

## Product datasheet for **MR225458**

### Ceacam1 (NM\_001039186) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Ceacam1 (NM_001039186) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Ceacam1
Synonyms:	bb-1; Bgp; Bgp1; C-CAM; Cc1; CD66a; Cea-1; Cea-7; Cea1; Cea7; Hv-2; Hv2; mCEA1; Mhv-1; MHVR; MHVR1
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>MR225458 representing NM\_001039186  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGGAGCTGGCCTCAGCACATCTCCACAAGGGCAGGTTCCCTGGGGAGGACTACTGCTCACAGCCTCAC  
 TTTTAGCCTCCTGGAGCCCTGCCACCACCTGCTGAAGTCACCATTGAGGCTGTGCCGCCCAAGTTGCTGA  
 AGACAACAAATGTTCTTCTACTTGTTCACAACTGCCCCCTGGCGCTTGGAGCCTTTCCTGGTACAAGGGA  
 AACACTACGGCTATAGACAAAGAAATTGCACGATTTGTACCAAATAGTAATATGAATTTACGGGGCAAG  
 CATACAGCGGCAGAGAGATAATATACAGCAATGGATCCCTGCTCTTCAAATGATCACCATGAAGGATAT  
 GGGAGTCTACACACTAGATATGACAGATGAAAACATCGTCGACTCAGGCGACTGTGCGATTTTCATGTA  
 CACCCCATATTATTAAGCCCAACATCACAAAGCAACAACCTCCAATCCCGTGGAGGGTGACGACTCCGTAT  
 CATTAACTGTGACTCTTACACTGACCCTGATAATATAAACTACCTGTGGAGCAGAAATGGTAAAGCCT  
 TTCAGAAGGTGACAGGCTGAAGCTGTCTGAGGGCAACAGGACTCTCACTTACTCAATGTCACGAGGAAT  
 GACACAGGACCCTATGTGTGTGAAACCCGGAATCCAGTGAGTGCAACCGAAGTGACCCATTACAGCCTGA  
 ACATTATCTATGGTCCGGACACCCCGATTATATCCCCCTCAGATATTTATTTGCATCCAGGGTCAAACCT  
 CAACCTCTCCTGCCATGCAGCCTCTAACCCACCTGCACAGTACTTTTGGCTTATCAATGAGAAGCCCAT  
 GCATCCTCCCAAGAGCTCTTATCCCAACATCACTACTAATAATAGCGGAACCTATACCTGCTTCGTCA  
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 CTTCTCCAAGTACCAACACCACAGTCAAAGAAGTACTCTGTGACCCGACCTGCTTGTGCAATGAC  
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 AGAACAACAGCATCCTCAGAATAGACCCTATTAAGAGGGGAAGATGCCGGGAGTATCAGTGTGAAATCTC  
 GAATCCAGTCAGCGTCAGGAGGAGCAACTCAATCAAGCTGGACATAATATTTGACCCAACACAAGGAGGC  
 CTCTCAGATGGGCCATTGCTGGCATCGTGATTGGAGTTGTGGCTGGGTGGCTCTAATAGCAGGGCTGG  
 CATATTTCTCTATTCCAGGAAGTCTGGCGGATCTGGCTCCTTC

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>MR225458 representing NM\_001039186  
 Red=Cloning site Green=Tags(s)

