

# Dicer (E-7): sc-393328

## 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 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 (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1698-1729 near the C-terminus of Dicer of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393328 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

Dicer (E-7) 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) 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.

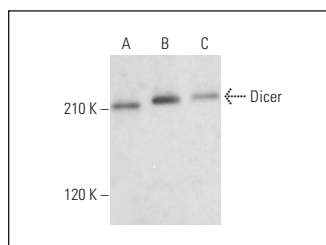
Molecular Weight of Dicer: 218 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, SJRH30 cell lysate: sc-2287 or KNRK whole cell lysate: sc-2214.

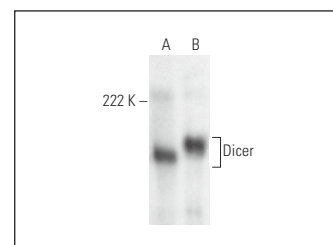
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA



Dicer (E-7): sc-393328. Western blot analysis of Dicer expression in WEHI-231 (A), U-698-M (B) and SJRH30 (C) whole cell lysates.



Dicer (E-7): sc-393328. Western blot analysis of Dicer expression in NIH/3T3 (A) and KNRK (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Mitzelfelt, K.A., et al. 2016. The human 343delT HSPB5 chaperone associated with early-onset skeletal myopathy causes defects in protein solubility. *J. Biol. Chem.* 291: 14939-14953.
2. Lannom, M.C., et al. 2021. FMRP and MOV10 regulate Dicer1 expression and dendrite development. *PLoS ONE* 16: e0260005.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



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.