

DESCRIPTION

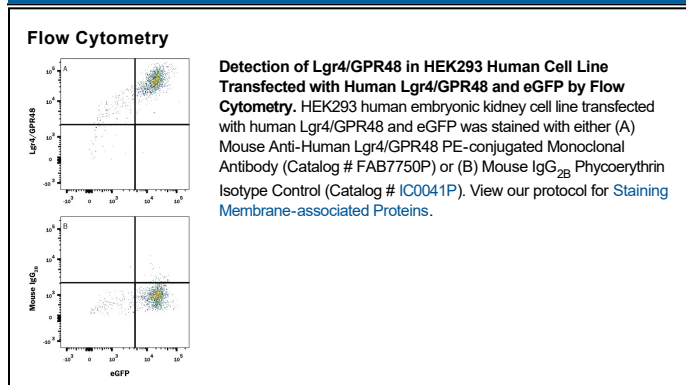
Species Reactivity	Human
Specificity	Detects human Lgr4/GPR48 in Lgr4-transfected cell-based ELISA. Stains human Lgr4/GPR48 transfected but not irrelevant transfected cells in flow cytometry.
Source	Monoclonal Mouse IgG _{2B} Clone # 852229
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	NS0 mouse myeloma cell line transfected with human Lgr4/GPR48 Met1-Asp951 Accession # Q9BXB1
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze.

- 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Lgr4 (Leucine-rich repeat GPR 4), also known as GPR48 (G-Protein-coupled Receptor 48), is a seven-transmembrane glycoprotein receptor in the Lgr family of cell surface receptors (1, 2). While this family includes receptors for hormones such as LH, FSH, TSH, and hCG, the subfamily comprising Lgr4, Lgr5, and Lgr6 are G-protein-independent mediators of the potentiating effect of R-Spondins on Wnt signaling (1-6). Lgr4 binds and forms complexes with R-Spondins, Frizzled Wnt receptors, and LRP Wnt co-receptors (5). It acts, at least in part, by enhancing Wnt-dependent LRP phosphorylation, internalization of LRPs, and accumulation of β -catenin (3, 4). Human Lgr4 cDNA encodes 951 amino acids (aa), including a long N-terminal Extracellular Domain (ECD, aa 25-544) with 16-17 LRR domains that mediate ligand interaction (1). The LRR-containing ECD of human Lgr4 shares 93% aa sequence identity with mouse, rat and bovine Lgr4, and 50-60% aa identity with human Lgr5 and Lgr6. Lgr4 is widely expressed in both embryo and adult. Expression of Lgr4 mRNA in adult humans is highest in pancreas, followed by liver, heart, muscle, brain, and placenta (1). In rodents, embryonic and adult expression includes liver, kidney, adrenals, bone/cartilage, and heart (2, 7-9). Lgr4 deletion in the mouse affects development in areas of normal expression, for example, it will inhibit fetal liver definitive erythropoiesis (9). Deletion of Lgr4 specifically from stem and progenitor cells in intestinal crypts induces loss of crypts due to insufficient Wnt signaling (5, 6). Lgr4 may be over-expressed in carcinomas and may promote invasiveness and metastasis by down-regulating p27^{Kip1} expression (10).

References:

1. Loh, E.D. *et al.* (2001) *Biochem. Biophys. Res. Commun.* **282**:757.
2. Hsu, S.Y. *et al.* (1998) *Mol. Endocrinol.* **12**:1830.
3. Carmon, K.S. *et al.* (2011) *Proc. Natl. Acad. Sci. USA* **108**:11452.
4. Glinka, A. *et al.* (2011) *EMBO Rep.* **12**:1055.
5. de Lau, W. *et al.* (2011) *Nature* **476**:293.
6. Ruffner, H. *et al.* (2012) *PLoS ONE* **7**:e40975.
7. Van Schoore, G. *et al.* (2005) *Histochem. Cell Biol.* **124**:35.
8. Mazerbourg, S. *et al.* (2004) *Mol. Endocrinol.* **18**:2241.
9. Song, H. *et al.* (2008) *J. Biol. Chem.* **283**:36687.
10. Gao, Y. *et al.* (2006) *Cancer Res.* **66**:11623.