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Anti-RAG2 Picoband Antibody
Catalog # ABO12479

Specification

Anti-RAG2 Picoband Antibody - Product Information

Application	**WB, IHC-P**
Primary Accession	P55895
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for V(D)J recombination-activating protein 2(RAG2) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-RAG2 Picoband Antibody - Additional Information

Gene ID 5897

Other Names
V(D)J recombination-activating protein 2, RAG-2, RAG2

Calculated MW
59241 MW KDa

Application Details
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat

Western blot, 0.1-0.5 µg/ml, Human

Subcellular Localization
Nucleus .

Tissue Specificity
Cells of the B- and T-lymphocyte lineages.

Protein Name
V(D)J recombination-activating protein 2

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence at the C-terminus of human RAG2 (498-527aa KKPPMKSLRKKGSGKILTPAKKSFLRRLFD), different from the related mouse sequence by three amino acids.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins.

Storage	**At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.**

Anti-RAG2 Picoband Antibody - Protein Information

Name RAG2

Function
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 (By similarity).

Cellular Location
Nucleus.

Tissue Location
Cells of the B- and T-lymphocyte lineages.

Anti-RAG2 Picoband Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

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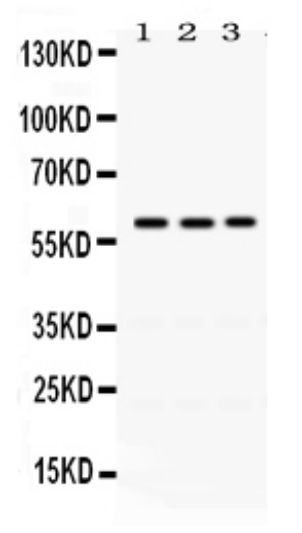
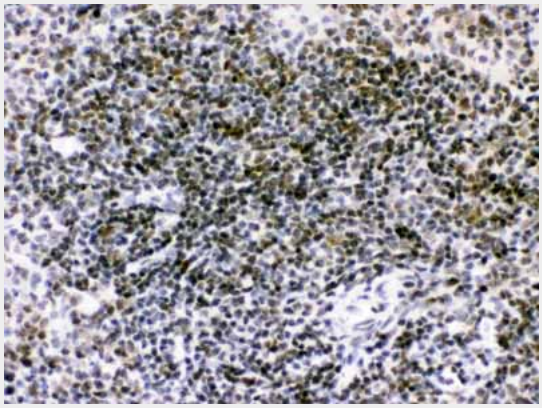
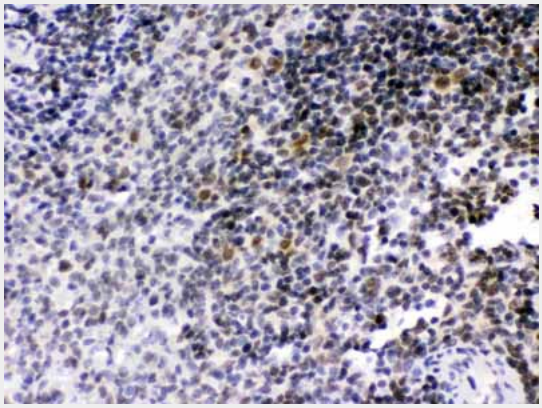
Anti-RAG2 Picoband Antibody - Images



Anti- RAG2 Picoband antibody, ABO12479, Western blottingAll lanes: Anti RAG2 (ABO12479) at 0.5ug/mlLane 1: A549 Whole Cell Lysate at 40ugLane 2: 22RV1 Whole Cell Lysate at 40ugLane 3: U20S Whole Cell Lysate at 40ugPredicted bind size: 59KDObserved bind size: 59KD



Anti- RAG2 Picoband antibody, ABO12479, IHC(P)IHC(P): Mouse Spleen Tissue



Anti- RAG2 Picoband antibody, ABO12479, IHC(P)IHC(P): Rat Spleen Tissue

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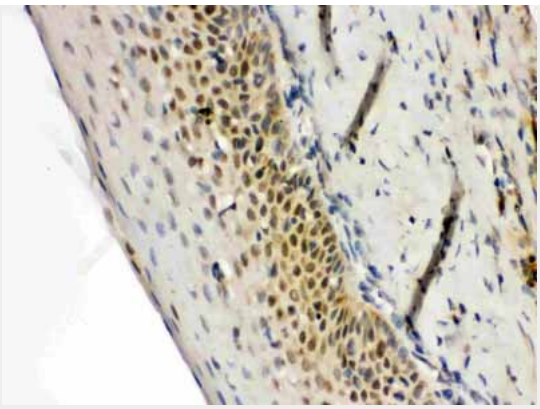

Anti- RAG2 Picoband antibody, ABO12479, IHC(P)IHC(P): Human Tonsil Tissue

Anti-RAG2 Picoband Antibody - Background

Recombination activating gene 2, also known as RAG-2, is a protein that in humans is encoded by the RAG2 gene. This gene encodes a protein that is involved in the initiation of V(D)J recombination during B and T cell development. This protein forms a complex with the product of the adjacent recombination activating gene 1, and this complex can form double-strand breaks by cleaving DNA at conserved recombination signal sequences. The recombination activating gene 1 component is thought to contain most of the catalytic activity, while the N-terminal of the recombination activating gene 2 component is thought to form a six-bladed propeller in the active core that serves as a binding scaffold for the tight association of the complex with DNA. A C-terminal plant homeodomain finger-like motif in this protein is necessary for interactions with chromatin components, specifically with histone H3 that is trimethylated at lysine 4. Mutations in this gene cause Omenn syndrome, a form of severe combined immunodeficiency associated with autoimmune-like symptoms.