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MUSK Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7664D

Product Information

Application	WB, FC, IF, E
Primary Accession	O15146
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB14743
Calculated MW	97056

Additional Information

Gene ID	4593
Other Names	Muscle, skeletal receptor tyrosine-protein kinase, Muscle-specific tyrosine-protein kinase receptor, MuSK, Muscle-specific kinase receptor, MUSK
Target/Specificity	This MUSK antibody is generated from rabbits immunized with human MUSK recombinant protein.
Dilution	WB~~1:1000 FC~~1:10~50 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MUSK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MUSK
Function	Receptor tyrosine kinase which plays a central role in the formation and the maintenance of the neuromuscular junction (NMJ), the synapse between the motor neuron and the skeletal muscle (PubMed:25537362). Recruitment of AGRIN by LRP4 to the MUSK signaling complex induces phosphorylation and

activation of MUSK, the kinase of the complex. The activation of MUSK in myotubes regulates the formation of NMJs through the regulation of different processes including the specific expression of genes in subsynaptic nuclei, the reorganization of the actin cytoskeleton and the clustering of the acetylcholine receptors (AChR) in the postsynaptic membrane. May regulate AChR phosphorylation and clustering through activation of ABL1 and Src family kinases which in turn regulate MUSK. DVL1 and PAK1 that form a ternary complex with MUSK are also important for MUSK-dependent regulation of AChR clustering. May positively regulate Rho family GTPases through FNTA. Mediates the phosphorylation of FNTA which promotes prenylation, recruitment to membranes and activation of RAC1 a regulator of the actin cytoskeleton and of gene expression. Other effectors of the MUSK signaling include DNAJA3 which functions downstream of MUSK. May also play a role in acetylcholinesterase (AChE) localization at the neuromuscular junctions (NMJ) via its interaction wit COLQ (By similarity). May also play a role within the central nervous system by mediating cholinergic responses, synaptic plasticity and memory formation (By similarity).

Cellular Location

Postsynaptic cell membrane; Single-pass type I membrane protein. Note=Colocalizes with acetylcholine receptors (AChR) to the postsynaptic cell membrane of the neuromuscular junction

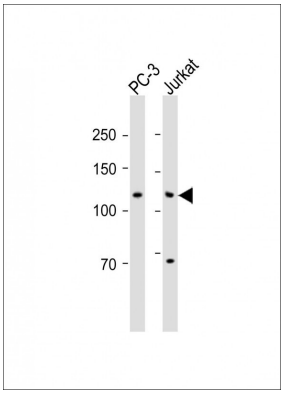
Background

MuSK activates signaling cascades responsible for many aspects of synapse formation, including the organization of the postsynaptic membrane, synapse-specific transcription, and presynaptic differentiation. MuSK also mediates agrin-induced aggregation of acetylcholine receptors at the mature vertebrate neuromuscular junction and also during synapse formation. It has been shown that a majority of AChR Ab-seronegative myasthenia gravis patients possess serum autoantibodies against MuSK.

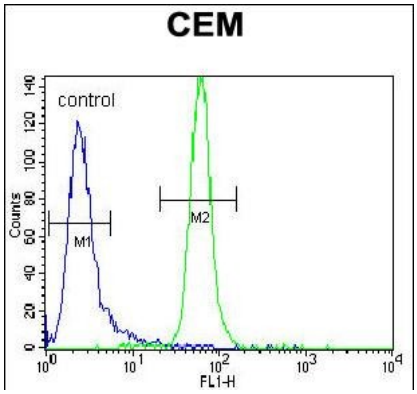
References

Blume-Jensen P, et al. Nature 2001. 411: 355.
Cantrell D, J. Cell Sci. 2001. 114: 1439.
Jhiang S Oncogene 2000. 19: 5590.
Manning G, et al. Science 2002. 298: 1912.
Moller, D, et al. Am. J. Physiol. 1994. 266: C351-C359.
Robertson, S. et al. Trends Genet. 2000. 16: 368.
Robinson D, et al. Oncogene 2000. 19: 5548.
Van der Ven, P, et al. Hum. Molec. Genet. 1993. 2: 1889.
Vanhaesebroeck, B, et al. Biochem. J. 2000. 346: 561.
Van Weering D, et al. Recent Results Cancer Res. 1998. 154: 271.

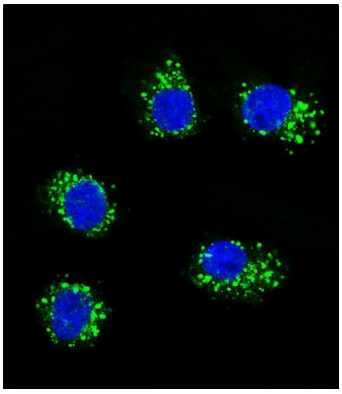
Images



All lanes: Anti-MUSK Antibody at 1:1000 dilution Lane 1: PC-3 whole cell lysate Lane 2: Jurkat whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 115 KDa Blocking/Dilution buffer: 5% NFDM/TBST.



MUSK Antibody (Cat. #AP7664d) flow cytometric analysis of CEM cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Confocal immunofluorescent analysis of MUSK Antibody(Cat#AP7664d) with MDA-MB231 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).