MULTISPAN
Assay Experts in GPCRs and Beyond

MULTISCREEN™ STABLE CELL LINE HUMAN RECOMBINANT MRGD

PRODUCT INFORMATION

Catalog Number: C1366

Lot Number: C1366-082225

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

Freeze Medium: Cellbanker 2

Host cell: HEK293T

Transfection: Expression vector containing full-length human MrgD cDNA (GenBank accession number NM_198923.1) with FLAG tag sequence at N-terminus

Recommended Storage: Liquid nitrogen upon receiving

Propagation Medium: DMEM, 10% FBS, 1 µg/mL puromycin

Stability: In progress

Data Sheet

Background: MRGD (MRGPRD) is a Class A Mas-related G protein-coupled receptor predominantly expressed in subsets of peripheral sensory neurons, where it contributes to the detection of noxious and pruritic stimuli, including β-alanine-evoked itch and pain-related signaling. Experimental studies show that MRGPRD responds to endogenous small-molecule agonists such as β-alanine in functional screens, engaging G protein–mediated pathways to modulate intracellular Ca^{2+} and sensory neuron excitability. Its expression in dorsal root ganglia and mechanistic linkage to somatosensory processes underscores its relevance as a target in pain, itch, and inflammatory research.

Application: Functional assays

Figure 1

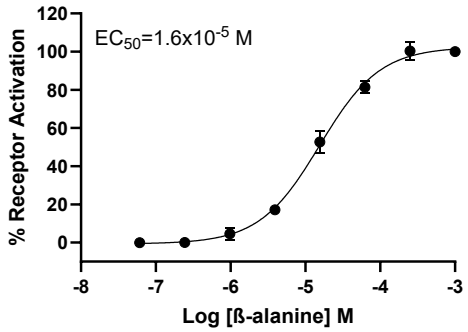

Figure 2

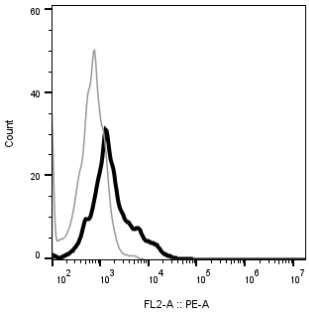

Figure 1. Dose-dependent stimulation of calcium flux upon treatment with ligand, measured with MULTISCREEN™ Calcium 1.0 No Wash Assay Kit (Multispan MSCA01). **Figure 2.** Receptor expression on cell surface measured by flow cytometry (FACS) using an anti-FLAG antibody. Thin line: parental cells; thick line: receptor-expressing cells.

References:

Suzuki S, Iida M, Hiroaki Y, et al. (2022) Structural insight into the activation mechanism of MrgD with heterotrimeric Gi-protein revealed by cryo-EM. Commun Biol 5:707.

Uno M, Nishimura S, Fukuchi K, et al. (2012) Identification of physiologically active substances as novel ligands for MRGPRD. J Biomed Biotechnol 2012:816159.

Wang H, Zylka MJ. (2009) Mrgprd-expressing polymodal nociceptive neurons innervate most known classes of substantia gelatinosa neurons. J Neurosci 29:13202-13209.

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