



# mGluR-5 (1B3): sc-293442

## BACKGROUND

The mGluR (metabotropic glutamate receptor) proteins are members of the G protein-coupled receptor family and are functionally and pharmacologically distinct from the GluR (ionotropic glutamate receptor) proteins. The eight currently known mGluR proteins are mediated by two G proteins with opposing regulation of adenylate cyclase pathways. The activities of mGluR-1 and mGluR-5 are mediated by a G protein that activates a phosphatidylinositol-calcium second messenger system and generates a calcium-activated chloride current. The remainder of the eight subtypes of mGluR have an activity mediated by a G protein that inhibits adenylate cyclase activity. mGluR-5, which can interact with SIAH1, RYR1, RYR2, ITPR1, SHANK1, SHANK3 and GRASP, acts as a receptor for glutamate. The PPXXf motif of mGluR-5 binds to HOM1, HOM2 and HOM3.

## REFERENCES

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2. Minakami, R., et al. 1994. Molecular cloning and the functional expression of two isoforms of human metabotropic glutamate receptor subtype 5. *Biochem. Biophys. Res. Commun.* 199: 1136-1143.
3. Yang, L., et al. 2004. A novel  $Ca^{2+}$ -independent signaling pathway to extracellular signal-regulated protein kinase by coactivation of NMDA receptors and metabotropic glutamate receptor 5 in neurons. *J. Neurosci.* 24: 10846-10857.
4. Molina-Hernández, M., et al. 2006. Antidepressant-like and anxiolytic-like actions of the mGluR-5 receptor antagonist MTEP, microinjected into lateral septal nuclei of male Wistar rats. *Prog. Neuropsychopharmacol. Biol. Psychiatry* 30: 1129-1135.
5. Sen, M. and Gleason, E. 2006. Immunolocalization of metabotropic glutamate receptors 1 and 5 in the synaptic layers of the chicken retina. *Vis. Neurosci.* 23: 221-231.
6. Ametamey, S.M., et al. 2006. Radiosynthesis and preclinical evaluation of  $^{11}C$ -ABP688 as a probe for imaging the metabotropic glutamate receptor subtype 5. *J. Nucl. Med.* 47: 698-705.
7. Koros, E., et al. 2007. The selective mGlu5 receptor antagonist MTEP, similar to NMDA receptor antagonists, induces social isolation in rats. *Neuropsychopharmacology* 32: 562-576.
8. Belozertseva, I.V., et al. 2007. Antidepressant-like effects of mGluR1 and mGluR5 antagonists in the rat forced swim and the mouse tail suspension tests. *Eur. Neuropsychopharmacol.* 17: 172-179.

## CHROMOSOMAL LOCATION

Genetic locus: GRM5 (human) mapping to 11q14.2; Grm5 (mouse) mapping to 7 E1.

## SOURCE

mGluR-5 (1B3) is a mouse monoclonal antibody raised against amino acids 419-518 representing partial length mGluR-5 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

mGluR-5 (1B3) is recommended for detection of mGluR-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for mGluR-5 siRNA (h): sc-61034, mGluR-5 siRNA (m): sc-61035, mGluR-5 shRNA Plasmid (h): sc-61034-SH, mGluR-5 shRNA Plasmid (m): sc-61035-SH, mGluR-5 shRNA (h) Lentiviral Particles: sc-61034-V and mGluR-5 shRNA (m) Lentiviral Particles: sc-61035-V.

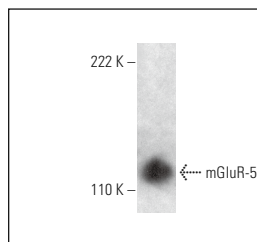
Molecular Weight of mGluR-5: 145 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232.

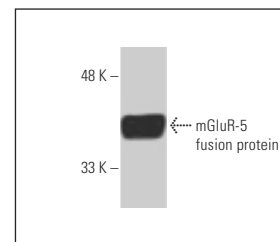
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



mGluR-5 (1B3): sc-293442. Western blot analysis of mGluR-5 expression in MDA-MB-231 whole cell lysate.



mGluR-5 (1B3): sc-293442. Western blot analysis of human recombinant mGluR-5 fusion protein.

## SELECT PRODUCT CITATIONS

1. Gao, Y., et al. 2023.  $\beta$ 2-microglobulin functions as an endogenous NMDAR antagonist to impair synaptic function. *Cell* 186: 1026-1038.e20.

## STORAGE

Store at 4° C, \*\*DO 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.