

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse FGF-23 in direct ELISAs and Western blots. In direct ELISAs, this antibody shows approximately 50% cross-reactivity with recombinant human (rh) FGF-23. In Western blots, this antibody does not cross-react with rhFGF-3, -4, -5, -7, -9, -10, -
Source	Monoclonal Rat IgG _{2A} Clone # 283507
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse FGF-23 Tyr25-Val251 (Arg179Gln) Accession # Q9EPC2
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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.

Immunohistochemistry 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

Fibroblast growth factor 23 (FGF-23) is a 30-32 kDa member of the FGF gene family. Based on its structure, it is further classified as an FGF19 subfamily member. This subfamily includes FGF-19, -21, and -23. Like all other FGF subfamilies, FGF-19 subfamily members contain a 120 amino acid (aa) core FGF domain that exhibits a β-trefoil structure (1, 2). Unlike other FGF subfamilies, FGF-19 subfamily members exist as highly diffusible molecules that is attributed to poor ECM/heparin sulfate binding (3-6). The cDNA for mouse FGF-23 predicts a 251 aa polypeptide that contains a 24 aa signal sequence and a 227 aa mature region (7). Mature mouse FGF-23 shows 72% aa identity to human FGF-23 (8). The FGF-19 subfamily shares an unusual receptor configuration. The standard model for FGF signaling requires an FGF:FGF R:heparin sulfate complex. Given FGF-23's minimal association with heparin, a substitute termed (α-) Klotho has evolved that serves the same function. Although FGF-23 binds to the widely expressed "c" isoforms of FGF R1 and 3 plus FGF R4, Klotho has a restricted distribution that limits FGF-23 activity (10-12). It should be noted that heparin-dependency has been reported for FGF-19 signaling, and this observation may extend to FGF-23 (13). The FGF-19 subfamily is considered endocrine in nature. All three subfamily members impact some aspect of metabolism and all three are induced by a nuclear receptor heterodimer that includes the retinoid X receptor (14-16). FGF-23 is considered a phosphatonin; that is, a molecule that reduces circulating plasma phosphate. It is produced by osteocytes and osteoblasts in response to high circulating phosphate levels, elevated parathyroid hormone that induces hypercalcemia, and circulatory volume loading. Upon binding to FGF-23 receptors on renal proximal tubular epithelium, two basic changes are seen. First, the enzyme responsible for generating the active form of vitamin D is suppressed, resulting in decreased levels of bioactive vitamin D. Since vitamin D promotes intestinal phosphate absorption, plasma phosphate declines. Second, the transporters responsible for phosphate resorption on renal epithelium are down regulated, resulting in decreased uptake from urine and again a decline in blood phosphorus (17, 18).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.