Datasheet

Anti-PLP Clone PLPC1

Product Name	Anti Human PLP C1
Catalogue Number	PLPC1
Clone, Isotype	PLPC1, IgG2a
Format	IgG
Tested Applications	FC, WB, IF, IHC, ICC

Description:
Proteolipid protein (PLP) is the major myelin protein of the CNS and plays an important role in the formation and maintenance of myelin. Mutations in PLP gene can lead to dysmyelinating diseases. Clone PLPC1 is used in the detection of PLP by various analysis methods.

Product Details:

Form in stock: IgG, purified – 1.0 mg/mL. Also available as unpurified supernatant.

Host: Mouse

Specificity: Synthetic peptide GRGTKF that recognizes the C terminal region of myelin proteolipid protein.

Human Histology positive control: Brain

Fusion partner: Spleen cells from immunised Balb/c mice were fused with cells of the mouse SP2/0 myeloma cell line.

Storage: Store at +4°C or -20°C. Avoid repeated freezing and thawing.

Shelf life: 18 months from date of dispatch.

Regulatory/ Restrictions: For research purposes only.

Applications	Suggested Dilution
Flow Cytometry	75µg/ml[1]
Western Blot	1:250 [24]
Immunofluorescence	Assay dependent
Immunohistochemistry	1:200-1:3000 [7-22]
Immunocytochemistry	1:1000 - 1:1500 [22,23]

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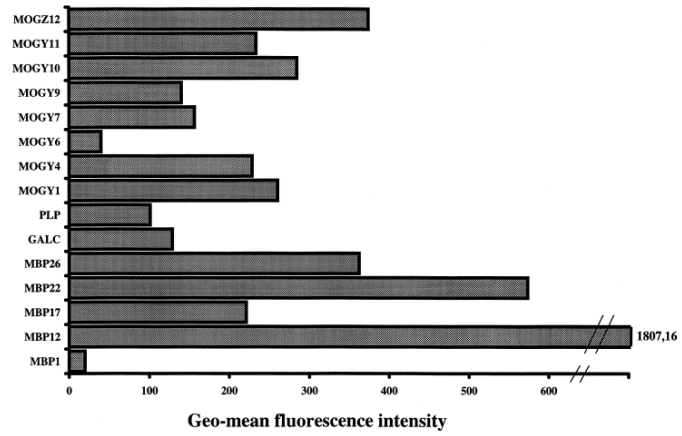
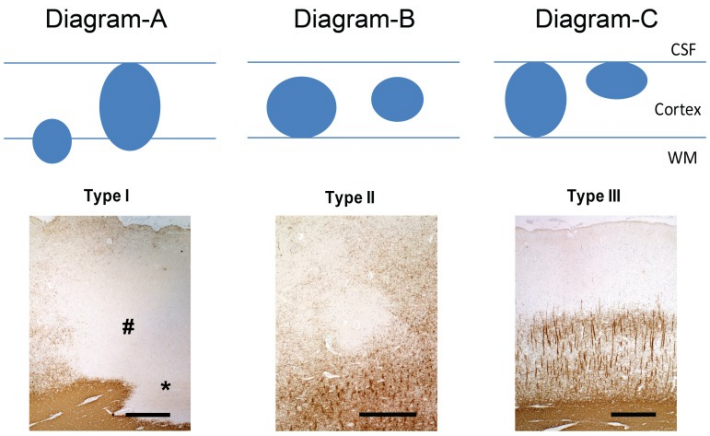
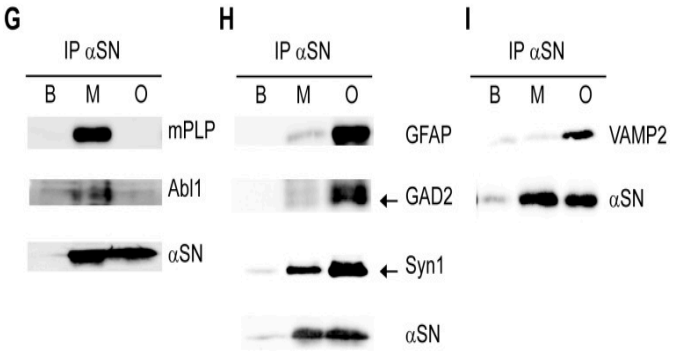
Applications:



