

Synaptophysin Monoclonal Antibody (SP11)

Catalog NumberMA1-39558

Product data sheet

Details		Species Reactivity	
Size	1 mL	Species reactivity	Human, Mouse, Rat
Host/Isotope	Rabbit / IgG	Published species	Human, Mouse, Not Applicable
Class	Monoclonal	Tested Applications	
Type	Antibody	Immunohistochemistry (Frozen) (IHC (F))	1:200
Clone	SP11	Immunohistochemistry (Paraffin) (IHC (P))	1:200
Immunogen	Synthetic peptide corresponding to C-terminus of human synaptophysin.	Western Blot (WB)	1:200
Conjugate	Unconjugated	Immunocytochemistry (ICC/IF)	5 µg/mL
Form	Liquid	Published Applications	
Concentration	Conc. Not Determined	Western Blot (WB)	See 1 publications below
Storage buffer	tissue culture supernatant/TBS, pH 7.5, with 1% BSA	Immunocytochemistry (ICC/IF)	See 1 publications below
Contains	0.1% sodium azide	Immunohistochemistry (Paraffin) (IHC (P))	See 3 publications below
Storage Conditions	-20°C or -80°C if preferred	Immunohistochemistry (IHC)	See 27 publications below
		Miscellaneous PubMed (Misc)	See 3 publications below
		Immunohistochemistry (Frozen) (IHC (F))	See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

Heat-mediated antigen retrieval is recommended prior to staining, using a 10mM citrate buffer, pH 6.0, for 10 minutes followed by cooling at room temperature for 20 min. Following antigen retrieval, incubate samples with primary antibody for 30 min at room temperature. A suggested positive control is pancreas or neuroendocrine tumor.

Background/Target Information

Synaptophysin is a calcium-binding and integral membrane glycoprotein present in presynaptic vesicles in almost all neurons. Synaptophysin has four transmembrane domains and it forms a complex with dynamin at high calcium concentrations suggesting an involvement in synaptic vesicle endocytosis. It is also involved in the regulation of short-term and long-term synaptic plasticity. Synaptophysin is currently the most widely used marker for nerve terminals and for differentiating neuroendocrine tumors. Mutations in the gene can result in mental retardation, X-linked 96.

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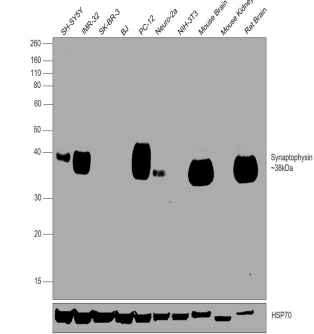
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Product Images For Synaptophysin Monoclonal Antibody (SP11)

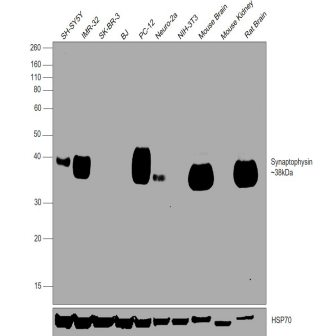
Synaptophysin Antibody (MA1-39558) in WB

Western blot was performed using Anti-Synaptophysin Monoclonal Antibody (SP11) (Product # MA1-39558, MA5-16402) and a 38kDa band corresponding to Synaptophysin was observed in SH-SY5Y, IMR-32, PC-12, Neuro-2a, Mouse Brain and Rat Brain, but not in SK-BR-3, BJ, NIH-3T3 and Mouse Kidney. Whole cell extracts (30 µg lysate) of SH-SY5Y (Lane 1), IMR-32 (Lane 2), SK-BR-3 (Lane 3), BJ (Lane 4), PC-12 (Lane 5), Neuro-2a (Lane 6), NIH-3T3 (Lane 7), Mouse Brain (Lane 8), Mouse Kidney (Lane 9), Rat Brain (Lane 10) were electrophoresed using NuPAGE™ 10% Bis-Tris Protein Gel (Product # NP0302BOX). Resolved proteins were then transferred onto a nitrocellulose membrane (Product # IB23001) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with the primary antibody (1:200 dilution) and detected by chemiluminescence with Goat anti-Rabbit IgG (Heavy Chain) Superclonal™ Recombinant Secondary Antibody, HRP (Product # A27036, 1:4000 dilution) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005).



