PRODUCT INFORMATION

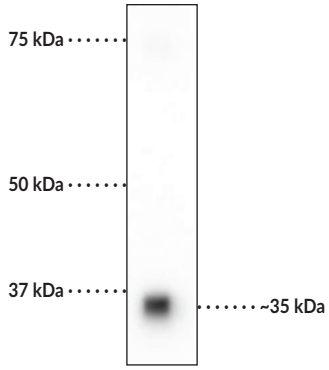
SMN Monoclonal Antibody (Clone 4B7)

Item No. 29295

Overview and Properties

Contents:	This vial contains 100 µl of protein G-purified monoclonal antibody.
Synonyms:	Gemin-1, Survival Motor Neuron Protein
Immunogen:	Recombinant human His-tagged SMN protein expressed in *E. coli*. The epitope recognized by the 4B7 clone binds to the region encoded by exon 1.
Molecular Weight:	~35 kDa
Species Reactivity:	(+) Human, mouse, rat
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	10 mM HEPES, pH 7.5, with 150 mM sodium chloride, 100 µg/ml BSA, and 50% glycerol
Clone:	4B7
Host:	Mouse
Isotype:	IgG1
Applications:	Immunocytochemistry (ICC) and Western blot (WB); the recommended starting dilution for ICC is 1:50-1:500 and 1:4,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



WB of T47D cell lysate showing specific immunolabeling of the ~35 kDa survival motor neuron (SMN) protein.

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Description

The survival motor neuron (SMN) protein is a ubiquitously expressed, multifunctional protein with roles in a variety of cellular processes, including small nuclear ribonucleoprotein (snRNP) and spliceosome assembly, translation, cytoskeletal dynamics, and stress granule formation.[1,2] It is a 294-amino acid protein encoded by *SMN1* in humans and is comprised of an N-terminal basic/lysine-rich domain that interacts with RNA and Gemin-2, a central Tudor domain (Item No. 14136) that functions in a variety of protein-protein interactions, a proline-rich region, and a C-terminal YG box that facilitates SMN oligomerization. Humans also have a second centromeric copy of the gene, called *SMN2*, that is the result of duplication and inversion and primarily produces a truncated isoform, SMNΔ7, which is less stable, but can also produce small amounts of SMN. Knockout of *Smn* is embryonic lethal in mice.[1] In humans, mutations in *SMN1* are associated with spinal muscular atrophy (SMA), a neuromuscular disorder characterized by degeneration of α motor neurons in the spinal cord and muscle weakness. Cayman's SMN Monoclonal Antibody can be used for immunocytochemistry (ICC) and Western blot (WB) applications. The antibody recognizes SMN protein at approximately 35 kDa from human, mouse, and rat samples.

References

1. Chaytow, H., Huang, Y.-T., Gillingwater, T.H., *et al.* The role of survival motor neuron protein (SMN) in protein homeostasis. *Cell. Mol. Life Sci.* **75(21)**, 3877-3894 (2018).
2. Singh, R.N., Howell, M.D., Ottesen, E.W., *et al.* Diverse role of survival motor neuron protein. *Biochim. Biophys. Acta Gene Regul. Mech.* **1860(3)**, 299-315 (2017).

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