

Product Specification Sheet

Nicastrin Antibodies

<input type="checkbox"/> Cat. # NICN11-P	Human Nicastrin Control/blocking Peptide	SIZE: 100 ug
<input type="checkbox"/> Cat. # NICN11-S	Rabbit Anti-Human Nicastrin antiserum #1	SIZE: 100 ul
<input type="checkbox"/> Cat. # NICN11-A	Rabbit Anti-Human Nicastrin IgG #1 (aff pure)	SIZE: 100 ug

β -amyloid (**A β**) deposition in the brain is the hallmark of Alzheimer's Disease (**AD**). To initiate A β formation, **β -secretase** cleaves APP at the N-terminus of A β to release APPs β (~100 kDa soluble NT-fragment), and C99, a 12-kDa CT membrane fragment. Alternatively, **α -secretase** cleaves within the A β to prevent the formation of A β . Cleavage by α -secretase produces a soluble N-terminal fragment, APPs α , and a 10-kDa membrane C-terminal fragment, C83. Both C99 and C83 can be further cleaved by **γ -secretase** releasing A β and a nonpathogenic p3 peptide, respectively. Both **Presenilins** and a newly discovered protein, **Nicastrin** are required for this activity. Nicastrin is an essential subunit of the gamma-secretase complex, an endoprotease complex that catalyzes the intramembrane cleavage of integral membrane proteins such as Notch receptors and APP (beta-amyloid precursor protein). It probably represents a stabilizing cofactor required for the assembly of the gamma-secretase complex. Missense mutations in a conserved hydrophilic domain of nicastrin increase A β 42 and A β 40 peptide production, whereas deletions in this domain inhibit A β production.

Human nicastrin gene (chromosome 1) encodes a transmembrane protein of 709 aa (mouse 708 aa). It has a putative signal peptide; a long N-terminal hydrophilic domain containing glycosylation, N-myristoylation and phosphorylation motifs; a ~20-residue hydrophobic putative transmembrane domain; and a short hydrophilic carboxy terminus of 20 residues. Human nicastrin has 89% homology with the mouse and 30% with Drosophila's protein.

Source of Antigen and Antibodies

Antigen	19-aa peptide from human nicastrin-(1) ; Designation (#NICN11-P, control or blocking peptide) conjugated to KLH; Epitope location ~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#NICN11-S) and IgG, purified over antigen-agarose (Cat # NICN11-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 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 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 -20OC and powder at 4oC or -20oC..

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

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). Human nicastrin ~80 kDa.

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry: Not tested. We recommend the use of 2-20 ug/ml of affinity pure antibody.

Specificity & Cross-reactivity

Human NICN11-P antigenic sequence is 94% conserved in mouse and rat. However, no significantly sequence homology was detected with the C. elegans or drosophila protein. 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: Yu G et al (2000) Nature 407, 48-54; Schenk D et al (2000) Nature 407, 34-35.

*This product is for In vitro research use only.

Related material available from ADI

Ant-Beta amyloid 1-40, 1-42, APP, Parkin, Synucleins (α , β , γ), Presenilins 1, 2, beta secretase,

NICN11-S-A-P

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