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8430410A17Rik antibody - N-terminal region

Rabbit Polyclonal Antibody
Catalog # AI14107

Product Information

Application	WB
Primary Accession	Q8R1M0
Other Accession	NM_173737, NP_776098
Reactivity	Human, Mouse, Rat, Rabbit, Pig, Dog, Horse, Bovine
Predicted	Human, Mouse, Rat, Rabbit, Pig, Dog, Horse, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	40169

Additional Information

Gene ID	232210
Alias Symbol	C85376
Other Names	Embryonic stem cell-specific 5-hydroxymethylcytosine-binding protein, ES cell-specific 5hmC-binding protein, Putative peptidase SRAPD1, 3.4.-.-, SRAP domain-containing protein 1, Hmces, Srapd1
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-8430410A17Rik antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	8430410A17Rik antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

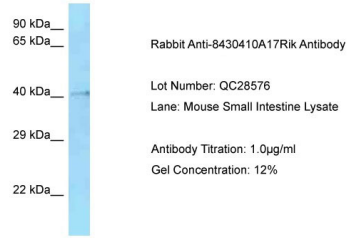
Name	Hmces {ECO:0000303|PubMed:31806351, ECO:0000312|MGI:MGI:1914053}
Function	Sensor of abasic sites in single-stranded DNA (ssDNA) required to preserve genome integrity by promoting error-free repair of abasic sites (By similarity). Acts as an enzyme that recognizes and binds abasic sites in ssDNA 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 (By similarity). 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 (By similarity). The HMCES DNA-protein cross-link is then either reversed or degraded (By similarity). 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 (By similarity). The HMCES DNA-protein cross-link can also be degraded by the SPRTN metalloprotease following unfolding by the BRIP1/FANCJ helicase (By similarity). Has preference for ssDNA, but can also accommodate double-stranded DNA with 3' or 5' overhang (dsDNA), and dsDNA-ssDNA 3' junction (By similarity). 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 (PubMed:31806351). Acts as a protease: mediates autocatalytic processing of its N-terminal methionine in order to expose the catalytic cysteine (PubMed:29020633).
Cellular Location	Chromosome {ECO:0000250|UniProtKB:Q96FZ2}. Note=Recruited to chromatin following DNA damage. Localizes to replication forks. {ECO:0000250|UniProtKB:Q96FZ2}
Tissue Location	Expressed in embryonic stem cells.

References

Spruijt C.G.,et al.Cell 152:1146-1159(2013).

Images



Host: Rabbit
Target Name: 8430410A17Rik
Sample Tissue: Mouse Small Intestine
Antibody Dilution: 1.0µg/ml