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Datasheet for 600-401-253

Beta Amyloid Antibody

Overview

Description:	Anti-Beta Amyloid (RABBIT) Antibody - 600-401-253
Item No.:	600-401-253
Size:	100 µg
Applications:	ELISA, IF, IHC, WB
Reactivity:	Human, Mouse
Host Species:	Rabbit

Product Details

Background:	Beta amyloid, often abbreviated as A-beta, is a protein that builds up in the brains of persons with Alzheimer's disease, collecting in clumps called plaques or senile plaques. While some researchers question whether beta amyloid is the cause of the dementia, most agree that it is involved in the disruption of thinking that is a hallmark of the disease. In some cases of familial Alzheimer's disease, mutations in genes for the proteins called the presenilins lead to increased production of amyloid. Researchers have been looking at how presenilin-1 in particular contributes to the excess buildup of beta amyloid. Presenilin-1 apparently acts to increase the activity of gamma-secretase, an enzyme that changes a normal protein (amyloid precursor protein or APP) into beta amyloid itself. Furthermore, presenilin-1 might be gamma-secretase. Anti-Beta Amyloid Antibody is useful for researchers interested in TLR signaling and Alzheimer's research.
Synonyms:	rabbit anti-Beta Amyloid Antibody, ß-amyloid, Amyloid beta A4 protein, Alzheimer disease amyloid protein, Beta amyloid, A-beta, ABPP, APPI, Beta-amyloid precursor protein
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	APP
Reactivity:	Human, Mouse

Immunogen Type:	Conjugated Peptide
Immunogen:	This antibody was affinity purified from whole rabbit serum prepared by repeated immunizations with a synthetic peptide corresponding to an extracellular region of human beta amyloid conjugated to KLH using maleimide.
Purity/Specificity:	This affinity purified antibody is directed against extracellular region of beta amyloid and is useful in determining its presence in various assays. Polyclonal anti-beta amyloid detects human and mouse beta amyloid. Blast analysis of the sequence of the immunogen shows 100% identity with Human, Guinea Pig, Pig, Cyno Monkey, Dog, Polar Bear, Rabbit, Chimp, Squirrel monkey, and Sheep. Cross reactivity with beta amyloid from other species is likely but has not been determined.
Relevant Links:	• UniProtKB - P05067 • NCBI - NP_000475.1 • NCBI - P05067.3 • GeneID - 351

Application Details

Tested Applications:	ELISA, IF, IHC, WB
Application Note:	Affinity purified anti-beta amyloid has been tested by ELISA, IHC, WB, and IF. A 45.8kDa band is detected in western blot using whole tissue extracts and lysates from mouse and human. In general, we recommend the use of 4% PFA or 10% formalin for fixation of tissues with IHC-paraffin or IHC-frozen application of this antibody.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:10,000 - 1:30,000
IF:	1:50-1:200
IHC:	1:50-1:200
WB:	1:1,000-1:5000

Formulation

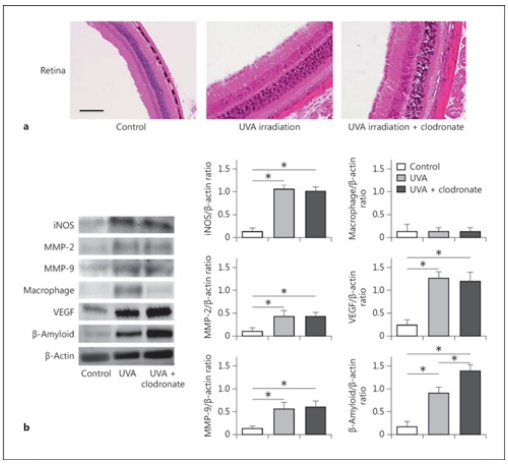
Physical State:	Liquid (sterile filtered)
Concentration:	1.1 mg/ml by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide