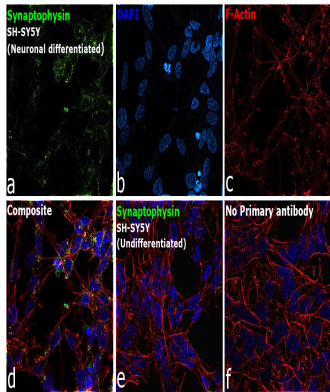
Synaptophysin Antibody (MA1-39558)

Antibody specificity was demonstrated by detection of differential basal expression of the target across the tested cell lines and tissues owing to their inherent genetic constitution. Relative expression of Synaptophysin was observed in SH-SY5Y, IMR-32, PC-12, Neuro-2a, Mouse Brain and Rat Brain, but not in SK-BR-3, BJ, NIH-3T3 and Mouse Kidney using Anti-Synaptophysin Monoclonal Antibody (SP11) (Product # MA1-39558, MA5-16402) in Western Blot. {RE}



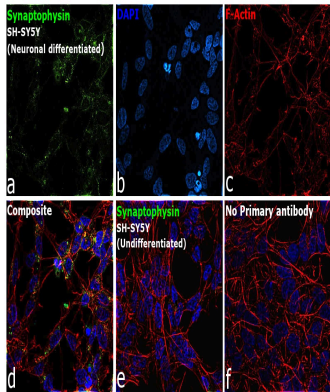
Synaptophysin Antibody (MA1-39558)

Antibody specificity was demonstrated by detection of differential basal expression of the target across cell models owing to their inherent genetic constitution. Immunofluorescence analysis using Anti-Synaptophysin Monoclonal Antibody (SP11) (Product # MA1-39558, MA5-16402), shows an increase in expression of Synaptophysin upon neuronal differentiation of SH-SY5Y cells. {RE}



Synaptophysin Antibody (MA1-39558) in ICC/IF

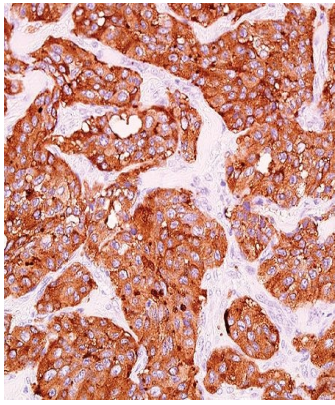
Immunofluorescence analysis of Synaptophysin was performed using neuronal differentiated SH-SY5Y cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 15 minutes, and blocked with 2% BSA for 1 hour at room temperature. The cells were labeled with Synaptophysin Monoclonal Antibody (SP11) (Product # MA1-39558, MA5-16402) at 1:200 dilution in 0.1% BSA, incubated at 4 degree celsius overnight and then labeled with Donkey anti-Rabbit IgG (H+L) Highly Cross-Adsorbed Secondary Antibody, Alexa Fluor Plus 488 (Product # A32790), (1:2000 dilution), for 45 minutes at room temperature (Panel a: Green). Nuclei (Panel b: Blue) were stained with ProLong™ Diamond Antifade Mountant with DAPI (Product # P36962). F-actin (Panel c: Red) was stained with Rhodamine Phalloidin (Product # R415, 1:300 dilution). Panel d represents the merged image showing cytoplasmic localization. Panel e represents undifferentiated SH-SY5Y cells, showing no expression of Synaptophysin. Panel f represents control cells with no primary antibody to assess background. The images were captured at 60X magnification.



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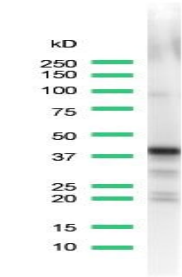


Synaptophysin Antibody (MA1-39558) in IHC (P)

Immunohistochemical (paraffin) analysis of Synaptophysin using anti-Synaptophysin Monoclonal Antibody (Product # MA5-16402) in Neuroendocrine Cancer Tissue. The recommended dilution for this antibody in immunohistochemistry applications is 1:200.

Synaptophysin Antibody (MA1-39558) in WB

Western blot analysis of Brain Tissue using anti-Synaptophysin Monoclonal Antibody (Product # MA5-16402). The recommended dilution for this antibody in western blot applications is 1:100.



