Synaptic Systems

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GFAP

Cat.No. 173 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H_2O, then aliquot and store at -20°C until use.
Applications	**WB**: 1 : 1000 (AP staining) (see remarks) **IP**: yes **ICC**: 1 : 1000 **IHC**: yes **IHC-P/FFPE**: 1 : 1000 **ELISA**: yes (see remarks)
Immunogen	Recombinant protein corresponding to AA 1 to 432 from human GFAP (UniProt Id: P14136)
Reactivity	Reacts with: human (P14136), rat (P47819), mouse (P03995), chicken, zebrafish. Other species not tested yet.
Specificity	Specific for GFAP.
matching control	173-0P
Remarks	**WB**: The polyclonal antibodies are more sensitive compared to the monoclonals. **ELISA**: Suitable as detector antibody for sandwich-ELISA with cat. no. 173 011 as capture antibody (protocol for sandwich-ELISA).

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Glial **f**ibrillary **a**cidic **p**rotein **GFAP** is a glial-specific member of the intermediate filament protein family. This group comprises celltype-specific filamentous proteins with similar structure and function as scaffold for cytoskeleton assembly and maintenance.
Frequently, neural stem cells also express GFAP. In addition many types of brain tumors, probably derived from astrocytic cells, heavily express GFAP. This protein is also found in the lens epithelium, Kupffer cells of the liver, in some cells in salivary tumors and others.
Point-mutations in the GFAP gene have been correlated to Alexander disease a fatal leukoencephalopathy that leads to the dysmyelination or demyelination of the central nervous system.

Selected References SYSY Antibodies

Distinct in vivo roles of secreted APP ectodomain variants APPsα and APPsβ in regulation of spine density, synaptic plasticity, and cognition.
Richter MC, Ludewig S, Winschel A, Abel T, Bold C, Salzburger LR, Klein S, Han K, Weyer SW, Fritz AK, Laube B, et al.
The EMBO journal (2018) : . **WB, IHC; tested species: mouse**

The Anti-amyloid Compound DO1 Decreases Plaque Pathology and Neuroinflammation-Related Expression Changes in 5xFAD Transgenic Mice.
Boeddrich A, Babila JT, Wiglenda T, Diez L, Jacob M, Nietfeld W, Huska MR, Haenig C, Groenke N, Buntru A, Blanc E, et al.
Cell chemical biology (2018) : . **ELISA; tested species: mouse**

Long-term culture of astrocytes attenuates the readily releasable pool of synaptic vesicles.
Kawano H, Katsurabayashi S, Kakazu Y, Yamashita Y, Kubo N, Kubo M, Okuda H, Takasaki K, Kubota K, Mishima K, Fujiwara M, et al.
PloS one (2012) 7(10): e48034. **ICC**

Identification of low molecular weight pyroglutamate A{beta} oligomers in Alzheimer disease: a novel tool for therapy and diagnosis.
Wirths O, Erck C, Martens H, Harmeier A, Geumann C, Jawhar S, Kumar S, Multhaup G, Walter J, Ingelsson M, Degerman-Gunnarsson M, et al.
The Journal of biological chemistry (2010) 285(53): 41517-24. **IHC-P; tested species: mouse**

Sonic hedgehog expression in the postnatal brain.
Rivell A, Petralia RS, Wang YX, Clawson E, Moehl K, Mattson MP, Yao PJ
Biology open (2019) : . **WB; tested species: rat**

Glia-to-neuron transfer of miRNAs via extracellular vesicles: a new mechanism underlying inflammation-induced synaptic alterations.
Prada I, Gabrielli M, Turola E, Iorio A, D'Arrigo G, Parolisi R, De Luca M, Pacifici M, Bastoni M, Lombardi M, Legname G, et al.
Acta neuropathologica (2018) 135(4): 529-550. **ICC; tested species: mouse**

Wfs1- deficient rats develop primary symptoms of Wolfram syndrome: insulin-dependent diabetes, optic nerve atrophy and medullary degeneration.
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Scientific reports (2017) 7(1): 10220. **IHC; tested species: rat**

An electrically resistive sheet of glial cells for amplifying signals of neuronal extracellular recordings.
Matsumura R, Yamamoto H, Niwano M, Hirano-Iwata A
Applied physics letters (2016) 108(2): 023701. **IHC**

Neprilysin deficiency alters the neuropathological and behavioral phenotype in the 5XFAD mouse model of Alzheimer's disease.
Hüttenrauch M, Baches S, Gerth J, Bayer TA, Weggen S, Wirths O
Journal of Alzheimer's disease : JAD (2015) 44(4): 1291-302. **IHC-P; tested species: mouse**

Large-scale analysis of viral nucleic acid spectrum in temporal lobe epilepsy biopsies.
Esposito L, Drexler JF, Braganza O, Doberentz E, Grote A, Widman G, Drosten C, Eis-Hübinger AM, Schoch S, Elger CE, Becker AJ, et al.
Epilepsia (2015) 56(2): 234-43. **IHC; tested species: human**

Accelerated tau pathology with synaptic and neuronal loss in a novel triple transgenic mouse model of Alzheimer's disease.
Saul A, Sprenger F, Bayer TA, Wirths O
Neurobiology of aging (2013) 34(11): 2564-73. **IHC-P; tested species: mouse**

βCTF-correlated burst of hippocampal TNFα occurs at a very early, pre-plaque stage in the TgCRND8 mouse model of Alzheimer's disease.
Cavanagh C, Colby-Milley J, Bouvier D, Farso M, Chabot JG, Quirion R, Krantic S
Journal of Alzheimer's disease : JAD (2013) 36(2): 233-8. **IHC**

Synaptotagmin-12 phosphorylation by cAMP-dependent protein kinase is essential for hippocampal mossy fiber LTP.
Kaeser-Woo YJ, Younts TJ, Yang X, Zhou P, Wu D, Castillo PE, Südhof TC
The Journal of neuroscience : the official journal of the Society for Neuroscience (2013) 33(23): 9769-80. **WB**

Chronic psychosocial stress and citalopram modulate the expression of the glial proteins GFAP and NDRG2 in the hippocampus.
Araya-Callís C, Hiemke C, Abumaria N, Flugge G
Psychopharmacology (2012) 224(1): 209-22. **IHC**

No improvement after chronic ibuprofen treatment in the 5XFAD mouse model of Alzheimer's disease.
Hillmann A, Hahn S, Schilling S, Hoffmann T, Demuth HU, Bulic B, Schneider-Axmann T, Bayer TA, Weggen S, Wirths O
Neurobiology of aging (2012) 33(4): 833.e39-50. **IHC**

Age-dependent kinetics of dentate gyrus neurogenesis in the absence of cyclin D2.
Ansorg A, Witte OW, Urbach A
BMC neuroscience (2012) 13: 46. **IHC**