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Human/Mouse/Rat GDF-8/Myostatin Biotinylated Antibody

Antigen Affinity-purified Polyclonal Goat IgG Catalog Number: BAF788

RDsystems

DESCRIPTION		
Species Reactivity	Human/Mouse/Rat	
Specificity	Detects human, mouse, and rat GDF-8/Myostatin in Western blots. In Western blots, approximately 15% cross-reactivity with recombinant human/mouse/rat GDF-11 is observed, 10% cross-reactivity with recombinant mouse (rm) GDF-3 is observed, and less than 2% cross-reactivity with rmGDF-1, rmGDF-5, and rmGDF-6 is observed.	
Source	Polyclonal Goat IgG	
Purification	Antigen Affinity-purified	
Immunogen	<i>E. coli</i> -derived recombinant mouse GDF-8/Myostatin Asp268-Ser376 Accession # O08689	
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.	

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 Human/Mouse/Rat GDF-8/Myostatin (Catalog # 788-G8)		
Immunohistochemistry	5-25 µg/mL	See Below		

DATA

Immunohistochemistry



GDF-8/Myostatin in Mouse Embryonic Lung. GDF-8/Myostatin was detected in immersion fixed frozen sections of mouse embryo (lung) using Goat Anti-Human/Mouse/Rat GDF-8/Myostatin Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF788) 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.

Immunohistochemistry



Detection of GDF-8/Myostatin in Mouse Embryo. GDF-8/Myostatin was detected in immersion fixed paraffinembedded 13 d.p.c. sections of Mouse Embryo using Goat Anti-Human/Mouse/Rat GDF-8/Myostatin Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF788) at 25 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to muscle cells in developing tongue. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

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.		
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 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- β s, 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 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:

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- 2. Sharma, M. et al. (1999) J. Cell Physiol. 180:1
- 3. McPherron, A.C. et al. (1997) Nature 387:83
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- 5. Kim, H.S. *et al.* (2001) Biochem. Biophys. Res. Commun. **281**:902

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