

Amylo-Glo RTD Amyloid Plaque Stain Reagent

Catalogue No.:	TR-300-AG
Description:	Amylo-Glo RTD Ready to Dilute Staining reagent is designed to stain amyloid plaques in tissue sections. This novel marker has several advantages over other conventional markers such as Thioflavin S and Congo Red because of its unique chemical and spectral properties. (L. Schmued et al. (2012) J.Neuroscience Methods 209:120- 126). Using Amylo-Glo results in a very bright blue UV excitable stain under physiological conditions that will not bleed through when illuminated with other filters. Its brightness makes it ideal for low magnification quantification studies, while its unique excitation/emission profile and mild staining conditions makes it ideal for combination for multiple immunofluorescent labeling studies. Amylo-Glo RTD is compatible with fresh, frozen, and formalin-fixed immunohistochemistry or cytochemistry, and it is particularly good for confocal and multiple labeling because of its high fluorescent intensity and high resistance to photo-bleaching. Moreover because Amylo-Glo fluoresces in the UV channel, double and triple labeling experiments can be performed very easily (see protocol).
Related products:	Amylo-Glo / EB kit catalog number TR-400-AG
Batch No.:	See vial label
Other Names:	AmyloGlo
Compound Name:	Compound: Amylo-Glo; Classification: Styrylbenzene derivative; Appearance: Yellow solution; Molecular Weight: 392; Filter system for visualizing: UV
Purity:	Thin layer chromatography using alumina plates and a solvent system of ethanol and water (3:1) revealed the presence of two fluorescent isomers. No amount of starting material was detected.
Applications:	Staining of amyloid plaques in human and animal tissues, see included protocol
Specificity:	amyloid plaques both intraneuronal and vascular
Appearance:	Excitation Peak: 334; Emission Peak: 533 nm - unbound, 438 nm when bound to amyloid. To visualize Amylo-glo in tissue, UV light is required. For example, Amylo-Glo tissue can be examined using an epifluorescent microscope with UV (Nikon UV-2A) filter cube. Excitation (325-375nm) Emission (400-450nm) is typical. Also note, it is not uncommon for Amylo-Glo to appear light yellow when examined by eye, yet appear a light blue color when photographed.
Reconstitution:	Ready to dilute per protocol; 100X
Storage:	The stock solution can be stored for up to 6 months after date of receipt at 2-8C protected from light. No preservatives. Use sterile technique when handling and proper laboratory procedures.
Expiry Date:	6 months from date of purchase
Specific References:	Hascup KN et al. (2020) "Hippocampal alterations in glutamatergic signaling during amyloid progression in A β PP/PS1 mice." Sci Rep. 10(1):14503; Application: IHC/IF Species: Mouse Crapser JD et al. (2020) "Microglia facilitate loss of perineuronal nets in the Alzheimer's disease brain." EBioMedicine. 58:102919; Application: IHC/IF Species: Mouse

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Abe Y et al. (2020) "Behavioral and electrophysiological evidence for a neuroprotective role of aquaporin-4 in the 5xFAD transgenic mice model." *Acta Neuropathol Commun.* 8(1):67; Application: IHC/IF Species: Mouse

Zhu X et al. (2020) "Robust neuroinflammation and perivascular pathology in rTg-DI rats, a novel model of microvascular cerebral amyloid angiopathy." *J Neuroinflammation.* 17(1):78; Application: IHC/IF Species: Rat

Majewski L et al. (2020) "Transgenic Mice Overexpressing Human STIM2 and ORAI1 in Neurons Exhibit Changes in Behavior and Calcium Homeostasis but Show No Signs of Neurodegeneration." *Int J Mol Sci.* 21(3); Application: IHC/IF Species: Mouse

Davtyan H et al. (2019) "Testing a MultiTEP-based combination vaccine to reduce A β and tau pathology in Tau22/5xFAD bigenic mice." *Alzheimers Res Ther.* 11(1):107; Application: IHC/IF Species: Mouse

Yeh SHH et al. (2019) "A high-sucrose diet aggravates Alzheimer's disease pathology, attenuates hypothalamic leptin signaling, and impairs food-anticipatory activity in APP^{swe}/PS1^{dE9} mice." *Neurobiol. Aging.* [In press]; Application: IHC/IF Species: Mouse

Bharani KL et al. (2019) "Serum Pro-Bdnf Levels Correlate With Phospho-Tau Staining In Alzheimer's Disease." *Neurobiol. Aging.* [In press]; Application: IHC/IF Species: Human

Hovakimyan A et al. (2019) "A MultiTEP platform-based epitope vaccine targeting the phosphatase activating domain (PAD) of tau: therapeutic efficacy in PS19 mice." *Sci Rep.* 9(1):15455; Application: IHC/IF Species: Human

Hasselmann J et al. (2019) "Development of a Chimeric Model to Study and Manipulate Human Microglia In Vivo." *Neuron.* [Epub ahead of print]; Application: IHC/IF Species: Mouse

Spangenberg E et al. (2019) "Sustained microglial depletion with CSF1R inhibitor impairs parenchymal plaque development in an Alzheimer's disease model." *Nat Commun.* 10(1):3758 (Supplementary Figure 1); Application: IHC/IF Species: Human

Eggers C et al. (2019) "Novel cannabis flavonoid, cannflavin A displays both a hormetic and neuroprotective profile against amyloid β -mediated neurotoxicity in PC12 cells: comparison with geranylated flavonoids, mimulone and diplacone." *Biochem Pharmacol.* [Epub ahead of print]; Application: IHC/IF Species: Rat

