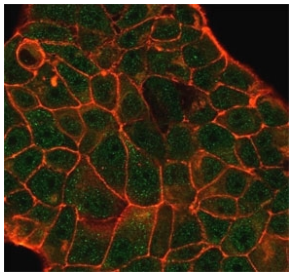
DCP2 Antibody / Post-Transcriptional Gene Regulator Antibody [clone PCRP-DCP2-1D6] (V9621)

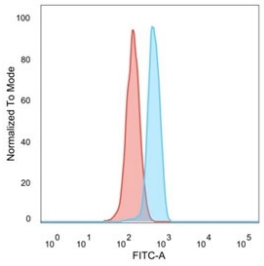
Catalog No.	Formulation	Size
V9621-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V9621-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V9621SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

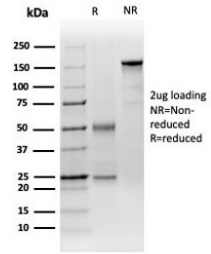
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2a
Clone Name	PCRP-DCP2-1D6
Purity	Protein A/G affinity
UniProt	Q8IU60
Localization	Nucleus, Cytoplasm
Applications	Flow cytometry: 1-2ug/million cells Immunofluorescence: 1-2ug/ml
Limitations	This DCP2 Antibody / Post-Transcriptional Gene Regulator Antibody is available for research use only.



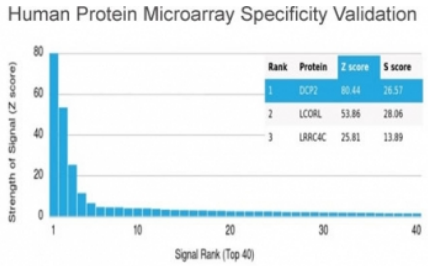
DCP2 Antibody Human MCF-7 IF. Immunofluorescent staining of PFA-fixed human MCF-7 cells with DCP2 Antibody (clone PCRP-DCP2-1D6) demonstrated punctate cytoplasmic staining (green), consistent with the localization of DCP2 (Decapping Protein 2) within cytoplasmic processing bodies (P-bodies). DCP2 is the catalytic component of the mRNA decapping complex that initiates 5'-to-3' mRNA degradation and plays a central role in RNA turnover and post-transcriptional regulation of gene expression. Phalloidin (red) labels the actin cytoskeleton, providing structural context for the intracellular distribution of DCP2, while the punctate staining pattern is characteristic of RNA processing granules involved in mRNA storage, decay, and translational control. These results support the utility of DCP2 Antibody for studies of RNA metabolism, transcript stability, processing body biology, and post-transcriptional gene regulation.



DCP2 Antibody HeLa Cell FACS. Flow cytometry analysis of PFA-fixed human HeLa cells using DCP2 Antibody (clone PCRP-DCP2-1D6, blue) shows a clear rightward shift relative to unstained cells (red), indicating detection of DCP2 / Decapping protein 2 expression. The intracellular signal is consistent with cytoplasmic localization of this mRNA decapping enzyme involved in RNA turnover and post-transcriptional regulation pathways.



SDS-PAGE analysis of purified, BSA-free Decapping Protein 2 antibody (clone PCRP-DCP2-1D6) as confirmation of integrity and purity.



DCP2 Antibody HuProt Microarray Specificity. Protein microarray analysis using DCP2 Antibody (clone PCRP-DCP2-1D6) shows strongest binding to DCP2 / Decapping protein 2, with the target ranked as the top hit on the array. Additional signals are observed for non-target proteins with lower intensity, indicating preferential binding to DCP2 relative to other proteins tested. Z score represents the strength of signal in standard deviations above the mean of all array signals, while S score reflects the separation between ranked targets and provides a measure of relative specificity.

Description

DCP2 Antibody / Post-Transcriptional Gene Regulator Antibody recognizes DCP2 (Decapping Protein 2), the catalytic enzyme responsible for removing the 5' cap structure from messenger RNA (mRNA), thereby initiating transcript degradation through the 5'-to-3' decay pathway. As the principal mRNA decapping enzyme in eukaryotic cells, DCP2 plays a fundamental role in post-transcriptional regulation of gene expression by controlling mRNA stability, transcript turnover, and protein production. Rather than regulating which genes are transcribed, DCP2 determines how long individual mRNA molecules remain available for translation, allowing cells to rapidly adjust protein synthesis in response to developmental, metabolic, and environmental signals. Clone PCRP-DCP2-1D6 has been validated by human protein microarray analysis, demonstrating exceptional specificity for DCP2 and providing confidence for applications requiring highly selective target detection.

DCP2 functions within cytoplasmic processing bodies (P-bodies), dynamic ribonucleoprotein granules that coordinate mRNA decapping, storage, translational repression, and degradation. Working together with DCP1, EDC proteins, RNA helicases, and the 5' exonuclease XRN1, DCP2 selectively targets transcripts for decay while preserving others needed for ongoing cellular activities. This regulated mRNA turnover allows precise control of cell proliferation, differentiation, stress adaptation, immune signaling, and developmental gene expression. By influencing transcript half-life rather than DNA transcription itself, DCP2 provides an additional layer of gene regulation that enables rapid and reversible changes in protein expression.

DCP2-mediated RNA turnover is essential for maintaining RNA quality control and eliminating defective, damaged, or no-longer-needed transcripts. The enzyme also contributes to cellular adaptation during oxidative stress, nutrient deprivation, viral infection, and other physiological challenges by selectively regulating the stability of stress-responsive mRNAs. Dysregulation of DCP2 or associated mRNA decay pathways has been implicated in cancer, neurodevelopmental disorders, inflammatory diseases, and viral pathogenesis, where abnormal transcript stability can alter signaling networks governing cell survival, proliferation, and differentiation. Because post-transcriptional regulation is increasingly recognized

as a major determinant of gene expression, DCP2 has become an important target in molecular and translational research.

DCP2 Antibody / Post-Transcriptional Gene Regulator Antibody is a valuable tool for studies of RNA metabolism, mRNA turnover, transcript stability, RNA quality control, and post-transcriptional gene regulation. Researchers frequently use DCP2 Antibody / Post-Transcriptional Gene Regulator Antibody to investigate processing body biology, stress-responsive gene expression, RNA decay pathways, and mechanisms that coordinate gene expression during development and disease. The protein microarray-validated specificity of clone PCRP-DCP2-1D6 further supports its use in applications requiring accurate, reproducible, and highly specific detection of DCP2.

Explore our Cell Biology Antibodies page to learn more about proteins that regulate RNA metabolism, transcript stability, and post-transcriptional gene expression.

Application Notes

Optimal dilution of the DCP2 Antibody / Post-Transcriptional Gene Regulator Antibody should be determined by the researcher.

Immunogen

Recombinant full-length human protein was used as the immunogen for the Decapping Protein 2 antibody.

Storage

Aliquot the Decapping Protein 2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

DCP2 antibody, mRNA Decapping Enzyme antibody, Decapping Protein 2 antibody, RNA Decapping Enzyme antibody, P-Body Protein antibody, Post-Transcriptional Gene Regulator antibody

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