Clone PLPC1 used to detect mouse myelin binding via Flow Cytometry
Image caption: Incubation of mouse myelin with mAb against myelin components. The binding is visualized by incubating the mAb-myelin with fluorescent labelled conjugates. The fluorescence intensity (FL2) of the myelin was measured using FACScan flow Cytometry. The data are presented as the geo-mean of fluorescence of one representative experiment (n=4). (Van der Goesa, et al.)
Dilution used: 75µg/ml



Clone PLPC1 used for the detection of PLP in brain tissue by **IHC-P**
Image caption: (**A**) Type-I NL with demyelination of the whole width of the cortex (#) and adjacent WM (*). (**B**) Type-II intracortical lesion evolving around a vessel. (**C**) Type-III subpial NL. Demyelination spreads from the pial surface until cortical layer 3. (Yao, B et al.)
Dilution used: 1:1000



Clone PLPC1 used for the detection of PLP in brain tissue by **Western Blot**
Image caption: ... human (G-I) brain extracts were analyzed by immunoblotting using antibodies against antigens selected among the monomer and oligomer binding proteins... (Betzer, C et al.)

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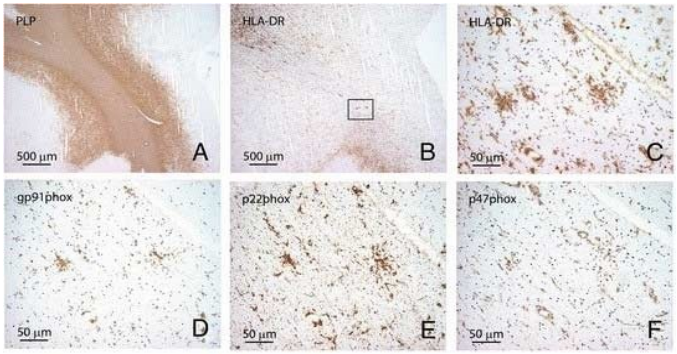
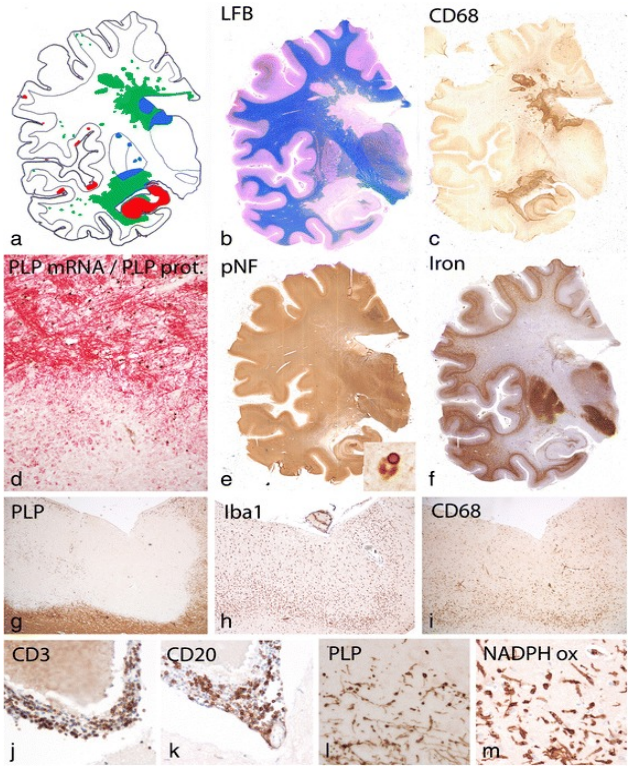


Clone PLPC1 used for the detection of PLP in brain tissue by **IHC-P**

Image caption: ... in the absence of apparent myelin loss (**A**, **E**: proteolipid protein) preactive lesions are defined as circumscribed nodules of activated microglia expressing HLA-DR (**B**, **C**) and CD68 (**D**)...