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PubMed References For Synaptophysin Monoclonal Antibody (SP11)

1 Western Blot References

Species / Dilution	Summary
	MA1-39558 was used in western blot to study how glucose and glutamate transporters are regulated by Ghrelin in hypothalamic astrocytes
Not Applicable / Not Cited	Scientific reports (2016; 6:) "Ghrelin Regulates Glucose and Glutamate Transporters in Hypothalamic Astrocytes." Author(s):Fuente-Martín E,García-Cáceres C,Argente-Arizón P,Díaz F,Granado M,Freire-Regatillo A,Castro-González D, Ceballos ML,Frago LM,Dickson SL,Argente J,Chowen JA PubMed Article URL: http://dx.doi.org/10.1038/srep23673

1 Immunocytochemistry References

Species / Dilution	Summary
	MA5-16402 was used in immunocytochemistry to study the effect of Cfr knockout on the number and distribution of pulmonary neuroendocrine cells and on airway smooth muscle innervation
Mouse / Not Cited	American journal of respiratory cell and molecular biology (2006; 35: 320) "Pulmonary neuroendocrine cells, airway innervation, and smooth muscle are altered in Cfr null mice." Author(s):Pan J,Luk C,Kent G,Cutz E,Yeger H PubMed Article URL: http://dx.doi.org/10.1165/rcmb.2005-0468OC

3 Immunohistochemistry (Paraffin) References

Species / Dilution	Summary
	MA5-16402 was used in immunohistochemistry - paraffin section to show that Bcl-xL promotes metastasis independent of its anti-apoptotic activity
Not Applicable / 1:100	Nature communications (2016; 7:) "Bcl-xL promotes metastasis independent of its anti-apoptotic activity." Author(s):Choi S,Chen Z,Tang LH,Fang Y,Shin SJ,Panarelli NC,Chen YT,Li Y,Jiang X,Du YN PubMed Article URL: http://dx.doi.org/10.1038/ncomms10384
	MA516402 was used in immunohistochemistry - paraffin section to analyze small-cell lung cancer samples for CD274 mutations
Human / 1:50	Clinical cancer research : an official journal of the American Association for Cancer Research (2017; 23: 1220) "Genomic Amplification of <i>CD274</i> (PD-L1) in Small-Cell Lung Cancer." Author(s):George J,Saito M,Tsuta K,Iwakawa R,Shiraishi K,Scheel AH,Uchida S,Watanabe SI,Nishikawa R,Noguchi M, Peifer M,Jang SJ,Petersen I,Büttner R,Harris CC,Yokota J,Thomas RK,Kohno T PubMed Article URL: http://dx.doi.org/10.1158/1078-0432.CCR-16-1069
	MA1-39558 was used in immunohistochemistry - paraffin section to discover a potential source of serum autotaxin in men by analyzing enteroendocrine cells
Not Applicable / 1:150	Biochimica et biophysica acta (2016; 1862: 696) "Enteroendocrine cells are a potential source of serum autotaxin in men." Author(s):Bolier R,Tolenaars D,Kremer AE,Saris J,Parés A,Verheij J,Bosma PJ,Beuers U,Oude Elferink RPJ PubMed Article URL: http://dx.doi.org/10.1016/j.bbadis.2016.01.012

27 Immunohistochemistry References

Species / Dilution	Summary
	MA5-16402 was used in immunohistochemistry to study the effects of PHD-1 deficiency on neuroepithelial body hyperplasia in a murine model
Mouse / 1:100	Advances in experimental medicine and biology (2013; 758: 149) "Hyperplasia of pulmonary neuroepithelial bodies (NEB) in lungs of prolyl hydroxylase -1(PHD-1) deficient mice." Author(s):Pan J,Yeger H,Ratcliffe P,Bishop T,Cutz E PubMed Article URL: http://dx.doi.org/10.1007/978-94-007-4584-1_21
	MA5-16402 was used in immunohistochemistry to examine neuroendocrine tumors and a range of adenocarcinomas for the expression of the ketosteroid reducing enzyme AKR1C3
Human / 1:100	International journal of clinical and experimental pathology (2014; 6: 2419) "Expression of aldo-keto reductase family 1 member C3 (AKR1C3) in neuroendocrine tumors & adenocarcinomas of pancreas, gastrointestinal tract, and lung." Author(s):Chang TS,Lin HK,Rogers KA,Brame LS,Yeh MM,Yang Q,Fung KM PubMed Article URL: http://www.ncbi.nlm.nih.gov/pubmed/24228104