Stabilizer:	None

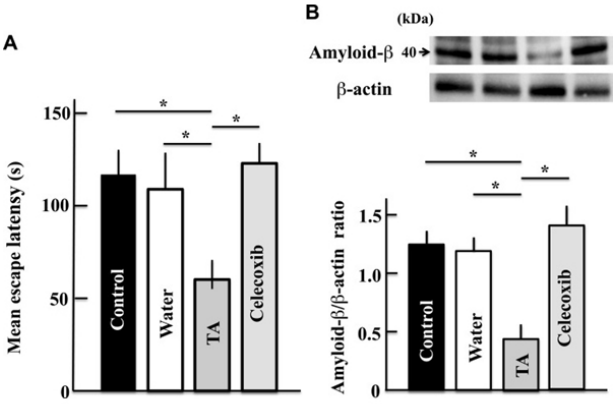
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

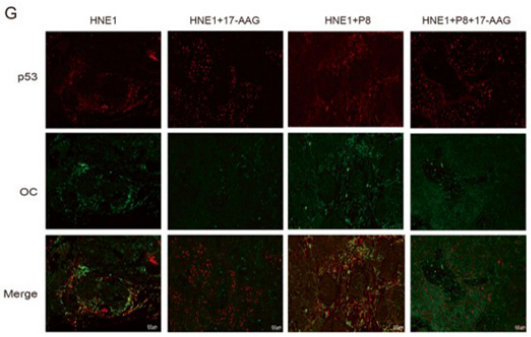
Images



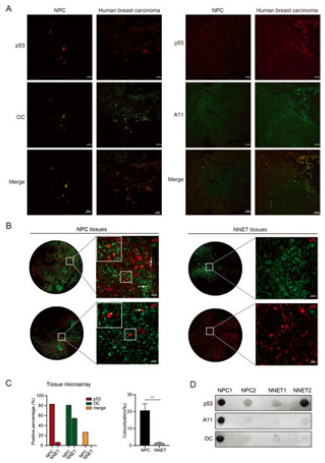
Western Blot
Long-term ultraviolet A (UVA) eye irradiation induced retinal damage (a) and increased expression of macrophages, vascular endothelial growth factor (VEGF), and β-amyloid (b) in Clophosome-treated C57BL/6j mice. Thin sections of the eye specimens were stained with hematoxylin-eosin. Scale bar, 100 µm. Values are expressed as mean ± SD derived from 12 animals. * $p < 0.05$. iNOS, inducible nitric oxide synthase; MMP-2, matrix metalloproteinase-2; MMP-9, matrix metalloproteinase-9.
Fig 6. PMID: 31988904



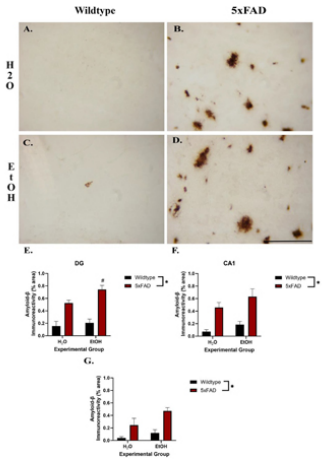
Western Blot
Effects of celecoxib (COX-2 inhibitor) on the memory and learning abilities (A) and expression of amyloid-β (B) in aging mice. Two years after treatment, we measured the memory and learning abilities and levels of amyloid-β using the Morris water maze test and Western blot analysis, respectively. Values are expressed as means ± standard deviations derived from measurements from 10 mice. *$p < 0.05$. Fig 8. PMID: 33376415



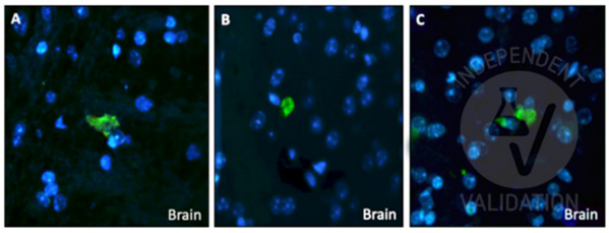
Immunofluorescence Microscopy
G Immunofluorescence staining with p53 and OC antibodies showed the p53 aggregation status in tumors from each group with different treatments. Red represents p53 antibody-specific staining, and green represents OC antibody p/n 600-401-252) staining. Scale bars, 50 µm. Data are represented as mean ± SD. *P < 0.05; **P < 0.01; ***P < 0.001; ****P < 0.0001. HE hematoxylin and eosin, IHC immunohistochemistry. Fig 5. PMID: 38212344



