

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 IgG ₁ Clone # 743835
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	E. coli-derived recombinant human GDF-11/BMP-11 Asn299-Ser407 Accession # 095390
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 with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

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.

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.

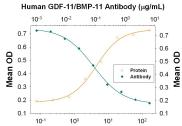
ELISA

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.

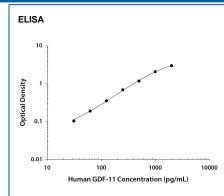
DATA

Neutralization



Recombinant Human/Mouse/Rat GDF-11/BMP-11 (ng/mL)

Induction of Hemoglobin Expression by GDF-11/BMP-11 and Neutralization by anti-GDF-11/GDF-8 Antibody. Recombinant Human GDF-11/BMP-11 (Catalog # 1958-GD) 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/GDF-8 Monoclonal Antibody (Catalog # MAB19582). The ND_{50} is typically 0.04-0.2 µg/mL. This antibody also neutralizes GDF-8



Human GDF-11/BMP-11 ELISA Standard Curve. Recombinant Human GDF-11/BMP-11 protein was serially diluted 2-fold and captured by Mouse Anti-Human GDF-11/BMP-11 Monoclonal Antibody (Catalog # MAB19584) coated on a Clear Polystyrene Microplate (Catalog # DY990), Mouse Anti-Human GDF-11/GDF-8 Monoclonal Antibody (Catalog # MAB19582) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # DY998) followed by Substrate Solution (Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # DY994).

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 shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

in a similar K562 bioassay.

- 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 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 peithelium, 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:

- 1. Nakashima, M. et al. (1999) Mech. Dev. 80:185.
- Oh, S.P. et al. (2002) Genes & Dev. 16:274.
- 3. Loffredo, F.S. et. al. (2013) Cell. 153.828.
- 4. Katsimpardi, L. et. al. (2014) Science. 344.630.
- 5. Sinha, M. et. al. (2014) Science. 344.649.

