

Product datasheet for **MR209420**

Spast (NM_016962) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Spast (NM_016962) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Spast
Synonyms:	mKIAA1083; Spg4
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>MR209420 representing NM_016962
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGAGTTCCTCGGCCGGACGACGGAAGAAGAAAGGCTCGGGCGGCGAGCCCGGCCGCCAGGCTC
 CGCCCCCGCGCGGTCCCCGCCCTGCCGCGGCCCGGCCCTGCGGCCGGCTCGCCGCTAAGCGGAA
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 CTCTCTTCGCGTGGCTCTGCCAGCGCTTCTCCGCGCCCTCATGGCCGCAAGAGGAGCTCCGGGACCG
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 TTTTGGAGACACCACTGTT

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>MR209420 representing NM_016962
 Red=Cloning site Green=Tags(s)

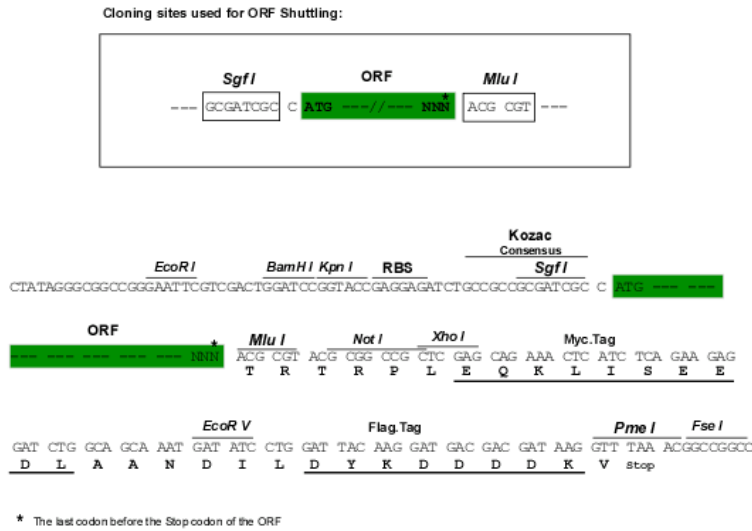
MSSPAGRKKKSGGASAPARPPPPAAVPAAGPAPAAGSPPKRNPSFSSPLVVGFFALLRLLACHLG
 LLFAWLCQRF SRALMAAKRSSGTAPAPASPPPEPGGGEAESVRVFKQAFYISIALRIDEEEKGQKE
 QAVEWYKKGIEELEKGIIVITVQGEQYERARRLQAKMMTNL VMAKDRLQLLEKLPVLQFSKSTQDVYN
 ESTNL TCRNGHLQSESGAVPKRKDPL THASNLSRPRSKTVLKSAGLSGHHRAPSCSGLSMVSGARPGG
 PAATTHKGTGPKNRTNPKSTPTTAVRKKKDLKNFRNVDSNLANLIMNEIVDNGTAVKFDIAGQELAKQA
 LQEIIVILPSLRPELFTGLRAPARGLLLFGPPGNGKTM LAKAVAAESNATFFNISAASTSKYVGEKLV
 RALFAVARELQPSIIFIDEVDSLLCERREGEHDSRRLKTEFLIEFDGVQSAGDDRVLVMGATNRPQELD
 EAVLRRFIKRVYVSLPNEETRLLLLKNLLCKQGSPLTQKELAQ LARMTDGYSGSDLTALAKDAALGP
 IRE LKPEQVKNMSASEMRNIRL SDFTESLKKIKRSVSPQTL EAYIRWNKDFGDTTV

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mm9027_g03.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_016962

ORF Size: 1839 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM_016962.2](#), [NP_058658.2](#)

RefSeq Size: 4693 bp

RefSeq ORF: 1842 bp

Locus ID: 50850

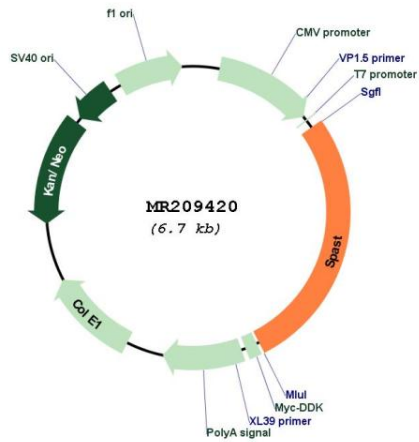
UniProt ID: [Q9QYY8](#)

Cytogenetics: 17 E2

MW: 66.8 kDa

Gene Summary: ATP-dependent microtubule severing protein that specifically recognizes and cuts microtubules that are polyglutamylated (PubMed:19141076 PubMed:20530212). 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 (By similarity). Severing activity is not dependent on tubulin acetylation or detyrosination (By similarity). Microtubule severing promotes reorganization of cellular microtubule arrays and the release of microtubules from the centrosome following nucleation (By similarity). It is critical for the biogenesis and maintenance of complex microtubule arrays in axons, spindles and cilia (By similarity). SPAST is involved in abscission step of cytokinesis and nuclear envelope reassembly during anaphase in cooperation with the ESCRT-III complex (By similarity). Recruited at the midbody, probably by IST1, and participates in membrane fission during abscission together with the ESCRT-III complex (By similarity). Recruited to the nuclear membrane by IST1 and mediates microtubule severing, promoting nuclear envelope sealing and mitotic spindle disassembly during late anaphase (By similarity). Required for membrane traffic from the endoplasmic reticulum (ER) to the Golgi and endosome recycling (By similarity). Recruited by IST1 to endosomes and regulates early endosomal tubulation and recycling by mediating microtubule severing (By similarity). Probably plays a role in axon growth and the formation of axonal branches (PubMed:18234839).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR209420