



pan MRGX (G-14): sc-54505

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 family. 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

- Dong, X., Han, S., Zylka, M.J., Simon, M.I. and Anderson, D.J. 2001. A diverse family of GPCRs expressed in specific subsets of nociceptive sensory neurons. *Cell* 106: 619-632.
- Han, S.K., Dong, X., Hwang, J.I., Zylka, M.J., Anderson, D.J. and Simon, M.I. 2002. Orphan G protein-coupled receptors MrgA1 and MrgC11 are distinctively activated by RF-amide-related peptides through the $G_{\alpha q/11}$ pathway. *Proc. Natl. Acad. of Sci. USA* 99: 14740-14745.
- Lembo, P.M., Grazzini, E., Groblewski, T., O'Donnell, D., Roy, M.O., Zhang, J., Hoffert, C., Cao, J., Schmidt, R., Pelletier, M., Labarre, M., Gosselin, M., Fortin, Y., Banville, D., Shen, S.H., Ström, P., Payza, K., Dray, A., Walker, P. and Ahmad, S. 2002. Proenkephalin A gene products activate a new family of sensory neuron-specific GPCRs. *Nat. Neurosci.* 5: 201-209.
- Takeda, S., Kadowaki, S., Haga, T., Takaesu, H. and Mitaku, S. 2002. Identification of G protein-coupled receptor genes from the human genome sequence. *FEBS Lett.* 520: 97-101.
- Robas, N., Mead, E. and Fidock, M. 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., Wang, Z., Zeng, H., Mahata, S.K., O'Connor, D.T. and Civelli, O. 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., Taylor, N., Xie, Y., Ford, R., Johnson, J., Paulsen, J.E. and Bates, B. 2005. Cloning and expression of MRG receptors in macaque, mouse, and human. *Brain Res. Mol. Brain Res.* 133: 187-197.
- Burstein, E.S., Ott, T.R., Feddock, M., Ma, J.N., Fuhs, S., Wong, S., Schiffer, H.H., Brann, M.R. and Nash, N.R. 2006. Characterization of the Mas-related gene family: structural and functional conservation of human and rhesus MRGX receptors. *Br. J. Clin. Pharmacol.* 147: 73-82.

RESEARCH USE

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

SOURCE

pan MRGX (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of MRGX1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54505 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

pan MRGX (G-14) is recommended for detection of MRGX1, MRGX3 and MRGX4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); may cross-react with MRGX2.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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