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AP31731PU-N Polyclonal Antibody to Amyloid Fibrils (OC) - Purified

Alternate names: Fibrils, OC

Quantity: 0.1 ml

Concentration: 1 mg/ml

Background: Amyloid monomeric proteins can sometimes oligomerize into destructive amyloid fibrils. Amyloidogenic conformations of non-disease related proteins can be created by partial protein misfolding or denaturation. Many degenerative diseases are known to be related to the accumulation of misfolded proteins as amyloid fibres (1, 2). These include the amyloid-β peptide plaques and tau neurofibrillary tangles in senile plaques of Alzheimer's symptomology, the deposition of α-synuclein in the Lewy bodies of Parkinson's disease, and accumulation of polyglutamine-containing aggregates in Huntington's disease (2, 3).

Host / Isotype: Rabbit / IgG

Immunogen: Fibrils prepared from Human Aß42 peptide.

Format:
State: Liquid purified IgG fraction
Purification: Protein A Chromatography
Buffer System: PBS
Preservatives: 0.09% Sodium Azide
Stabilizers: 50% Glycerol

Applications:
Dot Blot: 1/1000.
A 1/1000 dilution of AP31731PU-N was sufficient for detection of Amyloid fibrils on PVDF membranes using transferred fibrils by colorimetric dot blot analysis using Goat anti-Rabbit IgG:HRP as the secondary antibody.
Cited Applications:
ELISA, Immunocytochemistry, Immunoprecipitation, Immunohistochemistry and Western Blot, Dot Blot.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody recognizes generic epitopes common to many Amyloid fibrils and fibrillar oligomers, but not prefibrilllar oligomers or natively folded proteins.

Species Reactivity:
Tested: Human.
Expected from sequence similarity: Mouse and Rat.

Storage: Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citations:
Originator or purchased from resellers:
1. Nakajima H, Nishitsuji K, Kawashima H, Kuwabara K, Mikawa S, Uchimura K, et al. The polyphenol (-)-epigallocatechin-3-gallate prevents apoA-IIowa amyloidosis in vitro and protects human embryonic kidney 293 cells against amyloid cytotoxicity. Amyloid. 2016 Mar;23(1):17-25. doi: 10.3109/13506129.2015.1113167. Epub 2015 Dec 24. PubMed PMID: 26701221.

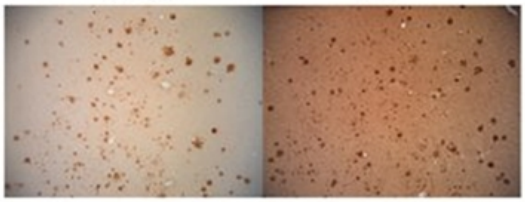
2. Nakajima H, Nishitsuji K, Kawashima H, Kuwabara K, Mikawa S, Uchimura K, et al. The polyphenol (-)-epigallocatechin-3-gallate prevents apoA-IIowa amyloidosis in vitro and protects human embryonic kidney 293 cells against amyloid cytotoxicity. Amyloid. 2016 Mar;23(1):17-25. doi: 10.3109/13506129.2015.1113167. Epub 2015 Dec 24. PubMed PMID: 26701221.
3. Tang Z, Dai S, He Y, Doty RA, Shultz LD, Sampson SB, et al. MEK guards proteome stability and inhibits tumor-suppressive amyloidogenesis via HSF1. Cell. 2015 Feb 12;160(4):729-44. doi: 10.1016/j.cell.2015.01.028. PubMed PMID: 25679764.

General Readings:

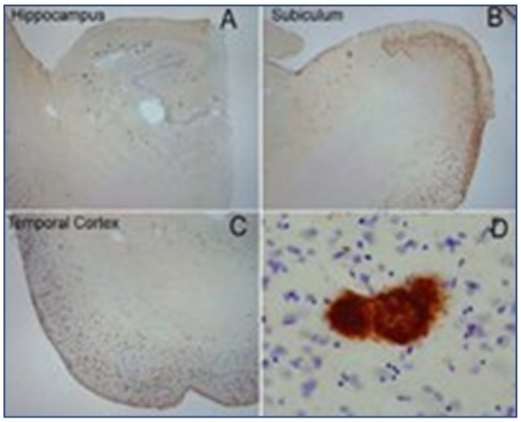
1. Glabe C.G. (2004) Trends Biochem Sci. 29(10): 542-547.
2. Kayed R., et al. (2004) J Bio. Chem. 279: 46363-46366.
3. Kayed R., et al. (2003) Science. 300(5618): 486-489.

Pictures:

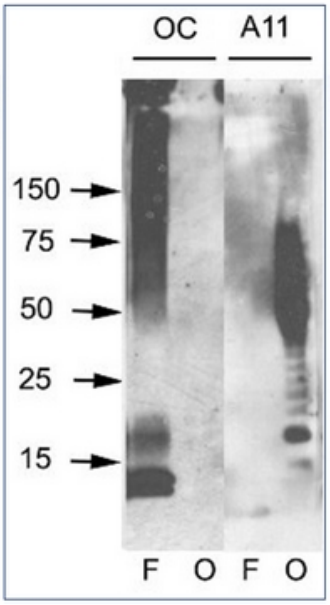
Immunohistochemistry analysis of Amyloid Fibrils (OC) in Human AD brain, showing no Amyloid Precursor Protein (APP) cross-reactivity (Left), but when conducted with monoclonal 6E10 (Right) shows considerable APP cross-reactivity.



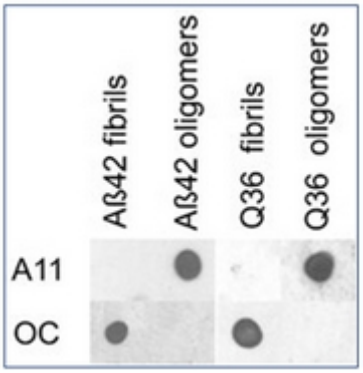
Extensive OC labeling was observed in the hippocampus (A), subiculum (B) and frontal cortex (C) in Alzheimer disease. A higher magnification photograph illustrates that OC positive deposits were dense and consisted of fine fibrillar material (D). *Picture courtesy of Kayed et al., (2007) Biomed Central: Molecular Neurodegeneration, 2: 18.*



Western blot analysis of Aβ42 fibrils and prefibrillar oligomers. Aβ42 fibrils (F) and prefibrillar oligomers (O) were run on SDS polyacrylamide gels, transferred to nitrocellulose and probed with OC and A11 antibodies.
Picture courtesy of Kayed et al., (2007) Biomed Central: Molecular Neurodegeneration, 2: 18.



Dot blot analysis of Aβ42 and polyQ36 prefibrillar oligomers and fibrils. Aβ42 and polyQ fibrils only stain with OC serum (Cat.No AP31731PU-N), while Aβ42 and polyQ prefibrillar oligomers only react with A11 (Cat.No AP31729PU-N).
Picture courtesy of Kayed et al., (2007) Biomed Central: Molecular Neurodegeneration, 2: 18.



Beta Amyloid HEPES-NaCl aggregation, showing 1/500 (Left) and 1/5000 (Right) time lapse dot blot.