

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-r
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
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% 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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

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 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 RIIIB, 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).

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