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Product datasheet for MR209855

Appl2 (NM_145220) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Appl2 (NM_145220) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Appl2
Synonyms:	Dip3b
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

ORF Nucleotide Sequence:

>MR209855 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGCCCGCCGTGGACAAGCTCCTGCTGGAGGAGGCGCTGCAGGACAGCCCCCAGGCGCGCTCCTTGCTGA
GTGTATTTGAAGAAGATGCTGGCACCCTCACAGATTACACCAACCAGCTGCTGCAGGCCATGCAGCGTGT
CTATGGCGCACAGAATGAAATGTGCCTGGCCACTCAGCAGCTTTCCAGGCAGCTGCTGGCATATGAAAAA
CAGAATTTTGCACTGGGCAAAGGCGATGAAGAAGTAATTTCAACACTACATTATTTTTCCAAAGTGATGG
ATGAGCTCAATGGTCTCCACACAGAGCTGGCCAAGCAACTGGCAGACACTATGGTTCTCCCTGTTATACA
GTTTCGAGAGAAGGATCTCACAGAAGTCAGCACTTTGAAGGATCTCTTTGGACTTGCCAGCAGCGAGCAC
GACCTGTCAATGGCAAAGTATAGCAGGCTCCCTAAGAAGAAGGAGAACGAGAAGGCGAAGACGGAAATTG
TGAAAGAGGTGGCGGCTGCCCGGCGGAAACAGCACCTCTCATCCCTTCAGTACTACTGCGCACTCAACGC
ACTGCAGTACCGCAAGCGGGCGGCCATGATGGAACCCTTGATAGGCTTTGCCCACGGACAGATCAACTTT
TTCAAGAGAGGAGCAGAGATGTTCTCCAAAAGTATGGACGGCTTCTTGTCATCCGTTAAAGACATGGTTC
AGAGCATTCAGGTGGAACTGGAAGCTGAGGCAGACAAGATGCGGGTGTCCCAGCAAGAGTTGCTTTCGGT
CAGTGAATCTGTTTACACTCCGGACATTGATGTGGCCACAGCGCAGATCAACAGGAACCTCATCCAGAAG
ACTGGTTACCTCAATCTCAGAAACAAGACCGGACTGGTCACCACCACGTGGGAGAGGCTGTACTTCTTCA
CCCAAGGCGGGAACCTCATGTGCCAGCCCCGGGGCGCTGTGGCTGGAGGCTTGATTCAGGACCTGGACAA
CTGCTCTGTGATGGCCGTGGATTGTGAAGACCGACGATACTGCTTCCAGATCTCCACGCCCAGTGGCAAA
CCGGGAATAATTCTCCAAGCAGAGAGCAGGAAGGAATATGAAGAGTGGATATGTGCAGTAAACAACATCT
CCAGGCAGATCTACCTGACGGACAACCCAGAGGCAGTAGCCATCAAGTTGAATCAGACGGCTCTTCAGGC
GGTGACGCCAATTACAAGCTTTGGGAAGAAACAAGAAAGCTCCTGCTCCAGTCAAAACATAAAAAATTCA
GACATAGAAGATGACAATATTGTTCCCAAAGCAACAGCCAGCATTCCTGAAACAGAGGAACTGATTGCAC
CTGGGACACCCATTCAGTTTGATATTGTACTTCCGGCAACAGAATTCCTTGACCAGAACAGGGGTGGCAG
GCGCACCAACCCTTTCGGTGAGACGGAGGATGGCTCATTCCCTGAAGCAGAAGACTCTCTTCTGCAGCAG
ATGTTCATCGTTCGGTTTTTGGGATCAATGGCAGTTAAGACAGACAGCACGGCTGAAGTGATTTATGAGG
CAATGAGACAAGTACTGGCTGCTCGAGCTATTCACAACATCTTCCGCATGACCGAATCCCATCTCATGGT
CACCAGTCAAACTCTGAGGTTGATAGATCCTCAGACTCAAGTGTCAAGGGCCTGTTTTGAGCTTACCAGT
GTCACACAGTTTGCTGCTCATCAAGAAAACAAAAGACTGGTTGGCTTTGTCATCCGGGTGCCGGAGTCCA
CAGGAGAAGAGTCTCTGAGCACATACATTTTTGAAAGCAACTCAGAAGGAGAAAAGATATGCTATGCTAT
TAATTTGGGGAAAGAAATTATTGAGGTTCAAAAGGATCCAGAAGCACTGGCTCGATTAATGCTGTCTGTA
CCACTAACCAATGATGGAAAGTATGTACTGTTAAACGATCAAGCAGATGACACTGGCGGAAGTCCAAGTG
AAAACAGAGGCGCAGAATCTGAAGCA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

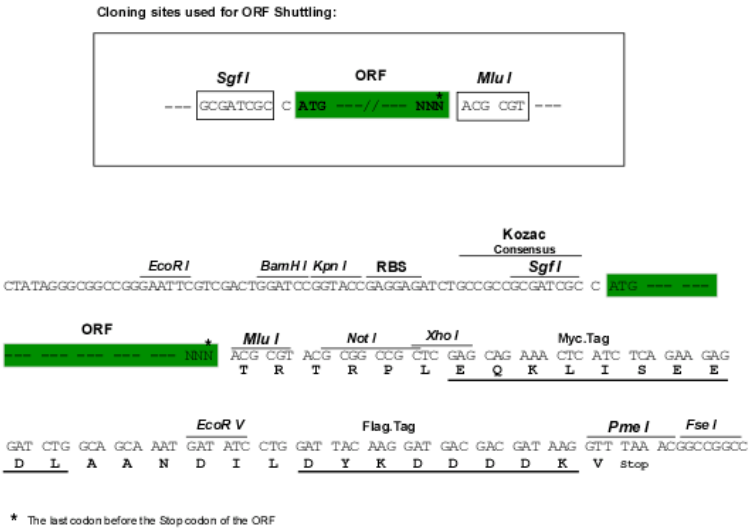
>MR209855 protein sequence
Red=Cloning site Green=Tags(s)

