MULTISPAN
Assay Experts in GPCRs and Beyond

MULTISCREEN^{TM} MEMBRANE PREPARATION HUMAN RECOMBINANT GPR75 RECEPTOR

Data sheet

PRODUCT INFORMATION

Catalog Number: MC1129

Lot Number: MC1129-021325

Quantity: Available 1mg, 5mg, or 10mg per vial

Protein concentration: 16.78 mg/mL

Packaging Buffer: 20mM Gly-Gly, 1 mM MgCl2, 25mM Sucrose (pH 7.2)

Host cell: HEK293T

Transfection: Expression vector containing full-length human GPR75 cDNA (GenBank accession number AF072693.1) with FLAG tag sequence at N-terminus

Recommended Storage: Liquid nitrogen upon receiving

Background: GPR75 is a class A orphan G protein-coupled receptor expressed in most tissues, but highly expressed in the brain. Studies have suggested that GPR75 is involved in hypertension, metabolic syndrome, obesity, and cancer, and may be a viable therapeutic target for the treatment of these conditions. Binding studies have shown that the eicosanoid 20-hydroxyeicosatetraenoic acid (20-HETE) and the chemokine CCL5 (RANTES) bind to GPR75, but the outcomes of these binding interactions are disputed. GPR75 associates with $G\alpha_q$, and therefore its activation should result in an increase in [cytoplasmic Ca^{2+}] through the phospholipase C / inositol triphosphate pathway.

Application: Functional assays

Figure 1

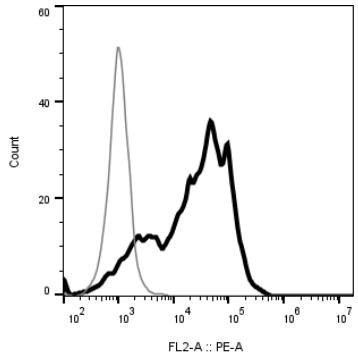

Figure 1. Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Thin line: parental cells; thick line: receptor-expressing cells.

References:

Pascale et al. (2021) Uncovering the signalling, structure and function of the 20-HETE-GPR75 pairing: Identifying the chemokine CCL5 as a negative regulator of GPR75. Br J Pharmacol. 178:3813-3828.

Dashti et al. (2023) G Protein-Coupled Receptor 75 (GPR75) As a Novel Molecule for Targeted Therapy of Cancer and Metabolic Syndrome. Asian Pac J Cancer Prev. 24(5):1817-1825.

Ignatov et al. (2006) RANTES stimulates Ca^{2+} mobilization and inositol triphosphate (IP_3) formation in cells transfected with G protein-coupled receptor 75. Br J Phamacol. 149:490-497.

Garcia et al. (2017) 20-HETE Signals Through G Protein-Coupled Receptor GPR75 (G_q) to Affect Vascular Function and Trigger Hypertension. Circ Res. 120(11):1776-1788.

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