Oligomeric Amyloid-beta ELISA Kit (2 plates)

Catalogue No.: BEK-2215-2P

Description:

The oligomeric form of Amyloid Beta peptide (Aß, 1-42) has been closely linked to Alzheimer's Disease. Several ELISAs targeting Aß have been developed; however, these ELISAs are known to cross-react with Amyloid Beta precursor protein (APP) and are poorly characterized against monomeric and oligomeric forms of the peptide. The Biosensis MOAB-2 antibody, developed by LaDu and co-workers (Youmans K. et al., 2012), has been shown to specifically detect Aß, but not the precursor molecule APP. When utilized in ELISAs, the oligomeric form of Aß peptide (o-Aß) can be assayed independently of the other forms of the molecule when assayed with the MOAB-2 monoclonal antibody.

The Biosensis oligomeric Aß ELISA kit is a sandwich ELISA that allows the preferential quantification of oligomeric Aß peptides. This kit is exclusive to Biosensis and consists of a pre-coated mouse monoclonal anti-Aß capture antibody (MOAB-2), a biotinylated MOAB-2 detection antibody and horseradish peroxidase (HRP)-conjugated streptavidin. The addition of a substrate (3,3',5,5'-tetramethylbenzidine, TMB) yields a colored reaction product which is directly proportional to the concentration of o-Aß present in samples and protein standards. The purpose of this kit is the in vitro qualitative measurement of oligomeric Aß peptide levels in brain extracts and CSF samples from both transgenic mice and humans relative to a known o-Aß standard. The inclusion of a highly validated oligomeric standard results in a unique, ready-to-use ELISA kit.

This kit has been configured for research use only and is not to be used in diagnostic or clinical procedures.

Related products: Oligomeric Human beta-Amyloid Aß1-42 Peptide, Stabilized (PE-1750-1000)

Beta-Amyloid Aß1-42 Peptide, HFIP-treated (PE-1749-50)

Batch No.: Refer to the product label.

Antigen: The standard in this ELISA is synthetically manufactured beta-amyloid peptide, amino acids 1-42 of human, HFIP treated and dried.
The stabilized oligomeric beta amyloid 1-42 control complex is also constructed from the same synthetic peptide standard material. No animal systems were used for their manufacture.

Other Names: Beta-APP42; Beta-APP40; Beta-amyloid protein 42; Beta-amyloid protein 40; ABPP; APPI; Amyloid beta A4 protein; MOAB2; MOAB-2; Alzheimer's antibody; AB40; AB42; abeta.

Specificity: Human. MOAB-2 (mouse IgG2b) is a pan-specific, high-titer antibody to Aß residues 1-4 and is highly specific just to amyloid beta peptide. The Biosensis o-Aß Elisa detects Aß oligomers as validated and described by Youmans KL et al (2012) and Rat by Combes M et al (2015).

Cross-reactivity: Rat.

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Storage: Store at 4°C

Expiry Date: 12 months from purchase.

Specific References: S Liu, S Park, G Allington, F Prelli, Y Sun, M Martá-Ariza, H Scholtzova, G Biswas, B Brown, PB Verghese, PD Mehta, Y-U Kwon and T Wisniewski (2017) "Targeting Apolipoprotein E/Amyloid ß Binding by Peptoid CPO_Aß17-21 P Ameliorates Alzheimer's Disease Related Pathology and Cognitive Decline." Sci Rep. 7(1):8009 Application: ELISA, Species: Transgenic mouse brain homogenates.

M Cacciottolo, X Wang, I Driscoll, N Woodward, A Saffari, J Reyes, M L Serre, W Vizuete, C Sioutas, T E Morgan, M Gatz, H C Chui, S A Shumaker, S M Resnick, M A Espeland, C E Finch and J C Chen (2017) "Particulate air pollutants, APOE alleles and their contributions to cognitive impairment in older women and to amyloidogenesis in experimental models." Transl Psychiatry. Jan 31;7(1):e1022. Application: ELISA, Species: Extracts of E3FAD and E4FAD transgenic mouse brains.

Riya Thomas, Paulina Zuchowska, Alan W. J. Morris, Felecia M. Marottoli, Sangeeta Sunny, Ryan Deaton, Peter H. Gann, Leon M. Tai (2016) "Epidermal growth factor prevents APOE4 and amyloid-beta-induced cognitive and cerebrovascular deficits in female mice." Acta Neuropathol Commun. 4(1):111 Application: ELISA, Species: Tris-extracts of EFAD transgenic mouse brains.

