MUSK Antibody (N-Term) Blocking Peptide

PRODUCT OVERVIEW

Product Name	MUSK, Blocking Peptide
Full Product Name	MUSK Antibody (N-term) Blocking Peptide
Product Gene Name	MUSK blocking peptide
Product Synonym Names	Muscle; skeletal receptor tyrosine-protein kinase; Muscle-specific tyrosine-protein kinase receptor; MuSK; Muscle-specific kinase receptor; MUSK
Form/Format	The synthetic peptide was lyophilized with 100% acetonitrile and is supplied as a powder. Reconstitute with 0.1 ml deionized water for a final concentration of 1 mg/ml.
Specificity	The synthetic peptide sequence used to generate the antibody was selected from the N-term region of human MUSK. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 6 months. For long term storage store at -20 degree C.
Antibody/Peptide Pairs	MUSK peptide (MBS9227136) is used for blocking the activity of MUSK antibody (MBS9204388)
Molecular Weight	86,425 Da
OMIM	208150
Cellular Location	Cell junction, synapse, postsynaptic cell membrane; Single-pass type I membrane protein. Note: Localizes to the postsynaptic cell membrane of the neuromuscular junction.
Related Product Information for MUSK blocking peptide	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. 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 within the central nervous system by mediating cholinergic responses, synaptic plasticity and memory formation (By similarity).
Other Notes	Small volumes of MUSK blocking peptide vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for MUSK purchase	MBS9227136 is a blocking peptide targeting MUSK. Also known as MUSK Antibody (N-term) Blocking Peptide.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for MUSK. It may not necessarily be applicable to this product.

NCBI GI #	50400806
NCBI GeneID	4593
NCBI Accession #	O15146.1
UniProt Primary Accession #	O15146

UniProt Secondary Accession #	Q32MJ8; Q32MJ9; Q5VZW7; Q5VZW8
UniProt Related Accession #	O15146
NCBI Official Full Name	Muscle, skeletal receptor tyrosine-protein kinase
NCBI Official Synonym Full Names	muscle associated receptor tyrosine kinase
NCBI Official Symbol	MUSK
NCBI Official Synonym Symbols	CMS9; FADS
UniProt Protein Name	Muscle, skeletal receptor tyrosine-protein kinase
UniProt Synonym Protein Names	Muscle-specific tyrosine-protein kinase receptor; MuSK; Muscle-specific kinase receptor
Protein Family	Muscle, skeletal receptor tyrosine protein kinase
UniProt Gene Name	MUSK
UniProt Synonym Gene Names	MuSK; Muscle-specific kinase receptor
UniProt Entry Name	MUSK_HUMAN
NCBI Protein Information	muscle, skeletal receptor tyrosine-protein kinase
NCBI Summary for MUSK	This gene encodes a muscle-specific tyrosine kinase receptor. The encoded protein may play a role in clustering of the acetylcholine receptor in the postsynaptic neuromuscular junction. Mutations in this gene have been associated with congenital myasthenic syndrome. Alternatively spliced transcript variants have been described.[provided by RefSeq, Oct 2009]
UniProt Comments for MUSK	MUSK: a receptor tyrosine kinase that is essential for the establishment and maintenance of the neuromuscular junction (NMJ). Its activation by agrin, a neuronally derived heparan-sulfate proteoglycan, and the agrin receptor (LRP4), leads to clustering of acetylcholine receptors on the postsynaptic side of the NMJ. Its activation by agrin requires Dok7, which interacts with the cytoplasmic portion of MuSK and activates its tyrosine kinase activity. Protein type: Kinase, protein; Membrane protein, integral; Protein kinase, tyrosine (receptor); EC 2.7.10.1; Protein kinase, TK; TK group; Musk family Chromosomal Location of Human Ortholog: 9q31.3-q32 Cellular Component: integral to plasma membrane; neuromuscular junction; postsynaptic membrane; receptor complex Molecular Function: protein binding; protein-tyrosine kinase activity Biological Process: memory; neuromuscular junction development; positive regulation of protein amino acid phosphorylation; protein amino acid autophosphorylation; regulation of synaptic growth at neuromuscular junction; transmembrane receptor protein tyrosine kinase signaling pathway Disease: Fetal Akinesia Deformation Sequence; Myasthenic Syndrome, Congenital, 9, Associated With Acetylcholine Receptor Deficiency
Research Articles on MUSK	**1.** A Dutch founder mutation in MUSK causing fetal akinesia deformation sequence has been found in 14 fetuses.
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