

## Product datasheet for **MG226630**

### Rag2 (NM\_009020) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Rag2 (NM_009020) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Rag2
Synonyms:	Rag-2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG226630 representing NM\_009020  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGTCCTGCAGATGGTAACAGTGGGCATAACATAGCCTTAATCAACCAGGCTTCTCACTTATGAATT  
 TTGATGGCCAAGTTTTCTTTGGCCAGAAAGGCTGGCCTAAGAGATCCTGTCTACTGGAGTCTTTCA  
 TTTTGATATAAAACAAAATCATCTCAAACCTGAAGCCTGCAATCTTCTCTAAAGATTCTCTGCTACCTCCCA  
 CCTCTTCGTTATCCAGCTACTTGCTCATACAAAGGCAGCATAGACTCTGACAAGCATCAATATATCATT  
 ACGGAGGGAAAACACCAAACAATGAGCTTTCCGATAAGATTTATATCATGTCTGTGCTTCAAGAATAA  
 CAAAAAGTTACTTTCCGTTGCACAGAGAAAGACTTAGTAGGAGATGTCCCTGAACCCAGATACGGCCAT  
 TCCATTGACGTGGTGTATAGTCGAGGGAAAAGCATGGGTGTTCTTTGGAGGACGTTTCATACATGCCTT  
 CTACCCAGAGAACCACAGAAAAATGGAATAGTGTAGCTGACTGCCTACCCATGTTTTCTTGATAGATT  
 TGAAATTTGGGTGTCTACATCATATATTCTCCAGAATTCAGGATGGGCTGTCTTTTCATGTTTCTATT  
 GCCAGAAACGATACCGTTTATATTTGGGAGGACTCACTTGCCAGTAATATACGCCCTGCTAACTTGT  
 ATAGAATAAGAGTGGACCTTCCCCTGGGTACCCAGCAGTGAATTGCACAGTCTTGCCAGGAGGAATCTC  
 TGTCTCCAGTGAATCCTCACTCAAACAACAATGATGAATTTGTTATTGTGGGTGGTTATCAGCTGGAA  
 AATCAGAAAAGGATGGTCTGCAGCCTTGTCTCTAGGGGACAACACGATTGAAATCAGTGAGATGGAGA  
 CTCCTGACTGGACCTCAGATATTAAGCATAGCAAAATATGGTTTGGAAAGCAACATGGGAAACGGGACTAT  
 TTTCTTGGCATAACCAGGAGACAATAAGCAGGCTATGTCAGAAGCATTCTATTTCTATACTTTGAGATGC  
 TCTGAAGAGGATTTGAGTGAAGATCAGAAAATTTGTTTTCAGTGTGAAGCAACAGTTTGTGATGGTACGA  
 ACTCCACTCCCTTTGAAGACTCAGAGGAATTTTGTTCAGTGTGAAGCAACAGTTTGTGATGGTACGA  
 TGAATTTGACACCTACAATGAAGATGATGAAGATGACGAGTCTGTAACCGGCTACTGGATAACATGTTGC  
 CCTACTTGTGATGTTGACATCAATACCTGGGTTCCGTTCTATTCAACGGAGCTCAATAAACCCGCCATGA  
 TCTATTGTTCTCATGGGGATGGGCACTGGGTACATGCCAGTGCATGGATTTGGAAGAACGCACACTCAT  
 CCCTTGTGAGAAGGAAGCAACAAGTATTATTGCAATGAACATGTACAGATAGCAAGAGCATTGCAAACT  
 CCCAAAAGAAACCCCTTACAAAACCTCCAATGAAATCCCTCCAAAAAAGGCTCTGGGAAAGTCT  
 TGACTCTGCCAAGAAATCCTTCTTAGAAGACTGTTTGTAT

**ACGCGTACGCGGCCGCTCGAG** - GFP Tag - GTTTAA

**Protein Sequence:**

>MG226630 representing NM\_009020  
 Red=Cloning site Green=Tags(s)

MSLQMVTVGHNIALIQPGFLMNFQGVFFFGQKGWPKRSCPTGVFHFQIKQNHLLKPAIFSKDSCYLP  
 PLRYPATCSYKGSIDSKHQYIIHGGKTPNNELSDKIYIMSVACKNNKVTFRCTEKDLVGDVPEPRYGH  
 SIDVVYSRGKSMGVLFGGRSYMPSTQRTTEKWNVSADCLPHVFLIDFEFGCATSYILPELQDGLSFHVS  
 ARNDTVYILGGHSLASNIRPANLYRIRVDLPLGTPAVNCTVLPGGISVSSAILTQTNNDEFVIVGGYQLE  
 NQKRMVCSLVSLGDNTIEISEMETPDWTSIDIKHSKIWFSGNMNGTIFLGIPGDNKQAMSEAFYFYLRC  
 SEEDLSEDQKIVSNSQSTSTEDPGDSTPFEDSEEFCSAEATSFDDGDEFDYNEDDEDESVTGYWITCC  
 PTCDVDINTWVPFYSTELNKPAMIYCSHGDDHVVHAQCMDLEERTLIHLSEGSNKYYCNEHVQIARALQT  
 PKRNPPLQKPPMKSLHKKGSGKVLTPAKKSFLRRLFD

**TRTRPLE** - GFP Tag - V

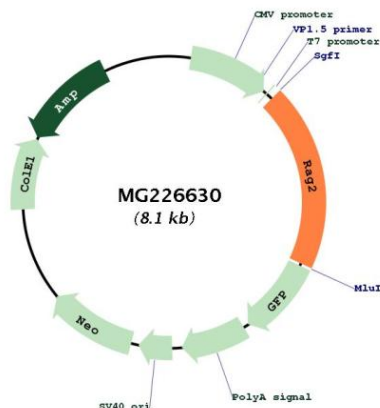
**Restriction Sites:**

Sgfl-Mlul



**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]

**Product images:**

Circular map for MG226630