Bioimaging Certified Reagent

Technical Data Sheet

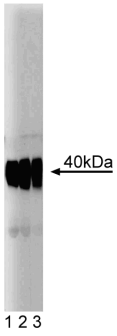
Purified Mouse Anti-SMN

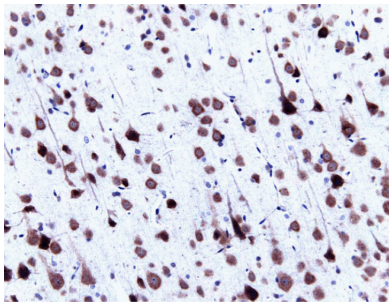
Product Information

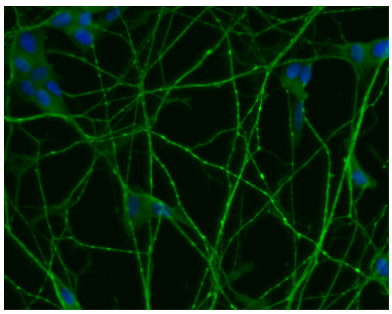
Material Number:	**610646**
Alternate Name:	Survival Motor Neuron
Size:	50 µg
Concentration:	250 µg/ml
Clone:	8/SMN
Immunogen:	Human SMN aa. 14-174
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Tested in Development: Mouse, Rat, Dog
Target MW:	40 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

SMN (survival motor neuron) was discovered as a candidate gene, located in chromosome 5q13, for the fatal autosomal Spinal muscular atrophy (SMA) disorder. The SMN gene was missing or interrupted in a significant number of patients with SMA. The SMN protein is 294 amino acids and migrates with apparent molecular weight of 40 kDa. In addition to the cytoplasm, other studies localized SMN in dots of 0.1-1.0 µm within the nucleus. These novel nuclear structures were named "gems" and found associated to coiled bodies. It was also found that SMN interacts with the RGG box of hnRNP U and fibrillarin. Therefore, the biochemical function of SMN may be in the regulation of mRNA metabolism.







Western blot analysis of SMN on a HepG2 cell lysate (Human hepatocellular carcinoma; ATCC HB-8065) (left). *Lane 1: 1:5000, lane 2: 1:10,000, lane 3: 1:20,000 dilution of the mouse anti-SMN antibody.*

Immunohistochemical staining of pyrimidal cells in a rat cortex, formalin-fixed paraffin-embedded tissue section, with citrate pre-treatment (magnification, 20X) (center).

Immunofluorescent staining of differentiated SH-SY5Y cells (right). *Cells were seeded in a 96 well, collagen coated imaging plate (Material # 353219) at ~ 5,000 cells per well. Cells were incubated with 50 M ATRA (Sigma, R2625) for 5 days, followed by 50 ng/ml BDNF (Sigma, B3795) for 5 days. Differentiated cells were fixed and stained using the Triton X100 fix/perm protocol (see Recommended Assay Procedure; Bioimaging protocol link) and the anti-SMN antibody. The second step reagent was Alexa Fluor® 488 goat anti mouse Ig (Invitrogen)(pseudo colored green). Cell nuclei were counter stained with Hoechst 33342 (pseudo colored blue). The image was taken on a BD Pathway™ 855 or 435 Bioimager System using a 20x objective and merged using the BD AttoVison ™ software This antibody also stained undifferentiated SH-SY5Y, SK-N-SH, C6, U87 and U373 cells using both the Triton X100 and methanol fix/perm protocols (see Recommended Assay Procedure; Bioimaging protocol link).*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at -20°C.

BD Biosciences

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development
Immunohistochemistry-formalin (antigen retrieval required)	Tested During Development
Bioimaging	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Bioimaging: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Bioimaging_Certified.shtml

Suggested Companion Products

Catalog Number	Name	Size	Clone
611555	HepG2 Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Alexa Fluor is a registered trademark of Molecular Probes, Inc., Eugene, OR.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Cifuentes-Diaz C, Frugier T, Tiziano FD. Deletion of murine SMN exon 7 directed to skeletal muscle leads to severe muscular dystrophy. *J Cell Biol.* 2001; 152(5):1107-1114.(Biology: Western blot)

Claus P, Doring F, Gringel S. Differential intranuclear localization of fibroblast growth factor-2 isoforms and specific interaction with the survival of motoneuron protein. *J Biol Chem.* 2003; 278(1):479-485.(Biology: Immunoprecipitation, Western blot)

Côté J, Boisvert FM, Boulanger MC, Bedford MT, Richard S. Sam68 RNA binding protein is an in vivo substrate for protein arginine N-methyltransferase 1. *Mol Biol Cell.* 2003; 14(1):274-287.(Biology: Immunoprecipitation, Western blot)

Lefebvre S, Bürglen L, Reboullet S. Identification and characterization of a spinal muscular atrophy-determining gene. *Cell.* 1995; 80(1):155-165.(Biology)

Wang IF, Reddy NM, Shen CK. Higher order arrangement of the eukaryotic nuclear bodies. *Proc Natl Acad Sci U S A.* 2002; 99(21):13583-13588.(Biology: Immunofluorescence, Western blot)