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### Certificate of Analysis

**Product:** Affinity Purified anti-Beta Amyloid (Rabbit)

**Code:** 600-401-253

**Lot #:** 16636

**Size:** 100 µg

**Physical State:** Liquid (sterile filtered)

**Antibody Concentration:** 1.0 mg/ml (by UV absorbance at 280 nm)

**Buffer:** 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

**Stabilizer:** None

**Preservative:** 0.01% (w/v) Sodium Azide

**Storage Conditions:** Store vial at -20° C. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Dilute only prior to immediate use. Expiration date is one (1) year from date of opening.

**Background Information:** Beta amyloid, often abbreviated as A-beta, is a protein that builds up in the brains of persons with Alzheimer's disease, collecting in clumps called plaques or senile plaques. While some researchers question whether beta amyloid is the cause of the dementia, most agree that it is involved in the disruption of thinking that is a hallmark of the disease. In some cases of familial Alzheimer's disease, mutations in genes for the proteins called the presenilins lead to increased production of amyloid. Researchers have been looking at how presenilin-1 in particular contributes to the excess buildup of beta amyloid. Presenilin-1 apparently acts to increase the activity of gamma-secretase, an enzyme that changes a normal protein (amyloid precursor protein or APP) into beta amyloid itself. Furthermore, presenilin-1 might be gamma-secretase.

**Application Note(s):** Affinity purified anti-beta amyloid detects beta amyloid in ELISA and western blot using whole tissue extracts from mouse brain. This antibody may work in fixed, paraffin embedded tissue, but has not yet been tested. In general, we recommend the use of 4% PFA for paraffin embedded tissues and 10% formalin for frozen tissue for fixation.

**Recommended Dilutions :** This product was assayed by immunoblot and was found to be reactive at 0.5-1.0 µg/ml. For ELISA a dilution of 1:10,000 is suggested for detection of beta amyloid protein. Use Rockland Immunochemical's HRP Anti-RABBIT IgG (H&L) (DONKEY) MX Bv Ch Gt GP Hs Hu Ms Rt & Sh (code 611-703-127) as a secondary antibody for detection. The researcher should determine optimal titers for other applications. The optimal titer will vary depending on the amount of antigen present, the application and the fixation method. The best dilution will result in the highest signal-to-noise ratio. In general, for affinity purified anti-peptide antibodies, we recommend 1:50-1:200 for IF/IC/IH; 1:1000 for WB and 5µg/300µL for IP.

**Purity and Specificity:** This affinity-purified antibody is directed against the amino terminal end of beta amyloid and is useful in determining its presence in various assays. Polyclonal anti-beta amyloid detects human and mouse beta amyloid. Cross reactivity with beta amyloid from other species is likely but has not been determined.

**Immunogen:** This antibody was affinity purified from whole rabbit serum prepared by repeated immunizations with beta amyloid peptide D-A-E-F-R-H-D-S-G-Y-E-V-H-H conjugated to KLH using maleimide. The sequence corresponds to aa 1-14 of human beta amyloid.

**Full Length Sequence:** Beta Amyloid (1-42) MW 4514.1 (immunizing peptide is in bold).

H<sub>2</sub>N - **Asp - Ala - Glu - Phe - Arg - His - Asp - Ser - Gly - Tyr - Glu - Val - His - His** - Gln - Lys - Leu - Val - Phe - Phe - Ala - Glu - Asp - Val - Gly - Ser - Asn - Lys - Gly - Ala - Ile - Ile - Gly - Leu - Met - Val - Gly - Gly - Val - Val - Ile - Ala - OH

**General Reference(s):**

N-terminal EFRH sequence of Alzheimer's beta-amyloid peptide represents the epitope of its anti-aggregating antibodies. (Frenkel D; J Neuroimmunol, 1998 Aug 1)

Activation of nuclear factor-kappa B by beta-amyloid peptides and interferon-gamma in murine microglia. (Bonaiuto C; J Neuroimmunol, 1997 Jul) (Luo Y; Neurosci Lett, 1996 Oct 18)

Alzheimer's beta-amyloid peptides induce inflammatory cascade in human vascular cells: the roles of cytokines and CD40. (Suo Z; Brain Res, 1998 Oct 5)

Amyloid beta peptide of Alzheimer's disease downregulates Bcl-2 and upregulates bax expression in human neurons. (Paradis E; J Neurosci, 1996 Dec 1)

Nontoxic amyloid beta peptide 1-42 suppresses acetylcholine synthesis. Possible role in cholinergic dysfunction in Alzheimer's disease. (Hoshi M; J Biol Chem, 1997 Jan 24)

Transcription factor NF-kappaB is activated in primary neurons by amyloid beta peptides and in neurons surrounding early plaques from patients with Alzheimer disease. (Kaltschmidt B; Proc Natl Acad Sci U S A, 1997 Mar 18)

Disaggregation of Alzheimer beta-amyloid by site-directed mAb. (Solomon B; Proc Natl Acad Sci U S A, 1997 Apr 15)

**Related Product(s):**

#611-703-127 HRP Anti-Rabbit IgG [H&L] MX10 (DONKEY)

#611-132-122 IRDye800 Anti-Rabbit IgG [H&L] MX10 (GOAT)

**USDA Certification:** All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation.

**Note:** This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.