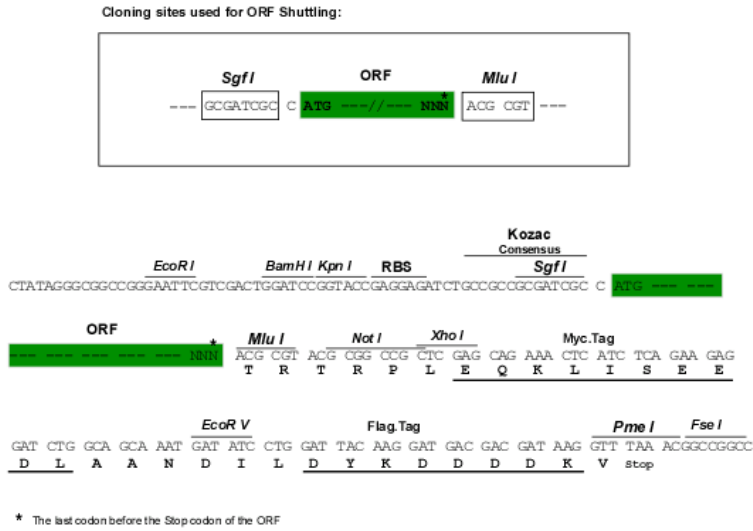
MELASAHLHKQVPWGGLLL TASLLASWSPATTAEVITIEAVPPQVAEDNNVLLL VHNPLALGAFAWYKG  
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 HPILLKPNITSNNSNPVEGDDSVSLTCDSYTDPNINYLWSRNGESLSEGDRLKLSGNRTLTLNVTNRN  
 DTGPYVCETRNPSVNRSDPFLNIIYGPDTPIISPDIYVHPGSNLSCHAASNPPAQYFWLINEKPH  
 ASSQELFIPNITNNSGTYTFCVNNSVTGLSRITVKNITVLEPVTQPFLQVTNTTVKELDSVTLTCLSD  
 IGANIQWLFNSQSLQLTERMTLSQNNILRIDPIKREDAGEYQCEISNPVSVRRSNSIKLDIIFDPTQGG  
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**TR**TRPLEQKLISEEDLAANDILDYKDDDDKV

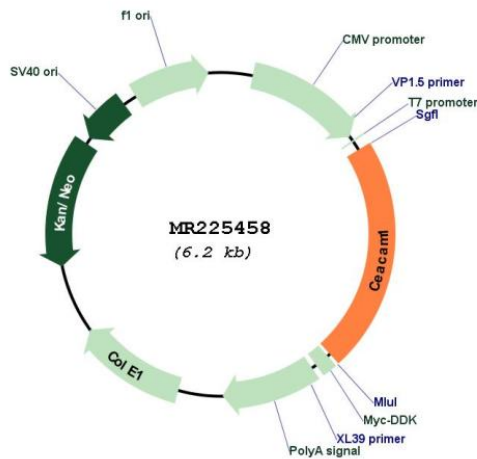
**Restriction Sites:**

SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN:

NM\_001039186

ORF Size:

1374 bp

OTI Disclaimer:

The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation:

This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components:

The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:** [NM\\_001039186.1](#), [NP\\_001034275.1](#)

**RefSeq Size:** 3683 bp

**RefSeq ORF:** 1377 bp

**Locus ID:** 26365

**UniProt ID:** [P31809](#)

**Cytogenetics:** 7 13.84 cM

**MW:** 50.5 kDa

**Gene Summary:** 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 (PubMed:16680193, PubMed:17081782, PubMed:18544705, PubMed:21029969, PubMed:21081647, PubMed:22496641, PubMed:22962327, PubMed:23696226). Its coinhibitory receptor function is phosphorylation- and PTPN6 -dependent, which in turn, suppress signal transduction of associated receptors by dephosphorylation of their downstream effectors (PubMed:17081782, PubMed:21029969, PubMed:22496641). Plays a role in immune response, of T-cells, natural killer (NK) and neutrophils (PubMed:17081782, PubMed:23696226, PubMed:22496641, PubMed:21029969). 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 (PubMed:22496641). 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 (PubMed:17081782). Upon natural killer (NK) cells activation, inhibit KLRK1-mediated cytolysis 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 (PubMed: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 (PubMed:22496641). Downregulates neutrophil production by acting as a coinhibitory receptor for CSF3R by downregulating the CSF3R-STAT3 pathway through recruitment of PTPN6 that dephosphorylates CSF3R (PubMed:21029969). Also regulates insulin action by promoting INS clearance and regulating lipogenesis in liver through regulating insulin

signaling (PubMed:18544705). 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 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 (PubMed:16680193, PubMed:22962327). Also regulates vascular permeability through the VEGFR2 signaling pathway resulting in control of nitric oxide production (PubMed:21081647). 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 (PubMed:15467833). Negatively regulates platelet aggregation by decreasing platelet adhesion on type I collagen through the GPVI-FcRgamma complex (PubMed:19008452). Inhibits cell migration and cell scattering through interaction with FLNA; interferes with the interaction of FLNA with RALA (By similarity). Mediates bile acid transport activity in a phosphorylation dependent manner (By similarity). Negatively regulates osteoclastogenesis (PubMed:25490771).[UniProtKB/Swiss-Prot Function]