

Product Information

Monoclonal Anti-N-Cadherin/A-CAM

Clone GC-4

Purified Mouse Immunoglobulin

Product Number **C 3865**

Product Description

Monoclonal Anti-N-Cadherin/A-CAM (mouse IgG1 isotype) is derived from the GC-4 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with affinity purified chicken heart A-CAM.¹ The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-N-Cadherin/A-CAM is specific for the N-Cadherin/A-CAM. The antibody reacts with the N-terminal half of the extracellular domain of N-Cadherin/A-CAM.^{1,2} It recognizes a polypeptide of 135 kDa isolated from a freshly prepared extract chicken cardiac muscle by immunoblotting. This antibody can work as a neutralizing antibody that can inhibit adherens junction formation,³ colony formation, cell adhesion, interaction between bone marrow hematopoietic cells,⁴ and cytoskeleton formation.⁵ Monoclonal Anti-N-Cadherin/A-CAM reacts with the N-Cadherin/A-CAM molecule from human,^{4,5} monkey,⁶ rabbit, rat,³ mouse,⁷ and chicken.¹⁻³ The antibody may be used in various immunochemical techniques including immunohistochemistry, immunocytochemistry,^{3,6} electron microscopy, immunoblotting,⁸ and FACS analysis.^{4,9}

N-Cadherin /A-CAM is a member of the cadherin family of proteins that mediate cell-cell adhesion in a calcium dependent manner. N-cadherin was cloned from neural tissues but later on found to be expressed mainly in endothelial and muscle tissues. Like the other classical cadherin proteins (E- and P-cadherin), N-cadherin is a

transmembrane glycoprotein that localizes in the cell-cell adherens junction on the plasma membrane.¹⁰⁻¹² This protein mediates the intercellular adhesion by homophilic interaction between the extracellular domains of the cadherin proteins in neighboring cells. The cytoplasmic tail of the protein interacts with signaling molecules (such as catenin, plakoglobin) and with cytoskeleton elements.

N-cadherin, like other member of the cadherin family, is found to be involved in embryonic development, tissue formation and adhesion. In cancer, disruption in the proper regulation of the cadherin proteins can lead to invasion and metastasis.¹⁰⁻¹²

Reagent

Monoclonal Anti-N-Cadherin/A-CAM is supplied as a **sterile** solution in 0.01 M phosphate buffered saline, pH 7.4.

Antibody Concentration: Approx. 2 mg/ml

Storage/Stability

For continuous use, store **sterile** at 2-8 °C for up to one month. For extended storage, freeze in **sterile** working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of 10-20 µg/ml is recommended using chicken cardiac muscle or COS-7 cell extracts.

By immunohistochemistry, a working antibody concentration of 5-10 µg/ml is recommended using rat cardiac muscle frozen sections.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working concentration by titration.

References

1. Volk, T., et al., *EMBO J.*, **3**, 2249-2260 (1984).
2. Volk, T., et al., *Develop. Biol.*, **139**, 314-326 (1990).
3. Goncharova, E.J., et al., *Development*, **114**, 173-183 (1992).
4. Puch, S., et al., *J. Cell Sci.*, **114**, 1567-1577 (2001).
5. Matsumura, T., et al., *J. Immunol.*, **158**, 3408-3416 (1997).
6. Waibler, Z., et al., *J. Cell Sci.*, **114**, 3873-3884 (2001).
7. Herrenknecht, K., et al., *Proc. Natl. Acad. Sci. USA*, **88**, 9156-9160 (1991).
8. Yan, Z., et al., *J. Biol. Chem.*, **272**, 27902-27907 (1997).
9. Mei-Yu, H., et al., *J. Cell Sci.*, **113**, 1535-1542 (2002).
10. Salomon, D., et al., *J. Cell Sci.*, **102**, 7-17 (1992).
11. Andst, B.D., et al., *J. Cell Sci.*, **114**, 629-641 (2001).
12. Connacci-Sorrell, M., et al., *J. Clin. Invest.*, **109**, 987-991 (2002).

KAA/RFB 10/03