

Gemin3 (h2): 293T Lysate: sc-173278

BACKGROUND

Spinal muscular atrophy (SMA) is an autosomal recessive neurodegenerative disease characterized by loss of motor neurons in the spinal cord. SMA is caused by deletion or loss-of-function mutations in the SMN (survival of motor neuron) gene. Gemin3, also known as DP103, DDX20, DEAD-box protein DP130 and DEAD/H box 20, is a protein product of human chromosome 1p13.2. It associates directly with SMN and is a part of the SMN complex containing Gemin2, Gemin4, Gemin5 and Gemin6, as well as several spliceosomal snRNP proteins. The SMN complex plays an essential role in spliceosomal snRNP assembly in the cytoplasm and is required for pre-mRNA splicing of the nucleus. It is found in both the cytoplasm and the nucleus. The nuclear form is concentrated in subnuclear bodies called gems (for Gemini of the coiled bodies). Gemin3 also interacts with SmB, SmD2 and SmD3. It contains the conserved motif Asp-Glu-Ala-Asp (DEAD) characteristic of DEAD-box proteins. Gemin3 is a putative RNA helicase and shows ATPase activity. It is expressed in B and T cell neuroblastoma-derived cell lines, malignant melanoma tumor, normal testis and is expressed in low levels in colon, skeletal muscle, liver, kidney and lung.

REFERENCES

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2. Coover, D., et al. 1997. The survival motor neuron protein in spinal muscular atrophy. *Hum. Mol. Genet.* 6: 1205-1214.
3. Monani, U., et al. 1999. A single nucleotide difference that alters splicing patterns distinguishes the SMA gene SMN1 from the copy gene SMN2. *Hum. Mol. Genet.* 8: 1177-1183.
4. Grundhoff, A., et al. 1999. Characterization of DP103, a novel DEAD box protein that binds to the Epstein-Barr virus nuclear proteins EBNA2 and EBNA3C. *J. Biol. Chem.* 274: 19136-19144.
5. Charroux, B., et al. 1999. Gemin3: A novel DEAD box protein that interacts with SMN, the spinal muscular atrophy gene product, and is a component of gems. *J. Cell. Biol.* 13: 1181-1194.
6. Mourelatos, Z., et al. 2001. SMN interacts with a novel family of hnRNP and spliceosomal proteins. *EMBO J.* 20: 5443-5452.

CHROMOSOMAL LOCATION

Genetic locus: DDX20 (human) mapping to 1p13.2.

PRODUCT

Gemin3 (h2): 293T Lysate represents a lysate of human Gemin3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

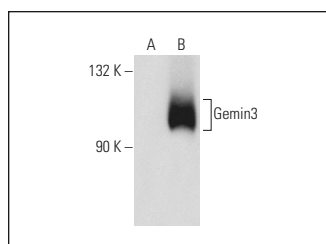
APPLICATIONS

Gemin3 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Gemin3 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Gemin3 (2): sc-135919 is recommended as a positive control antibody for Western Blot analysis of enhanced human Gemin3 expression in Gemin3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



Gemin3 (2): sc-135919. Western blot analysis of Gemin3 expression in non-transfected: sc-117752 (A) and human Gemin3 transfected: sc-173278 (B) 293T whole cell lysates.

PROTOCOLS

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