3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-DCP2 (C-terminal)
produced in rabbit, affinity isolated antibody

Product Number: **D6319**

Product Description

Anti-DCP2 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 406-420 of human DCP2 (GeneID: 167227), conjugated to KLH. The corresponding sequence is identical in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-DCP2 (C-terminal) specifically recognizes human, mouse and rat DCP2. The antibody may be used is several immunological techniques including immunoblotting (~50 kDa) and immunofluorescence. Staining of the DCP2 band in immunoblotting is specifically inhibited with the immunizing peptide.

Decapping is a critical and highly regulated step in the turnover of mRNA which involves decapping enzymes that hydrolyze the cap structure at the 5' mRNA. mRNA decay typically is initiated with the removal of the 3' poly A followed by degradation of the mRNA in a 5' to 3' or 3' to 5' direction. In the 5' to 3' decay pathway, the m7G mRNA cap is cleaved by Dcp1, Dcp2 (also known as DCP21 decapping enzyme homolog, hDCP, and NUDT20) and Hedls complex. In this complex, Dcp2 is the catalytic subunit, and the mRNA is degraded by the major cytoplasmic 5′ to 3′ exonuclease XRN1.[1-3] Dcp1 and Dcp2, conserved from yeast to mammals, colocalize in distinct cytoplasmic foci with other proteins involved in the 5' to 3' mRNA decay. These foci are termed PB (processing bodies) or DCP-bodies.[2, 4] In human, two distinct genes were identified for DCP1, DCP1A and DCP1B, which share ~70% homology in their N-termini and ~30% homology in their full length.[1,2] No enzymatic activity is associated with the human DCP1 proteins but the enzymatic activity of DCP2 is critically dependent on the DCP1 subunit *in vivo*.[1, 2] hDCP2 contains a highly conserved Nudix (nucleoside diphosphate linked to an X moiety) motif critical for the decapping activity.[5] It was also shown that Dcp2 is an RNA binding protein and can cleave only cap structure that is linked to an RNA moiety, suggesting that Dcp2 can differentially associate with specific mRNAs.[6]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is recommended using lysates of K-562 and Rat1 cells.

Immunofluorescence: a working concentration of 2-5 µg/mL is recommended using paraformaldehyde fixed NIH-3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Lyke-Andersen, J., *Mol. Cell. Biol.*, **22**, 8114-8121 (2002).
2. van Dijk, K., et al., *EMBO J.*, **21**, 6915-6024 (2002).
3. Fenger-Gron, M., et al., *Mol. Cell*, **20**, 905-915 (2005).

4. Fillman, C., and Lykke-Andersen, J., *Curr. Opin. Cell Biol.,* **17**, 326-331 (2005).
5. Dunckley, T., and Parker, R., *EMBO J*., **18**, 5411-5422 (1999).
6. Li, Y., et al., *Mol. Cell. Biol.,* **28**, 939-948 (2008).

SG,YD,KAA,PHC 01/09-1