SANTA CRUZ BIOTECHNOLOGY, INC.

pan MRGX (F-1): sc-393652



BACKGROUND

Mas-related G protein-coupled receptor member X1 (MRGX) is a sensory neuron-specific G protein-coupled receptor that is involved in the function of nociceptive neurons. This integral membrane protein may also regulate nociceptor development and/or the sensation or modulation of pain. There are four members (MRGX1-4) in the human MRGX familly. MRGX1 and MRGX2 receptors stimulate both $G_{\alpha q}$ - and $G_{\alpha i}$ -regulated pathways, while MRGX3 and MRGX4 receptors mainly activate $G_{\alpha q}$ -regulated pathways. $G_{\alpha q}$ proteins are involved in the calcium-signaling pathway downstream of the MRGX receptors. MRGX receptors are unique in that they are expressed in a subset of small dorsal root and trigeminal sensory neurons.

REFERENCES

- 1. Dong, X., et al. 2001. A diverse family of GPCRs expressed in specific subsets of nociceptive sensory neurons. Cell 106: 619-632.
- 2. Han, S.K., et al. 2002. Orphan G protein-coupled receptors MrgA1 and MrgC11 are distinctively activated by RF-amide-related peptides through the G_{α g/11} pathway. Proc. Natl. Acad. Sci. USA 99: 14740-14745.
- Lembo, P.M., et al. 2002. Proenkephalin A gene products activate a new family of sensory neuron-specific GPCRs. Nat. Neurosci. 5: 201-209.
- 4. Takeda, S., et al. 2002. Identification of G protein-coupled receptor genes from the human genome sequence. FEBS Lett. 520: 97-101.
- Robas, N., et al. 2003. MRGX2 is a high potency cortistatin receptor expressed in dorsal root ganglion. J. Biol. Chem. 278: 44400-44404.
- Chen, H. and Ikeda, S.R. 2004. Modulation of ion channels and synaptic transmission by a human sensory neuron-specific G protein-coupled receptor, SNSR4/MRGX1, heterologously expressed in cultured rat neurons. J. Neurosci. 24: 5044-5053.
- Nothacker, H.P., et al. 2005. Proadrenomedullin N-terminal peptide and cortistatin activation of MRGX2 receptor is based on a common structural motif. Eur. J. Pharmacol. 519: 191-193.
- Zhang, L., et al. 2005. Cloning and expression of MRG receptors in macaque, mouse, and human. Brain Res. Mol. Brain Res. 133: 187-197.
- Burstein, E.S., et al. 2006. Characterization of the Mas-related gene family: structural and functional conservation of human and rhesus MrgX receptors. Br. J. Pharmacol. 147: 73-82.

SOURCE

pan MRGX (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 114-135 within a cytoplasmic domain of MRGX1 of human origin.

PRODUCT

Each vial contains 200 μg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393652 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

pan MRGX (F-1) is recommended for detection of MRGX1, MRGX2, MRGX3 and MRGX4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-lgG κ BP-HRP: sc-516102 or m-lgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-lgG κ BP-FITC: sc-516140 or m-lgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA





pan MRGX (F-1): sc-393652. Western blot analysis of

pan MRGX expression in HeLa (A), Jurkat (B) and

MCF7 (C) whole cell lysates

pan MRGX (F-1): sc-393652. Western blot analysis of pan MRGX expression in HeLa (A), Neuro-2A (B), 3T3-L1 (C) and C6 (D) whole cell lysates.

STORAGE

Store at 4° C, **D0 NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.