



Qty: 50 µg/200 µl

Rabbit anti-β-APP

For Research Use Only

Catalog No. 51-2700

Lot No. See product label

Rabbit anti-β-Amyloid Precursor Protein

FORM

This polyclonal antibody is supplied as a 200 µl aliquot at a concentration of 0.25 mg/ml in phosphate buffered saline, pH 7.4, containing 0.1% sodium azide. The antibody is epitope-affinity-purified from rabbit antiserum.

POLYCLONAL ANTIBODY DESIGNATION (PAD): CT695

IMMUNOGEN

A 22 amino acid synthetic peptide derived from the C-terminus of the human β-amyloid precursor protein (β-APP). This sequence is 100% conserved in human, monkey, mouse, rat, guinea pig, and chicken β-APP proteins.

SPECIFICITY

This antibody can be used to specifically detect the β-amyloid precursor protein. The antibody reacts with full-length (APP_{695, 751, 770}) and N-terminal truncated forms of β-APP. The antibody can also be used to detect the C-terminal membrane-anchored fragment of β-APP that remains after α- or β-secretase cleavage. This antibody does not detect the β-APP product N-terminal to the γ-secretase cleavage site. To the best of our knowledge, reliable immunodetection of this fragment, with any antibody, has not been reported in the literature.

REACTIVITY

Reactivity with this antibody has been confirmed for human, mouse, pig, and rat. Based on sequence homology (see above) reactivity with other species, including monkey, guinea pig, and chicken β-APP is highly likely. Zymed's CT695 antibody has demonstrated superiority in detecting axonal damage.⁽¹⁾

Sample	ELISA	Western Blotting	Immuno-fluorescence	IHC ^(b)
Human		+		+
Mouse		+		
Rat		+ (a,1)	+ (1)	+ (1)
Pig				+
Immunogen	+			

(a) Tested with FRTL-5 (rat thyroid) cells and rat brain lysates.

(b) FFPE tissue requires epitope retrieval pretreatment.

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

ELISA: 0.1-1.0 µg/ml
Western Blotting: 0.2-2 µg/ml
Immunofluorescence: 1-5 µg/ml
Immunohistochemistry: 0.1-1 µg/ml

STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

www.invitrogen.com

Invitrogen Corporation • 542 Flynn Rd • Camarillo • CA 93012 • Tel: 800.955.6288 • E-mail: techsupport@invitrogen.com

PI512700

(Rev 10/08) DCC-08-1089

Important Licensing Information - These products may be covered by one or more Limited Use Label Licenses (see the Invitrogen Catalog or our website, www.invitrogen.com). By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BACKGROUND

Senile plaques and neurofibrillary tangles in brain are hallmarks of Alzheimer's disease.⁽²⁾ Mutations in the beta-amyloid precursor protein (β -APP) are contributory factors to Familial Alzheimer's Disease. The primary constituent of senile plaques are deposits of the 4 kDa amyloid beta-peptide, derived from amyloid beta-precursor proteins by internal proteolysis.⁽³⁾ The major brain β -APP isoforms (APP695, 751, 770) are integral membrane proteins with a single large N-terminal extracellular domain, a single transmembrane domain, and a small cytoplasmic C-terminal tail.

In the early 1990s, it was discovered that β -APP is a useful marker for axonal injury.⁽⁴⁾ β -APP is carried by fast anterograde transport vesicles to distal sites in the axon with the β -APP C-terminus residing in the cytoplasm and the N-terminus in the vesicle.⁽⁵⁾ Upon axonal injury, β -APP will pool in areas of impaired transport. β -APP has been used as a marker of axonal injury in many studies of different pathologies, including: head trauma⁽⁴⁾, HTLV-I-associated myelopathy⁽⁶⁾, multiple sclerosis⁽⁷⁾, shaken baby syndrome⁽⁸⁾, and encephalomyelitis⁽⁹⁾ among others.

REFERENCES

1. Stone JR, et al. *Brain Res* 871(2):288-302 (2000).
2. Glenner GG. *Cell* 52:307-308 (1988).
3. Kang J, et al. *Nature* 325:733-736 (1987).
4. Gentleman SM, et al. *Neurosci Lett* 160(2):139-44 (1993).
5. Dyrks T, et al. *EMBO J* 7(4):949-57 (1988).
6. Umehara F, et al. *J Neurol Sci* 176(2):95-101 (2000).
7. Bitsch A, et al. *Brain* 123 (Pt 6):1174-83 (2000).
8. Gleckman AM, et al. *Arch Pathol Lab Med* 124:251-256 (2000).
9. Kornek B, et al. *Am J Pathol* 157(1):267-76 (2000).

RELATED PRODUCTS

<u>Primary Antibodies</u>	<u>Clone</u>	<u>Cat. No.</u>
Ms x Amyloid β -Peptide	AMY-33	13-0100
Rb x Amyloid β -Peptide	polyclonal	71-5800
Ms x β -Amyloid Precursor Protein	LN27	13-0200
Ms x α -Synuclein	LB509	18-0215
Ms x Tau (C-term)	T46	13-6400
Ms x Tau	T14	13-1400
Rt x GFAP	2.2B10	13-0300
Ms x Neurofilaments	many	please inquire
<u>Immunoassay Reagents</u>	<u>Conjugate</u>	<u>Cat. No.</u>
Goat anti-Rabbit IgG (H+L) (ZyMAX™ Grade)	Purified	81-6100
	FITC	81-6111
	TRITC	81-6114
	Cy™3	81-6115
	Cy™5	81-6116
	HRP	81-6120
	AP	81-6122
	Biotin	81-6140
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

Contact Zymed for information about the wide range of IHC kits that are available.

Zymed® and ZyMAX™ are trademarks of Zymed Laboratories Inc. Cy™ is a trademark of Amersham Life Sciences, Inc. Sepharose® is a registered trademark of Pharmacia LKB.

JB000907

www.invitrogen.com

Invitrogen Corporation • 542 Flynn Rd • Camarillo • CA 93012 • Tel: 800.955.6288 • E-mail: techsupport@invitrogen.com

PI512700

(Rev 10/08) DCC-08-1089

Important Licensing Information - These products may be covered by one or more Limited Use Label Licenses (see the Invitrogen Catalog or our website, www.invitrogen.com). By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.