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Immunotag™ RAG-2 Monoclonal Antibody

Antibody Specification

Catalog No.	ITM0550
Product Description	Immunotag™ RAG-2 Monoclonal Antibody
Size	50 µg, 100 µg
Conjugation	HRP, Biotin, FITC, Alexa Fluor® 350, Alexa Fluor® 405, Alexa Fluor® 488, Alexa Fluor® 555, Alexa Fluor® 594, Alexa Fluor® 647
IMPORTANT NOTE	This product is custom manufactured with a lead time of 3-4 weeks. Once in production, this item cannot be cancelled from an order and is not eligible for return.
Target Protein	RAG-2
Clonality	Monoclonal
Storage/Stability	-20°C/1 year
Application	WB,ELISA
Recommended Dilution	Western Blot: 1/500 - 1/2000. ELISA: 1/10000. Not yet tested in other applications.
Concentration	1 mg/ml
Reactive Species	Human
Host Species	Mouse
Immunogen	Purified recombinant fragment of human RAG-2 (350-527aa) expressed in E. Coli.
Specificity	RAG-2 Monoclonal Antibody detects endogenous levels of RAG-2 protein.
Purification	Affinity purification
Form	Ascitic fluid containing 0.03% sodium azide.
Gene Name	RAG2
Accession No.	P55895 P21784
Alternate Names	RAG2; V(D)J recombination-activating protein 2; RAG-2

Antibody Specification

Description	recombination activating 2(RAG2) Homo sapiens 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 immunodef
Cell Pathway/ Category	Primary immunodeficiency,
Protein Expression	Placenta,Testis,
Subcellular Localization	nucleus,nucleoplasm,integral component of membrane,
Protein Function	disease:Defects in RAG2 are a cause of combined cellular and humoral immune defects with granulomas (CHIDG) [MIM:233650]. CHIDG is an immunodeficiency disease with granulomas in the skin, mucous membranes, and internal organs. Other characteristics include hypogammaglobulinemia, a diminished number of T and B cells, and sparse thymic tissue on ultrasonography.,disease:Defects in RAG2 are a cause of Omenn syndrome (OS) [MIM:603554]; a severe immunodeficiency characterized by the presence of activated, anergic, oligoclonal T-cells, hypereosinophilia, and high IgE levels.,disease:Defects in RAG2 are a cause of severe combined immunodeficiency, autosomal recessive T cell-negative, B-cell-negative, NK cell-positive (T(-)B(-)NK(+)SCID) [MIM:601457]. SCID refers to a genetically and clinically heterogeneous group of rare congenital disorders characterized by impairment of both humoral and cell-mediated immunity, leukopenia, and low or absent antibody levels. Patients with SCID present in infancy with recurrent, persistent infections by opportunistic organisms. The common characteristic of all types of SCID is absence of T-cell-mediated cellular immunity due to a defect in T-cell development.,function:During lymphocyte development, the genes encoding immunoglobulins and T-cell receptors are assembled from variable (V), diversity (D), and joining (J) gene segments. This combinatorial process, known as V(D)J recombination, allows the generation of an enormous range of binding specificities from a limited amount of genetic information. The RAG1/RAG2 complex initiates this process by binding to the conserved recombination signal sequences (RSS) and introducing a double-strand break between the RSS and the adjacent coding segment. These breaks are generated in two steps, nicking of one strand (hydrolysis), followed by hairpin formation (transesterification). RAG1/2 has also been shown to function as a transposase in vitro, and to possess RSS-independent endonuclease activity (end processing) and hairpin opening. RAG1 alone can bind to RSS but stable, efficient binding requires RAG2. All known catalytic activities require the presence of both proteins.,online information:RAG2 deficiency database,similarity:Belongs to the RAG2 family.,subunit:The RAG complexes appear to contain three to five molecules of RAG2 for each molecule of RAG1.,tissue specificity:Cells of the B- and T-lymphocyte lineages.,
Usage	For Research Use Only! Not for diagnostic or therapeutic procedures.