

Product datasheet for **MC217436**

Rag2 (NM_009020) Mouse Untagged Clone

Product data:

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



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Fully Sequenced ORF: >MC217436 representing NM_009020
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGTCCTGCAGATGGTAACAGTGGGCATAACATAGCCTTAATCAACCAGGCTTCTCACTTATGAATT
 TTGATGGCCAAGTTTTCTTTGGCCAGAAAGGCTGGCCTAAGAGATCCTGTCCTACTGGAGTCTTTCA
 TTTTGATATAAAACAAAATCATCTCAAACCTGAAGCCTGCAATCTTCTCTAAAGATTCTGCTACCTCCCA
 CCTCTTCGTTATCCAGCTACTTGCTCATACAAAGGCAGCATAGACTCTGACAAGCATCAATATATCATT
 ACGGAGGGAAAACACCAAACAATGAGCTTTCCGATAAGATTTATATCATGTCTGTGCTTGAAGAATAA
 CAAAAAGTTACTTTCCGTTGCACAGAGAAAGACTTAGTAGGAGATGTCCTGAACCCAGATACGGCCAT
 TCCATTGACGTGGTGTATAGTCGAGGGAAAAGCATGGGTGTTCTTTGGAGGACGTTTCATACATGCCTT
 CTACCCAGAGAACCACAGAAAAATGGAATAGTGTAGCTGACTGCCTACCCATGTTTTCTTGATAGATT
 TGAAATTTGGGTGTCTACATCATATATTCTCCAGAATTCAGGATGGGCTGCTTTTCATGTTTCTATT
 GCCAGAAACGATACCGTTTATATTTGGGAGGACACTCACTTGCCAGTAATATACGCCCTGCTAACTTGT
 ATAGAATAAGAGTGGACCTTCCCCTGGGTACCCAGCAGTGAATTGCACAGTCTTGCCAGGAGGAATCTC
 TGTCTCCAGTGAATCCTCACTCAAACAACAATGATGAATTTGTTATTGTGGTGGTTATCAGCTGGAA
 AATCAGAAAAGGATGGTCTGCAGCCTTGTCTCTAGGGGACAACACGATTGAAATCAGTGAGATGGAGA
 CTCCTGACTGGACCTCAGATATTAAGCATAGCAAAATATGGTTTGGAAAGCAACATGGGAAACGGGACTAT
 TTTCTTGGCATAACCAGGAGACAATAAGCAGGCTATGTCAGAAGCATTCTATTTCTATACTTTGAGATGC
 TCTGAAGAGGATTTGAGTGAAGATCAGAAAATTTGTTTTCAGTCTGAAGCAACAGTTTTGATGGTGACGA
 ACTCCACTCCCTTTGAAGACTCAGAGGAATTTTGTTCAGTCTGAAGCAACAGTTTTGATGGTGACGA
 TGAATTTGACACCTACAATGAAGATGATGAAGATGACGAGTCTGTAACCGGCTACTGGATAACATGTTGC
 CCTACTTGTGATGTTGACATCAATACCTGGGTTCCGTTCTATTCAACGGAGCTCAATAAACCCGCCATGA
 TCTATTGTTCTCATGGGGATGGGCACTGGGTACATGCCAGTGCATGGATTTGGAAGAACGCACACTCAT
 CCACTTGTGAGAAGGAAGCAACAAGTATTATTGCAATGAACATGTACAGATAGCAAGAGCATTGCAAAC
 CCCAAAAGAAACCCCTTACAAAAACCTCCAATGAAATCCCTCCAAAAAAGGCTCTGGGAAAGTCT
 TGACTCTGCCAAGAAATCCTTCTTAGAAGACTGTTTGA**TAA**

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: Sgfl-Mlul

ACCN: NM_009020

Insert Size: 1584 bp

OTI Disclaimer: Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

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_009020.3](#), [NP_033046.1](#)

RefSeq Size: 3393 bp

RefSeq ORF: 1584 bp

Locus ID: 19374

UniProt ID: [P21784](#)

Cytogenetics: 2 53.87 cM

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 hairpinning 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]