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LGR5 Antibody (loop2)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2745D

Specification

LGR5 Antibody (loop2) - Product Information

Application	**WB, IF, FC,E**
Primary Accession	O75473
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**689-719**

LGR5 Antibody (loop2) - Additional Information

Gene ID 8549

Other Names
Leucine-rich repeat-containing G-protein coupled receptor 5, G-protein coupled receptor 49, G-protein coupled receptor 67, G-protein coupled receptor HG38, LGR5, GPR49, GPR67

Target/Specificity
This LGR5 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 689-719 amino acids from human LGR5.

Dilution
WB~~1:1000
IF~~1:100
FC~~1:25

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
LGR5 Antibody (loop2) is for research use only and not for use in diagnostic or therapeutic procedures.

LGR5 Antibody (loop2) - Protein Information

Name LGR5

Synonyms GPR49, GPR67

Function Receptor for R-spondins that potentiates the canonical Wnt signaling pathway and acts as a stem cell marker of the intestinal epithelium and the hair follicle. Upon binding to R-spondins (RSPO1, RSPO2, RSPO3 or RSPO4), associates with phosphorylated LRP6 and frizzled receptors that are activated by extracellular Wnt receptors, triggering the canonical Wnt signaling pathway to increase expression of target genes. In contrast to classical G-protein coupled receptors, does not activate heterotrimeric G-proteins to transduce the signal. Involved in the development and/or maintenance of the adult intestinal stem cells during postembryonic development.

Cellular Location
Cell membrane; Multi-pass membrane protein. Golgi apparatus, trans-Golgi network membrane; Multi-pass membrane protein Note=Rapidly and constitutively internalized to the trans-Golgi network at steady state. Internalization to the trans-Golgi network may be the result of phosphorylation at Ser-861 and Ser-864; however, the phosphorylation event has not been proven (PubMed:23439653)

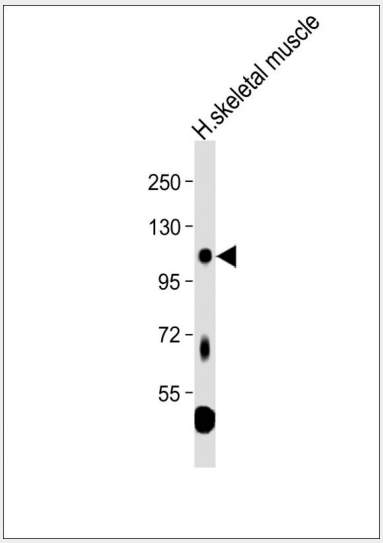
Tissue Location
Expressed in skeletal muscle, placenta, spinal cord, and various region of brain. Expressed at the base of crypts in colonic and small mucosa stem cells. In premalignant cancer expression is not restricted to the cript base. Overexpressed in cancers of the ovary, colon and liver.

LGR5 Antibody (loop2) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LGR5 Antibody (loop2) - Images



Anti-LGR5 Antibody (loop2) at 1:1000 dilution + Human skeletal muscle tissue lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated

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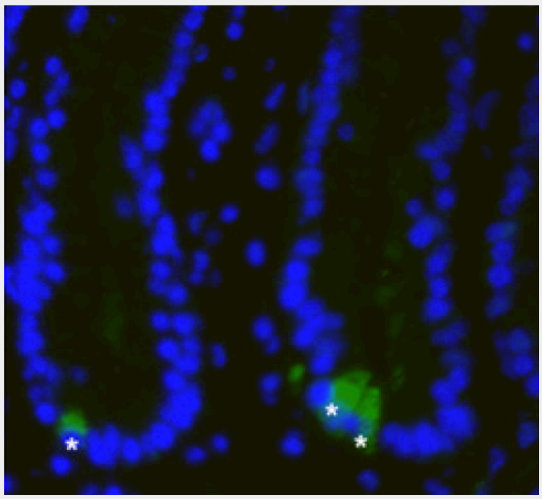
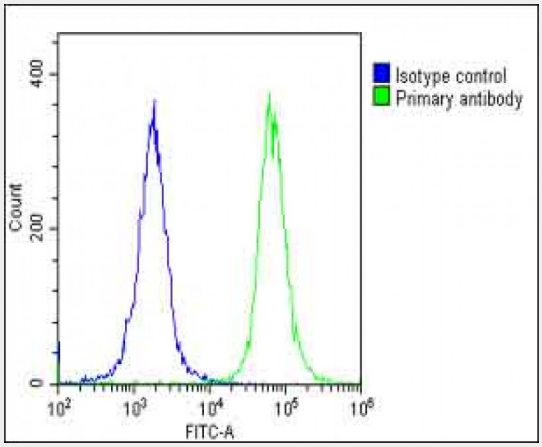
at 1/10000 dilution. Predicted band size : 100 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Fgr5 was stained in rat intestinal crypts longitudinal section, magnification 400Å with FITC goat anti-rabbit IgG (excitation and emission spectrum peak wavelengths of approximately 495 nm/519 nm). Sections were hydrated in PBS for 15 min, blocked for 1hwith 5% BSA, and incubated overnight at 4◦C. After rinsing with PBS, the slides were incubated for 1 h with the FITC goat anti-rabbit IgG. Asterisks indicate the positive cells. PMID: 29669842



Overlay histogram showing Hela cells stained with AP2745d(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP2745d, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(1583138) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.

