



Recombinant Human CEAM1 Fc-Fusion Protein

Cat No: Pr00181-10.9

Product Summary

Description: Recombinant human CEAM1 Fc-Fusion Protein manufactured using [AbAb's Recombinant Platform](#)

Protein: Human CEAM1

Fc domain: Human IgG1

Structure / Form: Disulfide-linked homodimer

Species: Human

Construct Design Note(s): The extracellular domain of CEAM1 has been fused to the Fc domain of human IgG1.

Host: HEK293

UniProt Accession Number: P13688

Alternative Description: Carcinoembryonic antigen-related cell adhesion molecule 1, Biliary glycoprotein 1, BGP-1, CD66a; CEAM1-Ig; CEAM1-Fc chimera; CEAM1 (Fc tag)

Published Application(s):

Tested Applications(s):

Activity: Isoform 1: Cell adhesion protein that mediates homophilic cell adhesion in a calcium-independent manner (By similarity). Plays a role as coinhibitory receptor in immune response, insulin action and functions also as an activator during angiogenesis [PMID:18424730, PMID:23696226, PMID:25363763]. Its coinhibitory receptor function is phosphorylation- and PTPN6 -dependent, which in turn, suppress signal transduction of associated receptors by dephosphorylation of their downstream effectors. Plays a role in immune response, of T cells, natural killer (NK) and neutrophils (PubMed:18424730, PubMed:23696226). Upon TCR/CD3 complex stimulation, inhibits TCR-mediated cytotoxicity by blocking granule exocytosis by mediating homophilic binding to adjacent cells, allowing interaction with and phosphorylation by LCK and interaction with the TCR/CD3 complex which recruits PTPN6 resulting in dephosphorylation of CD247 and ZAP70 [PMID:18424730]. Also inhibits T cell proliferation and cytokine production through inhibition of JNK cascade and plays a crucial role in regulating autoimmunity and anti-tumor immunity by inhibiting T cell through its interaction with HAVCR2 [PMID:25363763]. Upon natural killer (NK) cells activation, inhibit KLRK1-mediated cytotoxicity of CEACAM1-bearing tumor cells by trans-homophilic interactions with CEACAM1 on the target cell and lead to cis-interaction between CEACAM1 and KLRK1, allowing PTPN6 recruitment and then VAV1 dephosphorylation [PMID:23696226]. Upon neutrophils activation negatively regulates IL1B production by recruiting PTPN6 to a SYK-TLR4-CEACAM1 complex, that dephosphorylates SYK, reducing the production of reactive oxygen species (ROS) and lysosome disruption, which in turn, reduces the activity of the inflammasome. Downregulates neutrophil production by acting as a coinhibitory receptor for CSF3R by downregulating the CSF3R-STAT3 pathway through recruitment of PTPN6 that dephosphorylates CSF3R (By similarity). Also regulates insulin action by promoting INS clearance and regulating lipogenesis in liver through regulating insulin signaling (By similarity). Upon INS stimulation, undergoes phosphorylation by INSR leading to INS clearance by increasing receptor-mediated insulin endocytosis. This internalization promotes interaction with FASN leading to receptor-mediated insulin degradation and

