Human GDF-11/BMP-11 Alexa Fluor® Plus 488-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 743833

Catalog Number: FAB19581AFP488

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human GDF-11/BMP-11 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human BMP-6 or recombinant mouse GDF-8 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 743833
Purification	Protein A or G purified
Immunogen	*E. coli*-derived recombinant human GDF-11/BMP-11 Asn299-Ser407 Accession # O95390
Conjugate	Alexa Fluor Plus 488 Excitation Wavelength: 493 nm Emission Wavelength: 518 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *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.*

Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

DATA

PREPARATION AND STORAGE

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

BACKGROUND

Growth Differentiation Factor 11 (GDF-11), also known as BMP-11, is a member of the TGF-β superfamily and is highly related to GDF-8. GDF-11 encodes a 407 amino acid (aa) prepropeptide which contains a signal sequence for secretion and an RXXR proteolytic processing site to yield a 109 aa residue carboxy-terminal mature protein (1). Mature GDF-11 contains the canonical 7-cysteine motif common to other TGF-β superfamily members; however, like the TGF-βs, Activins and GDF-8, GDF-11 also contains one extra pair of cysteine residues. At the amino acid sequence level, mature human, mouse, rat and chicken GDF-11 are 99-100% identical. GDF-11 and GDF-8 share 90% amino acid sequence identity within the mature protein. As detected by *in situ* hybridization, GDF-11 is expressed in diverse regions of the mouse embryo: tailbud, somitic precursors, limbs, mandibular and branchial arches, dorsal neural tube, odontoblasts, nasal epithelium, and particular regions of the brain (1, 2). Likewise, a targeted deletion of GDF-11 in mice results in a spectrum of abnormalities including palatal malformation, vertebral defects, elongated trunks with a reduced or absent tail, missing or malformed kidneys, and an increased number of neurons in the olfactory epithelium (2-5). An intriguing finding in the knockout mice was that the trunk elongation was due to an increase in the number of thoracic vertebrae (4). This implicates GDF-11 as the first secreted factor to influence the specification of segmental identity in vertebrates (3). In fact, GDF-11 does regulate expression of segmental transcription factors, the Hox genes (6). GDF-11 signals through the Activin type II receptors and induces phosphorylation of Smad2 to mediate axial patterning (7). Despite the strong expression in the limb throughout development, no limb abnormalities were found in the knockout mice. However, *in vitro* micromass studies indicate that GDF-11 inhibits myogenic and chondrogenic cell differentiation and may impact formation and development of the limb skeleton (6).

References:

1. Gamer, L.W. *et al.* (1999) Dev. Biol. **208**: 222.
2. Nakashima, M. *et al.* (1999) Mech. Dev. **80**:185.
3. Gad, J.M. and P.P.L. Tam (1999) Curr. Biol. **9**:R783.
4. McPherron, A.C. *et al.* (1999) Nat. Genet. **22**:260.
5. Esquela, A.F. and S.J. Lee (2003) Dev. Biol. **257**:356.
6. Gamer, L.W. *et al.* (2001) Dev. Biol. **229**:407.
7. Oh, S.P. *et al.* (2002) Genes & Dev. **16**:274.

PRODUCT SPECIFIC NOTICES

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