10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# Rag1 antibody - C-terminal region

Rabbit Polyclonal Antibody
Catalog # AI12191

## Product Information

| | |
|---|---|
| **Application** | WB |
| **Primary Accession** | P15919 |
| **Other Accession** | NM_009019, NP_033045 |
| **Reactivity** | Mouse, Rat, Pig, Horse |
| **Predicted** | Human, Mouse, Rabbit, Zebrafish, Pig |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 119185 |

## Additional Information

| | |
|---|---|
| **Gene ID** | 19373 |
| **Alias Symbol** | Rag-1 |
| **Other Names** | V(D)J recombination-activating protein 1, RAG-1, Endonuclease RAG1, 3.1.-.-, E3 ubiquitin-protein ligase RAG1, 6.3.2.-, Rag1 |
| **Format** | Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose. |
| **Reconstitution & Storage** | Add 50 ul of distilled water. Final anti-Rag1 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles. |
| **Precautions** | Rag1 antibody - C-terminal region is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

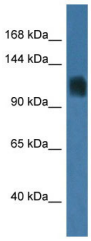
| | |
|---|---|
| **Name** | Rag1 |
| **Function** | Catalytic component of the RAG complex, a multiprotein complex that mediates the DNA cleavage phase during V(D)J recombination. V(D)J recombination assembles a diverse repertoire of immunoglobulin and T-cell receptor genes in developing B and T- lymphocytes through rearrangement of different V (variable), in some cases D (diversity), and J (joining) gene segments. In the RAG complex, RAG1 mediates the DNA-binding to the conserved recombination signal sequences (RSS) and catalyzes the DNA cleavage activities by introducing a double-strand break between the RSS and the adjacent coding segment. RAG2 is not a catalytic component but is required for all known catalytic activities. DNA cleavage 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 addition to its endonuclease activity, RAG1 also acts as an E3 ubiquitin-protein ligase that mediates monoubiquitination of histone H3. Histone H3 monoubiquitination is required for the joining step of V(D)J recombination. Mediates polyubiquitination of KPNA1.

**Cellular Location** Nucleus {ECO:0000255|PROSITE-ProRule:PRU00820, ECO:0000269|PubMed:8284210}

**Tissue Location** Maturing lymphoid cells and central nervous system.

## Images




WB Suggested Anti-Rag1 Antibody Titration: 1.0 µg/ml
Positive Control: Mouse Liver

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.