

## MULTISCREEN™ STABLE CELL LINE HUMAN RECOMBINANT GPR4 RECEPTOR

### Data Sheet

#### PRODUCT INFORMATION

**Catalog Number:** C1100

**Lot Number:** C1100-030717

**Quantity:** 1 vial ( $2 \times 10^6$ ) frozen cells

**Freeze Medium:** Sigma Freezing Medium (C-6164)

**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

**Recommended Storage:** Liquid nitrogen upon receiving

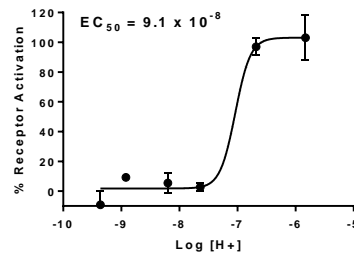
**Propagation Medium:** DMEM, 10% FBS, 1  $\mu$ g/mL puromycin

**Stability:** Stability in progress

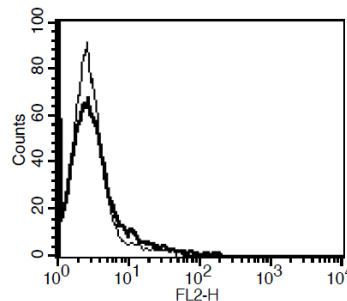
**Background:** The GPR4 is family of proton-sensing G protein-coupled receptors (GPCRs) and has recently been identified as novel pH sensors. GPR4 sense extracellular protons through histidine residues of the receptors and are coupled to G-proteins to stimulate intracellular signaling pathways. This 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 1.** Dose-dependent increase of intracellular cAMP level upon treatment with ligand. **Figure 2.** 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

Yang LV, Radu CG, Roy M, Lee McLaughlin J, et al. (2007) Vascular abnormalities in mice deficient for the G protein-coupled receptor GPR4 that functions as a pH sensor. *Mol Cell Biol* 27: 1334–1347

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