Dilution used: 1:500

(Van Horssen, J et al.)



Clone PLPC1 used for the detection of PLP in brain tissue by **ICC**

Image caption: ... l: The active lesion edge of the cortical lesions contains numerous macrophages with PLP reactive myelin degradation products... (Höftberger, R et al.)

Dilution used: 1:1000

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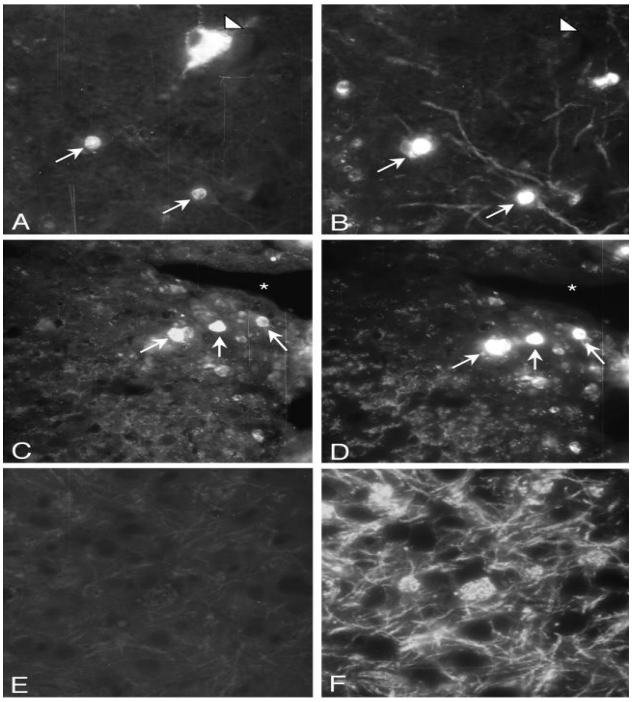

Clone PLPC1 used for the detection of PLP in brain tissue by **IF**

Image caption: ... PLP (B, D, and F; TRITC) in the ventral cervical spinal cords of *me/me* (A to D) mice 5 days after inoculation with TMEV... (Massa, P. T et al.)

References:

1. Van der Goesa, Annette, et al. (2000) The Role of Anti-Myelin (Auto)-Antibodies in the Phagocytosis of Myelin by Macrophages. *Journal of Neuroimmunology, 101, 61-67.*
2. Yao, B., Hametner, S., van Gelderen, P., Merkle, H., Chen, C., Lassmann, H., Bagnato, F. (2014) 7 Tesla Magnetic Resonance Imaging to Detect Cortical Pathology in Multiple Sclerosis*. PLoS ONE, 9(10), e108863.*
3. Betzer, C., Movius, A.J., Shi, M., Gai, W-P., Zhang, J., Jensen, P.H. (2015) Identification of Synaptosomal Proteins Binding to Monomeric and Oligomeric α-Synuclein. *PLoS ONE, 10(2), e0116473.*
4. Van Horssen, J., Singh, S., Van der Pol, S., Kipp, M., Lim, J.L., Peferoen, L., Amor, S. (2012) Clusters of activated microglia in normal-appearing white matter show signs of innate immune activation. *Journal of Neuroinflammation, 9, 156.*
5. Höftberger, R., Leisser, M., Bauer, J., Lassmann, H. (2015) Autoimmune encephalitis in humans: how closely does it reflect multiple sclerosis ? *Acta Neuropathologica Communications, 3, 80.*
6. Massa, P.T., Ropka, S.L., Saha, S., Fecenko, K.L., Beuler, K L. (2002) Critical Role for Protein Tyrosine Phosphatase SHP-1 in Controlling Infection of Central Nervous System Glia and Demyelination by Theiler's Murine Encephalomyelitis Virus. *Journal of Virology, 76(16), 8335–8346.*
7. Bramow, S., Frischer, J.M., Lassmann, H., Koch-Henriksen, N., Lucchinetti, C.F., Sørensen, P.S., Laursen, H. (2010) Demyelination versus remyelination in progressive multiple sclerosis. *Brain; 133 (10): 2983-2998.* **IHC, Dilution used 1:1000**
8. Kooij, G., Mizee, M.R., Van Horssen, J., Reijerkerk, A., Witte, M.E., Drexhage, J.A.R., Van der Pol, S.M.A., Van het Hof, B., Scheffer, G., Scheper, R., Dijkstra, C.D., Van der Valk, P., de Vries, H.E. (2011) Adenosine triphosphate-binding cassette transporters mediate chemokine (C-C motif) ligand 2 secretion from reactive astrocytes: relevance to multiple sclerosis pathogenesis. *Brain; 134 (2): 555-570.* **IHC, Dilution used 1:500**
9. Decker, C.F., Funalot, B., Vallat, J.M., Garcia-Bragado, F., Charnay, P., Topilko, P. (2010) CNS/PNS Boundary

