Product Information

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E-Cadherin/Fc Chimera
mouse, recombinant
expressed in mouse NSO cells

Catalog Number **E2153**
Storage Temperature –20 °C

Synonyms: Epithelial cadherin; ECAD; cell-CAM120/80; uvomorulin; Arc-1; L-CAM

Product Description
E-Cadherin/Fc Chimera is a cDNA sequence encoding the extracellular domain of mouse E-cadherin (amino acids 1-709)[1] fused by means of a polypeptide linker to the Fc region of human IgG1 that is 6× histidine-tagged at the C-terminus and expressed in NSO cells. The recombinant protein is a disulfide-linked homodimer. Based on N-terminal sequencing, the protein starts at Asp^{157}. The calculated molecular mass of the reduced monomer is 88.2 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 metastisis.[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.[2-4] 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 adherins junctions and are structurally associated with actin bundles.[3] The disassembly of adherens junctions 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]

E-Cadherin/Fc Chimera is lyophilized from a 0.2 μm sterile filtered solution containing 50 mM Tris-citrate, 50 mM NaCl, and 2 mM $CaCl_2$, pH 6.5.

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

Endotoxin level: <1.0 EU (endotoxin unit)/1 μg of protein [LAL (Limulus amebocyte lysate) method]

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.

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 ≥100 μg/ml with sterile Dulbecco's phosphate buffered saline containing 2 mM calcium 24 hours prior to use.

Storage/Stability
Prior to reconstitution, store the product at –20 °C.

Upon reconstitution, the product may be stored at 2–8 °C under sterile conditions for up to one month. For extended storage, freeze at –20 °C or below. Avoid repeated freeze-thaw cycles. Do not store in a "frost-free" freezer.

References

1. Nagafuchi, A., et al., Transformation of cell adhesion properties by exogenously introduced E-cadherin cDNA. Nature, **329**, 341-343 (1987).
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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., and Power, C., eds., "The Adhesion Molecule Facts Book, Academic Press, (1993) p.6.
5. Palacios, F., et al., An essential role for ARF6-regulated membrane traffic in adherins junction turnover and epithelial cell migration. EMBO, **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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