Immunofluorescence Microscopy
A Immunofluorescence showed the amyloid and oligomer states of p53 aggregation in NPC tissues. Red represents p53 staining, and green represents OC (p/n 600-401-252) or A11 (200-401-E88) antibody staining. Human breast carcinoma tissues were used as the positive control for p53 in the amyloid or oligomer state. Scale bars, 100 µm. B Representative staining results of p53 and OC antibodies for NPC and NNET tissue in the tissue microarray. The white arrows show the merged signals of p53 and OC antibody staining, representing amyloid aggregation of p53 in NPC tissues. Scale bars, 20 µm. C Statistical analysis of the p53 amyloid state and colocalization ratio for NPC and NNET tissues in the tissue microarray. Data are represented as mean ± SD. The P value was measured by the two-tailed Student's unpaired t test. **P < 0.01. D Dot blot results for TAFs extracted from NPC and NNET tissues. The positive immunoreactivity of OC and p53 confirmed the amyloid nature of fibrils for p53 in NPC. NPC nasopharyngeal carcinoma, NNET normal nasopharyngeal epithelial tissues, TAF tissue amyloid fraction. Fig 1. PMID: 38212344



Immunohistochemistry
Photomicrographs of amyloid beta in the DG indicate that the 5xFAD genotype (B) led to an increase in amyloid beta deposition. Interestingly, alcohol increased this effect in the 5xFAD mice (D). There was very little to no amyloid beta in the wildtype animals exposed to water (A) or ethanol (C). Two-way ANOVA revealed a main effect of genotype exposure on increased amyloid beta+ pixels in the DG (E), CA1 (F), and CA2/3 (G). However, the DG post hoc tests suggest that ethanol had an exacerbating effect on amyloid in the DG (E). Scale bar = 10 µm; * $p < 0.05$ main effect. # < 0.05 post hoc comparison compared to 5xFAD alone. Fig 4.
PMID: 40475910



Immunofluorescence Microscopy
Immunofluorescence of Anti-Beta Amyloid Antibody.
Tissue: adult mouse brain cells.
Fixation: 4% paraformaldehyde.
Antigen retrieval: none.
Primary Antibody: Anti-Beta Amyloid diluted 1:20, 1:50, 1:100, and 1:200 in 0.1 M PBS-BSA-PLL ON at RT.
Secondary Antibody: goat anti-rabbit AF488 conjugated antibody diluted 1:500 in 0.1 M PBS for 1 h at RT.
Staining of beta-amyloid positive cells at 40x magnification.
Independently Validated by antibodies-online GmbH (p/n ABIN1043866/ ABIN95037) courtesy of Prof. Merighi, University of Turin.

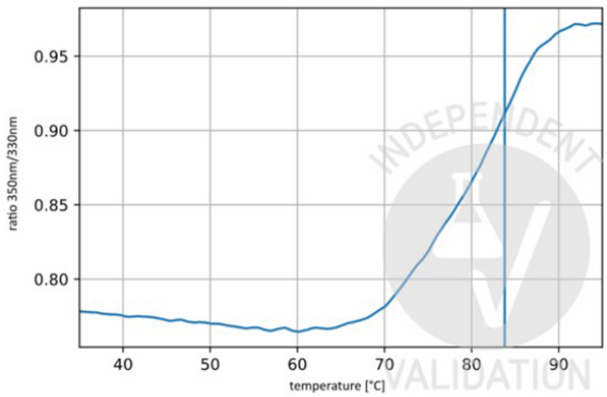
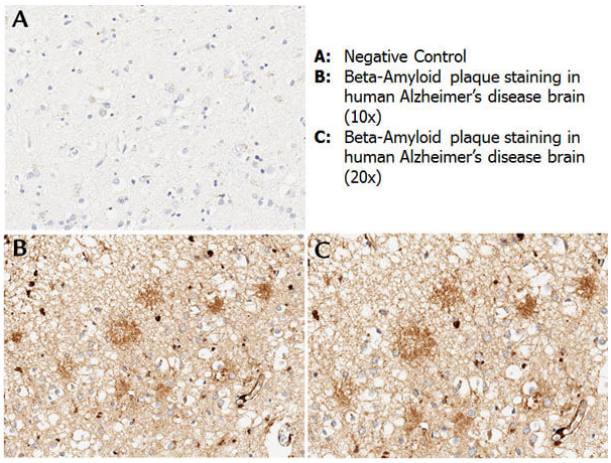
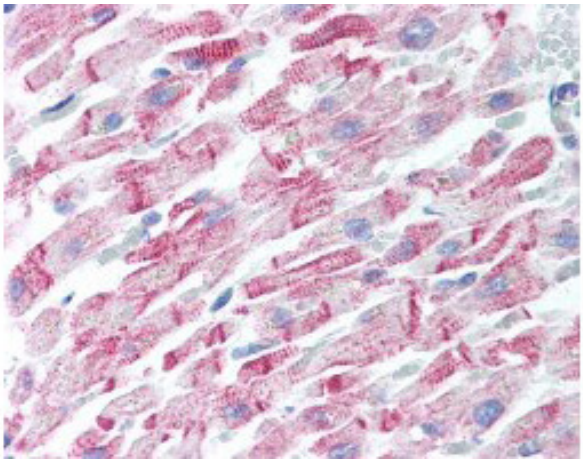


