

Product Information

E-CADHERIN /Fc CHIMERA

Human, Recombinant
Expressed in mouse NS0 cells

Product Number **E 2278**

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 Asp 155. The calculated molecular mass of the reduced monomer is approximately 87.7 kDa, but as a result of glycosylation, it migrates as an approximately 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 approx. 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

E-Cadherin/Fc Chimera is lyophilized from a 0.2 µm solution in 50 mM Tris-citrate, 0.2 M NaCl, 2 mM CaCl₂, pH 6.5.

Precautions and Disclaimer

This product is for laboratory use only. Please consult the Material Data Safety Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute to a concentration of 100 µg/ml or greater with sterile water containing 2 mM calcium 24 hours prior to use.

Storage/Stability

Stable for at least one year at -20 °C. Upon reconstitution, store at 2-4 °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 a 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% determined by SDS-PAGE, visualized by silver staining.

Endotoxin level: < 0.1 ng/µg of protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

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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*, **20**, 4973-4986 (2001).
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