Human FGF-21 Antibody

Monoclonal Mouse IgG_{2B} Clone # 461804

Catalog Number: MAB25372

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human FGF-21 in direct ELISAs. In direct ELISAs, less than 10% cross-reactivity with recombinant mouse FGF-21, recombinant human (rh) FGF-3, -4, -6 or -10 is observed and no cross-reactivity with rhFGF-5 or rhFGF-9 is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 461804
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human FGF-21 His29-Ser209 Accession # Q9NSA1
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.

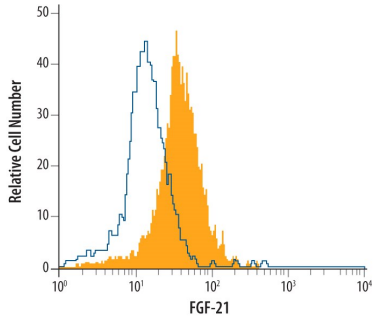
APPLICATIONS

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
Immunocytochemistry	15-30 µg/mL	See Below
Intracellular Staining by Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

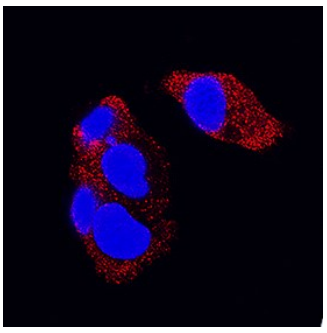
DATA

Intracellular Staining by Flow Cytometry



Detection of FGF-21 in HepG2 Human Cell Line by Flow Cytometry. HepG2 human hepatocellular carcinoma cell line was stained with Mouse Anti-Human FGF-21 Monoclonal Antibody (Catalog # MAB25372, filled histogram) or isotype control antibody (Catalog # MAB0041, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG $F(ab')_2$ Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin.

Immunocytochemistry



FGF-21 in HepG2 Human Cell Line. FGF-21 was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Mouse Anti-Human FGF-21 Monoclonal Antibody (Catalog # MAB25372) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

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	**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

Fibroblast growth factor 21 (FGF-21) is a member of the FGF gene family, which currently contains 22 human members. Based on its structure, it is further classified as an FGF-19 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 apparently exhibit poor binding to ECM, resulting in highly diffusible molecules (3). The cDNA for FGF-21 predicts a 209 aa polypeptide that contains a 28 aa signal sequence and a 181 aa mature region (4). Notably, FGF-21, as well as FGF-19 show limited binding to heparin (4). One potential alternate splice form has been reported. It shows a 43 aa substitution for the C-terminal 12 aa of the standard form (5). Mature human FGF-21 shows 81% aa identity to mouse FGF-21, and is known to be active on mouse cells (4, 6). The FGF-19 subfamily is considered endocrine in nature. All three subfamily members impact some aspect of metabolism, all three are induced by a nuclear receptor heterodimer that includes RXR, and all three utilize Klotho family members for signal transduction (7, 8, 9). FGF-21 is produced by hepatocytes in response to free fatty acid (FFA) stimulation of a PPARa/RXR dimeric complex (3, 7, 10, 11). This situation occurs clinically during starvation, or following the ingestion of a high-fat/low-carbohydrate diet. Upon FGF-21 secretion, white adipose tissue is induced to release FFAs from triglyceride stores. Once FFAs reach hepatocytes, they are oxidized and reduced to acetyl-CoA. The acetyl-CoA is recombined into 4-carbon ketone bodies (acetoacetate and β-hydroxybutyrate), released, and transported to peripheral tissues for TCA processing and energy generation (11, 12).

References:

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