

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human FGF-16 in Western blots. In this format, less than 2% cross-reactivity with recombinant human (rh) FGF acidic, rhFGF basic, rhFGF-3, -4, -5, -6, -7, -9, -10, -11, -12, -13, -17, -18, -19, -21, -23, recombinant mouse (rm) FGF-8b and rmFGF-15 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human FGF-16 (R&D Systems, Catalog # 1212-FG) Ala2-Arg207 Accession # O43320
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

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	0.1 µg/mL	Recombinant Human FGF-16 (Catalog # 1212-FG)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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

Fibroblast growth factor 16 (FGF-16) belongs to the large FGF family which has at least 23 members (1). All FGF family members are heparin-binding growth factors with a core 120 amino acid (aa) FGF domain that allows for a common tertiary structure. FGFs are expressed during embryonic development and in restricted adult tissues. They act on cells of mesodermal and neuroectodermal origin to regulate diverse physiologic functions including angiogenesis, cell growth, pattern formation, embryonic development, metabolic regulation, cell migration, neurotrophic effects and tissue repair (2, 3). Signaling receptors for FGFs are type I transmembrane receptor tyrosine kinases belonging to the immunoglobulin (Ig) superfamily. Four distinct but related classes of FGF receptors, FGF R1, 2, 3, and 4, exist. Through alternative splicing, multiple isoforms for FGF R1, 2 and 3, with distinct ligand recognition profiles, are also generated (3).

FGF-16 was originally identified in rat heart tissue by homology based polymerase chain reaction. Human FGF-16 cDNA predicts a 207 aa precursor protein with one N-linked glycosylation site. FGF-16 lacks a typical signal peptide, but is efficiently generated by mechanisms other than the classical protein secretion pathway. Among FGF family members, FGF-16 is most similar to FGF-9, sharing 73% aa sequence homology. Human FGF-16 shares 99% and 98.6% aa sequence identity with the mouse and rat FGF-16, respectively. In rat embryos, FGF-16 message is expressed predominantly in brown adipocytes. In adult animals, it is localized primarily in heart tissue. FGF-16 binds to and activates FGF receptor 4 (4). FGF-16 induces proliferation of primary adipocytes and oligodendrocytes *in vitro* and stimulates liver weight increase *in vivo* (4, 5). The expression pattern of FGF-16 and its effect on adipocyte proliferation suggest a role for this protein on the proliferation of embryonic brown adipose tissue (4).

References:

1. Miyake, A. *et al.* (1998) *Biochem. Biophys. Res. Com.* **243**:148.
2. Goldfarb, M. (1996) *Cytokine and Growth Factor Reviews* **7**:311.
3. Green, P. *et al.* (1996) *BioEssays* **18**:639.
4. Konishi, M. *et al.* (2000) *J. Biol. Chem.* **275**:12119.
5. Danilenko, D.M. *et al.* (2000) *Archiv. Biochem. Biophys.* **361**:34.