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Transgression by Central Glia in the Absence of Schwann Cells or Krox20/Egr2 Function. *Journal of Neuroscience 30.17 : 5958-967.* **IHC, Dilution used 1:400**

10. Roemer, S.F., Parisi P., Lennon, V.A., Benarroch, E.E., Lassmann, H., Bruck, W., Mandler, R.N., Weinshenker, B.G., Pittock, S.J., Wingerchuk, D.M., Lucchinetti, C.F. (2007) Pattern-specific loss of aquaporin-4 immunoreactivity distinguishes neuromyelitis optica from multiple sclerosis. *Brain; 130 (5): 1194-1205.* **IHC, Dilution used 1:1000**
11. Geurts, J.J.G., Bö, L., Roosendaal, S.D., Hazes, T., Daniëls, R., Barkhof, F., Witter, M.P., Huitinga, I., Van der Valk, P. (2007) Extensive Hippocampal Demyelination in Multiple Sclerosis. *Journal of Neuropathology & Experimental Neurology ; 66 (9): 819-827.* **IHC, Dilution used 1:3000**
12. Kooi, E.J., Prins, M., Bajic, N., Beliën, J.A.M., Gerritsen, W.H., Van Horssen, J., Geurts, J.J.G. (2011) Cholinergic imbalance in the multiple sclerosis hippocampus. *Acta Neuropathologica, 122(3), 313–322.* **IHC, Dilution used 1:500**
13. Seewann, A., Kooi, E. J., Roosendaal, S. D., Pouwels, P.J.W., Wattjes, M.P., Van Der Valk, P., Barkhof, F., Polman, C. H., Geurts, J.J.G. "Postmortem Verification of MS Cortical Lesion Detection with 3D DIR." *Neurology* 78.5 (2012): 302-08. **IHC, Dilution used 1:3000**
14. Kooi, E.J., E. M. M. Strijbis, P. Van Der Valk, and J. J. G. Geurts. (2012) Heterogeneity of Cortical Lesions in Multiple Sclerosis: Clinical and Pathologic Implications. *Neurology 79.13 : 1369-376.* **IHC, Dilution used 1:500**
15. Skripuletz, T., Hackstette, D., Bauer, K., Gudi, V., Pul, R., Voss, E., Berger, K., Kipp, M., Baumgärtner, W., Stangel, M. (2013) Astrocytes regulate myelin clearance through recruitment of microglia during cuprizone-induced demyelination. *Brain; 136 (1): 147-167.* **IHC, Dilution used 1:500**
16. Bagnato, F., Hametner, S., Yao, B., Van Gelderen, P., Merkle, H., Cantor, F.K., Duyn, J.H. (2011) Tracking iron in multiple sclerosis: a combined imaging and histopathological study at 7 Tesla. *Brain, 134(12), 3599–3612.* **IHC, Dilution used 1:1000**
17. Gilmore, C.P., Bö, L., Owens, T., Lowe, J., Esiri, M.M., Evangelou, N. (2006) Spinal Cord Gray Matter Demyelination in Multiple Sclerosis—A Novel Pattern of Residual Plaque Morphology. *Brain Pathology, 16: 202–208.* **IHC, Dilution used 1:3000**
18. Jatana, M., Singh, I., Singh, A.K., Jenkins, D. (2006) Combination of Systemic Hypothermia and N-acetylcysteine Attenuates Hypoxic-Ischemic Brain Injury in Neonatal Rats. *Pediatric Research 59.5: 684-89.* **IHC, Dilution used 1:200**