MPAVDKLLLEEALQDSPQARSLLSVFEEDAGTLTDYTNQLLQAMQRVYGAQNEMCLATQQLSRQLLAYEK
QNFALGKGDEEVISTLHYFSKVMDELNGLHTELAKQLADTMVLPVIQFREKDLTEVSTLKDLFGLASSEH
DLSMAKYSRLPKKKENEKAKTEIVKEVAAARRKQHLSSLQYYCALNALQYRKRAAMMEPLIGFAHGQINF
FKRGAEMFSKSMDGFLSSVKDMVQSIQVELEAEADKMRVSQQELLSVSESVYTPDIDVATAQINRNLIQK
TGYLNLRNKTGLVTTTWERLYFFTQGGNLMCQPRGAVAGGLIQDLDNCSVMAVDCEDRRYCFQISTPSGK
PGIILQAESRKEYEEWICAVNNISRQIYLTDNPEAVAIKLNQTALQAVTPITSFGKKQESSCSSQNIKNS
DIEDDNIVPKATASIPETEELIAPGTPIQFDIVLPATEFLDQNRGGRRTNPFGETEDGSFPEAEDSLLQQ
MFIVRFLGSMAVKTDSTAEVIYEAMRQVLAARAIHNIFRMTESHLMVTSQTLRLIDPQTQVSRACFELTS
VTQFAAHQENKRLVGFVIRVPESTGEESLSTYIFESNSEGEKICYAINLGKEIIEVQKDPEALARLMLSV
PLTNDGKYVLLNDQADDTGGSPSENRGAESEA

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_145220

ORF Size: 1989 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

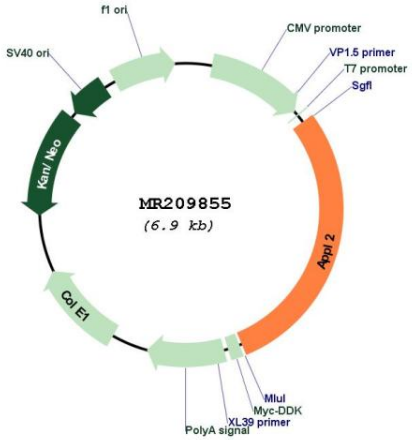
OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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_145220.2
RefSeq Size:	2958 bp
RefSeq ORF:	1989 bp
Locus ID:	216190
UniProt ID:	Q8K3G9
Cytogenetics:	10 C1
MW:	73.9 kDa

Gene Summary: Multifunctional adapter protein that binds to various membrane receptors, nuclear factors and signaling proteins to regulate many processes, such as cell proliferation, immune response, endosomal trafficking and cell metabolism (PubMed:25568335, PubMed:27219021, PubMed:25328665, PubMed:19661063, PubMed:29467283). Regulates signaling pathway leading to cell proliferation through interaction with RAB5A and subunits of the NuRD/MeCP1 complex (By similarity). Plays a role in immune response by modulating phagocytosis, inflammatory and innate immune responses (PubMed:25568335, PubMed:27219021, PubMed:25328665). In macrophages, enhances Fc-gamma receptor-mediated phagocytosis through interaction with RAB31 leading to activation of PI3K/Akt signaling (PubMed:25568335). In response to LPS, modulates inflammatory responses by playing a key role on the regulation of TLR4 signaling and in the nuclear translocation of RELA/NF-kappa-B p65 and the secretion of pro- and anti-inflammatory cytokines (PubMed:27219021). Also functions as a negative regulator of innate immune response via inhibition of AKT1 signaling pathway by forming a complex with APPL1 and PIK3R1 (PubMed:25328665). Plays a role in endosomal trafficking of TGFBR1 from the endosomes to the nucleus (By similarity). plays a role in cell metabolism by regulating adiponecting ans insulin signaling pathways and adaptative thermogenesis (PubMed:19661063, PubMed:29467283) (By similarity). In muscle, negatively regulates adiponectin-simulated glucose uptake and fatty acid oxidation by inhibiting adiponectin signaling pathway through APPL1 sequestration thereby antagonizing APPL1 action (PubMed:19661063). In muscles, negativeliy regulates insulin-induced plasma membrane recruitment of GLUT4 and glucose uptake through interaction with TBC1D1 (By similarity). Plays a role in cold and diet-induced adaptive thermogenesis by activating ventromedial hypothalamus (VMH) neurons throught AMPK inhibition which enhances sympathetic outflow to subcutaneous white adipose tissue (sWAT), sWAT beiging and cold tolerance (PubMed:29467283). Also plays a role in other signaling pathways namely Wnt/beta-catenin, HGF and glucocorticoid receptor signaling (PubMed:28965332, PubMed:29675572, PubMed:26445298). Positive regulator of beta-catenin/TCF-dependent transcription through direct interaction with RUVBL2/reptin resulting in the relief of RUVBL2-mediated repression of beta-catenin/TCF target genes by modulating the interactions within the beta-catenin-reptin-HDAC complex (By similarity). May affect adult neurogenesis in hippocampus and olfactory system via regulating the sensitivity of glucocorticoid receptor (PubMed:28965332, PubMed:29675572). Required for fibroblast migration through HGF cell signaling (PubMed:26445298).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR209855