

Product datasheet for **MR226630**

Rag2 (NM_009020) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Rag2 (NM_009020) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Rag2
Synonyms:	Rag-2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>MR226630 representing NM_009020
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGTCCTGCAGATGGTAACAGTGGGTGATAACATAGCCTTAATCAACCAGGCTTCTCACTTATGAATT
 TTGATGGCCAAGTTTTCTTTGGCCAGAAAGGCTGGCCTAAGAGATCCTGTCCTACTGGAGTCTTTCA
 TTTTGATATAAAACAAAATCATCTCAAACCTGAAGCCTGCAATCTTCTCTAAAGATTCTGCTACCTCCCA
 CCTCTTCGTTATCCAGCTACTTGCTCATACAAAGGCAGCATAGACTCTGACAAGCATCAATATATCATT
 ACGGAGGGAAAACACCAAACAATGAGCTTTCCGATAAGATTTATATCATGTCTGTCGCTTGAAGAATAA
 CAAAAAGTTACTTTCCGTTGCACAGAGAAAGACTTAGTAGGAGATGTCCTGAACCCAGATACGGCCAT
 TCCATTGACGTGGTGTATAGTCGAGGGAAAAGCATGGGTGTTCTTTGGAGGACGTTTCATACATGCCTT
 CTACCCAGAGAACCACAGAAAAATGGAATAGTGTAGCTGACTGCCTACCCATGTTTTCTTGATAGATT
 TGAAATTTGGGTGTCTACATCATATATTCTCCAGAATTCAGGATGGGCTGCTTTTCATGTTTCTATT
 GCCAGAAAACGATACCGTTTATATTTGGGAGGACTCACTTGCCAGTAATATACGCCCTGCTAACTTGT
 ATAGAATAAGAGTGGACCTTCCCCTGGGTACCCAGCAGTGAATTGCACAGTCTTGCCAGGAGGAATCTC
 TGTCTCCAGTGAATCCTCACTCAAACAACAATGATGAATTTGTTATTGTGGTGGTTATCAGCTGGAA
 AATCAGAAAAGGATGGTCTGCAGCCTTGTCTCTAGGGGACAACACGATTGAAATCAGTGAGATGGAGA
 CTCCTGACTGGACCTCAGATATTAAGCATAGCAAAATATGGTTTGAAGCAACATGGGAAACGGGACTAT
 TTTCTTGGCATAACCAGGAGACAATAAGCAGGCTATGTCAGAAGCATTCTATTTCTATACCTTTGAGATGC
 TCTGAAGAGGATTTGAGTGAAGATCAGAAAATTTGTTTTCAGTCTGAAGCAACAGTTTTGATGGTGACGA
 ACTCCACTCCCTTTGAAGACTCAGAGGAATTTTGTTCAGTCTGAAGCAACAGTTTTGATGGTGACGA
 TGAATTTGACACCTACAATGAAGATGATGAAGATGACGAGTCTGTAACCGGCTACTGGATAACATGTTGC
 CCTACTTGTGATGTTGACATCAATACCTGGGTTCCGTTCTATTCAACGGAGCTCAATAAACCCGCCATGA
 TCTATTGTTCTCATGGGGATGGGCACTGGGTACATGCCAGTGCATGGATTTGGAAGAACGCACACTCAT
 CCACTTGTGAGAAGGAAGCAACAAGTATTATTGCAATGAACATGTACAGATAGCAAGAGCATTGCAAAC
 CCCAAAAGAAACCCCTTACAAAACCTCCAATGAAATCCCTCCAAAAAAGGCTCTGGGAAAGTCT
 TGACTCTGCCAAGAAATCCTTCTTAGAAGACTGTTTGTAT

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>MR226630 representing NM_009020
 Red=Cloning site Green=Tags(s)

MSLQMVTVGHNIALIQPGFSLMNFQGVFFFGQKGWPKRSCPTGVFHFQIKQNHKLKPAIFSKDSCYLP
 PLRYPATCSYKGSIDSKHQYIIHGGKTPNNELSDKIYIMSVACKNNKVTFRCTEKDLVGDVPEPRYGH
 SIDVVYSRGKSMGVLFGGRSYMPSTQRTTEKWNSVADCLPHVFLIDFEFGCATSYILPELQDGLSFHVS
 ARNDTVYILGGHSLASNIRPANLYRIRVDLPLGTPAVNCTVLPGGISVSSAILTQTNDEFVIVGGYQLE
 NQKRMVCSLVSLGDNTIEISEMETPDWTSIDIKHSKIWFSGNMNGTIFLGIPGDNKQAMSEAFYFYLRC
 SEEDLSEDQKIVSNSQSTSTEDPGDSTPFEDSEEFCSAEATSFDDGDEFDYNEDDEDDESVTGYWITCC
 PTCDVDINTWVPFYSTELNKPAMIYCSHGDSHWVHAQCMDLEERTLIHLSEGSNKYYCNEHVQIARALQT
 PKRNPPLQKPPMKSLHKKGSGKVLTPAKKSFLRRLFD

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mm9039_c09.zip

Restriction Sites:

Sgfl-MluI

Cloning Scheme:


ACCN: NM_009020

ORF Size: 1581 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_009020.4](#)

RefSeq Size: 3393 bp

RefSeq ORF: 1584 bp

Locus ID: 19374

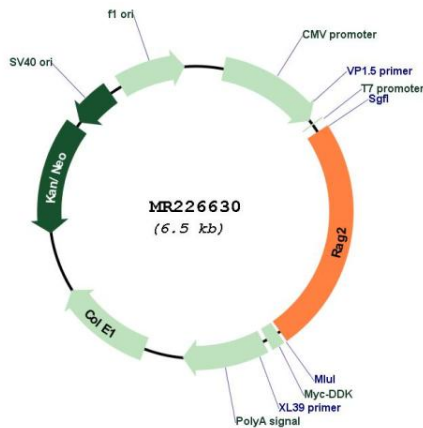
UniProt ID: [P21784](#)

Cytogenetics: 2 53.87 cM

MW: 59.5 kDa

Gene Summary: Core component of the RAG complex, a multiprotein complex that mediates the DNA cleavage phase during V(D)J recombination. V(D)J recombination assembles a diverse repertoire of immunoglobulin and T-cell receptor genes in developing B and T-lymphocytes through rearrangement of different V (variable), in some cases D (diversity), and J (joining) gene segments. DNA cleavage by the RAG complex occurs in 2 steps: a first nick is introduced in the top strand immediately upstream of the heptamer, generating a 3'-hydroxyl group that can attack the phosphodiester bond on the opposite strand in a direct transesterification reaction, thereby creating 4 DNA ends: 2 hairpin coding ends and 2 blunt, 5'-phosphorylated ends. The chromatin structure plays an essential role in the V(D)J recombination reactions and the presence of histone H3 trimethylated at 'Lys-4' (H3K4me3) stimulates both the nicking and haipinning steps. The RAG complex also plays a role in pre-B cell allelic exclusion, a process leading to expression of a single immunoglobulin heavy chain allele to enforce clonality and monospecific recognition by the B-cell antigen receptor (BCR) expressed on individual B-lymphocytes. The introduction of DNA breaks by the RAG complex on one immunoglobulin allele induces ATM-dependent repositioning of the other allele to pericentromeric heterochromatin, preventing accessibility to the RAG complex and recombination of the second allele. In the RAG complex, RAG2 is not the catalytic component but is required for all known catalytic activities mediated by RAG1. It probably acts as a sensor of chromatin state that recruits the RAG complex to H3K4me3.[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR226630