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	MA1-39558 was used in immunohistochemistry to detect the bone marrow metastases of neuroblastoma by immunohistochemical staining of specific proteins
Human / Not Cited	Applied immunohistochemistry & molecular morphology : AIMM (2010; 18: 348) "Detection of bone marrow metastases of neuroblastoma with immunohistochemical staining of CD56, chromogranin A, and synaptophysin." Author(s):Park SJ,Park CJ,Kim S,Jang S,Chi HS,Kim MJ,Im HJ,Seo JJ PubMed Article URL: http://dx.doi.org/10.1097/PAI.0b013e3181d2ed4c
	MA5-16402 was used in immunohistochemistry to report on a patient with large pulmonary meningothelial-like nodules
Human / 1:100	Case reports in oncology (2012; 5: 471) "Is primary pulmonary meningioma a giant form of a meningothelial-like nodule? A case report and review of the literature." Author(s):Masago K,Hosada W,Sasaki E,Murakami Y,Sugano M,Nagasaka T,Yamada M,Yatabe Y PubMed Article URL: http://dx.doi.org/10.1159/000342391
	MA5-16402 was used in immunohistochemistry to report on a case of pigmented paraganglioma of the kidney
Human / 1:100	Diagnostic pathology (2012; 7:) "Pigmented paraganglioma of the kidney: a case report." Author(s):Zhao L,Luo J,Zhang H,Da J PubMed Article URL: http://dx.doi.org/10.1186/1746-1596-7-77
	MA5-16402 was used in immunohistochemistry to determine if pancreatic neuroendocrine carcinomas are accurately characterized by the WHO 2010 classification of pancreatic neuroendocrine neoplasms
Not Applicable / 1:100	Journal of gastroenterology (2015; 50: 564) "Does the WHO 2010 classification of pancreatic neuroendocrine neoplasms accurately characterize pancreatic neuroendocrine carcinomas?" Author(s):Hijioka S,Hosoda W,Mizuno N,Hara K,Imaoka H,Bhatia V,Mekky MA,Tajika M,Tanaka T,Ishihara M,Yogi T,Tsutumi H,Fujiyoshi T,Sato T,Hieda N,Yoshida T,Okuno N,Shimizu Y,Yatabe Y,Niwa Y,Yamao K PubMed Article URL: http://dx.doi.org/10.1007/s00535-014-0987-2
	MA5-16402 was used in immunohistochemistry to study the diagnosis of colorectal neuroendocrine carcinoma using the WHO 2010 classification
Human / 1:100	Surgery (2014; 155: 650) "Prognostic impact of diagnosing colorectal neuroendocrine carcinoma using the World Health Organization 2010 classification." Author(s):Lee JL,Yu CS,Kim M,Hong SM,Lim SB,Kim JC PubMed Article URL: http://dx.doi.org/10.1016/j.surg.2013.11.012
	MA5-16402 was used in immunohistochemistry to study the potential of Aurora kinase A and N-myc gene amplifications as predictive/prognostic biomarkers for the development of treatment-related neuroendocrine prostate cancer
Human / Not Cited	Neoplasia (New York, N.Y.) (2013; 15: 1) "Concurrent AURKA and MYCN gene amplifications are harbingers of lethal treatment-related neuroendocrine prostate cancer." Author(s):Mosquera JM,Beltran H,Park K,MacDonald TY,Robinson BD,Tagawa ST,Perner S,Bismar TA,Erbersdobler A,Dhir R,Nelson JB,Nanus DM,Rubin MA PubMed Article URL: http://dx.doi.org/10.1593/neo.121550
	MA5-16402 was used in immunohistochemistry to study the expression of the hASH-1 transcription factor in neuroendocrine breast carcinoma
Human / 1:100	Virchows Archiv : an international journal of pathology (2012; 460: 415) "Human achaete-scute homolog-1 expression in neuroendocrine breast carcinoma." Author(s):Righi L,Rapa I,Votta A,Papotti M,Sapino A PubMed Article URL: http://dx.doi.org/10.1007/s00428-012-1223-1
	MA1-39558 was used in immunohistochemistry to evaluate novel immunohistochemistry reagents and techniques
Human / 1:100	Archives of pathology & laboratory medicine (2007; 131: 1047) "The contribution of bifunctional SkipDewax pretreatment solution, rabbit monoclonal antibodies, and polymer detection systems in immunohistochemistry." Author(s):Wong SC,Chan JK,Lo ES,Chan AK,Wong MC,Chan CM,Lam MY,Chan AT PubMed Article URL: http://dx.doi.org/10.5858/2007-131-1047-TCOBSP
	MA1-39558 was used in immunohistochemistry to examine the diagnostic process for clear cell and renal cell lesions in kidney
Human / 1:300	Pathology international (2008; 58: 713) "Confusing cases: clear cell but not renal cell lesions in kidney." Author(s):Baydar D,Aydin O PubMed Article URL: http://dx.doi.org/10.1111/j.1440-1827.2008.02298.x

