

Monoclonal Antibody to Synaptopodin / SYNPO - Aff - Purified

Alternate names:	KIAA1029
Catalog No.:	BM5086P
Quantity:	50 µg
Background:	Synaptopodin, a prolin-rich actin-binding protein with 2 binding sites for actin, 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 kD and pI of 9.38 (calculated from sequence data); in mouse the corresponding data are 74 kD, pI 9.27. In SDS-PAGE the antigen appears as 100 kD polypeptide in brain and 110 kD polypeptide in kidney (the difference might be attributed to posttranslational modifications).
Uniprot ID:	Q8N3V7
NCBI:	9606
GeneID:	11346
Host / Isotype:	Mouse / IgG1
Clone:	G1D4
Immunogen:	Isolated Rat kidney glomeruli.
Format:	State: Lyophilized purified Ig fraction Purification: Affinity Chromatography on Protein A Buffer System: Final Solution contains PBS, pH 7.4 with 0.09% Sodium Azide as preservative and 0.5% BSA as stabilizer Reconstitution: Restore with 1 ml distilled water
Applications:	Immunofluorescence. Immunohistochemistry on Frozen Sections. Immunohistochemistry on Paraffin Embedded Tissue (After microwave treatment). <i>Working Dilutions:</i> 1/5-1/10 for 1h at RT. Immunoblotting (Western): 0.1-0.5 µg/ml. The antibody also reacts with a 44 kD degradation fragment of Synaptopodin. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	The antibody reacts specifically with Synaptopodin. It recognizes differentiated podocytes (glomerular visceral epithelial cells) <i>in vivo</i> and <i>in vitro</i> (weaker additional reaction with arterial endothelial cells), co-localization with alpha-Actinin. Does <u>not</u> react with parietal cells. Reacts with a subset of exclusively telencephalic synapses. Differentiation dependent expression during postnatal maturation of Rat brain. Differentiation dependent expression

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in cultured hippocampal neurons.

Species Reactivity: **Tested:** Human, Bovine, Rat, Mouse, Guinea Pig and Gerbil. Negative with Rabbit, Frog and Chicken.

Storage: Store the antibody at 2-8°C (lyophilized and after reconstitution) or in aliquots at -20°C. Avoid repeated freezing and thawing. Shelf life: one year from despatch.

Product Citation:

1. Philipp Lechler, Xiaoqing Wu, Wanja Bernhardt, Valentina Campean, Susanne Gastiger, Thomas Hackenbeck, Bernd Klanke, Alexander Weidemann, Christina Warnecke, Kerstin Amann, Dirk Engehausen, Carsten Willam, Kai-Uwe Eckardt, Franz Rödel, and Michael Sean Wiesener. The Tumor Gene Survivin Is Highly Expressed in Adult Renal Tubular Cells: Implications for a Pathophysiological Role in the Kidney. *Am. J. Pathol.*, Nov **2007**; 171: 1483-1498.
2. Valentina Campean, Britta Karpe, Christian Haas, Akram Atalla, Harm Peters, Harald Rupprecht, Stefan Liebner, Till Acker, Karl Plate, and Kerstin Amann. Angiopoietin 1 and 2 gene and protein expression is differentially regulated in acute anti-Thy1.1 glomerulonephritis. *Am. J. Physiol. Renal Physiol.*, May **2008**; 294: F1174-F1184.
3. Laura L. Yates, Jenny Papakrivopoulou, David A. Long, Paraskevi Goggolidou, John O. Connolly, Adrian S. Woolf, and Charlotte H. Dean. The planar cell polarity gene Vangl2 is required for mammalian kidney-branching morphogenesis and glomerular maturation; *Hum. Mol. Genet.*, Sep **2010**; 10.1093/hmg/ddq397.
4. Laura L. Yates, Jenny Papakrivopoulou, David A. Long, Paraskevi Goggolidou, John O. Connolly, Adrian S. Woolf, and Charlotte H. Dean: The planar cell polarity gene Vangl2 is required for mammalian kidney-branching morphogenesis and glomerular maturation; *Hum. Mol. Genet.*, Dec **2010**; 19: 4663-4676.

General References:

1. Mundel P, Gilbert P, and W Kriz. Podocytes in Glomerulus of Rat Kidney Express a Characteristic 44 kD Protein. *J. Histochem. and Cytochem.* Vol 39 No 8:1047-1056 (**1991**)
2. Mundel P and W Kriz. Structure and function of podocytes: an update. *Anat. Embryol.* 192:385-397 (**1995**)
3. Mundel P, Reiser J, Kriz W. Phenotypic conversion and differentiation of human and rat podocytes in vitro. *J. Am. Soc. Nephrol.* 8:8978-705 (**1997**)
4. Mundel P, Heid HW, Mundel TM, Krüger M, Reiser J, Kriz W. Synaptopodin, an actin-associated protein in telencephalic dendrites and in renal podocytes. *J Cell Biol* Vol 139 (1):193-204 (**1997**)
5. Mundel P, Reiser J, Zuniga Borja A, Davidson G, Pavenstädt H, Kriz W, Zeller R. Rearrangements of cytoskeleton and cell contacts induce process formation and postmitotic differentiation of conditionally immortalized mouse podocyte cell lines, *Exp Cell Res* 236: 248-258 (**1997**)
6. Kobayashi N, Kriz W, Kuriyama R, Mundel P: Non-uniform microtubular polarity, established by CHO1/MKLP1 motor protein, is necessary for process formation of podocytes. *J. Cell. Biol.* 143: 1961-1970 (**1998**)
7. Barisoni L, Kriz W, Mundel P, D'Agati V. The dysregulated podocyte phenotype: a novel concept in the pathogenesis of collapsing idiopathic focal segmental glomerulosclerosis and HIV-associated nephropathy. *J. Am. Soc. Nephrol.* 10: 51-61 (**1999**)
8. Kihara I, Yaoita E, Kawasaki K, Yamamoto T, Hara M, Yanagihara T: Origin of hyperplastic epithelial cells in idiopathic collapsing glomerulopathy. *Histopathology* 34(6): 537-547 (**1999**)
9. Asanuma K, Kim K, Oh J, Giardino L, Chabanis S, Faul C, Reiser J, Mundel P: synaptopodin regulates the actin-bundling activity of α -actinin in an isoform-specific manner. *J. Clin. Invest.* 115, 1188-1198 (**2005**).

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