

# Dicer (A-2): sc-136981

## 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 (A-2) 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<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dicer (A-2) is available conjugated to agarose (sc-136981 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136981 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136981 PE), fluorescein (sc-136981 FITC), Alexa Fluor® 488 (sc-136981 AF488), Alexa Fluor® 546 (sc-136981 AF546), Alexa Fluor® 594 (sc-136981 AF594) or Alexa Fluor® 647 (sc-136981 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136981 AF680) or Alexa Fluor® 790 (sc-136981 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Dicer (A-2) 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).

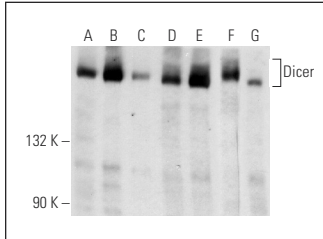
Suitable for use as control antibody for Dicer siRNA (h): sc-40489, Dicer siRNA (m): sc-40490, Dicer siRNA (r): sc-270275, Dicer shRNA Plasmid (h): sc-40489-SH, Dicer shRNA Plasmid (m): sc-40490-SH, Dicer shRNA Plasmid (r): sc-270275-SH, Dicer shRNA (h) Lentiviral Particles: sc-40489-V, Dicer shRNA (m)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

Molecular Weight of Dicer: 218 kDa.

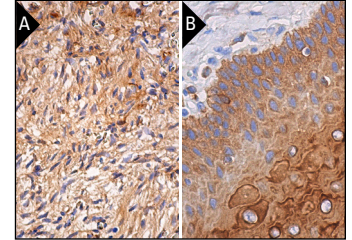
## STORAGE

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

## DATA



Dicer (A-2): sc-136981. Western blot analysis of Dicer expression in HeLa (A), Jurkat (B), 293 (C), U-2 OS (D), K-562 (E), RPE-J (F) whole cell lysates and Hep G2 nuclear extract (G).



Dicer (A-2): sc-136981. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing cytoplasmic staining of ovarian stroma cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (B).

## SELECT PRODUCT CITATIONS

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- Anglesio, M.S., et al. 2013. Cancer-associated somatic Dicer1 hotspot mutations cause defective miRNA processing and reverse-strand expression bias to predominantly mature 3p strands through loss of 5p strand cleavage. *J. Pathol.* 229: 400-409.
- Weng, K.F., et al. 2014. A cytoplasmic RNA virus generates functional viral small RNAs and regulates viral IRES activity in mammalian cells. *Nucleic Acids Res.* 42: 12789-12805.
- Sun, X., et al. 2015. DICER1 regulated let-7 expression levels in p53-induced cancer repression requires cyclin D1. *J. Cell. Mol. Med.* 19: 1357-1365.
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- Basavarajappa, D., et al. 2020. Dicer up-regulation by inhibition of specific proteolysis in differentiating monocytic cells. *Proc. Natl. Acad. Sci. USA* 117: 8573-8583.
- Campbell, A.M., et al. 2022. Epstein-Barr virus BGLF2 commandeers RISC to interfere with cellular miRNA function. *PLoS Pathog.* 18: e1010235.

## RESEARCH USE

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

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