### Beta Amyloid Monoclonal Antibody (10H3), Biotin

**Catalog Number**: MN1150B

**Species Reactivity**
- **Species reactivity**: Human
- **Published species**: Rat, Human, Mouse

**Tested Applications**
- **ELISA (ELISA)**: Assay-dependent
- **Immunohistochemistry (IHC)**: Assay-dependent
- **Western Blot (WB)**: Assay-dependent
- **ELISA (ELISA)**: See 7 publications below
- **Immunoprecipitation (IP)**: See 1 publications below
- **Blocking Assay (BLOCK)**: See 1 publications below

**Published Applications**
* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

## Product specific information

MN1150B targets Beta Amyloid in ELISA, IHC, and WB applications and shows reactivity with Human samples. The MN1150B immunogen is synthetic peptide corresponding to 28 a.a. sequence of beta amyloid. MN1150B detects Beta Amyloid which has a predicted molecular weight of approximately 83 kDa.

### Background/Target Information

Amyloid beta peptide (Abeta/Beta-amyloid) is the major constituent of amyloid plaques in the brains of individuals afflicted with Alzheimer’s disease. Abeta peptide is 40-43 amino acids long and generated from the beta-amyloid precursor protein (beta APP) in a two-step process. The first step involves cleavage of the extracellular, amino-terminal domain of beta APP. Protein cleavage is performed by an aspartyl protease, beta-secretase (BACE) which is synthesized as a propeptide and must be modified to the mature and active form by the prohormone convertase, furin. Beta APP cleavage by the mature form of BACE results in the cellular secretion of a segment of beta APP, and a membrane-bound remnant. The remnant protein is processed by another protease, gamma-secretase. Gamma-secretase cleaves an intra-membrane site in the carboxyl-terminal domain of beta APP, thus generating the amyloid beta peptide. Gamma-secretase is believed to be a multi-subunit complex containing presenilin-1 and 2 as central components. The transmembrane glycoprotein, nicastrin, is associated with presenilins and has been found to bind to the carboxyl-terminus of beta APP and helps to modulate the production of the amyloid beta peptide. Abeta is an extracellular filamentous protein component of amyloid cores, neuritic plaques and is also found as a deposit in neurofibrillary tangles. Alzheimer’s disease, the most common cause of senile dementia, is characterized by abnormal filamentous protein deposits in the brain. Beta amyloid deposits are also detected in Lewy body dementia, Down’s syndrome, amyloidosis (Dutch type), cerebroarterial amyloidosis (cerebral amyloid angiopathy) and in the Guam Parkinson-Dementia complex.

### PubMed References For Beta Amyloid Monoclonal Antibody (10H3), Biotin

#### 7 ELISA References

**Species / Dilution** | Summary
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Human / Not Cited | MN1150B was used in ELISA to investigate the changes of soluble A-beta in the frontal cortex in the aged people

**Human / Not Cited** | Brain pathology (Zurich, Switzerland) (Jul 2010; 20: 794)

> "Changes with age in the activities of beta-secretase and the Abeta-degrading enzymes neprilysin, insulin-degrading enzyme and angiotensin-converting enzyme."

**Author(s):** Miners JS, van Helmond Z, Kehoe PG, Love S

**PubMed Article URL:** http://dx.doi.org/10.1111/j.1750-3639.2010.00375.x

Human / Not Cited | MN1150B was used in ELISA to study the relationship between insoluble beta-amyloid and the activity of BACE-1 and neprilysin in Down's syndrome.

**Human / Not Cited** | Brain pathology (Zurich, Switzerland) (Jul 2010; 20: 787)

> "Higher soluble amyloid beta concentration in frontal cortex of young adults than in normal elderly or Alzheimer’s disease."

**Author(s):** van Helmond Z, Miners JS, Kehoe PG, Love S

**PubMed Article URL:** http://dx.doi.org/10.1111/j.1750-3639.2010.00374.x

Human / Not Cited | MN1150B was used in ELISA to study the differential expression of BIN1 in sporadic and familial Alzheimer's disease

**Human / Not Cited** | PloS one (Aug 2014; 8: )

> "BIN1 is decreased in sporadic but not familial Alzheimer’s disease or in aging."

**Author(s):** Glennon EB, Whitehouse IJ, Miners JS, Kehoe PG, Love S, Kellett KA, Hooper NM

**PubMed Article URL:** http://dx.doi.org/10.1371/journal.pone.0078806

#### Rat / Not Cited

**Human / Not Cited** | Brain pathology (Zurich, Switzerland) (Sep 2011; 21: 594)

> "Neprilysin protects against cerebral amyloid angiopathy and A-induced degeneration of cerebrovascular smooth muscle cells."

**Author(s):** Miners JS, Kehoe P, Love S

**PubMed Article URL:** http://dx.doi.org/10.1111/j.1750-3639.2011.00486.x

#### Human / Not Cited

**Human / Not Cited** | MN1150B was used in ELISA to study the ability of neprilysin to protect cells against toxicity

**Human / Not Cited** | MN1150B was used in ELISA to study the role of ACE variants in Alzheimer disease pathogenesis

**Human / Not Cited** | American journal of translational research (Oct 2010; 3: 73)

> "ACE variants and association with brain A levels in Alzheimer’s disease."

**Author(s):** Miners JS, van Helmond Z, Raiker M, Love S, Kehoe PG


#### 1 Immunoprecipitation References

<table>
<thead>
<tr>
<th>Species / Dilution</th>
<th>Summary</th>
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| Human / Not Cited | MN1150B was used in immunoprecipitation to investigate the diagnostic value of salivary tau species in Alzheimer disease


> "Salivary tau species are potential biomarkers of Alzheimer’s disease."

**Author(s):** Shi M, Sui YT, Peskind ER, Li G, Hwang H, Devic I, Ginghina C, Edgar JS, Pan C, Goodlett DR, Furay AR, Gonzalez-Cuyar LF, Zhang J

**PubMed Article URL:** http://dx.doi.org/10.3233/JAD-2011-110731

#### 1 Blocking Assay References


### Thermo Fisher Scientific

3747 N. Meridian Road
Rockford, IL 61105 USA

thermofisher.com/contactus
Summary

MNN150B was used in blocking/activating experiment to characterize the metalloenzyme-like activity of beta-amyloid oligomer

The Journal of Biological Chemistry (Oct 2002; 277: 40302)

"Metalloenzyme-like activity of Alzheimer’s disease beta-amyloid. Cu-dependent catalytic conversion of dopamine, cholesterol, and biological reducing agents to neurotoxic H(2)O(2)."


PubMed Article URL: http://dx.doi.org/10.1074/jbc.M206428200