SANTA CRUZ BIOTECHNOLOGY, INC.

Dicer (D-11): sc-136980

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 co-localizes 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 the 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 (D-11) 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.

STORAGE

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

APPLICATIONS

Dicer (D-11) 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.

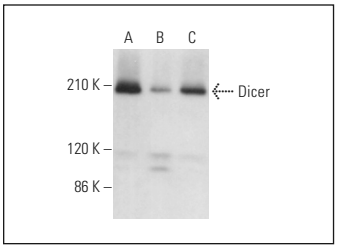
Molecular Weight of Dicer: 218 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, SUP-T1 whole cell lysate: sc-364796 or HEL 92.1.7 cell lysate: sc-2270.

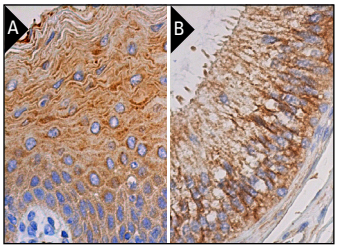
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Dicer (D-11): sc-136980. Western blot analysis of Dicer expression in SJRH30 (**A**), SUP-T1 (**B**) and HEL 92.1.7 (**C**) whole cell lysates.



Dicer (D-11): sc-136980. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Rajaram, K., et al. 2014. Dynamic miRNA expression patterns during retinal regeneration in zebrafish: reduced dicer or miRNA expression suppresses proliferation of Müller glia-derived neuronal progenitor cells. Dev. Dyn. 243: 1591-1605.
2. González-Duarte, R.J., et al. 2015. Calcitriol increases Dicer expression and modifies the microRNAs signature in SiHa cervical cancer cells. Biochem. Cell Biol. 93: 376-384.
3. Phinney, D.G., et al. 2015. Mesenchymal stem cells use extracellular vesicles to outsource mitophagy and shuttle microRNAs. Nat. Commun. 6: 8472.
4. Cotrim-Sousa, L., et al. 2019. Adhesion between medullary thymic epithelial cells and thymocytes is regulated by miR-181b-5p and miR-30b. Mol. Immunol. 114: 600-611.

RESEARCH USE

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

CONJUGATES

See **Dicer (F-10): sc-136979** for Dicer antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.