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to reduction of FASN activity leading to negative regulation of fatty acid synthesis. INSR-mediated phosphorylation also provokes a down-regulation of cell proliferation through SHC1 interaction resulting in decrease coupling of SHC1 to the MAPK3/ERK1-MAPK1/ERK2 and phosphatidylinositol 3-kinase pathways (By similarity). Functions as activator in angiogenesis by promoting blood vessel remodeling through endothelial cell differentiation and migration and in arteriogenesis by increasing the number of collateral arteries and collateral vessel calibers after ischemia. Also regulates vascular permeability through the VEGFR2 signaling pathway resulting in control of nitric oxide production (By similarity). Downregulates cell growth in response to EGF through its interaction with SHC1 that mediates interaction with EGFR resulting in decrease coupling of SHC1 to the MAPK3/ERK1-MAPK1/ERK2 pathway (By similarity). Negatively regulates platelet aggregation by decreasing platelet adhesion on type I collagen through the GPVI-FcRgamma complex (By similarity). Inhibits cell migration and cell scattering through interaction with FLNA; interferes with the interaction of FLNA with RALA [PMID:16291724]. Mediates bile acid transport activity in a phosphorylation dependent manner (By similarity). Negatively regulates osteoclastogenesis (By similarity). Isoform 8: Cell adhesion protein that mediates homophilic cell adhesion in a calcium-independent manner (By similarity). Promotes populations of T cells regulating IgA production and secretion associated with control of the commensal microbiota and resistance to enteropathogens (By similarity) [Uniprot].

Product Form

Purification: IMAC purified

Supplied in: 0.1 mg size: PBS with preservative (0.02% Proclin 300), 1 mg size: PBS only.

Endotoxin: <1.0 EU/mg

Shipping: The product is shipped on blue ice. Upon receipt, store it immediately at the temperature recommended.

Storage Recommendation: Store at 4°C for up to 1 month. For longer term storage aliquot in small volumes and store at -20°C. Avoid repeated freeze-thaw cycles.

SDS PAGE Purity: >95%, as determined by SDS-PAGE and visualized by Coomassie Brilliant Blue.

Fc-Fusion Sequence (monomer)

QLTTESMPFNVAEGKEVLLLHVHNLPPQLFGYSWYKGERVDGNGRQIVGYAIGTQQATPGPANSGRETIYPNASLLIQNVT
QNDTGFYTLQVIKSDLVNEEATGQFHVYPELPKPSISSNNSNPVEDKDAVAFTCEPETQDTTYLWWINNQLPVSPLRQ
LSNGNRTLTLVSVTRNDTGPIYECEIQNPVSANRSDPVTLNVTYGPDTPTISPSDTYYRPGANLSLSCYAASNPPAQYSW
LINGTFQQSTQELFIPNITVNNSGSYTCHANNSVTGCNRTTVKTIIVTELSPVVAKPQIKASKTTVTGDKDSVNLTCSTND
TGISIRWFFKNQSLPSSERMKLSQGNTTSLINPVKREDAGTYWCEVFNPISKQSDPIMLVNLYNALPQENGLSPGGG
GGSGGGGSEPKSQDKTHTCPPCPAPPELLGGPSVFLFPPKPKDITLMSRTPEVTCVVVDVSHEDPEVKFNWYVDGVEV
HNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQ
VSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVVFSCSVMHEALHNHYTQK
SLSLSPGHHHHHH

Underlined amino acids sequence include a G4S linker and 6xHis epitope tag, respectively.

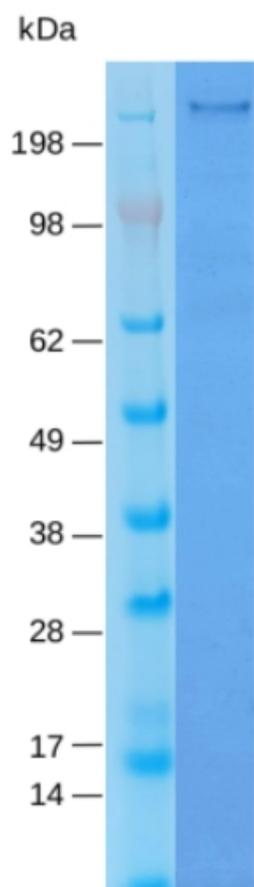
Calculated Molecular weight (dimer): 141439 Da

Extinction coefficient: 186450 (calculation performed as described by Pace *et al.* (1995), PMID: 8563639).

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CEAM1 (Pr00181-10.9) SDS-PAGE. Pr00181-10.9 under non-reducing conditions resolved by SDS-PAGE and stained using Coomassie-Blue.

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