

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Mouse                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | 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,                             |
| <b>Source</b>             | Polyclonal Sheep IgG                                                                                                                                                                                                                                                        |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant mouse GDF-8/Myostatin Propeptide<br>Asn25-Ser265<br>Accession # O08689                                                                                                                                                      |
| <b>Conjugate</b>          | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| <b>Neutralization</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>   | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Growth Differentiation Factor 8 (GDF-8), also known as Myostatin, is a secreted TGF- $\beta$  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- $\beta$  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 RIIIB 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).

## PRODUCT SPECIFIC NOTICES

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