Human GDF-1 Antibody

Monoclonal Mouse IgG_{2B} Clone # 748450

Catalog Number: MAB6937

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human GDF-1 in direct ELISAs and Western blots. In direct ELISAs, approximately 80% cross-reactivity with recombinant mouse (rm) GDF-1 is observed, and no cross-reactivity with recombinant human (rh) GDF-3 is observed. In Western blots, no cross-reactivity with rhGDF-3 or rmGDF-7 is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 748450
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human GDF-1 Asp254-Arg372 Accession # NP_001483
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 as a 0.2 µm filtered solution in PBS.

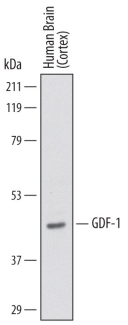
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below

DATA

Western Blot



Detection of Human GDF-1 by Western Blot. Western blot shows lysates of human brain (cortex) tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human GDF-1 Monoclonal Antibody (Catalog # MAB6937) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for GDF-1 at approximately 45 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
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.** ● 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 and Differentiation Factor 1 (GDF-1) is a secreted protein in the TGF-β superfamily (1). It is the functional equivalent of frog, zebrafish, and chick Vg1 (2, 3). Human GDF-1 is synthesized as a preproprotein that produces an approximately 44 kDa proprotein after cleavage of a 29 amino acid (aa) signal peptide. Further proteolysis at a dibasic cleavage site produces a 224 aa propeptide and a secreted 119 aa, 12-15 kDa mature peptide (4). Mature human GDF-1 shares 81% aa sequence identity with mouse and rat GDF-1. GDF-1 is expressed in the developing and adult nervous system, particularly in neurons of the cerebral cortex and hippocampus (4, 5). It is required during embryogenesis for development of left/right axis asymmetry, anterior/posterior axis asymmetry, and the notochord (2, 3, 6, 7). It cooperates with Nodal and GDF-3 in these activities and potentiates Nodal bioactivity through formation of a 27 kDa noncovalent GDF-1-Nodal heterodimer (3, 7, 8). The presence of Nodal is required for GDF-1 induced effects (8). GDF-1 signals through heteromeric receptor complexes containing Activin RIIA or Activin RIIB, ALK4 or ALK7, and an EGF-CFC protein such as Cryptic or Cripto (7-9). Loss of function mutations in GDF-1 are associated with a variety of human cardiac development defects (10).

References:

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