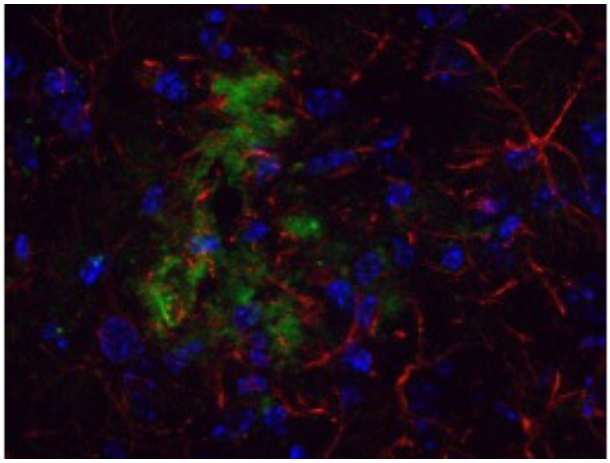
Figure
Unfolding profile of Anti-Beta Amyloid Antibody.
The fluorescence signal is plotted against temperature. The vertical line indicates the Ti at 83.8 °C. Independently Validated by antibodies-online GmbH (p/n ABIN1043866/ ABIN95037) courtesy of NanoTemper Technologies.



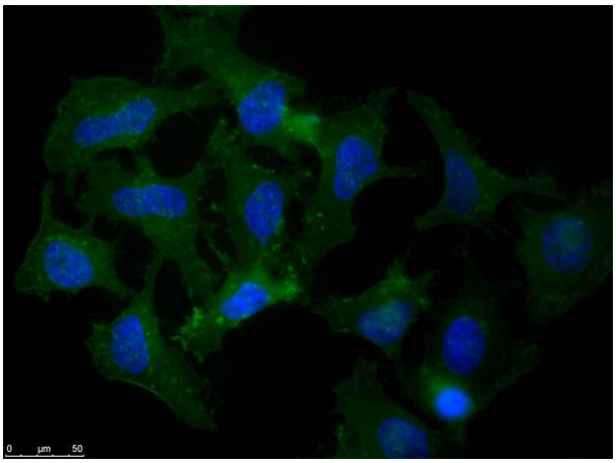
Immunohistochemistry
Immunohistochemistry with anti-beta amyloid antibody showing amyloid beta plaque staining in human Alzheimer's disease brain at 10x and 20x (B & C). Staining was performed on Leica Bond system using the standard protocol. Formalin fixed/paraffin embedded tissue sections were subjected to antigen retrieval with E1 (Leica Microsystems) retrieval solution for 20 min and then incubated with rabbit anti-beta amyloid antibody 600-401-253 at 1:100 dilution for 60 minutes. Biotinylated Anti-rabbit secondary antibody was used at 1:200 dilution to detect primary antibody. The reaction was developed using streptavidin-HRP conjugated compact polymer system and visualized with chromogen substrate, 3'3-diamino-benzidine substrate (DAB). The sections were then counterstained with hematoxylin to detect cell nuclei.



