

# Gemin8 (D-4): sc-365879

## BACKGROUND

Gemin8 is a 242 amino acid protein encoded by the mouse 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., et al. 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.
4. Carissimi, C., et al. 2006. Gemin8 is required for the architecture and function of the survival motor neuron complex. *J. Biol. Chem.* 281: 37009-37016
5. Zhang, H., et al. 2006. Multiprotein complexes of the survival of motor neuron protein SMN with Gemins traffic to neuronal processes and growth cones of motor neurons. *J. Neurosci.* 26: 8622-8632.
6. Otter, S., et al. 2007. A comprehensive interaction map of the human survival of motor neuron (SMN) complex. *J. Biol. Chem.* 282: 5825-5833.
7. Gabanella, F., et al. 2007. Ribonucleoprotein assembly defects correlate with spinal muscular atrophy severity and preferentially affect a subset of spliceosomal snRNPs. *PLoS ONE* 2: e921.
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## CHROMOSOMAL LOCATION

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

## SOURCE

Gemin8 (D-4) is a mouse monoclonal antibody raised against amino acids 1-238 representing full length Gemin8 of mouse 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.

## APPLICATIONS

Gemin8 (D-4) is recommended for detection of Gemin8 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 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.

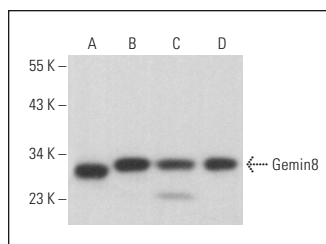
Molecular Weight of Gemin8: 32 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, SW480 cell lysate: sc-2219 or A549 cell lysate: sc-2413.

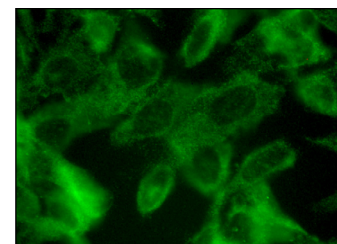
## RECOMMENDED SUPPORT REAGENTS

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



Gemin8 (D-4): sc-365879. Western blot analysis of Gemin8 expression in Neuro-2A (A), SW480 (B), HCT-116 (C) and A549 (D) whole cell lysates.



Gemin8 (D-4): sc-365879. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

## STORAGE

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

## RESEARCH USE

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