19. Maccarrone, G., Nischwitz, S., Deininger, S-O., Hornung, J., König, F.B., Stadelmann, C., Turck, C.W., Weber, F. (2017) MALDI imaging mass spectrometry analysis—A new approach for protein mapping in multiple sclerosis brain lesions. *Journal of Chromatography B, Volume 1047, Pages 131-140, ISSN 1570-0232.* **IHC, Dilution used 1:500**
20. Chuang, T-Y., Guo, Y., Seki, S.M., Rosen, A.M., Johanson, D.M., Mandell, J.W., Gaultier, A. (2016) LRP1 expression in microglia is protective during CNS autoimmunity. *Acta Neuropathologica Communications, 4, 68.* **IHC, Dilution used 1:500**
21. Cerina, M., Narayanan, V., Göbel, K., Bittner, S., Ruck, T., Meuth, P., Herrmann, A.M., Stangel, M., Gudi, V., Skripuletz, T., Daldrup, T., Wiendl, H., Seidenbecher, T., Ehling, P., Kleinschnitz, C., Pape, H-C., Budde, T., Meuth, S.G. (2017) The quality of cortical network function recovery depends on localization and degree of axonal demyelination. *Brain, Behavior, and Immunity, Volume 59, Pages 103-117, ISSN 0889-1591.* **IHC, Dilution used 1:500**
22. Katharina, J., Rickert, M., Clarner, T. , Beyer, C., Kipp, M. (2015) Absence of CCL2 and CCL3 Ameliorates Central Nervous System Grey Matter But Not White Matter Demyelination in the Presence of an Intact Blood-Brain Barrier. *Molecular Neurobiology 53.3: 1551-564.* **IHC and ICC, Dilution used 1:1500**
23. Haider, L., Fischer, M.T., Frischer, J.M., Bauer, J., Höftberger, R., Botond, G., Lassmann, H. (2011) Oxidative damage in multiple sclerosis lesions. *Brain, 134(7), 1914–1924.* **ICC, Dilution used 1:1000**
24. Cheng, C.M., et al. (1998) Biochemical and Morphometric Analyses Show That Myelination in the Insulin-like Growth Factor 1 Null Brain Is Proportionate to Its Neuronal Composition. *The Journal Of Neuroscience 18.15: 5673-681.* **WB, Dilution used 1:250**

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25. Jaśkiewicz, Ewa, et al. (2005) Expression of Recombinant Forms of Human 21.5 KDa Myelin Basic Protein and Proteolipid Protein in CHO Cells. *Acta Biochimica Polonica, 52, (4/2005) 863-866.* **FC**
26. Garcia-Vallejo, J. J., Ilarregui, J. M., Kalay, H., Chamorro, S., Koning, N., Unger, W. W., ... van Kooyk, Y. (2014). CNS myelin induces regulatory functions of DC-SIGN-expressing, antigen-presenting cells via cognate interaction with MOG. *Journal of Experimental Medicine, 211(7), 1457-1483.* **FC**

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