MULTISCREEN™ STABLE CELL LINE
MOUSE RECOMBINANT LPA1 RECEPTOR

Data sheet

PRODUCT INFORMATION

Catalog Number: Cm1048-6B

Lot Number: Cm1048-6B-041113

Quantity: 1 vial (1 x 10^6) frozen cells

Freeze Medium: Sigma Freezing Medium (C-6164)

Host cell: RH7777

Transfection: Expression vector containing full-length mouse Lpar1 cDNA (GenBank Accession Number: NM_172989.1) with FLAG tag sequence at N-terminus

Recommended Storage: Liquid nitrogen upon receiving

Propagation Medium: DMEM, 10% FBS, 3 µg/mL puromycin

Stability: Stable in culture for a minimum of 2 months

Background: The lipid growth factor lysophosphatidic acid (LPA) is responsible for cell signaling in diverse pathways including survival, proliferation, motility, and differentiation. LPA acts upon target cells by activating its cognate receptors, which belong to the G protein-coupled endothelial differentiation gene (EDG) family. Four mammalian cell surface LPA receptors have been identified so far: EDG-2 (LPA1), EDG-4 (LPA2), EDG-7 (LPA3) and LPA4 (GPR23/P2Y9). EDG-2 is the most widely expressed receptor, with high-level mRNAs in the colons, small intestine, placenta, brain and heart. Heterologous expression studies have shown that EDG-2 couples to both Gi/o and Gq to mediate PLC activation, inhibition of cAMP accumulation and activation of the MAPK pathway. EDG-2 deficient mice show phenotypic changes observed in psychiatric disease as well as impaired suckling behavior attributable to defective olfaction.

Application: Functional assays

Figure 1

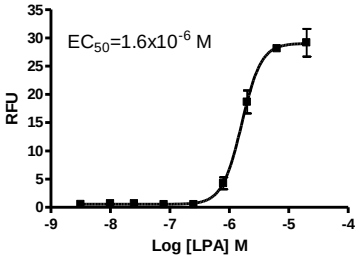


Figure 2

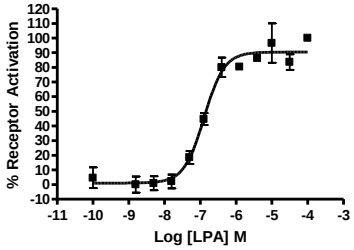
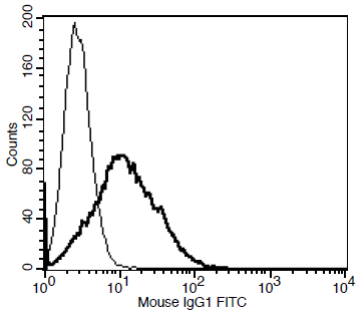


Figure 1. Dose-dependent calcium flux upon treatment with ligand, measured with Multiscreen™ Calcium 1.0 No Wash Assay Kit (Multispan MSCA01). **Figure 2.** Dose-dependent inhibition of forskolin-stimulated intracellular cAMP level upon treatment with ligand, measured with Multiscreen™ TR-FRET cAMP 1.0 No Wash Assay Kit (Multispan MSCM01). **Figure 3.** Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Thin line: parental cells; thick line: receptor-expressing cells.

Figure 3



References:

Mills and Moolenaar (2003) The emerging role of lysophosphatidic acid in cancer. *Nat Rev Cancer* 3:582-591.

Yang *et al.* (2002) In vivo roles of lysophospholipid receptors revealed by gene targeting studies in mice. *Biochim Biophys Acta* 1582:197-203.

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