Dominguez E (2019) "Microglial Contributions to Alzheimer's Disease Pathogenesis." PhD Thesis, UC Irvine. Application: IHC/IF Species: Mouse

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Jovic M et al. (2019) "Short-term fish oil supplementation applied in presymptomatic stage of Alzheimer's disease enhances microglial/macrophage barrier and prevents neuritic dystrophy in parietal cortex of 5xFAD mouse model." *PLoS One.* 14(5):e0216726; Application: IHC/IF
Species: Mouse

Collins MJ et al. (2019) "Age moderates the effects of traumatic brain injury on beta-amyloid plaque load in APP/PS1 mice." *J Neurotrauma.* [Epub ahead of print]; Application: IHC/IF
Species: Mouse

Shukla AK et al. (2018) "CD11a expression distinguishes infiltrating myeloid cells from plaque-associated microglia in Alzheimer's disease." *Glia.* [Epub ahead of print]; Application: IHC/IF
Species: Mouse

Feng X et al. (2018) "Quantitative proteomics reveals distinct composition of amyloid plaques in Alzheimer's disease.

"*Alzheimers Dement.* [In press]; Application: IHC/IF Species: Human, mouse

Davis J et al. (2018) "A Novel Transgenic Rat Model of Robust Cerebral Microvascular Amyloid with Prominent Vasculopathy.

"*Am J Pathol.* [Epub ahead of print]; Application: IHC/IF Species: Rat

Palombo F et al. (2017) "Detection of A β plaque-associated astrogliosis in Alzheimer's disease brain by spectroscopic imaging and immunohistochemistry." *Analyst.* [Epub ahead of print]; Application: IF
Species: Mouse

Abud EM (2017) "Generation of Human Microglia from Induced Pluripotent Stem Cells to Study Innate Immunity in Neurological Diseases." *PhD Thesis.* 2017; Application: IF
Species: Mouse

Abud EM et al. (2017) "iPSC-Derived Human Microglia-like Cells to Study Neurological Diseases." *Neuron.* 2017; 49(2):278-93 Application: IF
Species: Mouse

Solomon IH et al. (2017) "Brain and liver pathology, amyloid deposition, and interferon responses among older HIV-positive patients in the late HAART era." *BMC Infect Dis.* 2017; 17(1):151 Application: IF
Species: Human

Xu F et al. (2016) "Cerebral vascular amyloid seeds drive amyloid β -protein fibril assembly with a distinct anti-parallel structure." *Nat Commun.* 2016; 7:13527. Application: IF
Species: Mouse

Katsouri L et al. (2016) "PPAR γ -coactivator-1 α gene transfer reduces neuronal loss and amyloid- β generation by reducing β -secretase in an Alzheimer's disease model." *Proc Natl*

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Acad Sci USA. 2016; 113(43):12292-97. Application: IF Species: Mouse

Esposito G et al. (2016) "Autologous transplantation of intestine-isolated glia cells improves neuropathology and restores cognitive deficits in β amyloid-induced neurodegeneration." *Sci Rep.* 2016; 6: 22605. Application: IF Species: Rat

Marsh SE et al. (2016) "The adaptive immune system restrains Alzheimer's disease pathogenesis by modulating microglial function." *Proc Natl Sci USA.* Feb 16. pii: 201525466. Application: IF Species: Hu Fibrillar amyloid visualization.

Kim YH et al. (2015) "A 3D human neural cell culture system for modeling Alzheimer's disease." *Nat Protoc.* Jul;10(7):985-1006. Application: IF Species: Hu, Human neural stem-cell-derived three-dimensional (3D) culture system.

Nijholt DA et al. (2015) "Pregnancy Zone Protein is Increased in the Alzheimer's Disease Brain and Associates with Senile Plaques." *J Alzheimer's Disease.* 46(1):227-38. Application: IF Species: Hu

Kamphuis W et al. (2015) "GFAP and vimentin deficiency alters gene expression in astrocytes and microglia in wild-type mice and changes the transcriptional response of reactive glia in mouse model for Alzheimer's disease." *Glia.* Jun;63(6):1036-56. Application: IF Species: Mouse

Choi SH et al. (2014) "A three-dimensional human neural cell culture model of Alzheimer's disease." *Nature* Oct 12. doi: 10.1038/nature1380. Application: IF Species: Hu, Human neural stem-cell-derived three-dimensional (3D) culture system.

Niedowicz DM et al. (2014). "Obesity and diabetes cause cognitive dysfunction in the absence of accelerated beta-amyloid deposition in a novel murine model of mixed or vascular dementia." *Acta Neuropathol Commun.* 2014 Jun 10;2:64.

General References: L. Schmued et al. (2012) *J.Neuroscience Methods* 209:120, 126

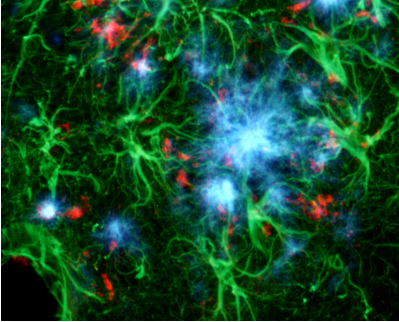
Kit Components: 5 mL of 100X Amylo-Glo RTD (A-G RTD) solution

Reagent 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.

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This triple exposure allows for the simultaneous localization of Amylo-Glo® positive amyloid plaques (blue), GFAP positive hypertrophied astrocytes (green) and activated microglia (red) in the hippocampus of the AD/Tg mouse. Combined UV, blue and green light illumination.

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