

MuSK (1-YD2): sc-134398

BACKGROUND

Receptor tyrosine kinases (RTKs) represent an important class of transmembrane signaling molecules. Binding of the extracellular domain of an RTK to its cognate ligand leads to receptor dimerization and the activation of the intrinsic tyrosine kinase activity of its intracellular kinase domain. The specificity of this type of cellular communication is conferred in part by the distribution of the receptor, which determines the cells that are capable of responding to a given ligand. MuSK, for muscle-specific kinase, also designated MLK1 for muscle localized kinase 1, is an RTK that is uniquely specific to the skeletal muscle lineage. MuSK is expressed at low levels in proliferating myoblasts, but is induced upon terminal differentiation and myotube fusion. In the embryo, MuSK is expressed in developing muscle, but its level of expression is dramatically reduced in mature muscle, where it is abundant only at the neuromuscular junction. The human MuSK gene maps to chromosome 9q31.3, overlapping a region containing the Fukuyama muscular dystrophy mutation.

REFERENCES

- Shoyab, M., et al. 1989. Structure and function of human amphiregulin: a member of the epidermal growth factor family. *Science* 243: 1074-1076.
- Janssen, J.W.G., et al. 1991. A novel putative tyrosine kinase receptor with oncogenic potential. *Oncogene* 6: 2113-2120.
- Schlessinger, J., et al. 1992. Growth factor signaling by receptor tyrosine kinases. *Neuron* 9: 383-391.
- Biesecker, L.G., et al. 1995. Identification of alternative exons, including a novel exon, in the tyrosine kinase receptor gene *Etk2/Tyro3* that explain differences in 5' cDNA sequences. *Oncogene* 10: 2239-2242.
- Taylor, I.C.A., et al. 1995. Overexpression of the Sky receptor tyrosine kinase at the cell surface or in the cytoplasm results in ligand-independent activation. *Oncogene* 11: 2619-2626.
- Valenzuela, D.M., et al. 1995. Receptor tyrosine kinase specific for the skeletal muscle lineage: expression in embryonic muscle, at the neuromuscular junction, and after injury. *Neuron* 15: 573-584.

CHROMOSOMAL LOCATION

Genetic locus: MUSK (human) mapping to 9q31.3.

SOURCE

MuSK (1-YD2) is a mouse monoclonal antibody raised against partial recombinant protein mapping within amino acids 301-400 of MuSK of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

MuSK (1-YD2) is recommended for detection of MuSK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MuSK siRNA (h): sc-43952, MuSK shRNA Plasmid (h): sc-43952-SH and MuSK shRNA (h) Lentiviral Particles: sc-43952-V.

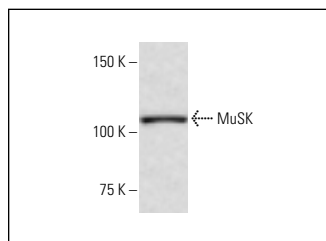
Molecular Weight of MuSK: 97 kDa.

Positive Controls: TE671 cell lysate: sc-2416, Jurkat whole cell lysate: sc-2204 or SK-N-SH cell lysate: sc-2410.

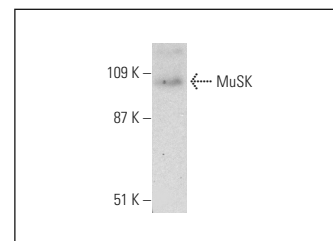
RECOMMENDED SUPPORT REAGENTS

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).

DATA



MuSK (1-YD2): sc-134398. Western blot analysis of MuSK expression in Jurkat whole cell lysate.



MuSK (1-YD2): sc-134398. Western blot analysis of MuSK expression in SK-N-SH whole cell lysate.

SELECT PRODUCT CITATIONS

- Madison, R.D., et al. 2019. Muscle-derived extracellular vesicles influence motor neuron regeneration accuracy. *Neuroscience* 419: 46-59.
- Jang, J., et al. 2022. Balanced free essential amino acids and resistance exercise training synergistically improve dexamethasone-induced impairments in muscle strength, endurance, and Insulin sensitivity in mice. *Int. J. Mol. Sci.* 23: 9735.

RESEARCH USE

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

PROTOCOLS

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