10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

LIN28 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1222a

Product Information

Application	WB, ICC, E
Primary Accession	Q9H9Z2
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	6D1F9
Isotype	IgG1
Calculated MW	22743
Description	LIN28: lin-28 homolog (C. elegans), also known as CSDD1, ZCCHC1. Entrez Protein NP_078950. LIN28 was first discovered in the nematode C. elegans. It is a heterochronic protein in C. elegans involved in the timing of developmental events and choice of stage specific cell fates. LIN28 expression has been found to be regulated post-transcriptionally by miRNAs in both nematodes and mammals. In humans it is expressed in embryonic stem cells and its expression decreases during differentiation. It is negatively regulated by retinoic acid in neuronal differentiation.
Immunogen	Purified recombinant fragment of LIN28 (aa93-209) expressed in E. Coli.
Formulation	Antibody are purified by protein G affinity chromatography. Liquid in 0.01M Phosphate buffer, pH 7.4 containing 0.03% sodium azide.

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
Dilution	WB~~1/500 - 1/2000 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. 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:22118463, PubMed:22898984). 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

References

1. Dev Dyn. 2005 Feb;232(2):487-97. 2. Mol Cell Biol. 2005 Nov;25(21):9198-208.

Images

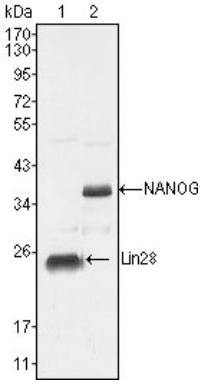


Figure 1: Western blot analysis using LIN28 mouse mAb against NTERA-2 cell lysate (1).

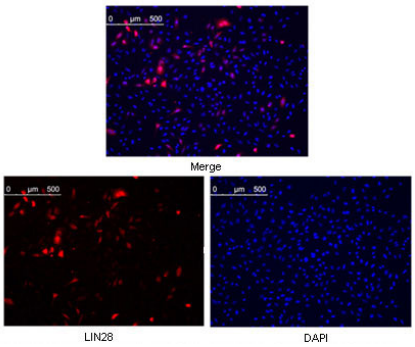


Figure 2: Confocal immunofluorescence analysis of methanol fixed Hela cells were transfected with pMX construct of human LIN28, cells were analyzed ~62 hours after transfection.

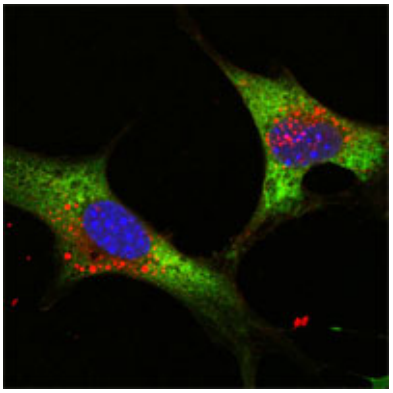


Figure 3: Confocal immunofluorescence analysis of NTERA-2 cells using LIN28 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

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