Mouse GDF-8/Myostatin Propeptide Antibody

Antigen Affinity-purified Polyclonal Sheep IgG

Catalog Number: AF1539

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects GDF-8/Myostatin Propeptide in direct ELISAs and Western blots. In direct ELISAs, less than 10% cross-reactivity with mature recombinant mouse (rm) GDF-8 is observed and less than 5% cross-reactivity with mature rmGDF-1, -3, -5, -6, -7, -9, and recombinant human GDF-11 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse GDF-8/Myostatin Propeptide Asn25-Ser265 Accession # O08689
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

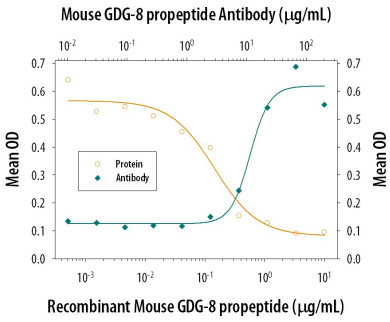
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Mouse GDF-8/Myostatin Propeptide (Catalog # 1539-PG)
Neutralization	Measured by its ability to neutralize GDF-8 Propeptide inhibition of GDF-8/Myostatin-dependent hemoglobin expression in the K562 human chronic myelogenous leukemia cell line. The Neutralization Dose (ND_{50}) is typically 10-30 µg/mL in the presence of 800 ng/mL Recombinant Mouse GDF-8 Propeptide and 40 ng/mL Recombinant Mouse GDF-8/Myostatin.	

DATA

Neutralization



GDF-8 Propeptide Inhibition of GDF-8/Myostatin-induced Hemoglobin Expression and Neutralization by Mouse GDF-8 Propeptide Antibody. Recombinant Mouse GDF-8 Propeptide (Catalog # 1539-PG) inhibits Recombinant Mouse GDF-8/Myostatin (Catalog # 788-G8) induced hemoglobin expression in the K562 human chronic myelogenous leukemia cell line in a dose-dependent manner (orange line), as measured by the psuedoperoxidase assay. Inhibition of Recombinant Mouse GDF-8/Myostatin (40 ng/mL) activity elicited by Recombinant Mouse GDF-8 Propeptide (800 ng/mL) is neutralized (green line) by increasing concentrations of Sheep Anti-Mouse GDF-8/Myostatin Propeptide Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1539). The ND_{50} is typically 10-30 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Growth Differentiation Factor 8 (GDF-8), also known as Myostatin, is a secreted TGF-β superfamily protein that is expressed specifically in developing and adult skeletal muscle. It controls myoblast proliferation and is a potent negative regulator of skeletal muscle mass (1-3). Mouse GDF-8 is synthesized as a 376 amino acid (aa) preproprotein that consists of a 24 aa signal peptide, a 243 aa propeptide, and a 109 aa mature protein (2). Within the propeptide, mouse GDF-8 shares 96% and 99% aa sequence identity with human and rat GDF-8, respectively. GDF-8 is secreted as a preproprotein that is cleaved by BMP-1 family proteases to separate the 35-40 kDa propeptide from the 12 kDa bioactive mature protein (4-6). This results in a latent complex containing a disulfide-linked dimer of the mature protein and two noncovalently-associated molecules of the propeptide (2, 6). The GDF-8 propeptide functions as an inhibitor of mature GDF-8, and GDF-8 activity can also be inhibited through association with Follistatin, FLRG, Decorin, or GASP-1 (6-11). The uncleaved GDF-8 proprotein binds Latent TGF-β bp3 which can sequester it in the extracellular matrix and prevent the proteolytic cleavage of the propeptide (12). GDF-8 binds to the type II Activin receptor Activin RIIB which then associates with the type I receptors Activin RIB/ALK-4 or TGF-beta RI/ALK-5 to induce signaling (13). GDF-8 additionally inhibits adipogenic differentiation of mesenchymal stem cells and preadipocytes (14). Genetic deletion of GDF-8 or *in vivo* administration of the GDF-8 propeptide induces muscle hypertrophy as well as enhanced glucose utilization and insulin sensitivity and a reduction in overall fat mass (15, 16).

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