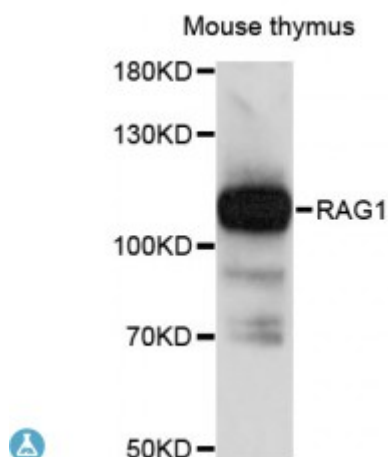


Anti-RAG1 Antibody



Description

The protein encoded by this gene is involved in activation of immunoglobulin V-D-J recombination. The encoded protein is involved in recognition of the DNA substrate, but stable binding and cleavage activity also requires RAG2. Defects in this gene can be the cause of several diseases.

Model	STJ114520
Host	Rabbit
Reactivity	Mouse
Applications	WB
Immunogen	Recombinant fusion protein containing a sequence corresponding to amino acids 1-270 of human RAG1 (NP_000439.1).
Gene ID	5896
Gene Symbol	RAG1
Dilution range	WB 1:1000 - 1:3000
Tissue Specificity	Maturing lymphoid cells
Purification	Affinity purification
Note	For Research Use Only (RUO).
Protein Name	V(D J recombination-activating protein 1 RAG-1 RING finger protein 74
Molecular Weight	119.097 kDa
Clonality	Polyclonal

Conjugation	Unconjugated
Isotype	IgG
Formulation	PBS with 0.02% sodium azide, 50% glycerol, pH7.3.
Storage Instruction	Store at -20C. Avoid freeze / thaw cycles.
Database Links	HGNC:9831 OMIM:179615 Reactome:R-HSA-1266695
Alternative Names	V(D J recombination-activating protein 1 RAG-1 RING finger protein 74
Function	<p>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 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 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 ,</p>
Cellular Localization	Nucleus
Post-translational Modifications	Autoubiquitinated in the presence of CDC34/UBCH3,