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# ZC12A Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP10978c

## Product Information

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| **Application** | WB, IHC-P, FC, E |
| **Primary Accession** | Q5D1E8 |
| **Other Accession** | NP_079355.2 |
| **Reactivity** | Human |
| **Predicted** | Canine |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Clone Names** | RB24811 |
| **Calculated MW** | 65699 |
| **Antigen Region** | 331-358 |

## Additional Information

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| **Gene ID** | 80149 |
| **Other Names** | Ribonuclease ZC3H12A, 31--, MCP-induced protein 1, Zinc finger CCCH domain-containing protein 12A, ZC3H12A {ECO:0000312\|EMBL:EAX073461} |
| **Target/Specificity** | This ZC12A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 331-358 amino acids from the Central region of human ZC12A. |
| **Dilution** | WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | ZC12A Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | ZC3H12A ( HGNC:26259) |
| **Function** | Endoribonuclease involved in various biological functions such as cellular |

inflammatory response and immune homeostasis, glial differentiation of neuroprogenitor cells, cell death of cardiomyocytes, adipogenesis and angiogenesis. Functions as an endoribonuclease involved in mRNA decay (PubMed:19909337). Modulates the inflammatory response by promoting the degradation of a set of translationally active cytokine-induced inflammation-related mRNAs, such as IL6 and IL12B, during the early phase of inflammation (PubMed:26320658). Prevents aberrant T-cell-mediated immune reaction by degradation of multiple mRNAs controlling T-cell activation, such as those encoding cytokines (IL6 and IL2), cell surface receptors (ICOS, TNFRSF4 and TNFR2) and transcription factor (REL) (By similarity). Inhibits cooperatively with ZC3H12A the differentiation of helper T cells Th17 in lungs. They repress target mRNA encoding the Th17 cell-promoting factors IL6, ICOS, REL, IRF4, NFKBID and NFKBIZ. The cooperation requires RNA-binding by RC3H1 and the nuclease activity of ZC3H12A (By similarity). Together with RC3H1, destabilizes TNFRSF4/OX40 mRNA by binding to the conserved stem loop structure in its 3'UTR (By similarity). Self regulates by destabilizing its own mRNA (By similarity). Cleaves mRNA harboring a stem-loop (SL), often located in their 3'-UTRs, during the early phase of inflammation in a helicase UPF1-dependent manner (PubMed:19909337, PubMed:22561375, PubMed:26134560, PubMed:26320658). Plays a role in the inhibition of microRNAs (miRNAs) biogenesis (PubMed:22055188). Cleaves the terminal loop of a set of precursor miRNAs (pre-miRNAs) important for the regulation of the inflammatory response leading to their degradation, and thus preventing the biosynthesis of mature miRNAs (PubMed:22055188). Also plays a role in promoting angiogenesis in response to inflammatory cytokines by inhibiting the production of antiangiogenic microRNAs via its anti-dicer RNase activity (PubMed:24048733). Affects the overall ubiquitination of cellular proteins (By similarity). Positively regulates deubiquitinase activity promoting the cleavage at 'Lys-48'- and 'Lys-63'-linked polyubiquitin chains on TNF receptor-associated factors (TRAFs), preventing JNK and NF-kappa-B signaling pathway activation, and hence negatively regulating macrophage-mediated inflammatory response and immune homeostasis (By similarity). Also induces deubiquitination of the transcription factor HIF1A, probably leading to its stabilization and nuclear import, thereby positively regulating the expression of proangiogenic HIF1A-targeted genes (PubMed:24048733). Involved in a TANK-dependent negative feedback response to attenuate NF-kappaB activation through the deubiquitination of IKBKG or TRAF6 in response to interleukin-1-beta (IL1B) stimulation or upon DNA damage (PubMed:25861989). Prevents stress granule (SGs) formation and promotes macrophage apoptosis under stress conditions, including arsenite- induced oxidative stress, heat shock and energy deprivation (By similarity). Plays a role in the regulation of macrophage polarization; promotes IL4-induced polarization of macrophages M1 into anti- inflammatory M2 state (By similarity). May also act as a transcription factor that regulates the expression of multiple genes involved in inflammatory response, angiogenesis, adipogenesis and apoptosis (PubMed:16574901, PubMed:18364357). Functions as a positive regulator of glial differentiation of neuroprogenitor cells through an amyloid precursor protein (APP)-dependent signaling pathway (PubMed:19185603). Attenuates septic myocardial contractile dysfunction in response to lipopolysaccharide (LPS) by reducing I-kappa-B-kinase (IKK)-mediated NF-kappa-B activation, and hence myocardial pro-inflammatory cytokine production (By similarity).

