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Customer Service: 1-800 786 1236  
Technical Service: 214 387 8105  
Fax: 214 387 0870  
[Info@fabgennix.com](mailto:Info@fabgennix.com)  
[www.fabgennix.com](http://www.fabgennix.com)

### Antibodies to Ionotropic Glutamate Receptor Type 5

Anti-Glutamate Receptor Type 5 (GLUR5) antibodies (Cat # GLUR5-501AP, FITC-GLUR5, P-GLUR5, PC-GLUR5)

Accession #: NP\_666184 and Alternate Nomenclature: EAA3; EEA3; GLR5; GRIK1.

Ionotropic Glutamate Receptor Type 5 belongs to the kainate receptors subunit of the ionotropic glutamate receptors. It is located at human chromosome 21q22.11 (1). The ionotropic glutamate receptors form the ion channel pore that activates when glutamate binds to the receptor, and kainate receptors play a major role in long and short term synaptic plasticity (2). Kainate receptors also play a role in both pre and post-synaptic neurons. Presynaptic kainate receptors are involved in inhibitory neurotransmission by modulating release of GABA through a presynaptic mechanism. Postsynaptic kainate receptors are involved in excitatory neurotransmission (3). Kainate receptors have been implicated in the induction of seizure behavior in the hippocampus. The ion channel formed by these receptors is permeable to sodium and potassium ions (4).

Down-regulation of GLUR5 during the human prefrontal cortical development has been associated with the development of schizophrenia (5). Allelic variants of GLUR5 have been suggested to contribute to the development of juvenile absence epilepsy (1). Variation in the 3' portion of the gene encoding the GLUR5 receptor has been shown to contribute to the risk of alcohol dependency (6). GLUR5 is highly expressed in the cerebellum and the superchiasmatic nuclei (SCN) of the hypothalamus. GLUR5 is approximately an 117kDa protein (934 amino acids).

The GLUR5-selective antibodies were generated against antigenic sequence near the N-terminal end of the protein. The antibodies to GLUR5 are affinity purified over immobilized antigen based chromatography, and the purified immunoglobulins are stabilized in antibody stabilization buffer. FabGennix Int. Inc. will also provide limited quantities of antigenic blocking peptides for GLUR5 antibodies. FabGennix International Inc. also carries antibodies related to neurodegenerative disorders, for a complete listing please visit [www.Fabgennix.com](http://www.Fabgennix.com). FabGennix Inc. will also conjugate antibodies with fluorescent probes upon request at a reasonable cost.

Catalog #	Product Description	Host Species	Cross Reactivity	Quantity	Price
GLUR5-501 AP	GLUR5 antibodies	Rabbit	R, m, other n.d	100 ug	235
FITC-GLUR5	FITC-conjugated GLUR5 antibodies	Rabbit	R, m, other n.d	100 ug	285
P-GLUR5	Antigenic blocking peptide	n/a	n/a	250 ug	115
PC-GLUR5	WB positive control for GLUR5-101AP	n/a	n/a	for 5 applications	165

R = rat; M = mouse; H = humans; R = rabbit \* Actual volume is 103-110 µl; WB, Western Blot analyses; IMM, Immunoprecipitation; IHC, Immunohistochemistry, n.d, not determine.

**Immunogen:** Synthetic peptides corresponding to unique epitope on GluR5. The GluR5 peptide was covalently modified post-synthetically covalently modified to achieve desired antigenicity.

**Concentration:** GLUR5-101AP antibody has Ig concentration ranging from 0.68-0.70mg/ml in antibody stabilization buffer.

**Applications:** For ELISA/Dot blot assay the antibody GLUR5-101AP can be diluted to 1:20,000 in diluObuffer (Cat # FGI-1963). Western blot applications, starting dilution of 1:500 is recommended. Other applications and species cross reactivity for this antibody is yet to be determined.

**Reactivity:** The antibody GLUR5-101AP labels a band of around 110kDa in PC-GluR5 samples.

**Protocols:** Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody can be obtained by calling technical service hotline. The general information on this antibody is supplied with the product. FabGennix Inc. recommends investigators to optimize conditions for optimal usage of this product.

**Form/Storage:** The antiserum is supplied in antibody stabilization buffer with preservatives. For long-term storage of antibody, store at -20°C FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi-use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45µm filter after every use for long-term storage.

**Notes:** Briefly centrifuge to collect liquid before opening the vial, heat the PC-GLUR5 tube in 90°C water bath for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher molecular weight immunoreactive bands.

**Note:** Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripObuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating is required.



Western Blot of GluR5. The GluR5 antibody (Cat # GluR5-501AP) at 1:500 in diluObuffer was probed with PC-GluR5 sample. MW of GluR5 is approximately 117kDa.

#### References:

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- Kranzler HR, Gelernter J, Anton RF, Arias AJ, Herman A, Zhao H, Burian L, Covault J. Association of markers in the 3' region of the GLUR5 kainate receptor subunit gene to alcohol dependency. Alcohol Clin Exp Res. 2009 May; 33(5): 925-930.

\* For users who may require large amounts of GLUR5-101AP, please enquire about bulk material discounts. This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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5850 Town and Country Blvd. Suite 301. Frisco, TX 75034

Customer service: 1800 786 1236; Technical Support: 214 387 8105