

Product Information

E-Cadherin /Fc Chimera human

recombinant, expressed in mouse NS0 cells

Catalog Number **E2278**

Storage Temperature -20 °C

Synonyms: ECAD, Cell-CAM120/80, Uvomorulin, Arc-1, L-CAM

Product Description

A cDNA sequence encoding the extracellular domain of human pre-pro E-cadherin (amino acid residues 1-707)¹ fused by means of a polypeptide linker to the Fc region of human IgG1 that is 6X histidine-tagged at the C-terminus was expressed in NS0 cells. The recombinant protein is a disulfide-linked homodimer. Based on N-terminal sequencing, the protein starts at Asp¹⁵⁵. The calculated molecular mass of the reduced monomer is ~87.7 kDa, but as a result of glycosylation, it migrates as an ~120 kDa protein on reducing SDS-PAGE.

E-cadherin is a type 1 membrane protein. It is a member of the large family of cadherins – calcium dependent cell adhesion proteins. These proteins are involved in many morphoregulatory processes including the establishment of tissue boundaries, tissue rearrangement, cell differentiation, and metastasis.²

Cadherins typically consist of a large extracellular domain containing DXD and DXNDN repeats responsible for calcium-dependent adhesion, a single-pass transmembrane domain, and a highly conserved, short C-terminal cytoplasmic domain responsible for interacting with catenins.^{2,3,4} E-cadherins contain five extracellular calcium-binding domains, each of ~110 amino acids. The extracellular domain of E-cadherin tends to bind in a homophilic manner, however, heterophilic binding occurs under certain conditions. The binding of extracellular cadherin is the basis for cell-cell adhesion and tends to be prevalent at adherin junctions and are structurally associated with actin bundles.³ The disassembly of adherens junction is dependent on the internalization of E-cadherin via vesicle transport into the cytoplasm.⁵ The N-cadherin/Fc chimera has been shown to retain structural and functional properties of the cadherins.⁶

Reagent

Supplied as a lyophilized powder from a 0.2 µm filtered solution in 50mM Tris-Citrate, 250mM NaCl, and 2mM CaCl₂ pH 6.5.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute to a concentration of 100 µg/ml or greater with sterile DPBS containing Ca²⁺ and Mg²⁺.

Storage/Stability

Stable for at least one year at -20 °C. Upon reconstitution, store at 2-8 °C for up to one month or at -20 °C for up to three months. Avoid repeated freeze-thaw cycles. Do not store in a frost-free freezer.

Product Profile

The typical concentration of E-Cadherin/Fc Chimera which supports the adhesion of human breast adenocarcinoma (MCF-7) cells to the immobilized protein is 1.5 µg/ml at 100 µL/well on a 96 well plate. Optimal concentration will need to be determined for each application.

Purity: ≥90% (SDS-PAGE, visualized by silver staining).

Endotoxin level: < 1.0 EU per 1µg of protein by the LAL (Limulus amoebocyte lysate) method.

References

1. Bussemakers, M. J., et al., Molecular cloning and characterization of the human E-cadherin cDNA. *Mol. Biol. Rep.*, **17**, 123-128 (1993).
2. Steinberg, M., McNutt, P. M., Cadherins and their connections: adhesion junctions have broader functions. *Curr. Opin. Cell Biol.*, **11**, 554-560 (1999).

3. Thoreson, M.A., et al., Selective Uncoupling of p120^{ctn} from E-cadherin Disrupts Strong Adhesion. *J. Cell Biol.*, **48**, 189-201(2000).
4. Pigott, R., Power, C., Eds, "The Adhesion Molecule FactsBook, Academic Press, p.6 (1993).
5. Palacios, F., et al., An essential role for ARF6-regulated membrane traffic in adherens junction turnover and epithelial cell migration. *EMBO J.*, **20**, 4973-4986 (2001).
6. Lambert, M., et al., Immobilized dimers of N-cadherin-Fc chimera mimic cadherin-mediated cell contact formation: contribution of both outside-in and inside-out signals. *J. Cell Sci.*, **113**, 2207-2209 (2000).

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