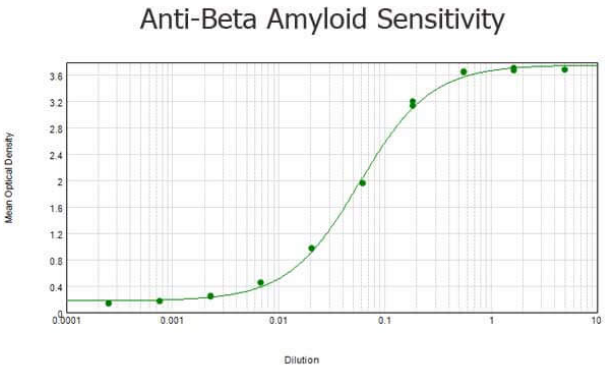
Immunohistochemistry
Human Heart (formalin-fixed, paraffin-embedded) stained with Anti-Beta Amyloid Antibody at 5 ug/ml followed by biotinylated goat anti-rabbit IgG secondary antibody, alkaline phosphatase-streptavidin and chromogen.



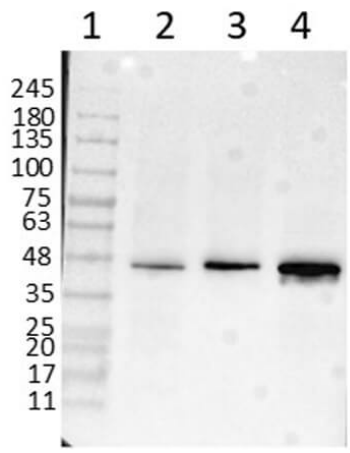
Immunofluorescence Microscopy
Immunohistochemical detection of beta Amyloid using Anti-Beta Amyloid Antibody on TG APP23 mouse brain cortex frozen sections. Anti-Beta Amyloid Antibody used at 1:200 and incubated for 2 hours in TBS/BSA with Tween and azide. Fluorescent labelled anti rabbit IgG was then added. Carl Hobbs, King`s College London, United Kingdom.



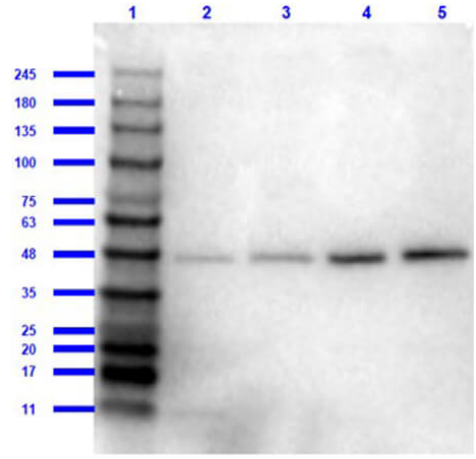
Immunofluorescence Microscopy
Immunofluorescence microscopy of Rabbit Anti-Beta Amyloid antibody using HeLa cells fixed with MeOH. Anti-Beta Amyloid Antibody was used at 1 µg/mL, O/N at 4°C. Secondary antibody: Anti-RABBIT IgG DyLight™ 488 Conjugated Preadsorbed (p/n 611-741-127) at 2 ug/ml for 1 h at RT. Localization: APP is a cell surface protein that rapidly becomes internalized to endosomes and lysosomes. Some APP accumulates in secretory transport vesicles. Colocalizes with other proteins in a vesicular pattern in cytoplasm and perinuclear regions. Staining: Amyloid beta as green fluorescent signal with DAPI (blue) nuclear counterstain.



ELISA
ELISA results of purified Rabbit anti-Beta Amyloid Antibody tested against BSA-conjugated peptide of immunizing peptide. Each well was coated in duplicate with 0.1µg of conjugate. The starting dilution of antibody was 5µg/ml and the X-axis represents the Log10 of a 3-fold dilution. This titration is a 4-parameter curve fit where the IC50 is defined as the titer of the antibody. Assay performed using 3% fish gel, Goat anti-Rabbit IgG Antibody Peroxidase Conjugated (Min X Bv Ch Gt GP Ham Hs Hu Ms Rt & Sh Serum Proteins) (p/n 611-103-122) and TMB ELISA Peroxidase Substrate (p/n TMBE-1000).



