# Product datasheet

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

### Short overview

| | |
|---|---|
| **Cat. No.** | 690094S |
| **Quantity** | 200 µl |
| **Concentration** | 50 µg/ml (10 µg) |

### Product description

| | |
|---|---|
| **Host** | Mouse |
| **Antibody Type** | Monoclonal |
| **Isotype** | IgG1 |
| **Clone** | G1D4 |
| **Immunogen** | Isolated rat kidney glomeruli |
| **Formulation** | PBS pH 7.4 with 0.09% sodium azide and 0.5% BSA |
| **UniprotID** | A4IFK4 (Bovine), A0A286XK19 (Guinea pig), Q8N3V7 (Human), Q91YE8 (Mouse), D4A702 (Rat) |
| **Synomym** | 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

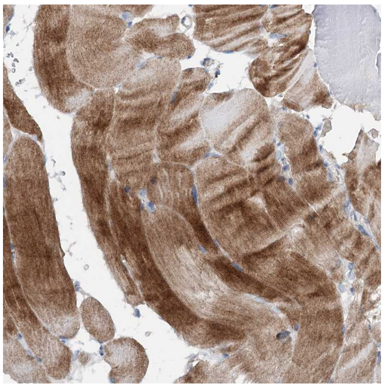
| | |
|---|---|
| **Immunocytochemistry (ICC)** | Assay dependent |
| **Immunohistochemistry (IHC) - frozen** | 1:50-1:200 (0.25-1 µg/ml) |
| **Immunohistochemistry (IHC) - paraffin** | 1:50-1:200 (0.25-1 µg/ml, microwave treatment recommended) |
| **Western Blot (WB)** | Assay dependent |

### Background

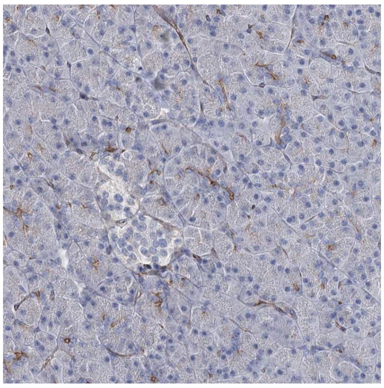
The antibody recognizes differentiated podocytes (glomerular visceral epithelial cells) in vivo and in vitro (weaker additional reaction with arterial endothelial cells), co-localization with alpha-actinin. Does not react with parietal cells. Reacts with a subset of exclusively telencephalic synapses. 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 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.

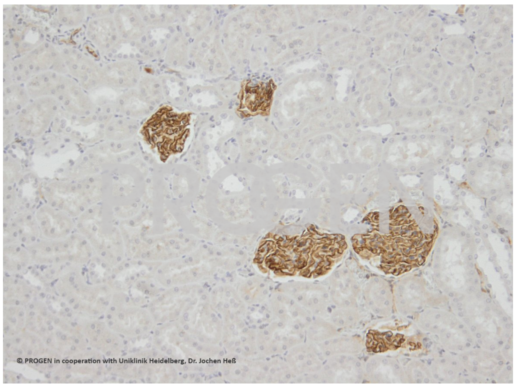
## Product images



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)



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




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

## References


| Publication | Species | Application |
|---|---|---|
| Turk, T. et al. BMP Signaling and Podocyte Markers Are Decreased in Human Diabetic Nephropathy in Association With CTGF Overexpression. J. Histochem. Cytochem. 57, 623-631 (2009). | human,mouse | IHC (paraffin) |
| Wagner, N. et al. The podocyte protein nephrin is required for cardiac vessel formation. Hum. Mol. Genet. 20, 2182-2194 (2011). | mouse | IHC (frozen) |
| GÃ¶del, M. et al. Role of mTOR in podocyte function and diabetic nephropathy in humans and mice. J. Clin. Invest. 121, 2197-2209 (2011). | human | IHC (frozen) |
| Rachubik, P. et al. The TRPC6-AMPK pathway is involved in insulin-dependent cytoskeleton reorganization and glucose uptake in cultured rat podocytes. Cell. Physiol. Biochem. 51, 393â€“410 (2018). | Rat | |
| Barisoni, L., Kriz, W., Mundel, P. & Dâ€˜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). | human | IHC (paraffin) |