

MULTISCREEN™ β -ARRESTIN STABLE CELL LINE HUMAN RECOMBINANT GPR4 RECEPTOR

PRODUCT INFORMATION

Catalog Number: CA1100

Lot Number: CA1100-081619

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

Freeze Medium: Cellbanker 2

Host cell: HEK293T

Transfection: Expression vector containing full-length human GPR4 cDNA (GenBank Accession Number NM_005282.1) with FLAG tag sequence at N-terminus and ARRB2 cDNA (GenBank Accession Number NM_004313.3)

Recommended Storage: Liquid nitrogen upon receiving

Propagation Medium: DMEM, 10% FBS, 1 μ g/mL puromycin, 250 μ g/mL hygromycin

Stability: Stability in progress

Data Sheet

Background: The GPR4 is family of proton-sensing G protein-coupled receptors (GPCRs) and has recently been identified as novel pH sensors. GPR4 sense extracellular protons through histidine residues of the receptors and are coupled to G-proteins to stimulate intracellular signaling pathways. This receptor is expressed in vascular endothelial and smooth muscle cells, as well in a wide range of tissues such as the lung, kidney, heart, and liver. GPR4, upon activation by acidic pH stimulates the G_s /cyclic adenosine monophosphate (cAMP) signaling pathway in endothelial cells and regulates micro vessel growth.

Application: Functional assays

Figure 1

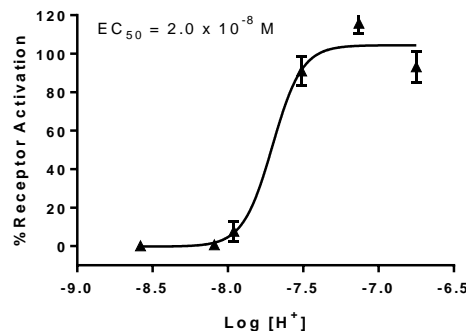


Figure 2

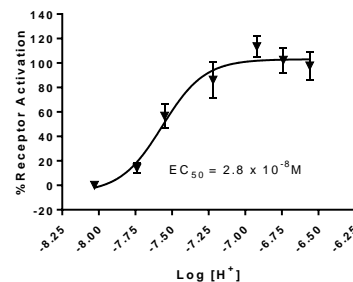


Figure 3

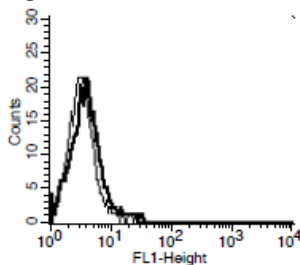


Figure 1. Dose-dependent stimulation from arrestin recruitment upon treatment with pH, measured with MultiScreen™ β -Arrestin Assay Kit (Multispan MSBAK01). **Figure 2.** Dose-dependent increase of intracellular cAMP level upon treatment with pH, measured with MultiScreen™ TR-FRET cAMP 1.0 No Wash Assay 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.

References:

Ludwig, M.-G., Vanek, M., Guerini, D., Gasser, J. A., Jones, C. E., Junker, U., Hofstetter, H., Wolf, R. M., Seuwen, K. Proton-sensing G-protein-coupled receptors. *Nature* 425: 93-98, 2003.

Chen A, Dong L, Leffler NR, Asch AS, Witte ON, et al. (2011) Activation of GPR4 by Acidosis Increases Endothelial Cell Adhesion through the cAMP/Epac Pathway. *PLOS ONE* 6(11): e27586. doi: 10.1371/journal.pone.0027586

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MULTISPAN
Assay Experts in GPCRs and Beyond

Yang LV, Radu CG, Roy M,
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(2007) Vascular abnormalities
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GPR4 that functions as a pH
sensor. Mol Cell Biol 27:
1334-1347

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