Data Sheet (Cat.No.TMPY-04414)

TargetMol

MUSK Protein, Human, Recombinant (aa 433-783, His & GST)

General Information

Synonyms: FADS;CMS9;muscle, skeletal, receptor tyrosine kinase

Protein Construction: A DNA sequence encoding the C-terminal segment of human MUSK isoform 2 (O15146-2) (Arg 433-Val 783) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Met

Species: Human

Expression Host: Baculovirus Insect Cells

Accession: O15146-2

Molecular Weight: 68 kDa (predicted); 58 kDa (reducing conditions)

QC Testing

Biological Activity: Kinase activity untested

Purity: > 90 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Supplied as sterile 20 mM Tris, 500 mM NaCl, pH 7.4, 10 mM GSH.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Muscle, skeletal receptor tyrosine-protein kinase, also known as Muscle-specific tyrosine-protein kinase receptor, Muscle-specific kinase receptor, and MUSK, is a single-pass type I membrane protein that belongs to the protein kinase superfamily and tyr protein kinase family. MUSK contains one FZ (frizzled) domain, three Ig-like C2-type (immunoglobulin-like) domains, and one protein kinase domain. This protein is a muscle-specific tyrosine kinase receptor and it may play a role in clustering of the acetylcholine receptor in the postsynaptic neuromuscular junction. MUSK expression is increased in muscle cells stimulated with Wnt or at conditions when the Wnt signaling was activated. MUSK is a muscle-specific receptor tyrosine kinase that is activated by agrin. It has a critical role in neuromuscular synapse formation. MUSK is a receptor tyrosine kinase that is a key mediator of agrin's action and

is involved in neuromuscular junction (NMJ) organization. Defects in the MUSK encoding gene are a cause of autosomal recessive congenital myasthenic syndrome (CMS). Congenital myasthenic syndromes are inherited disorders of neuromuscular transmission that stem from mutations in presynaptic, synaptic, or postsynaptic proteins. MUSK mutations lead to decreased agrin-dependent AChR aggregation, a critical step in the formation of the neuromuscular junction. Mutations in this receptor encoding gene also have been associated with the congenital myasthenic syndrome.

Reference

Glass D, et al. (1996) Agrin acts via a MuSK receptor complex. Cell. 85 (4): 513-23.
DeChiara T, et al. (1996) The receptor tyrosine kinase MuSK is required for neuromuscular junction formation in vivo. Cell. 85 (4): 501-12.
Hoch W, et al. (2001) Auto-antibodies to the receptor tyrosine kinase MuSK in patients with myasthenia gravis without acetylcholine receptor antibodies. Nat Med. 7 (3): 365-8.

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