Human GDF-5/BMP-14 Antibody

Monoclonal Mouse IgG_{2B} Clone # 1065032

Catalog Number: MAB8340

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human GDF-5 in direct ELISA.
Source	Monoclonal Mouse IgG_{2B} Clone # 1065032
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	E. coli-derived recombinant human GDF-5 Ala382-Arg501 Accession # P43026
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

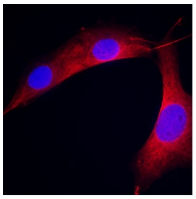
APPLICATIONS

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.*

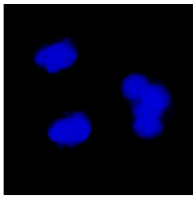
	Recommended Concentration	Sample
Immunocytochemistry	8-25 µg/mL	Immersion fixed U-118 MG human glioblastoma/astrocytoma cells (positive) and MCF-7 MG human glioblastoma cells (negative)

DATA

Immunocytochemistry



U-118MG (Positive) cells



MCF-7 (Negative) cells

Detection of GDF-5/BMP-14 in U-118MG (positive) and MCF-7 (negative) cells. GDF-5/BMP-14 was detected in immersion fixed U-118 MG human glioblastoma/astrocytoma cells (positive) and absent in MCF-7 MG human glioblastoma cells (negative) using Mouse Anti-Human GDF-5/BMP-14 Monoclonal Antibody (Catalog # MAB8340) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cell cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

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	**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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Human GDF-5/BMP-14 Antibody

Monoclonal Mouse IgG_{2B} Clone # 1065032

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BACKGROUND

Growth Differentiation Factor 5 (GDF-5), also known as cartilage-derived morphogenetic protein 1 (CDMP-1) and BMP-14, 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 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 (BMPR-IB) and type II (BMPR-II or Activin R-II) sereine/threonine kinase receptors, and the activation of Smad proteins (Smad 1, 5, and 8).

References:

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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.
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