

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse GDF-3 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse GDF-1, -5, -6, -7, -8, or -9 is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 144728
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant mouse GDF-3 Ala253-Gly366 Accession # Q07104
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 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	1 µg/mL	Recombinant Mouse GDF-3 (Catalog # 958-G3)

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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 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.

BACKGROUND

GDF-3 (previously called Vgr-2) is a TGF-β superfamily member belonging to the growth/differentiation factor family (1, 2). GDF-3 is expressed in undifferentiated embryonic stem (ES) cells, adipose tissue and the brain (2-4). In ES cells, it maintains pluripotency and influences early cell fate decisions (5, 6). For example, frog embryos injected with GDF-3 develop a secondary dorsal axis and deletion of mouse GDF-3 can produce defects in the anterior visceral endoderm of the pre-gastrulation embryo (5, 6). In adipocytes, GDF-3 is induced by a high fat diet and promotes adipogenesis (3). GDF-3 has been reported to oppose BMP's functions and to have a nodal-like activity in early development (1). The 366 amino acid (aa) mouse GDF-3 contains a 22 aa signal sequence, a 230 aa propeptide and a 114 aa mature protein that contains one potential N-glycosylation site. Most of GDF-3 is present as the prepro form, while the mature GDF-3 is presumably the secreted, active form (1). The mature protein contains the cysteine-knot structure that is conserved throughout family members. Since it lacks the fourth cysteine, which is responsible for the formation of inter-molecular disulfide bond, GDF-3 may exist as a non-covalent homodimer. Mature mouse GDF-3 shares 90%, 83% and 83% aa identity with rat, human and canine GDF-3, respectively. Among family members, mature GDF-3 is most similar to mouse BMP-6 (45% aa identity) and *Xenopus* VG-1 (52% aa identity).

References:

1. Levine, A. J. and A. H. Brivanlou (2006) *Cell Cycle* 5:1069.
2. McPherron, A. C. and S-J. Lee (1993) *J. Biol. Chem.* 268:3444.
3. Wang, W. *et al.* (2004) *Biochem. Biophys. Res. Comm.* 321:1024.
4. Hexige, S. *et al.* (2005) *Neurosci. Lett.* 389:83.
5. Levine, A. J. and A. H. Brivanlou (2005) *Development* 133:209.
6. Chen, C. *et al.* (2006) *Development* 133:319.