LGR5 Antibody (loop2) - Background

LGR5/GPR49 is an orphan receptor. It may be an important receptor for signals controlling growth and differentiation of specific embryonic tissues. Stem cell marker of the intestinal epithelium and the hair follicle. Target gene of Wnt signaling. Expressed in skeletal muscle, placenta, spinal cord, and various region
of brain. Expressed at the base of crypts in colonic and small mucosa
stem cells. In premalignant cancer expression is not restricted to the
cript base. Overexpressed in cancers of the ovary, colon and liver.

LGR5 Antibody (loop2) - References

References for protein:
1. Barker,N., Nature 449 (7165),1003-1007 (2007)
2. Hsu,S.Y., Mol. Endocrinol. 14 (8), 1257-1271 (2000) .
3. Yamamoto Y. , Sakamoto M., Fujii G., Tsuiji H. , Kenetaka K., Asaka M., Hirohashi S. Overexpression of orphan G-protein-coupled receptor, Gpr49, in human hepatocellular carcinomas with beta-catenin mutations. Hepatology 37:528-533(2003).
4. McClanahan T., Koseoglu S., Smith K., Grein J., Gustafson E., Black S., Kirschmeier P., Samatar A.A. Identification of overexpression of orphan G protein-coupled receptor GPR49 in human colon and ovarian primary tumors. Cancer Biol. Ther. 5:419-426(2006).
6. Becker L., Huang Q., Mashimo H. Immunostaining of Lgr5, an intestinal stem cell marker, in normal and premalignant human gastrointestinal tissue. ScientificWorldJournal 8:1168-1176(2008)

References for HeLa cell line:
1. Scherer WF, Syverton JT, Gey GO (May 1953). "Studies on the propagation in vitro of poliomyelitis viruses. IV. Viral multiplication in a stable strain of human malignant epithelial cells (strain HeLa) derived from an epidermoid carcinoma of the cervix". J. Exp. Med. 97 (5): 695–710. [PubMed:13052828].

2. Macville M, Schröck E, Padilla-Nash H, Keck C, Ghadimi BM, Zimonjic D, Popescu N, Ried T (January 1999). "Comprehensive and definitive molecular cytogenetic characterization of HeLa cells by spectral karyotyping". Cancer Res. 59 (1): 141–50. [PubMed: 9892199].
3. Rahbari R, Sheahan T, Modes V, Collier P, Macfarlane C, Badge RM (April 2009). "A novel L1 retrotransposon marker for HeLa cell line identification". BioTechniques 46 (4): 277–84. [PubMed: 19450234].

4. Capes-Davis A, Theodosopoulos G, Atkin I, Drexler HG, Kohara A, MacLeod RA, Masters JR, Nakamura Y, Reid YA, Reddel RR, Freshney RI (July 2010). "Check your cultures! A list of cross-contaminated or misidentified cell lines". Int. J. Cancer 127 (1): 1–8. [PubMed:20143388].

LGR5 Antibody (loop2) - Citations

- A combination therapy of bortezomib, CXCR4 inhibitor, and checkpoint inhibitor is effective in cholangiocarcinoma
- Application of Human Induced Pluripotent Stem Cell-Derived Intestinal Organoids as a Model of Epithelial Damage and Fibrosis in Inflammatory Bowel Disease
- Targeting chemoresistant colorectal cancer via systemic administration of a BMP7 variant
- Lgr5 Does Not Vary Throughout the Menstrual Cycle in Endometriotic Human Eutopic Endometrium.
- Bile salt dependent lipase promotes intestinal adaptation in rats with massive small bowel resection.
- Generation of Intestinal Organoids Suitable for Pharmacokinetic Studies from Human Induced Pluripotent Stem Cells.
- LGR5 and BMI1 Increase Pig Intestinal Epithelial Cell Proliferation by Stimulating WNT/β-Catenin Signaling.
- Effects of a small molecule R-spondin-1 substitute RS-246204 on a mouse intestinal organoid culture.
- Regulation of intestinal myofibroblasts by KRas-mutated colorectal cancer cells through heparin-binding epidermal growth factor-like growth factor.
- Expression Analysis of the Stem Cell Marker Pw1/Peg3 Reveals a CD34 Negative Progenitor Population in the Hair Follicle.
- ERBB3 Positively Correlates with Intestinal Stem Cell Markers but Marks a Distinct Non Proliferative Cell Population in Colorectal Cancer.
- Characterization of Three-Dimensional Retinal Tissue Derived from Human Embryonic Stem

Cells in Adherent Monolayer Cultures.
- The effectiveness of an anti-human IL-6 receptor monoclonal antibody combined with chemotherapy to target colon cancer stem-like cells.
- Long-term culture of genome-stable bipotent stem cells from adult human liver.
- Intestinal stem cell marker LGR5 expression during gastric carcinogenesis.
- LGR5 is a promising biomarker for patients with stage I and II gastric cancer.
- Transcription factor Oct1 is a somatic and cancer stem cell determinant.
- Multiple roles of integrin-linked kinase in epidermal development, maturation and pigmentation revealed by molecular profiling.
- Significance of Lgr5(+ve) cancer stem cells in the colon and rectum.
- Stable expression of neurogenin 1 induces LGR5, a novel stem cell marker, in an immortalized human neural stem cell line HB1.F3.