Recombinant Human EpCAM/TROP-1 Fc Chimera

Catalog Number: 960-EP

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived human EpCAM/TROP1 protein

Human EpCAM (Gln24-Lys265) Accession # CAA32870.1	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	No results obtained: Gln24 predicted
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	54 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	60-70 kDa, under reducing conditions.
Activity	Measured by the ability of the immobilized protein to support the adhesion of the L Cells mouse fibroblast cell line. When 5 x 10^4 cells/well are added to Recombinant Human EpCAM/TROP-1 Fc Chimera and Human Fibronectin (0.5 µg/mL, (Catalog # 1918-FN) coated plates, cell adhesion is enhanced in a dose dependent manner after 45 minutes at 37 °C. The ED_{50} for this effect is 0.7-2.8 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Epithelial Cellular Adhesion Molecule (EpCAM), also known as KS1/4, gp40, GA733-2, 17-1A, and TROP-1, is a 40 kDa transmembrane glycoprotein composed of a 242 amino acid (aa) extracellular domain with two epidermal-growth-factor-like (EGF-like) repeats within the cysteine-rich N-terminal region, a 23 aa transmembrane domain, and a 26 aa cytoplasmic domain. Human and mouse EpCAM share 82% aa sequence identity. In human, EpCAM also shares 49% aa sequence homology with Trop-2/EGP-1. During embryonic development, EpCAM is detected in fetal lung, kidney, liver, pancreas, skin, and germ cells. In adults, human EpCAM is detected in basolateral cell membranes of all simple, pseudo-stratified, and transitional epithelia, but is not detected in normal squamous stratified epithelia, mesenchymal tissue, muscular tissue, neuro-endocrine tissue, or lymphoid tissue (1). EpCAM expression has been found to increase in actively proliferating epithelia tissues and during adult liver regeneration (1, 2). EpCAM expression is also found to increase in human malignant neoplasias, with most carcinoma expressing EpCAM including those of arising from squamousal epithelia (1). EpCAM has been shown function as a homophilic Ca^{2+} independent adhesion molecule (3). Homophilic adhesion via EpCAM requires the interaction of both EGF-like repeats, with the first EGF-like repeat mediating reciprocal interaction between EpCAM molecules on opposing cells, while the second repeat is involved in lateral interaction of EpCAM. Lateral interaction of EpCAM lead to the formation of dimers and tetramers (4). During homophilic adhesion the cytoplasmic tail of EpCAM interacts with the actin cytoskeleton via a direct association α-actinin (5).

References:

1. Balzar, M. *et al.* (1999) J. Mol. Med. **77**:699.
2. Boer, C.J, *et al.* (1999) J. Pathol. **188**:201.
3. Litvinow, S.V. *et al.* (1994) J. Cell Biol. **125**:437.
4. Balzar, M. *et al.* (2001) Mol. Cell. Biol. **21**:2570.
5. Balzar, M. *et al.* (1998) Mol. Cell. Biol. **18**:4388.

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