SANTA CRUZ BIOTECHNOLOGY, INC.

Dicer (F-10): sc-136979

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mammalian Dicer is a type III RNase-related protein with orthologs in yeast, *Drosophila* and *Arabidopsis*. Dicer contains an RNA-helicase motif including a DEXH-box in its amino-terminus and an RNase motif in the carboxy-terminus. The gene encoding human Dicer maps to chromosome 14q32.13. Dicer is expressed in brain, heart, liver, lung, pancreas, kidney and placenta and functions in the RNA interference pathway. Dicer cleaves short hairpin RNA precursors of approximately 70 bp into 21-23 bp dsRNAs that selectively target the destruction of homologous RNAs. Dicer localizes to the cytoplasm of mammalian cells. Specifically, it colocalizes with calreticulin in the endoplasmic reticulum. Although the cleavage of RNA by Dicer is ATP-independent, the product release necessary for the rapid turnover of this enzyme may be attributed to ATP. Immunoprecipitation studies indicate Dicer forms a complex with PIWI domain of eIF2C translation initiation factors.

CHROMOSOMAL LOCATION

Genetic locus: DICER1 (human) mapping to 14q32.13; Dicer1 (mouse) mapping to 12 E.

SOURCE

Dicer (F-10) is a mouse monoclonal antibody raised against amino acids 1701-1912 mapping at the C-terminus of Dicer of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dicer (F-10) is available conjugated to agarose (sc-136979 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136979 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136979 PE), fluorescein (sc-136979 FITC), Alexa Fluor® 488 (sc-136979 AF488), Alexa Fluor® 546 (sc-136979 AF546), Alexa Fluor® 594 (sc-136979 AF594) or Alexa Fluor® 647 (sc-136979 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136979 AF680) or Alexa Fluor® 790 (sc-136979 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Dicer (F-10) is recommended for detection of Dicer of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Dicer siRNA (h): sc-40489, Dicer siRNA (m): sc-40490, Dicer siRNA (r): sc-270275, Dicer shRNA Plasmid (h): sc-40489-SH, Dicer shRNA Plasmid (m): sc-40490-SH, Dicer shRNA Plasmid (r): sc-270275-SH, Dicer shRNA (h) Lentiviral Particles: sc-40489-V, Dicer shRNA (m) Lentiviral Particles: sc-40490-V and Dicer shRNA (r) Lentiviral Particles: sc-270275-V.

Molecular Weight of Dicer: 218 kDa.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SELECT PRODUCT CITATIONS

1. Adam, O., et al. 2012. Role of miR-21 in the pathogenesis of atrial fibrosis. Basic Res. Cardiol. 107: 278.
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3. Qu, Y., et al. 2014. MiR-139-5p inhibits HGTD-P and regulates neuronal apoptosis induced by hypoxia-ischemia in neonatal rats. Neurobiol. Dis. 63: 184-193.
4. Wang, W.X., et al. 2015. Mitochondria-associated microRNAs in rat hippocampus following traumatic brain injury. Exp. Neurol. 265: 84-93.
5. Lin, X., et al. 2015. The Epstein-Barr virus BART miRNA cluster of the M81 strain modulates multiple functions in primary B cells. PLoS Pathog. 11: e1005344.
6. Kourtidis, A., et al. 2017. Cadherin complexes recruit mRNAs and RISC to regulate epithelial cell signaling. J. Cell Biol. 216: 3073-3085.
7. Silva, A.M., et al. 2018. Profiling the circulating miRnome reveals a temporal regulation of the bone injury response. Theranostics 8: 3902-3917.
8. Piatek, P., et al. 2019. MS $CD49d^{+}CD154^{+}$ lymphocytes reprogram oligodendrocytes into immune reactive cells affecting CNS regeneration. Cells 8: 1508.
9. Godin, P., et al. 2020. YAP and TAZ are required for the postnatal development and the maintenance of the structural integrity of the oviduct. Reproduction 160: 307-318.
10. Zhang, Y., et al. 2020. The activation of antiviral RNA interference not only exists in neural progenitor cells but also in somatic cells in mammals. Emerg. Microbes Infect. 9: 1580-1589.
11. Venkataramanan, S., et al. 2021. DDX3X and DDX3Y are redundant in protein synthesis. RNA 27: 1577-1588.
12. Su, W., et al. 2021. Changes in neurodegeneration-related miRNAs in brains from $CAPN1^{-/-}$ mice. BBA Adv. 1: 100004.
13. Zhang, Y., et al. 2021. Efficient Dicer processing of virus-derived double-stranded RNAs and its modulation by RIG-I-like receptor LGP2. PLoS Pathog. 17: e1009790.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.