

LIN28 Antibody

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP11549a

Product Information

ApplicationWB, FC, EPrimary AccessionQ9H9Z2Other AccessionNP_078950.1ReactivityHuman, Mouse

Host Rabbit
Clonality Polyclonal
Isotype Rabbit IgG
Clone Names RB14740
Calculated MW 22743

Additional Information

Gene ID 79727

Other Names Protein lin-28 homolog A, Lin-28A, Zinc finger CCHC domain-containing

protein 1, LIN28A, CSDD1, LIN28, ZCCHC1

Target/Specificity This LIN28A antibody is generated from rabbits immunized with a His fusion

protein from human LIN28A.

Dilution WB~~1:1000 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 prepared by Saturated Ammonium Sulfate (SAS) precipitation

followed by dialysis against PBS.

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 LIN28 Antibody is for research use only and not for use in diagnostic or

therapeutic procedures.

Protein Information

Name LIN28A

Synonyms CSDD1, LIN28, ZCCHC1

Function RNA-binding protein that inhibits processing of pre-let-7 miRNAs and

regulates translation of mRNAs that control developmental timing, pluripotency and metabolism (PubMed:21247876). Seems to recognize a

common structural G-quartet (G4) feature in its miRNA and mRNA targets (Probable). 'Translational enhancer' that drives specific mRNAs to polysomes and increases the efficiency of protein synthesis. Its association with the translational machinery and target mRNAs results in an increased number of initiation events per molecule of mRNA and, indirectly, in mRNA stabilization. Binds IGF2 mRNA, MYOD1 mRNA, ARBP/36B4 ribosomal protein mRNA and its own mRNA. Essential for skeletal muscle differentiation program through the translational up- regulation of IGF2 expression. Suppressor of microRNA (miRNA) biogenesis, including that of let-7, miR107, miR-143 and miR-200c. Specifically binds the miRNA precursors (pre-miRNAs), recognizing an 5'-GGAG-3' motif found in pre-miRNA terminal loop, and recruits TUT4 and TUT7 uridylyltransferases (PubMed: 18951094, PubMed: 19703396, PubMed:22118463, PubMed:22898984). This results in the terminal uridylation of target pre-miRNAs (PubMed: 18951094, PubMed: 19703396, PubMed: 22118463, PubMed: 22898984). Uridylated pre-miRNAs fail to be processed by Dicer and undergo degradation. The repression of let-7 expression is required for normal development and contributes to maintain the pluripotent state by preventing let-7-mediated differentiation of embryonic stem cells (PubMed:18951094, PubMed:19703396, PubMed: <u>22118463</u>, PubMed: <u>22898984</u>). Localized to the periendoplasmic reticulum area, binds to a large number of spliced mRNAs and inhibits the translation of mRNAs destined for the ER, reducing the synthesis of transmembrane proteins, ER or Golgi lumen proteins, and secretory proteins. Binds to and enhances the translation of mRNAs for several metabolic enzymes, such as PFKP, PDHA1 or SDHA, increasing glycolysis and oxidative phosphorylation. Which, with the let-7 repression may enhance tissue repair in adult tissue (By similarity).

Cellular Location

Cytoplasm. Rough endoplasmic reticulum {ECO:0000250 | UniProtKB:Q8K3Y3}. Cytoplasm, P-body. Cytoplasm, Stress granule. Nucleus, nucleolus {ECO:0000250 | UniProtKB:Q8K3Y3}. Note=Predominantly cytoplasmic (PubMed:22118463). In the cytoplasm, localizes to peri-endoplasmic reticulum regions and detected in the microsomal fraction derived from rough endoplasmic reticulum (RER) following subcellular fractionation May be bound to the cytosolic surface of RER on which ER-associated mRNAs are translated (By similarity). Shuttle from the nucleus to the cytoplasm requires RNA-binding (PubMed:17617744). Nucleolar localization is observed in 10-15% of the nuclei in differentiated myotubes (By similarity). {ECO:0000250 | UniProtKB:Q8K3Y3, ECO:0000269 | PubMed:17617744, ECO:0000269 | PubMed:22118463}

Tissue Location

Expressed in embryonic stem cells, placenta and testis. Tends to be up-regulated in HER2-overexpressing breast tumors

Background

Acts as a 'translational enhancer', driving specific mRNAs to polysomes and thus increasing the efficiency of protein synthesis. Its association with the translational machinery and target mRNAs results in an increased number of initiation events per molecule of mRNA and, indirectly, in stabilizing the mRNAs. Binds IGF2 mRNA, MYOD1 mRNA, ARBP/36B4 ribosomal protein mRNA and its own mRNA. Essential for skeletal muscle differentiation program through the translational up-regulation of IGF2 expression (By similarity). Acts as a suppressor of microRNA (miRNA) biogenesis by specifically binding the precursor let-7 (pre-let-7), a miRNA precursor. Acts by binding pre-let-7 and recruiting ZCCHC11/TUT4 uridylyltransferase, leading to the terminal uridylation of pre-let-7. Uridylated pre-let-7 miRNAs fail to be processed by Dicer and undergo degradation. Degradation of pre-let-7 in embryonic stem (ES) cells contributes to the maintenance of ES cells. In contrast, LIN28A down-regulation in neural stem cells by miR-125, allows the processing of pre-let-7. Specifically recognizes the 5'-GGAG-3' motif in the terminal loop of pre-let-7. Also recognizes and binds non pre-let-7 pre-miRNAs that contain the 5'-GGAG-3' motif in the terminal loop, leading to their terminal uridylation and subsequent degradation.

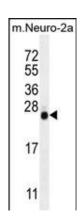
References

Peng, S., et al. Oncogene 29(14):2153-2159(2010) Qiu, C., et al. Nucleic Acids Res. 38(4):1240-1248(2010) Iliopoulos, D., et al. Cell 139(4):693-706(2009) Heo, I., et al. Cell 138(4):696-708(2009) West, J.A., et al. Nature 460(7257):909-913(2009)

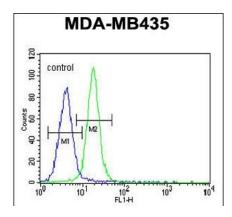
Images

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LIN28 Antibody (Cat. #AP11549a) western blot analysis in MDA-MB435 cell line lysates (35ug/lane). This demonstrates the LIN28 antibody detected the LIN28 protein (arrow).



LIN28 Antibody (Cat. #AP11549a) western blot analysis in mouse Neuro-2a cell line lysates (35ug/lane). This demonstrates the LIN28 antibody detected the LIN28 protein (arrow).



LIN28 Antibody (Cat. #AP11549a) flow cytometric analysis of MDA-MB435 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.