Technical Data Sheet

Biotin Rat anti-Human Lgr5 (N-Terminal)

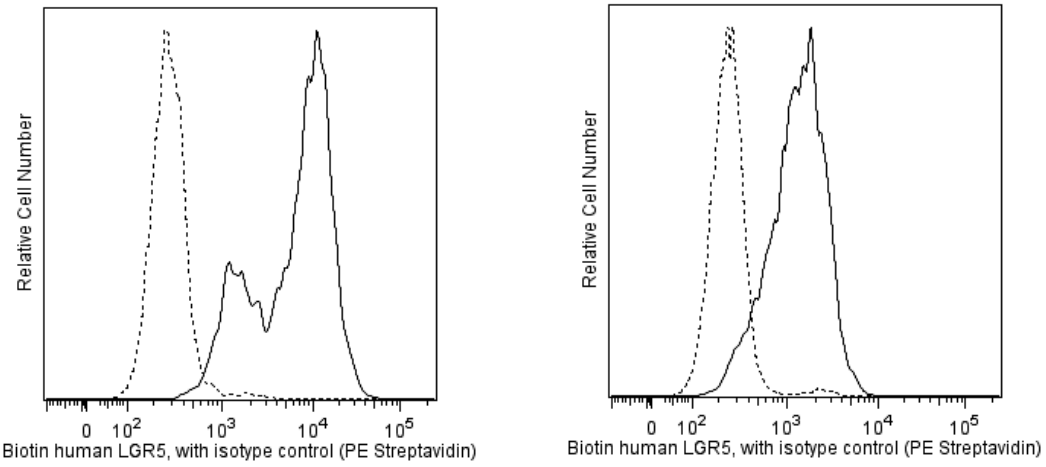
Product Information

Material Number:	**562904**
Alternate Name:	GPR49, GPR67, HG38
Size:	50 µg
Concentration:	0.5 mg/ml
Clone:	8F2
Immunogen:	Human LGR5 DNA
Isotype:	Rat IgG2b, κ
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

Description

Lgr5 (leucine-rich-repeat-containing G-protein-coupled receptor 5) is a seven transmembrane-domain receptor that is a target gene for Wnt and marks stem cells in the small intestine, colon, stomach, and hair follicle. Lgr5 was initially identified as a potential stem cell marker due to restricted expression of Lgr5 in the intestinal crypt and labeling of rapidly cycling cells of the colon and intestine. Using both lineage tracing and organoid culture experiments, Lgr5 positive cells are capable of generating all types of the small intestine epithelium hence indicating that Lgr5 marks stem cells of the small intestine and colon. R-spondin growth factors, which are secreted agonists of the Wnt pathway, bind Lgr5. The binding of R-spondins to Lgr5 leads to recruitment of the Frizzled/LRP Wnt receptor complex, which binds to Wnt ligands and leads to downstream Wnt signaling. Lgr5 is up-regulated in colon and ovarian cancers and has been implicated in promotion of tumor growth and metastasis.

The 8F2 monoclonal antibody recognizes an epitope in the N-terminal region of Human Lgr5.



Flow cytometric analysis of LGR5 expression on human LGR5-transfected cells. *LS 174T colorectal adenocarcinoma cells transfected with human LGR5 (cells from Dr. Hans Clevers, Hubrecht Institute, Left Panel) and parental LS 174T cells, which express low levels of endogenous LGR5 (ATCC CL-188, Right Panel) were harvested using Accutase™ Cell Detachment Solution (Cat. No. 561527). The cells were stained with either Biotin Rat IgG2b, κ Isotype Control (Cat. No. 553987; dashed line histogram) or Biotin Rat Anti-Human Lgr5 (N-Terminal) antibody (Cat. No. 562904; solid line histogram) at matched concentrations. The cells were then washed and stained with PE Streptavidin (Cat. No. 554061) as the secondary detection reagent. The fluorescence histograms were derived from gated events based on the light scattering characteristics of viable LS 174T cells. Flow cytometry was performed on a BD FACSCanto™ II Flow Cytometry System.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated with biotin under optimum conditions, and unreacted biotin was removed.
Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

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Application Notes

Application

Flow cytometry	Routinely Tested
Bioimaging	Not Recommended
Immunofluorescence	Not Recommended

Suggested Companion Products

Catalog Number	Name	Size	Clone
553987	Biotin Rat IgG2b, κ Isotype Control	0.25 mg	A95-1
554061	PE Streptavidin	0.5 mg	(none)
561527	Accutase™ Cell Detachment Solution	100 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
4. Accutase is a registered trademark of Innovative Cell Technologies, Inc.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

References

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Carmon KS, Gong X, Lin Q, Thomas A, Liu Q. R-spondins function as ligands of the orphan receptors LGR4 and LGR5 to regulate Wnt/{beta}-catenin signaling. *Proc Natl Acad Sci U S A.* 2011; 108(28):11452-11457. (Biology)

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Jaks V, Barker N, Kasper M, et al. Lgr5 marks cycling, yet long-lived, hair follicle stem cells. *Nat Genet.* 2008; 40(11):1291-1299. (Biology)

Kemper K, Prasetyanti PR, de Lau W, Rodermond H, Clevers H, Medema JP. Monoclonal Antibodies Against Lgr5 Identify Human Colorectal Cancer Stem Cells. *Stem Cells.* 2012; . (Biology)

Merlos-Suárez A, Barriga FM, Jung P et al. The intestinal stem cell signature identifies colorectal cancer stem cells and predicts disease relapse. *Cell Stem Cell.* 2011; 8(5):511-524. (Biology)

Yui S, Nakamura T, Sato T, et al. Functional engraftment of colon epithelium expanded in vitro from a single adult Lgr5(+) stem cell. *Nat Med.* 2012; 18(4):618-623. (Biology)

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