SANTA CRUZ BIOTECHNOLOGY, INC.

GluR-1 (E-6): sc-13152

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 neurodegeneration. 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 are co-localized with NMDA receptors in many synapses and consist of seven structurally related subunits designated GluR-1 to -7. 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: epsilion 1, 2, 3, 4 and one ζ subunit. The ζ subunit is expressed throughout the brainstem whereas the four epsilon subunits display limited distribution.

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. 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: GRIA1 (human) mapping to 5q33.2; Gria1 (mouse) mapping to 11 B1.3.

SOURCE

GluR-1 (E-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 21-51 near the N-terminus of GluR-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GluR-1 (E-6) is available conjugated to agarose (sc-13152 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13152 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13152 PE), fluorescein (sc-13152 FITC), Alexa Fluor® 488 (sc-13152 AF488), Alexa Fluor® 546 (sc-13152 AF546), Alexa Fluor® 594 (sc-13152 AF594) or Alexa Fluor® 647 (sc-13152 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13152 AF680) or Alexa Fluor® 790 (sc-13152 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-13152 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

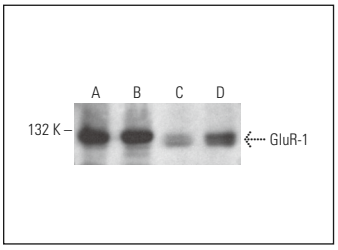
GluR-1 (E-6) is recommended for detection of GluR-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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-1 siRNA (h): sc-35485, GluR-1 siRNA (m): sc-35486, GluR-1 siRNA (r): sc-270586, GluR-1 shRNA Plasmid (h): sc-35485-SH, GluR-1 shRNA Plasmid (m): sc-35486-SH, GluR-1 shRNA Plasmid (r): sc-270586-SH, GluR-1 shRNA (h) Lentiviral Particles: sc-35485-V, GluR-1 shRNA (m) Lentiviral Particles: sc-35486-V and GluR-1 shRNA (r) Lentiviral Particles: sc-270586-V.

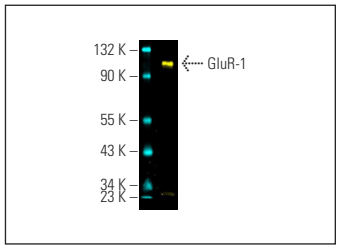
Molecular Weight of GluR-1: 106 kDa.

Positive Controls: rat cerebellum extract: sc-2398, rat brain extract: sc-2392 or human cerebellum extract: sc-516706.

DATA



GluR-1 (E-6): sc-13152. Western blot analysis of GluR-1 expression in rat brain (**A**), rat cerebellum (**B**), human brain (**C**) and human cerebellum (**D**) tissue extracts.



GluR-1 (E-6) Alexa Fluor® 488: sc-13152 AF488. Direct fluorescent western blot analysis of GluR-1 expression in rat cerebellum tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 647: sc-516791.

SELECT PRODUCT CITATIONS

1. Gu, Z., et al. 2005. Regulation of NMDA receptors by neuregulin signaling in prefrontal cortex. J. Neurosci. 25: 4974-4984.
2. Leal, R.B., et al. 2020. Amygdala levels of the GluA1 subunit of glutamate receptors and its phosphorylation state at serine 845 in the anterior hippocampus are biomarkers of ictal fear but not anxiety. Mol. Psychiatry 25: 655-665.
3. Perna, A., et al. 2021. Revealing NOTCH-dependencies in synaptic targets associated with Alzheimer's disease. Mol. Cell. Neurosci. 115: 103657.
4. Oliva, C.A., et al. 2023. Age-dependent behavioral and synaptic dysfunction impairment are improved with long-term andrographolide administration in long-lived female degus *(Octodon degus).* Int. J. Mol. Sci. 24: 1105.

RESEARCH USE

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