

MULTISCREEN™ STABLE CELL LINE
HUMAN RECOMBINANT μ OPIOID RECEPTOR

PRODUCT INFORMATION

Catalog Number: C1350-1a

Lot Number: C1350-1a-060909

Quantity: 1 vial (2×10^6) frozen cells

Freeze Medium: Sigma Freezing Medium (C-6164)

Host cell: CHO-K1

Transfection: Expression vector containing full-length human OPRM1 cDNA (GenBank accession number NM_000914.2) with FLAG tag sequence at N-terminus

Recommended Storage: Liquid nitrogen upon receiving

Propagation Medium: DMEM/F12, 10% FBS, 10 μg/mL puromycin

Stability: Stable after minimum two months continuous growth

Data Sheet

Background: μ opioid receptor (MOR) is a G protein-coupled receptor for β-endorphin. The receptor activation inhibits neurotransmitter release by reducing calcium currents and increasing potassium conductance. MOR mediates positive reinforcement following direct (morphine) or indirect (alcohol, cannabinoids, nicotine) activation. MOR plays a genetic role in the control of gut inflammation. MOR-deficient mice are highly susceptible to colon inflammation, with a 50% mortality rate occurring 3 days after administration of TNBS that induces inflammation. MOR agonists regulate cytokine production and T cell proliferation and might be new therapeutic molecules in inflammatory bowel disease.

Application: Functional assays

Figure 1

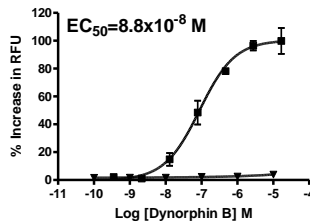


Figure 2

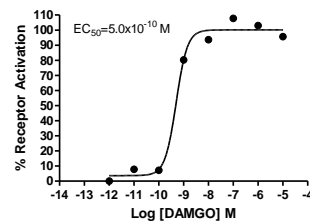


Figure 3

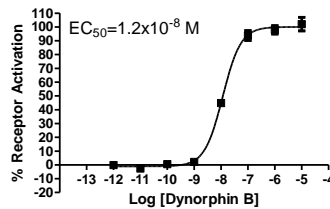


Figure 4

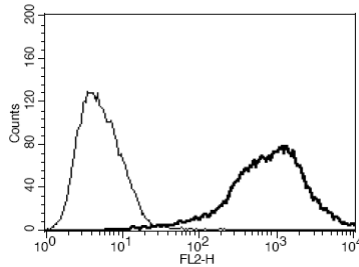


Figure 1. Dose-dependent stimulation of calcium flux upon treatment with ligand, measured with Multiscreen™ Calcium 1.0 No Wash Assay Kit (Multispan MSCA01).

Figure 2. Dose-dependent stimulation of pERK level upon treatment with ligand, monitored with FlexStation. **Figure 3.** 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 4.** Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Thin line: parental cells; thick line: receptor-expressing cells.

References:

Chen *et al.* (1993) Molecular cloning and functional expression of a mu-opioid receptor from rat brain. *Mol Pharmacol* 44:8-12.

Contet *et al.* (2004) Mu opioid receptor: a gateway to drug addiction. *Curr Opin Neurobiol* 14:370-378.

Philippe *et al.* (2003) Anti-inflammatory properties of the mu opioid receptor support its use in the treatment of colon inflammation. *J Clin Invest* 111:1329-1338.

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