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N-Cadherin (D4R1H) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate)

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

Applications: IF-IC	Reactivity: H M	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #P19022	Entrez-Gene Id: 1000
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Product Usage Information

Application

Immunofluorescence (Immunocytochemistry)

Dilution

1:50

Storage

Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

Specificity/Sensitivity

N-Cadherin (D4R1H) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate) recognizes endogenous levels of total N-cadherin protein. Some non-specific staining has been observed in mouse kidney tissue.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg526 of human N-cadherin protein.

Description

This Cell Signaling Technology antibody is conjugated to Alexa Fluor[®] 647 fluorescent dye and tested in-house for direct immunofluorescent analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated N-Cadherin (D4R1H) XP[®] Rabbit mAb #13116.

Background

Cadherins are a superfamily of transmembrane glycoproteins that contain cadherin repeats of approximately 100 residues in their extracellular domain. Cadherins mediate calcium-dependent cell-cell adhesion and play critical roles in normal tissue development (1). The classic cadherin subfamily includes N-, P-, R-, B-, and E-cadherins, as well as about ten other members that are found in adherens junctions, a cellular structure near the apical surface of polarized epithelial cells. The cytoplasmic domain of classical cadherins interacts with β -catenin, γ -catenin (also called plakoglobin), and p120 catenin. β -catenin and γ -catenin associate with α -catenin, which links the cadherin-catenin complex to the actin cytoskeleton (1,2). While β - and γ -catenin play structural roles in the junctional complex, p120 regulates cadherin adhesive activity and trafficking (1-4). Investigators consider E-cadherin an active suppressor of invasion and growth of many epithelial cancers (1-3). Research studies indicate that cancer cells have upregulated N-cadherin in addition to loss of E-cadherin. This change in cadherin expression is called the "cadherin switch." N-cadherin cooperates with the FGF receptor, leading to overexpression of MMP-9 and cellular invasion (3). Research studies have shown that in endothelial cells, VE-cadherin signaling, expression, and localization correlate with vascular permeability and tumor angiogenesis (5,6). Investigators have also demonstrated that expression of P-cadherin, which is normally present in epithelial cells, is also altered in ovarian and other human cancers (7,8).

Background References

1. Wheelock, M.J. and Johnson, K.R. (2003) *Annu Rev Cell Dev Biol* 19, 207-35.
2. Christofori, G. (2003) *EMBO J* 22, 2318-23.
3. Hazan, R.B. et al. (2004) *Ann N Y Acad Sci* 1014, 155-63.
4. Bryant, D.M. and Stow, J.L. (2004) *Trends Cell Biol* 14, 427-34.
5. Rabascio, C. et al. (2004) *Cancer Res* 64, 4373-7.
6. Yamaoka-Tojo, M. et al. (2006) *Arterioscler Thromb Vasc Biol* 26, 1991-7.
7. Patel, I.S. et al. (2003) *Int J Cancer* 106, 172-7.
8. Sanders, D.S. et al. (2000) *J Pathol* 190, 526-30.

Species Reactivity

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

Applications Key

IF-IC: Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse

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