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Exonuclease 1 Rabbit pAb

Catalog # AP98517

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q9UQ84
Other Accession	Q9UQ84
Reactivity	Human, Mouse
Predicted	Rat, Chimpanzee, Gorilla
Host	Rabbit
Clonality	Polyclonal
Calculated MW	94103
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Exonuclease 1
Epitope Specificity	31-130/846
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the XPG/RAD2 endonuclease family. EXO1 subfamily.
SUBUNIT	Interacts with the MLH1-PMS2 heterodimer via MLH1. Interacts with MSH3. Interacts with the MSH2-MSH6 heterodimer via MSH2, and this interaction may increase the processivity of the 5'->3' exonuclease activity. Interacts with PCNA, and this interaction may both stimulate the cryptic 3'->5' exonuclease activity and suppress the 5'->3' exonuclease activity. Interacts with WRN, and this interaction stimulates both the 5'->3' exonuclease activity and cleavage of 5'-overhanging flap structures. Interacts with RECQL/RECQ1, and this interaction stimulates cleavage of 5'-overhanging flap structures.
Post-translational modifications	Phosphorylated upon DNA damage and in response to agents stalling DNA replication, probably by ATM or ATR. Phosphorylation at Ser-454, Thr-621 and Ser-714 is induced upon DNA-damage caused by treatment with hydroxyurea (HU) but not upon IR treatment. The HU-induced EXO1 triple phosphorylation facilitates destabilisation/degradation of the protein.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Comparative evaluation of the expression patterns of the human and mouse genes, combined with previous biochemical and yeast genetic studies, indicate that the Exo1 (Exonuclease I) proteins are important contributors to chromosome processing during mammalian DNA repair and recombination. In mice, the Exo1 gene maps to distal chromosome 1, consistent with the recent mapping of the orthologous human HEX1/EXO1 gene to chromosome 1q43. Exo1 is expressed prominently in testis, an area of active homologous recombination, and spleen, a prominent lymphoid tissue. In both mammalian and yeast systems, Exo1 is a 5'-3' double stranded DNA exonuclease that has previously been implicated in DNA mismatch repair (MMR). The MMR system ensures genome integrity by removing mispaired and unpaired bases that originate during replication. In humans, Exo1 interacts with MSH2 and MLH1 and has been proposed to be a redundant exonuclease in MMR. In both mammalian and yeast systems, Exo1 plays a structural role in MMR and stabilizes multiprotein complexes containing a number of MMR proteins.

Additional Information

Gene ID	9156
Other Names	CK820_G0023283; HEX1; hExoI; EXO1_HUMAN; EXO1; hExo1; Exonuclease I (hExoI); 3.1.-.-; EXOI; exonuclease 1; rad2 nuclease family member, homolog of S. cerevisiae exonuclease 1
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1ug /Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	EXO1
Synonyms	EXOI, HEX1
Function	5'->3' double-stranded DNA exonuclease which may also possess a cryptic 3'->5' double-stranded DNA exonuclease activity. Functions in DNA mismatch repair (MMR) to excise mismatch-containing DNA tracts directed by strand breaks located either 5' or 3' to the mismatch. Also exhibits endonuclease activity against 5'-overhanging flap structures similar to those generated by displacement synthesis when DNA polymerase encounters the 5'-end of a downstream Okazaki fragment. Required for somatic hypermutation (SHM) and class switch recombination (CSR) of immunoglobulin genes. Essential for male and female meiosis.
Cellular Location	Nucleus Note=Colocalizes with PCNA to discrete nuclear foci in S-phase
Tissue Location	Highly expressed in bone marrow, testis and thymus. Expressed at lower levels in colon, lymph nodes, ovary, placenta, prostate, small intestine, spleen and stomach

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