

MUSK Protein, Mouse (Myc, His-SUMO)

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| Cat. No.: | HY-P71568 |
| Synonyms: | Musk; Nsk2; Muscle; skeletal receptor tyrosine-protein kinase; EC 2.7.10.1; Muscle-specific tyrosine-protein kinase receptor; MuSK; Muscle-specific kinase receptor |
| Species: | Mouse |
| Source: | E. coli |
| Accession: | Q61006 (E22-S494) |
| Gene ID: | 18198 |
| Molecular Weight: | Approximately 69.3 kDa |

PROPERTIES

AA Sequence

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E K L P K A P V I T   T P L E T V D A L V   E E V A T F M C A V   E S Y P Q P E I S W
T R N K I L I K L F   D T R Y S I R E N G   Q L L T I L S V E D   S D D G I Y C C I A
N N G V G G A V E S   C G A L Q V K M K P   K I T R P P I N V K   I I E G L K A V L P
C T T M G N P K P S   V S W I K G D N A L   R E N S R I A V L E   S G S L R I H N V Q
K E D A G Q Y R C V   A K N S L G T A Y S   K L V K L E V E V F   A R I L R A P E S H
N V T F G S F V T L   R C T A I G I P V P   T I S W I E N G N A   V S S G S I Q E S V
K D R V I D S R L Q   L F I T K P G L Y T   C I A T N K H G E K   F S T A K A A A T V
S I A E W S K S Q K   D S Q G Y C A Q Y R   G E V C D A V L A K   D A L V F F N T S Y
R D P E D A Q E L L   I H T A W N E L K A   V S P L C R P A A E   A L L C N H L F Q E
C S P G V V P T P M   P I C R E Y C L A V   K E L F C A K E W Q   A M E G K A H R G L
Y R S G M H L L P V   P E C S K L P S M H   R D P T A C T R L P   Y L D Y K K E N I T
T F P S I T S
  
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| Biological Activity | The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet. |
| Appearance | Lyophilized powder. |
| Formulation | Lyophilized after extensive dialysis against solution in 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0. |
| Endotoxin Level | <1 EU/μg, determined by LAL method. |
| Reconstitution | It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. |
| Storage & Stability | Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage. |
| Shipping | Room temperature in continental US; may vary elsewhere. |

DESCRIPTION

Background

MUSK protein is a receptor tyrosine kinase that plays a crucial role in the formation and maintenance of the neuromuscular junction (NMJ), the synapse connecting motor neurons and skeletal muscle. The MUSK signaling complex is activated through the recruitment of AGRIN by LRP4, leading to the phosphorylation and activation of MUSK. In myotubes, the activation of MUSK regulates NMJ formation by controlling several processes, including the expression of specific genes in subsynaptic nuclei, the reorganization of the actin cytoskeleton, and the clustering of acetylcholine receptors (AChR) in the postsynaptic membrane. This regulation of AChR phosphorylation and clustering is mediated by the activation of ABL1 and Src family kinases, which in turn regulate MUSK. Additionally, MUSK forms a ternary complex with DVL1 and PAK1, which are important for MUSK-dependent regulation of AChR clustering. MUSK can also positively regulate Rho family GTPases through FNTA, mediating the phosphorylation and activation of RAC1, a key regulator of the actin cytoskeleton and gene expression. Downstream effectors of MUSK signaling include DNAJA3, which functions downstream of MUSK. Furthermore, MUSK may also have a role in the central nervous system by mediating cholinergic responses, synaptic plasticity, and memory formation.

Caution: Product has not been fully validated for medical applications. For research use only.

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