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	<p>MA1-39558 was used in immunohistochemistry to report three clinical cases of acinar cell carcinoma without intrapancreatic tumour</p>
Human / 1:100	<p>Digestive and liver disease : official journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver (2011; 43: 971)</p> <p>"Acinar cell carcinoma: a possible diagnosis in patients without intrapancreatic tumour."</p> <p>Author(s):Terris B,Genevay M,Rouquette A,Audebourg A,Mentha G,Dousset B,Rubbia-Brandt L</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.dld.2011.07.013</p>
	<p>MA5-16402 was used in immunohistochemistry to report on a case of tumor-in-tumor of the thyroid with basaloid differentiation</p>
Human / Not Cited	<p>International journal of surgical pathology (2011; 19: 276)</p> <p>"Tumor-in-tumor of the thyroid with basaloid differentiation: a lesion with a solid cell nest neoplastic component?"</p> <p>Author(s):Eloy C,Vinagre J,Cameselle-Teijeiro J,Paiva ME,Soares P,Sobrinho-Simões M</p> <p>PubMed Article URL:http://dx.doi.org/10.1177/1066896910393506</p>
	<p>MA5-16402 was used in immunohistochemistry to report on two cases of endolymphatic sac tumor</p>
Human / 1:400	<p>Pathology, research and practice (2008; 204: 599)</p> <p>"Endolymphatic sac tumor (aggressive papillary tumor of middle ear and temporal bone): report of two cases with analysis of the VHL gene."</p> <p>Author(s):Skalova A,Sima R,Bohus P,Curík R,Lukás J,Michal M</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.prp.2008.01.016</p>
	<p>MA5-16402 was used in immunohistochemistry to study histological sectioning of brush bristles as an alternative method for diagnosis of biliary tract lesions</p>
Human / Not Cited	<p>The American journal of gastroenterology (2008; 103: 1274)</p> <p>"Diagnosis of biliary tract lesions by histological sectioning of brush bristles as alternative to cytological smearing."</p> <p>Author(s):Asioli S,Accinelli G,Pacchioni D,Bussolati G</p> <p>PubMed Article URL:http://dx.doi.org/10.1111/j.1572-0241.2007.01698.x</p>
	<p>MA5-16402 was used in immunohistochemistry to study p63 expression as a prognostic marker in Merkel cell carcinoma</p>
Human / 1:100	<p>Cancer (2007; 110: 640)</p> <p>"p63 expression as a new prognostic marker in Merkel cell carcinoma."</p> <p>Author(s):Asioli S,Righi A,Volante M,Eusebi V,Bussolati G</p> <p>PubMed Article URL:http://dx.doi.org/10.1002/cncr.22828</p>
	<p>MA5-16402 was used in immunohistochemistry to study the prognostic value of p63 expression in Merkel cell carcinomas</p>
Human / Not Cited	<p>Modern pathology : an official journal of the United States and Canadian Academy of Pathology, Inc (2011; 24: 1451)</p> <p>"Expression of p63 is the sole independent marker of aggressiveness in localised (stage I-II) Merkel cell carcinomas."</p> <p>Author(s):Asioli S,Righi A,de Biase D,Morandi L,Caliendo V,Picciotto F,Macripò G,Maletta F,di Cantogno LV,Chiusa L, Eusebi V,Bussolati G</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/modpathol.2011.100</p>
	<p>MA516402 was used in immunohistochemistry to discuss a case of mixed adenoneuroendocrine carcinoma of stomach with tubular adenoma and well-differentiated neuroendocrine tumor in the primary tumor in the stomach</p>
Human / Not Cited	<p>Case reports in pathology (2022; 2016:)</p> <p>"A Previously Undescribed Presentation of Mixed Adenoneuroendocrine Carcinoma."</p> <p>Author(s):De Luca-Johnson J,Zenali M</p> <p>PubMed Article URL:http://dx.doi.org/10.1155/2016/9063634</p>
	<p>MA1-39558 was used in immunohistochemistry to report a clinical case of small cell carcinoma with skeletal muscle differentiation of urinary bladder</p>
Human / 1:20	<p>Pathology international (2009; 59: 748)</p> <p>"Small cell carcinoma with skeletal muscle differentiation of urinary bladder."</p> <p>Author(s):Yajima N,Mizukami H,Wada R,Saito F,Yagihashi S</p> <p>PubMed Article URL:http://dx.doi.org/10.1111/j.1440-1827.2009.02438.x</p>
	<p>MA1-39558 was used in immunohistochemistry to examine a case of neonatal atypical cystic meningioma</p>
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Species / Dilution	Summary
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