**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.

<table>
<thead>
<tr>
<th>Application</th>
<th>Recommended Concentration</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>0.1 μg/mL</td>
<td>See Below</td>
</tr>
<tr>
<td>Immunohistochemistry</td>
<td>5-15 μg/mL</td>
<td>See Below</td>
</tr>
</tbody>
</table>
| 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 25ng 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.
**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 pseudoperoxidase 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**

<table>
<thead>
<tr>
<th>Reconstitution</th>
<th>Reconstitute at 0.2 mg/mL in sterile PBS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping</td>
<td>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</td>
</tr>
<tr>
<td>Stability &amp; Storage</td>
<td>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</td>
</tr>
<tr>
<td></td>
<td>- 12 months from date of receipt, -20 to -70 °C as supplied.</td>
</tr>
<tr>
<td></td>
<td>- 1 month, 2 to 8 °C under sterile conditions after reconstitution.</td>
</tr>
<tr>
<td></td>
<td>- 6 months, -20 to -70 °C under sterile conditions after reconstitution.</td>
</tr>
</tbody>
</table>

**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:**