2E1) XP® Rabbit mAb recognizes endogenous levels of total integrin α4 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser1027 of human integrin α4 protein.

Background

Integrins are α/β heterodimeric cell surface receptors that play a pivotal role in cell adhesion and migration, as well as in growth and survival (1,2). The integrin family contains at least 18 α and 8 β subunits that form 24 known integrins with distinct tissue distribution and overlapping ligand specificities (3). Integrins not only transmit signals to cells in response to the extracellular environment (outside-in signaling), but also sense intracellular cues to alter their interaction with the extracellular environment (inside-out signaling) (1,2).
A pair of important α4 integrins, α4β1 and α4β7, interact with VCAM-1, fibronectin, and MAdCAM-1 at cell adhesions (3). Gene knockout and antibody blocking research reveal that α4 integrins play important roles in embryonic liver and heart development and in fetal lymphocyte homing (4-6). Phosphorylation at Ser988 within the cytoplasmic tail of integrin α4 blocks binding to paxillin and promotes leading edge migration (7,8).
On SDS-PAGE, integrin α4 can migrate at several different apparent molecular sizes, a 150 kDa mature protein and a 140 kDa precursor protein (a 180 kDa protein also exists under mild non-reducing conditions) (9). Integrin α4 has a cleavage site at Arg558, which results in a small portion of the protein as either an 80 kDa N-terminal or 70 kDa C-terminal fragment (10).

Background References

1. Hood, J.D. and Cheresh, D.A. (2002) *Nat Rev Cancer* 2, 91-100.
2. Liu, S. et al. (2000) *J Cell Sci* 113 (Pt 20), 3563-71.
3. Plow, E.F. et al. (2000) *J Biol Chem* 275, 21785-8.
4. Bonder, C.S. et al. (2005) *Immunity* 23, 153-63.
5. Arroyo, A.G. et al. (1999) *Immunity* 11, 555-66.
6. Yang, J.T. et al. (1995) *Development* 121, 549-60.
7. Nishiya, N. et al. (2005) *Nat Cell Biol* 7, 343-52.
8. Alon, R. et al. (2005) *J Cell Biol* 171, 1073-84.
9. Teixidó, J. et al. (1992) *J Biol Chem* 267, 1786-91.
10. Pujades, C. et al. (1996) *Biochem J* 313 (Pt 3), 899-908.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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