

Product datasheet

anti-Synaptopodin/SYNPO mouse monoclonal, G1D4, liquid, purified

Short overview

Cat. No.	690094
Quantity	1 ml
Concentration	50 µg/ml (50 µg)

Product description

Host	Mouse
Antibody Type	Monoclonal
Isotype	IgG1
Clone	G1D4
Immunogen	Isolated rat kidney glomeruli
Formulation	PBS pH 7.4 with 0.5% BSA and 0.09% sodium azide
UniprotID	A4IFK4 (Bovine), A0A286XK19 (Guinea pig), Q8N3V7 (Human), Q91YE8 (Mouse), D4A702 (Rat)
Synonym	Synaptopodin, SYNPO, KIAA1029
Conjugate	Unconjugated
Purification	Affinity chromatography
Storage	Short term at 2-8°C; long term storage in aliquots at -20°C; avoid freeze/thaw cycles
Intended use	Research use only
Application	ICC/IF, IHC, WB
Reactivity	Human, Mouse, Rat
No reactivity	Chicken, Frog, Rabbit

Applications

Immunocytochemistry (ICC)	Assay dependent
Immunohistochemistry (IHC) - frozen	1:50-1:200 (0.25-1 µg/ml)
Immunohistochemistry (IHC) - paraffin	1:50-1:200 (0.25-1 µg/ml, microwave treatment recommended)
Western Blot (WB)	Assay dependent

Background

The antibody recognizes differentiated podocytes (glomerular visceral epithelial cells) in vivo and in vitro (weaker additional reaction with arterial endothelial cells), co-localization with alpha-actinin. Does not react with parietal cells. Reacts with a subset of exclusively telencephalic synapses. Differentiation-dependent expression during postnatal maturation of rat brain. Differentiation-dependent expression in cultured hippocampal neurons.

The antibody reacts specifically with synaptopodin, a prolin-rich actin-binding protein with 2 binding sites for actin. Synaptopodin represents a new class of actin-binding proteins which has first been localized in podocytes and a subset of telencephalic postsynaptic densities. In human tissue synaptopodin has a molecular weight of 73.7 kDa and pI of 9.38 (calculated from sequence data); in mouse the corresponding data are 74

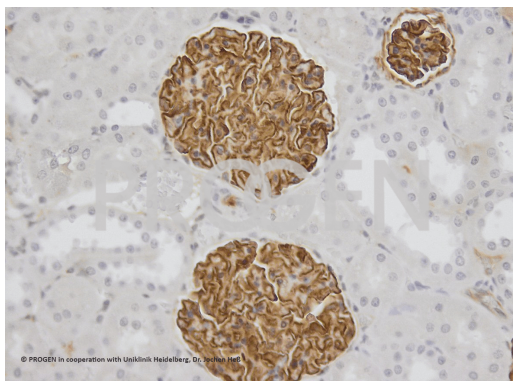
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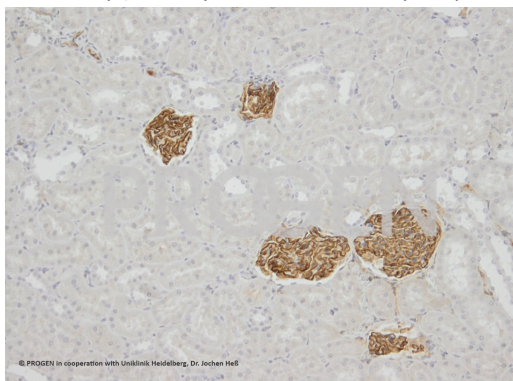
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kDa, pI 9.27. In SDS-PAGE the antigen appears as 100 kDa polypeptide in brain and 110 kDa polypeptide in kidney (the difference might be attributed to posttranslational modifications). In Western blot analysis the antibody also reacts with a 44 kDa degradation fragment of synaptopodin.

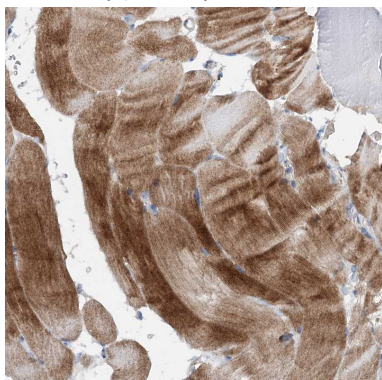
Product images



Rat kidney (courtesy of J. Heß, University Hospital Heidelberg)



Rat kidney (courtesy of J. Heß, University Hospital Heidelberg)



Synaptopodin staining on human skeletal muscle (courtesy of The Human Protein Atlas, www.proteinatlas.org, Thul PJ et al, 2017. A subcellular map of the human proteome. Science)

References

Publication	Species	Application
Moritz Schanz Martin Kimmel Mark Dominik Alscher Kerstin Amann Christoph Daniel., TIMP-2 and IGFBP7 in human kidney biopsies in renal disease. Clin Kidney J. 16 1434-1446. (2023).	Human	IHC-IF
Montandon, M., Hamidouche, T., et al. Telomerase is required for glomerular renewal in kidneys of adult mice. NPJ Regen Med. (2022).	Mouse	IHC-IF
Ekulu, P. M. et al. Novel human podocyte cell model carrying g2/g2 apol1 high-risk genotype. Cells 10, (2021).	human	WB
Zhu, Z. et al. Mitoquinone Protects Podocytes from Angiotensin II-Induced Mitochondrial Dysfunction and Injury via the Keap1-Nrf2 Signaling Pathway. Oxid. Med. Cell. Longev. 2021, (2021).	rat	IHC-IF
Ornellas, F. et al. Mesenchymal Stromal Cells Induce Podocyte Protection in the Puromycin Injury Model. Sci.Rep. 9, 19604 (2019)	rat	IHC (paraffin)