Western Blot
Western Blot of Rabbit Anti-Beta Amyloid Antibody. Lane 1: Opal Prestained Molecular Weight Marker (p/n MB-210-0500). Lane 2: HEK293T Whole Cell Lysate (p/n W09-001-GX5). Lane 3: Mouse Brain Whole Cell Lysate (p/n W10-000-004). Lane 4: A-172 Whole Cell Lysate (p/n W09-001-GL5). Load: 10µg/lane. Primary Antibody: Anti-Beta Amyloid at 1µg/mL overnight at 2-8°C. Secondary Antibody: Goat Anti-Rabbit IgG HRP Conjugated (p/n 611-103-122) at 1:70,000 for 30min at RT. Block: BlockOut Buffer (p/n MB-073). Predicted MW: ~40-50kDa. Observed MW: ~48kDa.



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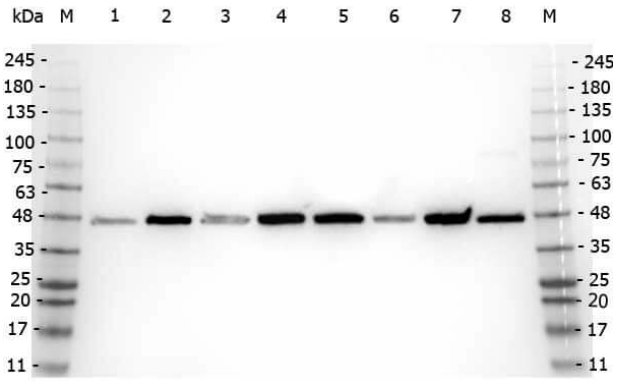
Western Blot of Rabbit Anti-Beta Amyloid Antibody. Lane 1: Opal Prestained Molecular Weight Marker (p/n MB-210-0500). Lane 2: HEK293T Whole Cell Lysate (p/n W09-001-GX5). Lane 3: Mouse Brain Whole Cell Lysate (p/n W10-000-004). Lane 4: A-172 Whole Cell Lysate (p/n W09-001-GL5). Lane 5: Daudi Whole Cell Lysate (p/n W09-001-MQ2). Load: 10µg/lane. Primary Antibody: Anti-Beta Amyloid at 1:1000 overnight at 2-8°C. Secondary Antibody: Goat Anti-Rabbit IgG HRP Conjugated (p/n 611-103-122) at 1:70,000 for 30min at RT. Block: BlockOut Buffer (p/n MB-073). Predicted MW: ~40-50kDa. Observed MW: ~48kDa.



Western Blot
Western Blot of Rabbit anti-Beta Amyloid antibody. Marker: Opal Pre-stained ladder (p/n MB-210-0500). Lane 1: HEK293 lysate (p/n W09-000-365). Lane 2: HeLa Lysate (p/n W09-000-364). Lane 3: MCF-7 Lysate (p/n W09-000-360). Lane 4: Jurkat Lysate (p/n W09-000-370). Lane 5: A431 Lysate (p/n W09-000-361). Lane 6: LNCaP Lysate (p/n W09-001-GJ9). Lane 7: A-172 Lysate (p/n W09-001-GL5). Lane 8: NIH/3T3 Lysate (p/n W10-000-358). Load: 35 µg per lane. Primary antibody: Beta Amyloid antibody at 1:5,000 for overnight at 4°C. Secondary antibody: Peroxidase rabbit secondary antibody at 1:30,000 for 60 min at RT. Blocking Buffer: 1% Casein-TTBS for 30 min at RT. Predicted MW: ~40-50 kDa. Observed size: ~48 kDa for Beta Amyloid.

References

- Li J et al. Amyloid aggregates induced by the p53-R280T mutation lead to loss of p53 function in nasopharyngeal carcinoma. *Cell Death Dis.* (2024)
- Mohommed HE et al. Ethanol Exacerbates the Alzheimer's Disease Pathology in the 5xFAD Mouse Model. *Neuroglia.* (2024)
- Hiramoto K et al. Tranexamic Acid Improves Memory and Learning Abilities in Aging Mice. *Journal of Experimental Pharmacology* (2020)
- Hiramoto K et al. Long-Term Ultraviolet A Eye Irradiation Causes Retina Denaturation in Mice. *Biomedicine Hub* (2017)

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