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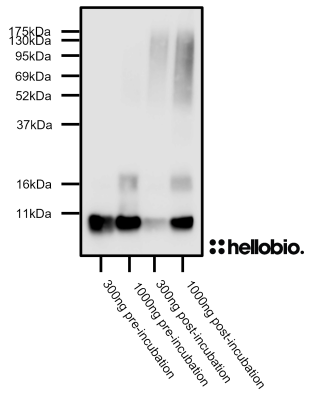
DATASHEET

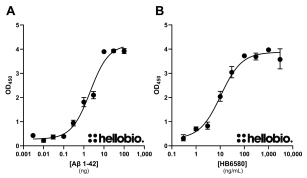
Anti-Amyloid Beta Antibody ValidAb™

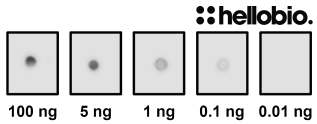
Product overview

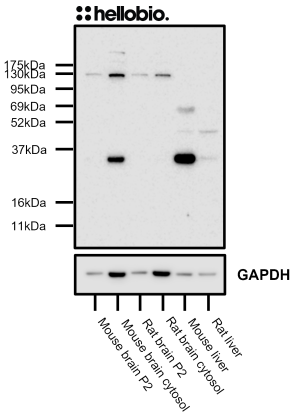
Name	Anti-Amyloid Beta Antibody ValidAb™
Cat No	HB6580
Host	Mouse
Clonality	Monoclonal
Target	Amyloid Beta
Description	Antibody to Amyloid Beta (Aβ) - neurotoxic peptide species that aggregates into plaques. Part of the ValidAb™ range of highly validated, data-rich antibodies.

Validation data









Product information

Immunogen	Carrier protein conjugated with residues 1-17 of human Aβ1-42
Clone number	BAM7cc
Isotype	IgG1
Purification	Protein A affinity chromatography
Concentration	1mg/ml
Formulation	Lyophilized. When reconstituted contains PBS with 1% recombinant albumin and 0.09% sodium azide
Predicted species reactivity	Human
Tested species reactivity	Human

Tested applications

Applications	ELISA, WB
Application notes	This antibody was raised to a N-terminal sequence of Amyloid Beta therefore will not recognise Amyloid β 25-35 peptide species.

Applications **Western blot optimal concentration**	ELISA, WB 1µg/ml (1:1,000) is a good starting point depending upon the level of Aβ expression in the sample.
Positive control	Recombinant Aβ such as HB9805 serves as the best positive control due to increased consistency compared to tissue samples.
Negative control	Cell lines such as HEK293T do not express Amyloid Beta therefore serve as excellent negative controls.
Open data link	Please follow this link to OSF

Target information

Other names	Aβ, Abeta, beta-amyloid, Amyloid beta peptide, β-Amyloid, Amyloid A4 protein
UniProt ID **Gene name** **NCBI full gene name** **Entrez gene ID**	P05067 (Amyloid Precursor Protein) amyloid beta precursor protein APP 351
Amino acids	Dependent upon Aβ species however the most common species are:
Expression	• Amyloid Beta 1-40 • Amyloid Beta 1-42 • Amyloid Beta 25-35 (not recognized by this antibody) The amyloid precursor protein (APP) exhibits a ubiquitous expression pattern across the body, with significant levels detected in the brain, kidney, lung, spleen, and skeletal muscle. While APP is widely distributed in both neuronal and non-neuronal tissues, the cleaved amyloid beta peptide is most prominently associated with the central nervous system, where it is secreted by neurons.
Subcellular expression	Amyloid beta is primarily generated within the trans-Golgi network and early endosomes following the internalization of APP from the cell surface. While the majority of the peptide is secreted, a distinct pool is retained within multivesicular bodies and lysosomes for degradation. Aβ has also been reported to accumulate in mitochondria alongside synaptic terminals.
Target function	Amyloid beta is a toxic peptide species created through proteolytic processing of APP (see our Amyloid Beta guide for more detail). Aβ is prone to aggregation to create both toxic soluble species and larger insoluble aggregates and plaques that are one of the hallmarks of Alzheimer's disease.
Processing	Amyloid precursor protein (APP) is cleaved by β-secretases such as BACE1 to give a 99 residue C-terminal fragment (C99) which is then cleaved again by the γ-secretase complex to liberate free amyloid beta which mostly takes the form of either Aβ1-40 or Aβ1-42
Post translational modifications	Amyloid beta is subject to various post-translational modifications (PTM) which have been linked to increased toxicity. Some key PTMs are isomerization of the aspartic acid residue at position 7 (iso-Aβ), N-terminal pyroglutamate formation, and phosphorylation at serine 8 (pS8-Aβ).
Homology (compared to human)	Rat and mouse Aβ1-42 have a 93% homology compared to the human homologue with three residue differences (R5G, Y10F, H13R).
Similar proteins	There is no significant homology to other proteins

Storage & Handling

Storage instructions	-20°C then use reconstitution advice
Reconstitution advice	Upon receipt store at either -20°C or -80°C. For 100µg packs either: • Reconstitute with 100µl dH_2O and store at 4°C • Reconstitute with 50µl dH_2O and 50µl glycerol then store at -20°C • Reconstitute with 100µl dH_2O, aliquot then snap freeze and store at -80°C For 25µg packs either: • Reconstitute with 25µl dH_2O and store at 4°C • Reconstitute with 12.5µl dH_2O and 12.5µl glycerol then store at -20°C • Reconstitute with 25µl dH_2O, aliquot then snap freeze and store at -80°C For more information read our guide on the best care for your product. Take care when opening as the precipitate is extremely light and can easily be lost if disturbed. When reconstituting make sure that the antibody is thoroughly dissolved by pipetting up and down before giving the antibody a brief spin at 10,000g to make sure that all material is recovered and at the bottom of the tube.
Shipping Conditions **Important**	Stable for ambient temperature shipping. Follow storage instructions on receipt. This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

Amyloid beta: structure, biology and structure-based therapeutic development

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3D structure of Alzheimer's amyloid-beta(1-42) fibrils

Lührs T, Ritter C, Adrian M, Riek-Loher D, Bohrmann B, Döbeli H, Schubert D, Riek R. (2005) Proc Natl Acad Sci USA
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