

## Abeta 42

Cat.No. 218 703; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	<b>WB:</b> 1 : 1000 (ECL detection) (see remarks) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 100 up to 1 : 500 (see remarks) <b>IHC-P/FFPE:</b> 1 : 100 (see remarks) <b>ELISA:</b> yes suitable only as capture antibody, cat. no. 218 211 is recommended detector antibody for
Immunogen	Synthetic peptide corresponding to AA 37 to 42 from human Abeta42 (UniProt Id: P05067)
Reactivity	Reacts with: human (P05067), rat (P08592), mouse (P12023). Other species not tested yet.
Specificity	Specific for Abeta 42 with weak cross-reactivity to Abeta 40 in westernblots that is not apparent in ELISA tests.
Remarks	<b>WB:</b> Detects purified Abeta 42. Complex samples like brain extracts still have to be tested. Nitrocellulose membrane is recommended for blotting. Boil membrane after blotting for 3min.  <b>IHC:</b> Formic acid treatment required recommended protocol.  <b>IHC-P:</b> Formic acid treatment required.

### TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Amyloid deposits, also called plaques, of Alzheimer's patients consist of several protein components like the amyloid **beta**-peptides (**Abeta**, **Aβ**) 1-40/42/43 and additional C- and N-terminally modified fragments of Abeta as for instance Abeta pE3 and Abeta pE11.

An additional Abeta variant, **Abeta 38**, is more soluble compared to other Abeta species and is not found in plaques of sporadic Alzheimer's cases. However, it is detected in the blood-vessel walls of a subset of patients with severe cerebral amyloid angiopathy. It especially accumulates in brains of patients carrying mutations in the Abeta coding region.

Cleavage of amyloid precursor protein APP by β- and γ- secretases results in the generation of the Aβ (βA4) peptide, whereas α-secretase cleaves within the Aβ sequence and prevents the formation of Abeta from APP.

### Selected References SYSY Antibodies

Astrocytes infected with Chlamydia pneumoniae demonstrate altered expression and activity of secretases involved in the generation of β-amyloid found in Alzheimer disease.

Al-Atrache Z, Lopez DB, Hingley ST, Appelt DM  
BMC neuroscience (2019) 20(1): 6. **ICC; tested species: human**

Human Striatal Dopaminergic and Regional Serotonergic Synaptic Degeneration with Lewy Body Disease and Inheritance of APOE ε4.

Postupna N, Latimer CS, Larson EB, Sherfield E, Paladin J, Shively CA, Jorgensen MJ, Andrews RN, Kaplan JR, Crane PK, Montine KS, et al.

The American journal of pathology (2017) 187(4): 884-895. **FACS; tested species: human**

Axonal degeneration in an Alzheimer mouse model is PS1 gene dose dependent and linked to intraneuronal Aβ accumulation.

Christensen DZ, Huettnerauch M, Mitkovski M, Pradier L, Wirths O  
Frontiers in aging neuroscience (2014) 6: 139. **IHC-P**

N-truncated amyloid β (Aβ) 4-42 forms stable aggregates and induces acute and long-lasting behavioral deficits.

Bouter Y, Dietrich K, Wittnam JL, Rezaei-Ghaleh N, Pillot T, Papot-Couturier S, Lefebvre T, Sprenger F, Wirths O, Zweckstetter M, Bayer TA, et al.

Acta neuropathologica (2013) 126(2): 189-205. **IHC; tested species: human**

Nephrilysin deficiency alters the neuropathological and behavioral phenotype in the 5XFAD mouse model of Alzheimer's disease.

Hüttenrauch M, Baches S, Gerth J, Bayer TA, Weggen S, Wirths O

Journal of Alzheimer's disease : JAD (2015) 44(4): 1291-302. **IHC; tested species: mouse**

Aβ38 in the brains of patients with sporadic and familial Alzheimer's disease and transgenic mouse models.

Reinert J, Martens H, Huettnerauch M, Kolbow T, Lannfelt L, Ingelsson M, Paetau A, Verkoniemi-Ahola A, Bayer TA, Wirths O  
Journal of Alzheimer's disease : JAD (2014) 39(4): 871-81. **IHC; tested species: human**

Abundance of Aβs-x like immunoreactivity in transgenic 5XFAD, APP/PS1KI and 3xTG mice, sporadic and familial Alzheimer's disease.

Guzmán EA, Bouter Y, Richard BC, Lannfelt L, Ingelsson M, Paetau A, Verkoniemi-Ahola A, Wirths O, Bayer TA  
Molecular neurodegeneration (2014) 9: 13. **IHC; tested species: human**

### Selected General References

Circulating immune complexes of Abeta and IgM in plasma of patients with Alzheimer's disease.

Marcello A, Wirths O, Schneider-Axmann T, Degerman-Gunnarsson M, Lannfelt L, Bayer TA  
Journal of neural transmission (Vienna, Austria : 1996) (2009) 116(7): 913-20.

Immune response to Abeta-peptides in peripheral blood from patients with Alzheimer's disease and control subjects.

Baril L, Nicolas L, Croisile B, Crozier P, Hessler C, Sassolas A, McCormick JB, Trannoy E  
Neuroscience letters (2004) 355(3): 226-30.

Dietary Cu stabilizes brain superoxide dismutase 1 activity and reduces amyloid Abeta production in APP23 transgenic mice.

Bayer TA, Schäfer S, Simons A, Kemmling A, Kamer T, Tepest R, Eckert A, Schüssel K, Eikenberg O, Sturchler-Pierrat C, Abramowski D, et al.

Proceedings of the National Academy of Sciences of the United States of America (2003) 100(24): 14187-92.

Correlative memory deficits, Abeta elevation, and amyloid plaques in transgenic mice.

Hsiao K, Chapman P, Nilsen S, Eckman C, Harigaya Y, Younkin S, Yang F, Cole G  
Science (New York, N.Y.) (1996) 274(5284): 99-102.

Physical, morphological and functional differences between ph 5.8 and 7.4 aggregates of the Alzheimer's amyloid peptide Abeta.

Wood SJ, Maleeff B, Hart T, Wetzel R  
Journal of molecular biology (1996) 256(5): 870-7.

Water-soluble Abeta (N-40, N-42) oligomers in normal and Alzheimer disease brains.

Kuo YM, Emmerling MR, Vigo-Pelfrey C, Kasunic TC, Kirkpatrick JB, Murdoch GH, Ball MJ, Roher AE  
The Journal of biological chemistry (1996) 271(8): 4077-81.