Recombinant Mouse MuSK His-tag

Catalog Number: 11519-MK

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived mouse MuSK protein Glu22-Thr494, with a C-terminal 6-His tag Accession # Q61006.1
N-terminal Sequence Analysis	Glu22
Predicted Molecular Mass	53 kDa

SPECIFICATIONS

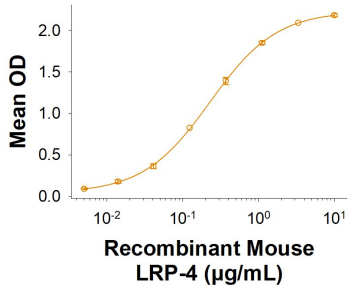
SDS-PAGE	63-69 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Mouse MuSK His-tag binds to Recombinant Mouse LRP-4 His-tag (Catalog # 10229-LR) and Agrin His-tag with a ED_{50} of 0.0800-0.800 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 6 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after opening. • 3 months, -20 to -70 °C under sterile conditions after opening.

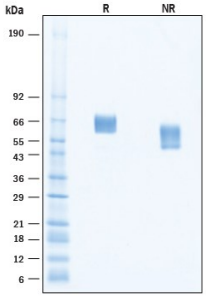
DATA

Binding Activity



Recombinant Mouse MuSK His-tag Protein Binding Activity. Recombinant Mouse MuSK His-tag Protein (Catalog # 11519-MK) binds to Recombinant Mouse LRP-4 His-tag Protein (Catalog # 10229-LR) and Agrin His-tag Protein with an ED_{50} of 0.0800-0.800 µg/mL.

SDS-PAGE



Recombinant Mouse MuSK His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Mouse MuSK His-tag Protein (Catalog # 11519-MK) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 63 - 69 kDa.

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BACKGROUND

MuSK (muscle-specific kinase) is a 100-kDa type I transmembrane (TM) protein belonging to the receptor tyrosine kinase family (1). It is found in the postsynaptic membrane of skeletal muscle motor endplates (2). MuSK contains a 473 aa extracellular domain (ECD), a 21 aa transmembrane domain, and a 353 cytoplasmic domain. Human MuSK has multiple isoforms. One contains deletions at residues 307-394 and 454-461, while a second is a short soluble form that contains residues 120-209 plus a unique 24 aa Cterminal tail (3). Within the ECD, mouse MuSK shares 91% and 96% aa sequence identity with human and rat MuSK, respectively. MuSK is a crucial signaling molecule in the formation of the neuromuscular junction(NMJ). Defects in MuSK causes muscle weakness in congenital myathenic syndromes (4). MuSK binds the heparin sulfate proteoglycan agrin to promote acetylcholine receptor clustering. It has also been found to bind with low-density lipoprotein receptor-related protein 4 (LRP4) (5), Wnt ligands (6), Biglycan (7), ColQ (8) and BMPs(10). Recent studies have showed that MuSK does not bind agrin directly, but enhanced the MuSK-LRP4 interaction (8, 9). When agrin binds to the N-terminal region of LRP4, this promotes the association of LRP4 and MuSK, which then stimulates MuSK kinase activity (11, 12).

References:

1. Valenzuela, D.M. *et al.* (1995) Neuron **15**:573.
2. Finn, A.J. *et al.* (2003) Nat. Neurosci. **6**:717.
3. Nasrin, F. *et al.* (2014) Sci. Rep. **4**:6841.
4. DeChiara, T. *et al.* (1996) Cell **85**:501.
5. Kim, N. *et al.* (2008) Cell **135**:334.
6. Banerjee, S. *et al.* (2011) Development **138**:3287.
7. Amenta, A.R. *et al.* (2012) J. Neurosci. **32**:2324.
8. Otsuka, K. *et al.* (2015) Scientific Reports **5**:13928.
9. Zhang, B. *et al.* (2008) Neuron **60**:285.
10. Yilmaz, A. *et al.* (2016) Science Signaling **9**:ra87.
11. Zhang, W. *et al.* (2011) J. Biol. Chem. **286**:40624.
12. Burden, S.J. *et al.* (2017) CSH Perspectives Biol. **5**:a009167.

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