Revision 1

Store at -20C

#3968

RAG1 (D36B3) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	119	Rabbit IgG	#P15918	5896

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

RAG1 (D36B3) Rabbit mAb detects endogenous levels of total RAG1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant human RAG1 protein.

Background

The sequences encoding antigen receptors are split into multiple germline segments which are then combined by a process called V(D)J recombination during immune cells development. A variable (V) segment is combined with a joining (J) segment, and in some cases a D (Diversity) segment, to create the antigen-binding portion of the receptor. The recombined V(D)J segment is then spliced into exons that encode the constant region to produce mature mRNA (1,2). This essential process required for the development of functional immune T and B cells creates a vast diversity in these receptors (3,4). Initiation of this process follows binding of RAG1 (recombination activating gene 1) and RAG2 to the conserved recombination signal sequences (RSS) and the introduction of a double-strand break between the RSS and the coding sequence (5,6). RAG1 and RAG2 genes are located immediately adjacent to each other in the genome and lack introns in their coding regions in many species. RAG1 and RAG2 are coexpressed only in the B and T cell lineages and both are required for cleavage activity (7). RAG1 and RAG2 can also function as transposases, contributing to chromosomal translocations and lymphoid malignancy (8,9). Mutations in the RAG genes are associated with a spectrum of combined immune deficiencies in humans (10,11).

Background References

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3. Alt, F.W. et al. (1992) *Ann N Y Acad Sci* 651, 277-94.
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5. Swanson, P.C. (2004) *Immunol Rev* 200, 90-114.
6. Swanson, P.C. et al. (2009) *Adv Exp Med Biol* 650, 1-15.
7. Fugmann, S.D. et al. (2000) *Annu Rev Immunol* 18, 495-527.
8. Hiom, K. et al. (1998) *Cell* 94, 463-70.
9. Agrawal, A. et al. (1998) *Nature* 394, 744-51.
10. Villa, A. et al. (1999) *J Clin Immunol* 19, 87-97.
11. Corneo, B. et al. (2000) *J Biol Chem* 275, 12672-5.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

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