Human/Mouse/Rat GDF-8/Myostatin Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF788

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human, mouse, and rat GDF-8/Myostatin in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 30% cross-reactivity is observed with recombinant human/mouse/rat GDF-11. In Western blots, no cross-reactivity with recombinant human BMP-6 and recombinant mouse BMP-6 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant mouse GDF-8/Myostatin Asp268-Ser376 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.

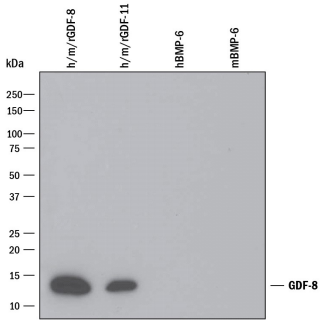
APPLICATIONS

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	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize GDF-8/Myostatin-induced hemoglobin expression in the K562 human chronic myelogenous leukemia cell line. The Neutralization Dose (ND_{50}) is typically 0.6-3 µg/mL in the presence of 30 ng/mL Recombinant Mouse GDF-8/Myostatin.	

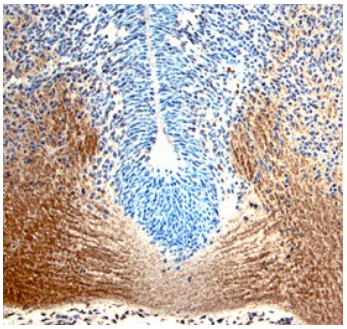
DATA

Western Blot



Detection of Recombinant Human, Mouse, and Rat GDF-8/Myostatin by Western Blot. Western blot shows 25 ng of Recombinant Human/Mouse/Rat GDF-8/Myostatin (Catalog # 788-G8), Recombinant Human/Mouse/Rat GDF-11/BMP-11 (Catalog # 1958-GD), Recombinant Human BMP-6 (Catalog # 507-BP), and Recombinant Mouse BMP-6 (Catalog # 6325-BM). PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Human/Mouse/Rat GDF-8/Myostatin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF788) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for GDF-8/Myostatin at approximately 14 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.

Immunohistochemistry



GDF-8/Myostatin in Mouse Embryo. GDF-8/Myostatin was detected in immersion fixed frozen sections of mouse embryo (10 d.p.c., section through neural tube) using Goat Anti-Human/Mouse/Rat GDF-8/Myostatin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF788) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

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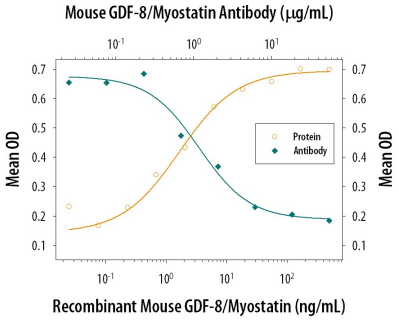
Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF788

Neutralization



Hemoglobin Expression Induced by GDF-8/Myostatin and Neutralization by Mouse GDF-8/Myostatin Antibody. Recombinant Mouse GDF-8/Myostatin (Catalog # 788-G8) increases hemoglobin expression in the K562 human chronic myelogenous leukemia cell line in a dose-dependent manner (orange line), as measured by the psuedoperoxidase assay. Hemoglobin expression elicited by Recombinant Mouse GDF-8/Myostatin (30 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human/Mouse/Rat GDF-8/Myostatin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF788). The ND_{50} is typically 0.6-3 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.

BACKGROUND

Growth Differentiation Factor 8 (GDF-8), also known as myostatin, is a member of the TGF-β superfamily that is expressed specifically in developing and adult skeletal muscle. GDF-8 cDNA encodes a 376 amino acid (aa) prepropeptide with a 24 aa residue signal peptide, a 223 aa residue amino-terminal propeptide, and a 109 aa residue carboxy-terminal mature protein. Mature GDF-8 contains the canonical 7-cysteine motif common to other TGF-β superfamily members. Similar to the TGF-βs, activins and BMP-11, GDF-8 also contains one extra pair of cysteine residues that is not found in other family members. The bioactive form of GDF-8 is a homodimer with an apparent molecular weight of approximately 25 kDa. GDF-8 is highly conserved across species. At the amino acid sequence level, mature human, mouse, rat and cow GDF-8 are 100% identical. Within the TGF-β superfamily, GDF-8 is most closely related to BMP-11, a mammalian protein that acts as a dorsal mesoderm and neural inducer in *Xenopus* explants. The two proteins share 90% amino acid sequence identity within their mature chain. A targeted disruption of GDF-8 in mouse results in large mice with a widespread increase in skeletal muscle mass, indicating that GDF-8 is a negative regulator of skeletal muscle growth. A mutation in the bovine GDF-8 gene has been shown to be responsible for the double-muscled phenotype in cattle breeds such as Belgian Blue cattle that is characterized by an increase in muscle mass. GDF-8 has also been shown to inhibit preadipocyte differentiation to adipocytes. Mature GDF-8 binds to activin type II receptors and the binding is antagonized by the activin-binding protein, follistatin. R&D Systems recombinant GDF-8 preparations have been shown to act similarly to Activin A in both the *Xenopus* animal cap and the K562 assays.

References:

1. Storm, E.E. *et al.* (1994) Nature **368**:639.
2. Sharma, M. *et al.* (1999) J. Cell Physiol. **180**:1.
3. McPherron, A.C. *et al.* (1997) Nature **387**:83.
4. Lee, S.J. *et al.* (2001) Proc. Natl. Acad. Sci. USA **98**:9306.
5. Kim, H.S. *et al.* (2001) Biochem. Biophys. Res. Commun. **281**:902.

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