

**DESCRIPTION**

<b>Source</b>	Human embryonic kidney cell, HEK293-derived mouse LRP-4 protein		
	Mouse LRP-4 (Ser21-Ser1725) Accession # Q8VI56.3	HPGGGSGGGSGGGS	HHHHHH
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Ser21		
<b>Predicted Molecular Mass</b>	192 kDa		

**SPECIFICATIONS**

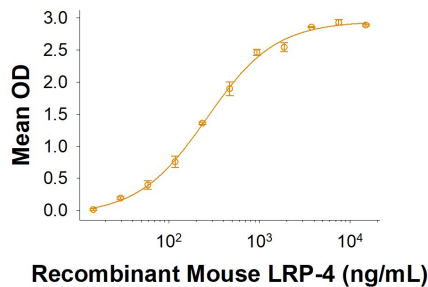
<b>SDS-PAGE</b>	198-235 kDa, under reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Mouse USAG-1 (Catalog # 9008-SD) is present at 2 µg/mL, the concentration of Recombinant Mouse LRP-4 that produces 50% of the optimal binding response is 80-800 ng/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 µg/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

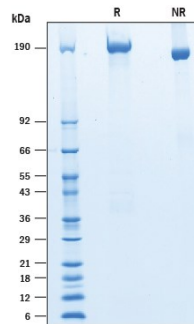
**DATA**

**Binding Activity**



When Recombinant Mouse USAG1 (Catalog # 9008-SD) is used at 2 µg/mL (100 µL/well), it binds to Recombinant Mouse LRP-4 (Catalog # 10229-LR) with an ED<sub>50</sub> of 80-800 ng/mL.

**SDS-PAGE**



2 µg/lane of Recombinant Mouse LRP-4 His-tag was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 180-235 kDa.

**BACKGROUND**

LDL receptor-related protein 4 (LRP-4), also known as Megf7, is an approximately 220 kDa type I membrane protein in the LDL receptor superfamily. LRP-4 plays an important role in development of the neuromuscular junction (NMJ), bones, teeth, mammary placodes, and hair follicles (1, 2). Mature mouse LRP-4 consists of a 1705 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment, and a 159 aa cytoplasmic domain. The ECD contains 3 EGF-like domains, 8 LDLR-A domains, and 20 LDLR-B repeats that fold into 4 beta-propeller domains (3, 4). Within the ECD, mouse LRP-4 shares 97% and 99% aa sequence identity with human and rat LRP-4, respectively. The ECD of LRP-4 can be shed by ADAM10 mediated cleavage (5). LRP-4 is expressed on myotubes (6, 7), neurons (8, 9), osteocytes and osteoblasts (10, 11), developing tooth epithelium (12), and male and female germ cells (13). It is localized to NMJ on developing myotubes, and it associates in cis with the muscle-specific kinase MuSK (6, 7). Its binding to neuron-derived Agrin promotes additional LRP-4 association with MuSK, MuSK activation, clustering of AChR, and postsynaptic development of the NMJ (6, 7, and 14). LRP-4 also enhances presynaptic differentiation of the NMJ, although this does not require Agrin (14). Neuronal LRP-4 additionally binds ApoE and Fspondin (8, 9). LRP-4 regulates both BMP and Wnt signaling through binding to Wise, Sclerostin, and Dkk1 (10, 12). These interactions are important for the control of bone growth and mineralization, tooth morphogenesis, and the development of mammary placodes, hair follicles, and whiskers (10, 12, and 15).

**References:**

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