

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse GDF-5/BMP-14 in Western blots.
Source	Monoclonal Rat IgG _{2A} Clone # 90509
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant mouse GDF-5/BMP-14 Ala376-Arg495 Accession # P43027
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

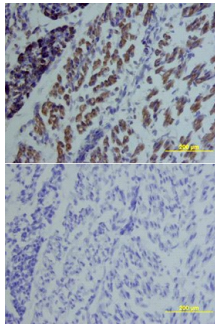
APPLICATIONS

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	1 µg/mL	Recombinant Mouse GDF-5 (Catalog # 853-G5)
Immunohistochemistry	8-25 µg/mL	See Below

DATA

Immunohistochemistry



GDF-5 in Mouse Embryo. GDF-5 was detected in immersion fixed frozen sections of mouse embryo using Mouse GDF-5 Biotinylated Monoclonal Antibody (Catalog # BAM853) at 25 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Rat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS017) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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 5 (GDF-5), also known as cartilage-derived morphogenetic protein 1 (CDMP-1), is a member of the bone morphogenetic protein (BMP) family which belongs to the transforming growth factor β (TGF-β) superfamily. GDF-5 is synthesized as a large precursor protein that consists of an N-terminal 19 amino acid (aa) signal sequence, a 362 aa pro region and a 120 aa C-terminal mature peptide. Mature GDF-5 is a homodimeric protein which contains the characteristic seven conserved cysteine residues. GDF-5, GDF-6, and GDF-7, which share 80-86% identity, define a new subgroup within the BMP family. Like other TGF-β superfamily proteins, GDF-5 is highly conserved across species. At the amino acid sequence level, mature human and mouse GDF-5 are 98% identical. It has been reported that GDF-5 has multiple functions including regulation of myogenesis, regulation of chondrogenesis, bone morphogenesis, and neuron differentiation and survival. GDF-5 response is mediated by the formation of hetero-oligomeric complexes of type I (BMPRI) and type II (BMPRII or Activin R-II) serine/threonine kinase receptors, and the activation of Smad proteins (Smad 1, 5, and 8).

References:

1. Storm, E.E. *et al.* (1994) *Nature* **368**:639.
2. Nishitoh, H. *et al.* (1996) *J. Biol. Chem.* **271**:21345.
3. Francis-West, P.H. *et al.* (1999) *Development* **126**:1035.
4. Massague, J. *et al.* (2000) *Genes and Dev.* **14**:627.
5. Settle, S.H., Jr. *et al.* (2003) *Dev. Biol.* **254**:116.
6. Inada, M. *et al.* (1996) *BBRC* **222**:317.