Product Data Sheet

Rat anti-human LGR5 (GPR49) monoclonal antibody (GM-0607)

Product information

Catalog Number:	GM-0607
Clone:	BEE-6F7
Description:	purified monoclonal rat antibody
Specificity:	anti-human LGR5 (GPR49)
Isotype:	IgG2a, kappa
Purification:	Protein G
Storage:	short term: 2°C - 8°C; long term: -20°C (avoid repeated freezing and thawing)
Buffer:	phosphate buffered saline, pH 7.2
Immunogen:	genetic immunisation with cDNA encoding human LGR5
Selection:	based on recognition of the complete **native protein** expressed on transfected mammalian cells

Working dilutions

Flow cytometry:	1.2 µg/10^6 cells
CELISA:	1:200 - 1:400

For each application a titration should be performed to determine the optimal concentration.

Specificity testing by flow cytometry

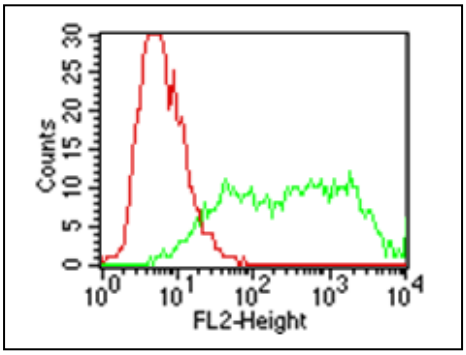

Fig.1: FACS analysis of BOSC23 cells using BEE-6F7. BOSC23 cells were transiently transfected with an expression vector encoding either LGR5-hum (green curve), or an irrelevant protein (control transfectant (red curve). Binding of BEE-6F7 was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with LGR5-hum transfected cells.

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SDS page analysis of BEE-6F7

The antibody was purified by protein G affinity chromatography from cell culture supernatants

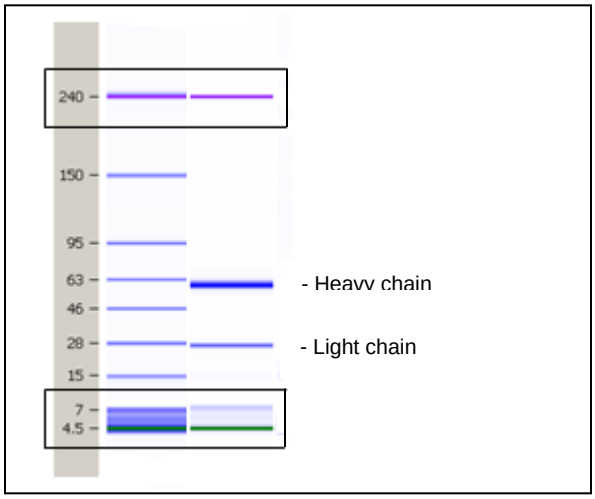

Fig.2: CGE analysis of purified GM-0607 monoclonal antibody. Lane 1: molecular weight marker, Lane 2: 2 µg of purified GM-0607 antibody. Proteins were separated by CGE (capillary gel electrophoresis, Agilent 2100 Bioanalyzer). Internal control bands (240 kDa / 7 kDa / 4,5 kDa).

Background

LGR5 (Leucine-rich repeat- containing G protein-coupled receptor 5), also known as GPR49. belongs to the superfamily of G protein-coupled receptors (GPCRs) (1). It is a 907 amino acid multi-pass membrane protein and has multiple N-terminal leucine-rich repeats, which are important for interaction with the glycoprotein ligands, and 7 transmembrane domains. LGR5 is expressed across a diverse range of tissue such as in the muscle, placenta, spinal cord and brain and particularly as a biomarker of adult stem cells in certain tissues (2). LGR5 is a member of the Wnt signaling pathway. Although its ligand remains elusive, it has been shown that costimulation with R-spondin 1 and Wnt-3a induce increased internalization of LGR5 (3). LGR5 is overexpressed in certain cancer types, e.g. gastrointestinal tumours and is thought to represent a tumour suppressor, although its role there is still unclear.

References

1. **McDonald T, Wang R, Bailey W, Xie G, Chen F, Caskey CT, Liu Q** (1998). Identification and cloning of an orphan G protein-coupled receptor of the glycoprotein hormone receptor subfamily". *Biochem Biophys Res Commun* **247** (2): 266–70
2. **Hsu SY, Liang SG, Hsueh AJ (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**: 1830–45
3. **de Lau W[1], Barker N, Low TY, Koo BK, Li VS, Teunissen H, Kujala P, Haegebarth A, Peters PJ, van de Wetering M, Stange DE, van Es JE, Guardavaccaro D, Schasfoort RB, Mohri Y, Nishimori K, Mohammed S, Heck AJ, Clevers H.**(2011) Lgr5 homologues associate with Wnt receptors and mediate R-spondin signalling. *Nature* **476**: 293-7