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Anti-Spastin Antibody (clone 2F5)

Mouse Anti Human Monoclonal Antibody
Catalog # ALS17683

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9UBP0
Predicted	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1,k
Clone Names	2F5
Calculated MW	67197
Concentration (mg/ml)	0.39 mg/ml

Additional Information

Gene ID	6683
Alias Symbol	SPAST
Other Names	SPAST, ADPSP, KIAA1083, FSP2, Spastin, Spastic paraplegia 4 protein, SPG4
Target/Specificity	Human Spastin Protein
Reconstitution & Storage	Protein A purified
Precautions	Anti-Spastin Antibody (clone 2F5) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SPAST {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000312|HGNC:HGNC:11233}
Function	ATP-dependent microtubule severing protein that specifically recognizes and cuts microtubules that are polyglutamylated (PubMed:11809724, PubMed:15716377, PubMed:16219033, PubMed:17389232, PubMed:20530212, PubMed:22637577, PubMed:26875866). Preferentially recognizes and acts on microtubules decorated with short polyglutamate tails: severing activity increases as the number of glutamates per tubulin rises from one to eight, but decreases beyond this glutamylation threshold (PubMed:26875866). Severing activity is not dependent on tubulin acetylation or detyrosination (PubMed:26875866). Microtubule severing promotes reorganization of cellular microtubule arrays and the release of microtubules from the centrosome following nucleation. It is critical for the biogenesis and maintenance of complex microtubule arrays in axons, spindles and cilia.

SPAST is involved in abscission step of cytokinesis and nuclear envelope reassembly during anaphase in cooperation with the ESCRT-III complex (PubMed:19000169, PubMed:21310966, PubMed:26040712). Recruited at the midbody, probably by IST1, and participates in membrane fission during abscission together with the ESCRT-III complex (PubMed:21310966). Recruited to the nuclear membrane by IST1 and mediates microtubule severing, promoting nuclear envelope sealing and mitotic spindle disassembly during late anaphase (PubMed:26040712). Required for membrane traffic from the endoplasmic reticulum (ER) to the Golgi and endosome recycling (PubMed:23897888). Recruited by IST1 to endosomes and regulates early endosomal tubulation and recycling by mediating microtubule severing (PubMed:23897888). Probably plays a role in axon growth and the formation of axonal branches (PubMed:15716377).

Cellular Location

Membrane {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:19000169}; Peripheral membrane protein {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000305|PubMed:20200447} Endoplasmic reticulum {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:16602018}. Midbody {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:18997780, ECO:0000269|PubMed:21310966, ECO:0000269|PubMed:25390646}. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:15269182, ECO:0000269|PubMed:15891913, ECO:0000269|PubMed:25390646}. Cytoplasm, cytoskeleton {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:15716377, ECO:0000269|PubMed:17389232, ECO:0000269|PubMed:18410514, ECO:0000269|PubMed:19000169, ECO:0000269|PubMed:20200447}. Cytoplasm, perinuclear region {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:11809724, ECO:0000269|PubMed:15147984, ECO:0000269|PubMed:15269182, ECO:0000269|PubMed:15537668}. Nucleus {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:15147984, ECO:0000269|PubMed:15269182, ECO:0000269|PubMed:16026783}. Cytoplasm, cytoskeleton, spindle {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:15269182}. Cytoplasm {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:16026783, ECO:0000269|PubMed:20200447}. Cell projection, axon. Note=Forms an intramembrane hairpin-like structure in the membrane (PubMed:20200447). Localization to the centrosome is independent of microtubules (PubMed:15891913). Localizes to the midbody of dividing cells, and this requires CHMP1B (PubMed:18997780). Enriched in the distal axons and branches of postmitotic neurons (PubMed:15269182). Mainly nuclear in interphase cells and becomes associated with the centrosomes, spindle microtubules, midzone and finally the midbody during cell division (PubMed:15269182). {ECO:0000255|HAMAP-Rule:MF_03021, ECO:0000269|PubMed:15269182, ECO:0000269|PubMed:15891913, ECO:0000269|PubMed:18997780, ECO:0000305|PubMed:20200447} [Isoform 3]: Cytoplasm. Endosome. Nucleus membrane Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Constitutes the main endosomal form (PubMed:19000169). Recruited to nuclear membrane by IST1 during late anaphase (PubMed:26040712).

Tissue Location

Expressed in brain, heart, kidney, liver, lung, pancreas, placenta and skeletal muscle. The short isoforms may predominate in brain and spinal cord.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.