SYSY Antibodies

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Abeta42

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. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: 1 : 1000 (ECL detection) (see remarks) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 100 up to 1 : 500 (see remarks) **IHC-P**: 1 : 100 (see remarks) **ELISA**: 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	**WB**: 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. **IHC**: Antigen retrieval with formic acid is required. **IHC-P**: Antigen retrieval with formic acid is required.

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

Background

Amyloid deposits, also called plaques, of Alzheimer's patients consist of several protein components like the **a**myloid **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, **Abeta38**, 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 **a**myloid **p**recursor **p**rotein 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 for 218 703

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) 201: 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) 1874: 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, Huettenrauch 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) 1262: 189-205. . **IHC; tested species: human**

Deposition of C-terminally truncated Aβ species Aβ37 and Aβ39 in Alzheimer's disease and transgenic mouse models.
Reinert J, Richard BC, Klafki HW, Friedrich B, Bayer TA, Wiltfang J, Kovacs GG, Ingelsson M, Lannfelt L, Paetau A, Bergquist J, et al.
Acta neuropathologica communications (2016) 4: 24. . **IHC-P; tested species: mouse**

Neprilysin 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) 444: 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, Huettenrauch M, Kolbow T, Lannfelt L, Ingelsson M, Paetau A, Verkkoniemi-Ahola A, Bayer TA, Wirths O
Journal of Alzheimer's disease : JAD (2014) 394: 871-81. . **IHC; tested species: human**

Abundance of $Aβ_{5}$-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, Verkkoniemi-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) 1167: 913-20. .

Access the online factsheet including applicable protocols at https://sysy.com/product/218703 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.