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Recombinant Mouse CEACAM1 protein fragment

REP0065
100µg

Description

The carcinoembryonic antigen (CEA) family is composed of 29 genes tandemly arranged on chromosome 19q13.2. Based on nucleotide homologies, these genes are classified into 2 major subfamilies, the CEACAM and the pregnancy-specific glycoprotein (PSG) subgroups. The CEACAM-encoded proteins include CEA, CEACAM1, and other CEA gene members. CEACAM1 (Carcinoembryonic antigen related cell adhesion molecule 1; also BGP1, CD66a), is involved in the regulation of important biological processes, such asinsulin homeostasis, angiogenesis, and modulation of the immune response. Expression of CEACAM1 is associated with the progression of malignancy and metastatic spread in a large array of cancer tissues which include melanoma, Non-Small Cell Lung Carcinoma (NSCLC) bladder, prostate, thyroid, breast, colon and gastric carcinomas. In addition, CEACAM1 has also been identified as receptors for host-specific viruses and bacteria in mice and humans such as Neisseria, Haemophilus influenzae, Moraxella catarrhalis and mouse hepatitis virus (MHV). The binding of Opa (the neisserial colony opacity associated) proteins occurs at the non-glycosylated face of the N-domain of CEACAM1; heterophilic adhesion facilitates bacterial colonization of the gut and bacterial phagocytosis by neutrophilis; and is involved in the granulocytes migration during inflammatory responses. The N-terminal domain of CEACAM1 has been implicated also in mediating homophilic adhesion. This is an important factor for the embryonic organization of the intestinal epithelium and hepatocytes in the liver, in placental trophoblasts, during muscle and tooth development and vascularisation of the central nervous system, in angiogenesis and in the negative regulation of cell proliferation.

In mouse, the ceacam1 gene exists in two allelic forms, ceacam1a and ceacam1b, and the ceacam1 alleles expressed largely determine mouse susceptibility to MHV. Mouse strains expressing ceacam1a (such as C57BL/6, BALB/c, and C3H) are highly susceptible, while strains homozygous for ceacam1b (such as SJL) are resistant to infection. ceacam1a transcripts are alternatively spliced, yielding four distinct variants in the mouse. These splice variants encode either two or four extracellular immunoglobulin-like (Ig-like) domains linked by a transmembrane domain to a short (10 amino acids) or long (73 amino acids) cytoplasmic tail. The MHV binding site resides within the N-terminal IgV-like domain, D1. This domain is present in all four isoforms of CEACAM1a, and thus all serve as functional receptors for MHV. Mouse CEACAM1 shares 56% and 70% aa identity with human and rat CEACAM1, respectively. The human and mouse CEACAM1 genes have highly conserved structures, similar patterns of mRNA splicing, and similar patterns of expression in different tissues.

Product type

Recombinant protein fragment

Protein fragment

The 35-235 residues of mouse CEACAM1 isoform CEACAM1a-4L comprising the N-terminal Ig-V like domain, D1 (aa 35-140) and the first Ig-C2 like domain, A1 (aa 146-235). NCBI Reference Sequence: **NP_001034274.1**

Expression system

Escherichia coli

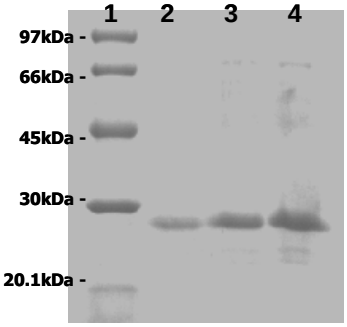
Tested by

SDS Page, Western Blotting, ELISA.

Purity

>95% pure estimated by SDS-PAGE (EU Ph. 5.0 § 2.5.31)

Purified recombinant mouse CEACAM 1(lane 1, molecular weight standard; lane 2, 1g; lane 3, 2.5g; lane 4, 5g) was separated by SDS-PAGE (12% polyacrylamide) and stained with Coomassie Blue.



Form

Liquid

Storage buffer

20 mM Phosphate buffer pH 7.5; 0.5M sodium chloride; 1.5Mm EDTA, 10% glycerol.

Storage instructions

Shipped on dry ice. Upon delivery aliquot and store at -20ºC. Avoid freeze / thaw cycles.