

## LGR5 (H-76): sc-135238

### BACKGROUND

G protein-coupled receptors (GPCRs), also designated seven transmembrane (7TM) receptors or heptahelical receptors, interact with G proteins (heterotrimeric GTPases) to synthesize intracellular second messengers, such as diacylglycerol, cyclic AMP, inositol phosphates and calcium ions. Their diverse biological functions range from vision and olfaction to neuronal and endocrine signaling and are involved in many pathological conditions. LGR5 (leucine-rich repeat-containing G protein-coupled receptor 5), also known as GPR49 or GPR67, is a 907 amino acid multi-pass membrane protein that contains 17 leucine-rich repeats and belongs to the G protein-coupled receptor family. Expressed in placenta, skeletal muscle and spinal cord, LGR5 functions as an orphan receptor that is thought to play an important role in embryonic growth control and cellular differentiation. Overexpression of LGR5 is associated with increased tumor susceptibility and malignant transformation, implicating LGR5 as a potent tumor-inducing protein.

### REFERENCES

- McDonald, T., et al. 1998. Identification and cloning of an orphan G protein-coupled receptor of the glycoprotein hormone receptor subfamily. *Biochem. Biophys. Res. Commun.* 247: 266-270.
- Hsu, S.Y., et al. 1998. Characterization of two LGR genes homologous to gonadotropin and thyrotropin receptors with extracellular leucine-rich repeats and a G protein-coupled, seven-transmembrane region. *Mol. Endocrinol.* 12: 1830-1845.
- Hsu, S.Y., et al. 2000. The three subfamilies of leucine-rich repeat-containing G protein-coupled receptors (LGR): identification of LGR6 and LGR7 and the signaling mechanism for LGR7. *Mol. Endocrinol.* 14: 1257-1271.
- amamoto, Y., et al. 2003. Overexpression of orphan G protein-coupled receptor, GPR49, in human hepatocellular carcinomas with  $\beta$ -catenin mutations. *Hepatology* 37: 528-533.
- McClanahan, T., et al. 2006. Identification of overexpression of orphan G protein-coupled receptor GPR49 in human colon and ovarian primary tumors. *Cancer Biol. Ther.* 5: 419-426.
- Barker, N., et al. 2007. Identification of stem cells in small intestine and colon by marker gene *Lgr5*. *Nature* 449: 1003-1007.
- Tanese, K., et al. 2008. G protein-coupled receptor GPR49 is upregulated in basal cell carcinoma and promotes cell proliferation and tumor formation. *Am. J. Pathol.* 173: 835-843.
- Jaks, V., et al. 2008. LGR5 marks cycling, yet long-lived, hair follicle stem cells. *Nat. Genet.* 40: 1291-1299.

### CHROMOSOMAL LOCATION

Genetic locus: LGR5 (human) mapping to 12q21.1; *Lgr5* (mouse) mapping to 10 D2.

### SOURCE

LGR5 (H-76) is a rabbit polyclonal antibody raised against amino acids 341-416 mapping within an internal region of LGR5 of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### APPLICATIONS

LGR5 (H-76) is recommended for detection of LGR5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LGR5 (H-76) is also recommended for detection of LGR5 in additional species, including bovine and porcine.

Suitable for use as control antibody for LGR5 siRNA (h): sc-62559, LGR5 siRNA (m): sc-62560, LGR5 shRNA Plasmid (h): sc-62559-SH, LGR5 shRNA Plasmid (m): sc-62560-SH, LGR5 shRNA (h) Lentiviral Particles: sc-62559-V and LGR5 shRNA (m) Lentiviral Particles: sc-62560-V.

Molecular Weight of LGR5: 100 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **LGR5 (2B5B9): sc-517191**, our highly recommended monoclonal alternative to LGR5 (H-76).