Nor Faeizah Ibrahim, Daijiro Yanagisawa, Lina Wati Durani, Hamizah Shahirah Hamezah, Hanafi Ahmad Damanhuri, Wan Zurinah Wan Ngah, Mayumi Tsuji, Yuji Kiuchi, Kenjiro Ono, Ikuo Tooyama (2016) "Tocotrienol-Rich Fraction Modulates Amyloid Pathology and Improves Cognitive Function in AßPP/PS1 Mice." J Alzheimers Dis. [Epub ahead of print]. Application: ELISA, Species: Tris-extracts of mouse brain homogenates.

Jia Luo, Sue H. Lee, Lawren VandeVrede, Zhihui Qin, Manel Ben Aissa, John Larson, Andrew F. Teich, Ottavio Arancio, Yohan D'Souza, Ahmed Elharram, Kevin Koster, Leon M. Tai, Mary Jo LaDu, Brian M. Bennett and Gregory R. J. Thatcher (2016) "A multifunctional therapeutic approach to disease modification in multiple familial mouse models and a novel sporadic model of Alzheimer's disease." Molecular Neurodegeneration 2016 11:35. Application: ELISA, Species: Tris-extracts of EFAD transgenic mouse brains.

Weiguo Peng, Thiyagarajan M. Achariyar, Baoman Li, Yonghong Liao, Humberto Mestre, Emi Hitomi, Sean Regan, Tristan Kasper, Sisi Peng, Fengfei Ding, Helene Benveniste, Maiken Nedergaard, Rashid Dean (2016) "Suppression of glymphatic fluid transport in a mouse model of Alzheimer's disease." Neurobiology of Disease. Vol. 93, Pages 215-225 Application: ELISA, Species: TBSX-extracts of mouse cerebral cortex.

Mafalda Cacciottolo, Amy Christensen, Alexandra Moser, Jiahui Liu, Christian J. Pike, Conor

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Smith, Mary Jo LaDu, Patrick M. Sullivan, Todd E. Morgan, Egor Dolzhenko, Andreas Charidimou, Lars-Olof Wahlund, Maria Kristofferson Wiberg, Sara Shams, Gloria Chia-Yi Chiang (2016) "The APOE4 allele shows opposite sex bias in microbleeds and Alzheimer's disease of humans and mice." Neurobiology of Aging. Volume 37, January 2016, Pages 47–57 Application: ELISA, Species: Tris-extracts of E3FAD and E4FAD transgenic mouse brains.

Combes M, Poindron P, Callizot N.(2015) "Glutamate protects neuromuscular junctions from deleterious effects of ß-amyloid peptide and conversely: An in vitro study in a nerve-muscle coculture." J Neurosci. Res. 93(4):633-43 Application: ELISA, Species: Native Rat neurites & human muscle cell co-culture supernatants.

Seo, Dong Han, et al. (2015) "Plasma-enabled sustainable elemental lifecycles: honeycomb-derived graphenes for next-generation biosensors and supercapacitors."

General References:

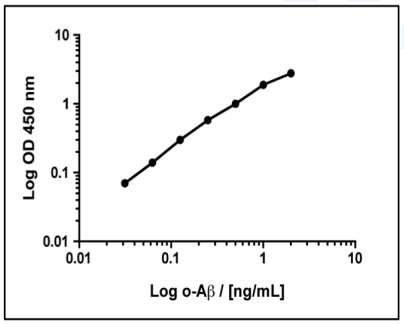
Youmans KL et al. (2011) J Neurosci Methods 196(1): 51-9
Youmans KL et al. (2012) Mol Neurodegener. 16;7:8
Tai ML et al. (2013) J Biol Chem. 288(8): 5914-26
Good pathology summary:
Viola KL, Klein WL. (2015) Amyloid ß oligomers in Alzheimer's disease pathogenesis, treatment, and diagnosis. Acta Neuropathol. 2015 Feb;129(2):183-206

Kit components: The ELISA kit box contains 2 x 96-well pre-coated strip plates, protein standards, QC sample, detection reagents, wash and sample buffers, substrate buffer and detailed protocols.

Range: 0.031 - 2 ng/mL

Kit protocol: Please refer to our online product listing for current protocol/MSDS versions.

MSDS: Please refer to our online product listing for current protocol/MSDS versions.



This standard curve generated in our laboratories is for demonstration purposes only, but can be used as a guide to expected performance. A standard curve should be generated for each assay.

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