MULTISCREEN™ β-ARRESTIN2 STABLE CELL LINE HUMAN RECOMBINANT GPR91 RECEPTOR

PRODUCT INFORMATION

Catalog Number: CA1141BA2-1

Lot Number: CA1141BA2-1-032822

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

Freeze Medium: Cellbanker 2 (Amsbio 11891)

Host cell: CHO-K1 β-Arrestin2

Transfection: Expression vector containing full-length human GPR91 cDNA (GenBank Accession Number: NM_033050.3) 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/F12, 10% FBS, 10 µg/mL puromycin, 800 µg/mL G418

Stability: In progress

Data sheet

Background: GPR91, also known as SUCNR1, is a G Protein-Coupled Receptor with 339 amino acids. It has been characterized as a receptor for Succinate, a citric acid cycle intermediate. Succinate plays a key role in energy metabolism. Local interstitial accumulation of Succinate has recently been reported to serve as an indicator of ischemic or diabetic organ damage in the brain, liver, and kidney. In diabetes patients, the accumulation of Succinate is detectable in the plasma, and more significantly in the renal tubular fluid and urine. It is therefore considered a potential new biomarker of local tissue damage. It has also been shown that Succinate increases blood pressure in animals. The Succinate-induced hypertensive effect involves the renin-angiotensin system that is shown to be absent in GPR91-deficient mice. There is a possible role for GPR91 in renovascular hypertension, a disease closely linked to atherosclerosis, diabetes and renal failure. In a recombinant system overexpressing GPR91, Succinate was shown to not only stimulate calcium mobilization and inositol phosphate (IP) accumulation through the stimulation of Gαq pathway but also to activate the Erk1/2 MAPK pathway and inhibit forskolin-stimulated cAMP accumulation through Gαi pathway

Application: Functional assays

Figure 1

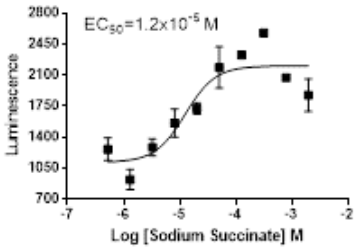
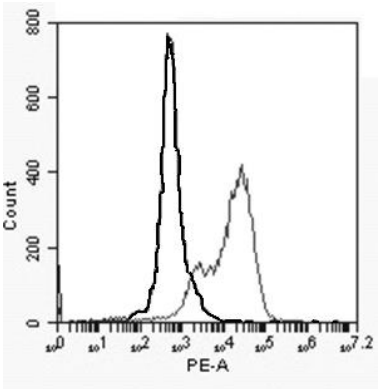


Figure 1. Dose-dependent stimulation from arrestin recruitment upon treatment with ligand, measure with MULTISPAN™ β-Arrestin Assay Kit (Multispan MSBAK01).
Figure 2.. Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Black line: parental cells; gray line: receptor-expressing cells.

Figure 2.



References:

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Saxena, H., Deshpande, D., Tiegs, B., Yan, H., Battafarano, R., Burrows, W., Penn, R. (2012). The GPCR OGR1 (GPR68) mediates diverse signalling and contraction of airway

Saavedra *et al*. (1998) Blockade of brain angiotensin II AT1 receptors ameliorates stress, anxiety, brain inflammation and ischemia: Therapeutic implications. *Psychoneuroendocrinology* 36:1-18.

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