**Cellular Location**

Nucleus. Cytoplasm. Cytoplasm, P-body. Rough endoplasmic reticulum membrane {ECO:0000250|UniProtKB:Q5D1E7}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q5D1E7}; Cytoplasmic side {ECO:0000250|UniProtKB:Q5D1E7}. Cytoplasmic granule {ECO:0000250|UniProtKB:Q5D1E7}. Note=Predominantly localized in the cytoplasm. Colocalizes with GW182 on many granule-like structures, probably

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| | corresponding to cytoplasmic GW bodies (GWBs), also called processing bodies (P bodies). Colocalizes with calnexin on the surface of the rough endoplasmic reticulum (RER) membrane and with translationally active polysomes (By similarity). Colocalizes with ZC3H12D in cytoplasmic mRNA processing P-body, also known as GW bodies (GWBs) (PubMed:22055188, PubMed:26134560) |
| **Tissue Location** | Expressed in heart, placenta, spleen, kidney, liver and lung (PubMed:19909337). Expressed in leukocytes (PubMed:19909337) Expressed in monocyte (PubMed:16574901). |

## Background

ZC3H12A is an MCP1 (CCL2; MIM 158105)-induced protein that acts as a transcriptional activator and causes cell death of cardiomyocytes, possibly via induction of genes associated with apoptosis.

## References


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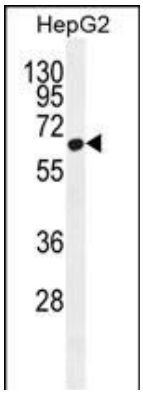
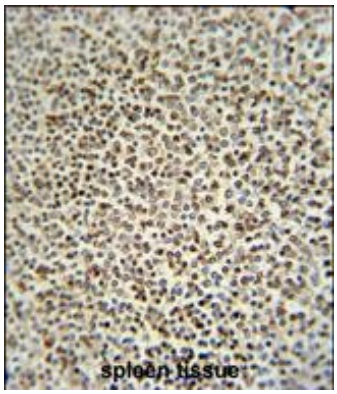
Vrotsos, E.G., et al. Brain Res. Bull. 79(2):97-103(2009)
Niu, J., et al. J. Biol. Chem. 283(21):14542-14551(2008)
Liang, J., et al. J. Biol. Chem. 283(10):6337-6346(2008)
Zhou, L., et al. Circ. Res. 98(9):1177-1185(2006)


## Images

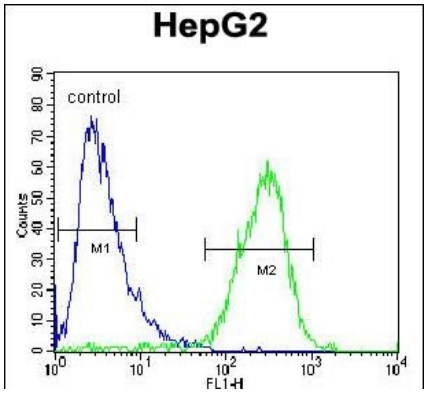



ZC12A Antibody (Center) (Cat. #AP10978c) western blot analysis in HepG2 cell line lysates (35ug/lane).This demonstrates the ZC12A antibody detected the ZC12A protein (arrow).




ZC12A antibody (Center) (Cat. #AP10978c) immunohistochemistry analysis in formalin fixed and paraffin embedded human spleen tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the ZC12A antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.

ZC12A Antibody (Center) (Cat. #AP10978c) flow cytometric analysis of HepG2 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

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