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C3orf37 Rabbit pAb

Catalog # AP98195

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q96FZ2
Other Accession	Q96FZ2
Predicted	Rat, Human, Mouse, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	40575
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human C3orf37
Epitope Specificity	31-130/354
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 UPF0361 family.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	C3orf37, also known as DC12 or MGC111075, is a 354 amino acid protein encoded by a gene that maps to human chromosome 3q21.3. Chromosome 3 is made up of approximately 214 million bases encoding over 1,100 genes. Notably, there is a chemokine receptor gene cluster and a variety of human cancer related loci on chromosome 3. Particular regions of the chromosome 3 short arm are deleted in many types of cancer cells. Key tumor suppressing genes on chromosome 3 encode apoptosis mediator RASSF1, cell migration regulator HYAL1 and angiogenesis suppressor SEMA3B. Marfan Syndrome, porphyria, von Hippel-Lindau syndrome, osteogenesis imperfecta and Charcot-Marie-Tooth disease are a few of the numerous genetic diseases associated with chromosome 3.

Additional Information

Gene ID	56941
Other Names	C3orf37; DC12; SRAPD1; HMCES_HUMAN; HMCES; Embryonic stem cell-specific 5-hydroxymethylcytosine-binding protein (ES cell-specific 5hmC-binding protein); Peptidase HMCES; SRAP domain-containing protein 1; 4.-.-.-; 5-hydroxymethylcytosine binding, ES cell specific; chromosome 3 open reading frame 37; 5-hydroxymethylcytosine (hmC) binding, ES cell-specific; SOS response associated peptidase domain containing 1; embryonic stem cell-specific 5-hydroxymethylcytosine-binding protein
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
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	HMCES {ECO:0000303|PubMed:30554877, ECO:0000312|HGNC:HGNC:24446}
Function	Sensor of abasic sites in single-stranded DNA (ssDNA) required to preserve genome integrity by promoting error-free repair of abasic sites (PubMed:30554877, PubMed:31235913, PubMed:31235915, PubMed:32307824, PubMed:32492421). Acts as an enzyme that recognizes and binds abasic sites in ssDNA at replication forks and chemically modifies the lesion by forming a covalent cross-link with DNA: forms a stable thiazolidine linkage between a ring-opened abasic site and the alpha-amino and sulfhydryl substituents of its N-terminal catalytic cysteine residue (PubMed:30554877, PubMed:31235913). Promotes error- free repair by protecting abasic sites from translesion synthesis (TLS) polymerases and endonucleases that are error-prone and would generate mutations and double-strand breaks (PubMed:30554877). The HMCES DNA- protein cross-link is then either reversed or degraded (PubMed:30554877, PubMed:36608669, PubMed:37519246, PubMed:37950866). HMCES is able to catalyze the reversal of its thiazolidine cross-link and cycle between a cross-link and a non-cross-linked state depending on DNA context: mediates self-reversal of the thiazolidine cross-link in double stranded DNA, allowing APEX1 to initiate downstream repair of abasic sites (PubMed:37519246, PubMed:37950866). The HMCES DNA-protein cross-link can also be degraded by the SPRTN metalloprotease following unfolding by the BRIP1/FANCJ helicase (PubMed:36608669). Has preference for ssDNA, but can also accommodate double-stranded DNA with 3' or 5' overhang (dsDNA), and dsDNA-ssDNA 3' junction (PubMed:31235915, PubMed:31806351). Plays a protective role during somatic hypermutation of immunoglobulin genes in B-cells: acts via its ability to form covalent cross-links with abasic sites, thereby limiting the accumulation of deletions in somatic hypermutation target regions (PubMed:35450882). Also involved in class switch recombination (CSR) in B-cells independently of the formation of a DNA-protein cross-link: acts by binding and protecting ssDNA overhangs to promote DNA double- strand break repair through the microhomology-mediated alternative-end- joining (Alt-EJ) pathway (By similarity). Acts as a protease: mediates autocatalytic processing of its N-terminal methionine in order to expose the catalytic cysteine (By similarity).
Cellular Location	Chromosome. Note=Recruited to chromatin following DNA damage (PubMed:30554877) Localizes to replication forks (PubMed:30554877)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.