

SMN1 (2F1) Mouse mAb

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications: W, IP, IF-IC	Reactivity: H Mk	Sensitivity: Endogenous	MW (kDa): 38	Source/Isotype: Mouse IgG1	UniProt ID: #Q16637	Entrez-Gene Id: 6606
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Product Usage Information**Application**

Western Blotting
Immunoprecipitation
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:50
1:400

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

SMN1 (2F1) Mouse mAb recognizes endogenous levels of total SMN1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the carboxy terminus of human SMN1 protein.

Background

The survival motor neuron (SMN) protein is ubiquitously expressed in mammals and encoded by two genes, *SMN1* and *SMN2* (1,2). The protein coding sequences of *SMN1* and *SMN2* are predicted to be identical, as *SMN2* differs from *SMN1* by only five nucleotides (3). *SMN* impacts various aspects of RNA metabolism, and is required for biogenesis of small nuclear ribonucleoprotein (snRNP) particles critical for pre-mRNA splicing. Furthermore, *SMN*, needed for stress granule formation, is found in ribonucleoprotein (RNP) granules moving through neuronal processes and is part of RNP complexes implicated in synaptic local translation (4,5). Mutations in its coding genes, *SMN1* or *SMN2*, are linked to neuromuscular disease spinal muscular atrophy (SMA), a leading genetic cause of infant mortality (2-6). The severity of SMA is inversely proportional to *SMN2* copy number. Over 96% of SMA patients have homozygous mutations (deletion, rearrangement, or point mutation) in *SMN1*, however they retain at least one copy of *SMN2* (1).

Background References

1. Lefebvre, S. et al. (1995) *Cell* 80, 155-65.
2. Singh, R.N. et al. (2017) *Biochim Biophys Acta Gene Regul Mech* 1860, 299-315.
3. Melki, J. (1997) *Curr Opin Neurol* 10, 381-5.
4. Dimitriadi, M. et al. (2016) *Proc Natl Acad Sci U S A* 113, E4377-86.
5. Li, W. (2017) *PLoS One* 12, e0178519.
6. Chaytow, H. et al. (2018) *Cell Mol Life Sci* 75, 3877-3894.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **Mk:** Monkey

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