SANTA CRUZ BIOTECHNOLOGY, INC.

Gemin8 (1F8): sc-130669

BACKGROUND

Gemin8 is a 242 amino acid protein encoded by the human gene GEMIN8. Gemin8, along with Gemins 2-7 and unrip, is a major component of the large multiprotein survival of motor neurons (SMN) complex. The survival of motor neurons (SMN) protein, a product of the disease gene of the common neurodegenerative disease spinal muscular atrophy, is also part of the SMN complex. The SMN complex is a modular composition of proteins with SMN, Gemin8 and Gemin7 in its center. The SMN complex functions as an assembly machine for small nuclear ribonucleoproteins (snRNPs) the major components of the spliceosome. Gemin8 binds directly to SMN and mediates its interaction with the Gemin6/Gemin7 heterodimer. Importantly, the loss of Gemin6, Gemin7 and Unrip interaction with SMN as a result of Gemin8 knockdown affects snRNP assembly by impairing the SMN complex association with Sm proteins but not with snRNAs. The Gemin6/Gemin7 complex binds to Sm proteins and might help organize Sm proteins for formation of Sm rings on snRNA targets.

REFERENCES

1. Massenet, S., et al. 2002. The SMN complex is associated with snRNPs throughout their cytoplasmic assembly pathway. Mol. Cell. Biol. 22: 6533-6541.
2. Shpargel, K.B. and Matera, A.G. 2005. Gemin proteins are required for efficient assembly of Sm-class ribonucleoproteins. Proc. Natl. Acad. Sci. USA 102: 17372-17377.
3. Carissimi, C., et al. 2006. Gemin8 is a novel component of the survival motor neuron complex and functions in small nuclear ribonucleoprotein assembly. J. Biol. Chem. 281: 8126-8134.

CHROMOSOMAL LOCATION

Genetic locus: GEMIN8 (human) mapping to Xp22.2; Gemin8 (mouse) mapping to X F5.

SOURCE

Gemin8 (1F8) is a mouse monoclonal antibody raised against recombinant Gemin8 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.

Gemin8 (1F8) is available conjugated to agarose (sc-130669 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-130669 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130669 PE), fluorescein (sc-130669 FITC), Alexa Fluor® 488 (sc-130669 AF488), Alexa Fluor® 546 (sc-130669 AF546), Alexa Fluor® 594 (sc-130669 AF594) or Alexa Fluor® 647 (sc-130669 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130669 AF680) or Alexa Fluor® 790 (sc-130669 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

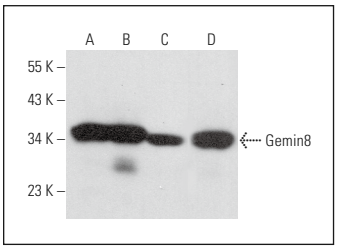
Gemin8 (1F8) is recommended for detection of Gemin8 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 Gemin8 siRNA (h): sc-62372, Gemin8 siRNA (m): sc-62373, Gemin8 shRNA Plasmid (h): sc-62372-SH, Gemin8 shRNA Plasmid (m): sc-62373-SH, Gemin8 shRNA (h) Lentiviral Particles: sc-62372-V and Gemin8 shRNA (m) Lentiviral Particles: sc-62373-V.

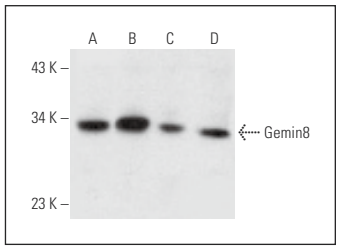
Molecular Weight of Gemin8: 32 kDa.

Positive Controls: RAT2 whole cell lysate: sc-364198, C3H/10T1/2 cell lysate: sc-3801 or P19 cell lysate: sc-24760.

DATA



Gemin8 (1F8): sc-130669. Western blot analysis of Gemin8 expression in NIH/3T3 (**A**), SW480 (**B**), c4 (**C**) and A549 (**D**) whole cell lysates.



Gemin8 (1F8): sc-130669. Western blot analysis of Gemin8 expression in RAT2 (**A**), C3H/10T1/2 (**B**), NIH/3T3 (**C**) and P19 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Tsuiji, H., et al. 2013. Spliceosome integrity is defective in the motor neuron diseases ALS and SMA. EMBO Mol. Med. 5: 221-234.
2. Sanchez, G., et al. 2013. A novel function for the survival motoneuron protein as a translational regulator. Hum. Mol. Genet. 22: 668-684.
3. Zou, D., et al. 2024. DDX20 is required for cell-cycle reentry of prospermatogonia and establishment of spermatogonial stem cell pool during testicular development in mice. Dev. Cell 59: 1707-1723.e8.

STORAGE

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

PROTOCOLS

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