ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Human glutamate inhibitory protein factor (IPF) Antibodies

Cat # IPF14-P	Human IPF control/blocking peptide	**SIZE**: 100 ug
Cat # IPF14-S	Rabbit Anti-Human IPF antiserum	**SIZE**: 100 ul
Cat # IPF14-A	Rabbit Anti-Human IPF IgG, aff pure	**SIZE**: 100 ug

Glutamate is the main excitatory neurotransmitter in the brain. To date five glutamate Transporters have been cloned: **GLAST (EAAT1), GLT1 (EAAT2), EAAC1 (EAAT3), EAAT4, and EAAT5**. These transporters are believed to be critical in reducing potentially toxic extracellular concentration of glutamate by rapid uptake into nerve terminals and glial cells. Synaptic vesicles in the nerve terminals play a critical role in neurotransmission. Glutamergic neurotransmission occurs through an exocytotic process involving the interaction of glutamate containing synaptic vesicles with the plasma membranes of the presynaptic ending. An electro-chemical proton gradient generated by a V-type H+-ATPase (vacuolar-type proton-translocating ATPase) in the synaptic vesicles membrane provides the driving force for glutamate uptake. Recently a protein, termed **inhibitory protein factor (IPF)**, has been isolated from brain cytosol that inhibits glutamate and GABA uptake into synaptic vesicles (IC50 ~25 nM). IPF does not inhibit ATP-independent uptake, norepinephrine uptake into chromaffin vesicles, and Na-dependent glutamate uptake into synaptosomes. IPF refers to a three distinct proteins with ~mol wt of 138kDa (IPF-α), 135 kDa (IPF-β), and 132 kDa (IPF-γ). IPF-α is derived from a ubiquitous, non-erythroid brain spectrin called **α-Fodrin**, a well-characterized protein previously implicated in such diverse activities as exocytosis/endocytosis, apoptosis, and NMDA-receptor activation. However, α-Fodrin itself has no effect on glutamate uptake. The N-terminal 1-20 aa of IPF-α, IPF-β, and IPF-γ are identical with 26-45 aa of α-Fodrin (mol wt ~240 kDa). Therefore, it appears that some identified protease(s) may generate IPF-α from α-Fodrin t

Source of Antigen and Antibodies

Antigen	10-aa peptide of human IPF **Designated (IPF14-P or control peptide).** **Epitope location** ~ N-terminus,
Ab Host/type	Rabbit, polyclonal antiserum unpurified (Cat # IPF14-S), Aff pure IgG1 (**cat #IPF14-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	**# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control**

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting 1:1K-5K for antiserum and 1-10 ug/ml for aff pure IgG using Chemiluminescence technique. IPFs are approx. ~135-140 kDa.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:1-10K for antiserum serum and 0.5-1 ug/ml for affinity pure IgG).

Histochemistry & Immunofluorescence: not tested

Specificity & Cross-reactivity

The human IPF14-P control peptide shows 100% sequence homology with rat and 90% with chicken Spectrin alpha chain. Its sequence is derived from the N-terminal sequencing of the purified IPF (1). Antibody crossreactivity in various species is not established. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at:the web site).

General References: (1) Ozkan ED (1997) PNAS 94, 4317-4142; Tamura Y et al (2001) J. Neurochem. 76, 1153-1164; moon RT et al (1990) JBC 265, 4427; McMahon AP et al (1987) Biochem. Soc,. Trans. 15, 804; Hong WJ et al (1989) JBC 264, 12758.

**This product is for In vitro research use only.*

Related material available from ADI

Anti-GLAST, EAAC1, GLT1, EAAt4, EAAT5, GTRAP41, GTRAP48, VGLUT1/BNPI, VGLUT-2/DNPI & GABA Transporters (GAT1-3)

IPF14-S-A-P 71226S

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