SANTA CRUZ BIOTECHNOLOGY, INC.

GluR-δ2 (D-9): sc-393437

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glutamate receptors mediate most excitatory neurotransmission in the brain and play an important role in neural plasticity, neural development and neuro-degeneration. Ionotropic glutamate receptors are categorized into NMDA receptors and kainate/AMPA receptors, both of which contain glutamate-gated, cation-specific ion channels. Kainate/AMPA receptors co-localize with NMDA receptors in many synapses and consist of seven structurally related subunits designated GluR-1 to -7 as well as GluR-δ2. The kainate/AMPA receptors are primarily responsible for the fast excitatory neuro-transmission by glutamate whereas the NMDA receptors are functionally characterized by a slow kinetic and a high permeability for Ca^{2+} ions. The NMDA receptors consist of five subunits: ε 1, 2, 3, 4 and one ζ subunit. The ζ subunit is expressed throughout the brainstem whereas the four ε subunits display limited distribution. In mice, mutations in the gene encoding GluR-δ2 (GRID2) cause the Lurcher phenotype. The gene encoding human GluR-δ2 maps to chromosome 4q22.1.

REFERENCES

1. Choi, D.W., et al. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. Annu. Rev. Neurosci. 13: 171-182.
2. Nakanishi, S. 1992. Molecular diversity of glutamate receptors and implications for brain function. Science 258: 597-603.
3. Stern, P., et al. 1992. Fast and slow components of unitary EPSCs on stellate cells elicited by focal stimulation in slices of rat visual cortex. J. Physiol. 449: 247-278.

CHROMOSOMAL LOCATION

Genetic locus: GRID2 (human) mapping to 4q22.1; Grid2 (mouse) mapping to 6 C1.

SOURCE

GluR-δ2 (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 972-1005 at the C-terminus of GluR-δ2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GluR-δ2 (D-9) is available conjugated to agarose (sc-393437 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393437 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393437 PE), fluorescein (sc-393437 FITC), Alexa Fluor® 488 (sc-393437 AF488), Alexa Fluor® 546 (sc-393437 AF546), Alexa Fluor® 594 (sc-393437 AF594) or Alexa Fluor® 647 (sc-393437 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393437 AF680) or Alexa Fluor® 790 (sc-393437 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393437 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

GluR-δ2 (D-9) is recommended for detection of GluR-δ2 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).

Suitable for use as control antibody for GluR-δ2 siRNA (h): sc-42491, GluR-δ2 siRNA (m): sc-42492, GluR-δ2 shRNA Plasmid (h): sc-42491-SH, GluR-δ2 shRNA Plasmid (m): sc-42492-SH, GluR-δ2 shRNA (h) Lentiviral Particles: sc-42491-V and GluR-δ2 shRNA (m) Lentiviral Particles: sc-42492-V.

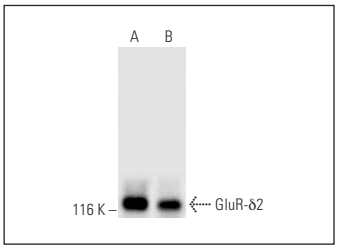
Molecular Weight of GluR-δ2: 110 kDa.

Positive Controls: rat cerebellum extract: sc-2398 or mouse brain extract: sc-2235.

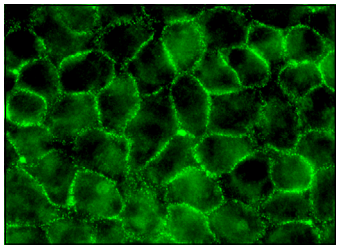
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



GluR-δ2 (D-9): sc-393437. Western blot analysis of GluR-δ2 expression in rat cerebellum (**A**) and mouse brain (**B**) tissue extracts.



GluR-δ2 (D-9): sc-393437. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. zur Nedden, S., et al. 2018. Protein kinase N1 critically regulates cerebellar development and long-term function. J. Clin. Invest. 128: 2076-2088.

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.