ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Neprilysin-Like Protease-α (NEPL-α) Antibodies

Cat # NEPLA11-S	Rabbit Anti-Mouse Neprilysin-alpha (NEPL-alpha) antiserum	**SIZE**: 100 ul
Cat # NEPLA11-A	Rabbit Anti-Mouse Neprilysin-alpha (NEPL-alpha) IgG (aff pure)	**SIZE**: 100 ug
Cat # NEPLA11-P	Mouse Neprilysin-alpha (NEPL-alpha) Control/blocking peptide	**SIZE**: 100 ug

The amyloid β-peptide (**Aβ**) of 39 to 43 amino acids is constitutively produced in brain upon proteolysis of the β-amylod precursor protein (**APP**) and exists as fragments of 40, 42 and 43 amino acids ($A\beta_{40}$, $A\beta_{42}$, $A\beta_{43}$). In the young and healthy humans, the secreted Aβ is rapidly catabolized before it can be deposited in the brain. However, upon aging or the onset of familial **Alzheimer's Disease**, alterations in either synthesis or degradation/clearance of Aβ may contribute to amyloid depositions in the brain. Aβ carries cleavage sites for a number of *in vivo* and *in vitro* proteases like cathepsin D and M-13 metalloproteases. The M-13 family comprises several zinc-dependent metalloproteases like **DINE**, **PHEX**, **KELL**, **ECE**, **XCE**, **neprilysin** (**NEP**) and neprilysin-like proteases (**NEPLs**). The NEPLs (**NEPL-α, NEPL-β, NEPL-γ**) arise from the alternative splicing of a single NEPL gene and are zinc dependent metalloproteases with ~54 % homology to NEP.

NEPL-α (variously called SEP^A/splice 1) is a type II trans-membrane metallopeptidase (~110 kDa) containing a highly glycosylated polypeptide chain of 742aa with a HEXXH zinc-binding consensus, cytoplasmic tail and a large extracellular catalytic domain. NPL-α lacks a 23aa sequence present in N-terminal of NEPL-β. In contrast to NEP and NEPL-β which exist in membrane-bound as well as soluble forms, NEPL-α is expressed as membrane-bound form only. In comparison to NEP, the NEPL-α has lower affinity and/or smaller V_{max} for Aβ and cannot proteolyze cell secreted $A\beta_{40}$ or $A\beta_{42}$ *in vivo*. Unlike NEP, NEPL-α is not a major *in vivo* peptidase for degrading endogenous Aβ however, it might degrade Aβ in Alzheimer patients where Aβ is accumulated in excess and an Aβ-degradative pathway, alternative to NEP, exists.

Source of Antigen and Antibodies

Antigen	17-aa peptide from (gene accession # NP038811.1) Mouse **Neprilysin-Like Protease-α (NEPL-α) (NEPLA11-P, control/blocking peptide**); conjugated to KLH; Epitope location ~ Cytoplasmic, ~N-terminus
Ab Host/type	Rabbit, Polyclonal aff pure IgG (cat # NEPLA11-A) purified over the antigen column
Ab Format	Cat # 20320, goat anti-rabbit IgG-HRP (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)
☐ 100 ul ☐ Solution ☐ Lyophilized powder
Supplied in Buffer: 0.1% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
☐ 100 ug/100 ul ☐ Solution ☐ Lyophilized powder
Supplied in **Buffer**: PBS + 0.1% BSA
Reconstitute powder in PBS at 1 mg/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 vials for less than a week at 4°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 neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). NOT TESTED

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

Histochemistry & Immunofluorescence: not tested. We recommend the use of affinity pure antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

The NEPLA11-P peptide is 100% conserved in mouse NEPL-α, β and γ. No significant sequence homology of NEPLA11-P is seen with other proteins. Antibody reactivity in various species is not known. The NEPLA11-P 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.

References

(1) Iwata et al. (2001) Science 292, 1550; Ikeda et al. (2000) J. Biol. Chem. 274, 32469; Boileau et al. (2001) Biochem. J 355, 107; Kiryu-Seo et al. (2000) PNAS 97, 4345.

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

Related materials available from ADI
Antibodies: NEP11-S (NEP), NEPLB21-S (NEPL-β), NEPLG31-S (NEPL-γ), DINE11-S (DINE) and PHEX11-S (PHEX).

NEPLA11-S-A-P rev. 210112 AC

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