Human GDF-11/GDF-8 Antibody
Monoclonal Mouse IgG1, Clone # 743835
Catalog Number: MAB19582

DESCRIPTION
Species Reactivity Human
Specificity Detects human GDF-11/BMP-11 in direct ELISAs. In direct ELISAs, 100% cross-reactivity with mouse GDF-8 is observed.
Source Monoclonal Mouse IgG1, Clone # 743835
Purification Protein A or G purified from hybridoma culture supernatant
Immunogen E. coli-derived recombinant human GDF-11/BMP-11
Accession # OB5390
Endotoxin Level <0.10 EU per 1 μg of the antibody by the LAL method.
Formulation Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.

APPLICATIONS
Neutralization
Measured by its ability to neutralize GDF-11/BMP-11 induction of hemoglobin expression in the K562 human chronic myelogenous leukemia cell line, Schwall, R.H. et al. (1991) Method Enzymol. 198:340. The Neutralization Dose (ND50) is typically 0.04–0.2 μg/mL in the presence of 25 ng/mL Recombinant Human GDF-11/BMP-11. This antibody also neutralizes GDF-8 in a similar K562 bioassay.

ELISA
This antibody functions as an ELISA detection antibody when paired with Mouse Anti-Human GDF-11/BMP-11 Monoclonal Antibody (Catalog # MAB19584).
This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human GDF-11/BMP-11 DuoSet ELISA Kit (Catalog # DY1958-05) for convenient development of a sandwich ELISA.

DATA
Induction of Hemoglobin Expression by GDF-11/BMP-11 and Neutralization by anti-GDF-11/BMP-11 Antibody. Recombinant Human GDF-11/BMP-11 (Catalog # 1958-05) induces hemoglobin expression in the K562 human chronic myelogenous leukemia cell line in a dose-dependent manner (orange line), as measured by the pseudoperoxidase assay. Induction of hemoglobin expression by GDF-11/BMP-11 (25 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human GDF-11/BMP-11 Monoclonal Antibody (Catalog # MAB19582). The ND50 is typically 0.04–0.2 μg/mL. This antibody also neutralizes GDF-8 in a similar K562 bioassay.

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.
*Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.
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.
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 processed into a 109 aa mature protein. 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. Mature GDF-11 and GDF-8 share 90% amino acid sequence identity. 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). GDF-11 signals through the Activin type II receptors and induces phosphorylation of Smad2 to mediate axial patterning (2).

Systemic GDF-11 levels decline with age and administration of higher levels of GDF-11 can reverse age-related cardiac hypertrophy (3). In addition, systemic administration of recombinant GDF-11 protein restores genomic integrity and health of muscle stem cells, neurovasculature and enhances neurogenesis (4, 5).

References: