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DCP2 Antibody

Catalog # ASC11553

Product Information

Application	WB, IF, E
Primary Accession	Q8IU60
Other Accession	NP_689837, 31542498
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	48423
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	DCP2 antibody can be used for detection of DCP2 by Western blot at 1 □g/mL. For immunofluorescence start at 20 □g/mL.

Additional Information

Gene ID	167227
Other Names	m7GpppN-mRNA hydrolase, 3.6.1.62, Nucleoside diphosphate-linked moiety X motif 20, Nudix motif 20, mRNA-decapping enzyme 2, hDpc, DCP2, NUDT20
Target/Specificity	DCP2; Multiple isoforms of DCP2 are known to exist.
Reconstitution & Storage	DCP2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	DCP2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DCP2
Synonyms	NUDT20
Function	Decapping metalloenzyme that catalyzes the cleavage of the cap structure on mRNAs (PubMed:12218187, PubMed:12417715, PubMed:12923261, PubMed:21070968, PubMed:28002401, PubMed:31875550). Removes the 7-methyl guanine cap structure from mRNA molecules, yielding a 5'-phosphorylated mRNA fragment and 7m-GDP (PubMed:12486012, PubMed:12923261, PubMed:21070968, PubMed:28002401, PubMed:31875550). Necessary for the degradation of mRNAs, both in normal mRNA turnover and in nonsense-mediated mRNA decay (PubMed:14527413).

	Plays a role in replication-dependent histone mRNA degradation (PubMed:18172165). Has higher activity towards mRNAs that lack a poly(A) tail (PubMed:21070968). Has no activity towards a cap structure lacking an RNA moiety (PubMed:21070968). The presence of a N(6)-methyladenosine methylation at the second transcribed position of mRNAs (N(6),2'-O-dimethyladenosine cap; m6A(m)) provides resistance to DCP2-mediated decapping (PubMed:28002401). Blocks autophagy in nutrient-rich conditions by repressing the expression of ATG-related genes through degradation of their transcripts (PubMed:26098573).
Cellular Location	Cytoplasm, P-body. Nucleus Note=Predominantly cytoplasmic, in processing bodies (PB) (PubMed:15273322). A minor amount is nuclear (PubMed:15273322)
Tissue Location	Expressed in brain and testis. Not detected in heart (at protein level).

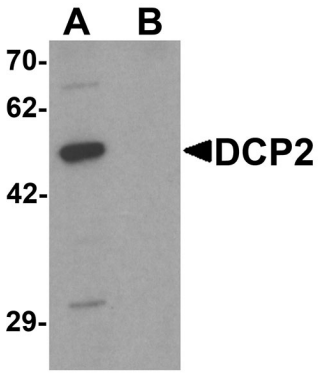
Background

DCP2 Antibody: The removal, or decapping, of eukaryotic mRNA is an important step in the degradation of mRNA. Decapping protein 2 (DCP2) is the major mRNA decapping enzyme in cells. It is a member of the Nudix hydrolases superfamily of proteins that predominantly catalyze the hydrolysis of small nucleoside diphosphate substrates linked to another moiety. DCP2 is widely expressed in multiple tissues at varying levels, with highest expression seen in testis and brain.

References

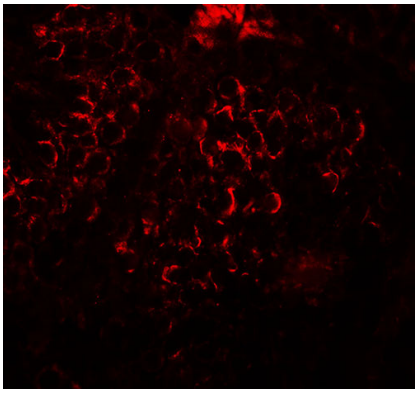
Song MG, Li Y, and Kiledjian M. Multiple mRNA decapping enzymes in mammalian cells. Mol. Cell 2010; 40:423-32.
Dunckley T and Parker R. The DCP2 protein is required for mRNA decapping in Saccharomyces cerevisiae and contains a functional MutT motif. EMBO J. 18:5411-22.
Bessman MJ, Frick DN, and O'Handley SF. The MutT proteins of "Nudix" hydrolases, a family of versatile, widely distributed, "housecleaning" enzymes. J. Biol. Chem. 1996; 271:25059-62

Images



Western blot analysis of DCP2 in 293 cell lysate with DCP2 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.

Immunofluorescence of DCP2 in human testis tissue with DCP2 antibody at 20 µg/mL.



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