

## Product datasheet for **MR230853**

### **Brsk2 (NM\_001276763) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Brsk2 (NM_001276763) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Brsk2
Synonyms:	4833424K13Rik; SAD-A; SADA
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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ORF Nucleotide  
Sequence:

>MR230853 representing NM\_001276763  
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCCGCGATCGCC

ATGACATCGACGGGAAGGACGGCGGGCGCAGCACGCGCAGTATGTGGGGCCCTACCGGCTGGAGA  
AGACGCTGGGCAAGGGGCAGACAGGCTTGGTGAAGCTGGGAATCCACTGTGTCACTTGCCAGAAGGTCGC  
CATCAAAATCGTGAACCGTGAGAAGCTCAGTGAGTCGGTCTGATGAAGGTGGAGCGAGAGATTGCCATC  
TTGAAGCTCATCGAGCATCCACATGTAAGCTGCATGACGTCTATGAAAAACAAAAATATTTATAACC  
TGGTGCTAGAACATGTGTCTGGGGGAGAGCTGTTGACTACCTGGTGAAGAAGGGCCGGCTGACCCCAA  
GGAGGCCCGCAAGTTCTCCGGCAGATCATCTGCACTGGACTTCTGTACAGCCACTCCATATGCCAT  
AGAGACTGAAGCCAGAGAACCTGCTGCTAGATGAGAGGAACAACATCCGTATTGCAGACTTTGGCATGG  
CATCCCTGCAGGTGGGAGACAGCCTGCTGGAGACCAGCTGCGGATCTCCACACTATGCCTGTCCGGAAGT  
GATTCGGGGCGAGAAGTATGATGGCCGCAAGGCAGATGTGTGGAGCTGTGGTGTGATCCTGTTCCGCTTG  
CTGGTGGGGGCTCTGCCTTTTGATGATGACAACCTGCGGCAGTTGCTGGAGAAGGTCAAGCGTGGTGTGT  
TCCACATGCCACACTTTATCCCACCAGACTGCCAGAGTCTCCTGCGTGGCATGATTGAGGTGGATGCAGC  
TCGGCGCCTCACGCTAGAGCACATTCAGAAACACATATGGTATATAGGTGGCAAGAATGAGCCAGAGCCC  
GAACAGCCCATCCCACGCAAGGTGCAGATCCGCTCACTACCCAGCTTGGAAAGACATTGACCTGATGTGT  
TGGACAGCATGCACTCACTGGGCTGCTCCGAGACCGCAACAAGTGTCTGAGGATCTGCTATCTGAGGA  
GGAGAATCAGGAAAAGATGATTTATTTCTCCTCCTGGATCGGAAAGAACGGTATCCAAGCCATGAGGAT  
GAGGACCTGCCCCCAGGAATGAGATAGACCCTCCCGGAAGCGTGTGGATTCCCCGATGCTGAACCGGC  
TGCACGGAGAGCCATTGAGATGGCCAGCATGGCCAGAGTAAAGCAGTGTTCAGTAAAAGCCTGGATATC  
GCTGAAGCCCATCCCAATTCAGCAAAGAAGACAGATCTCGATCCATCAGTGGTGCCTCAGGCCCTT  
CTACAAGTCCACTCAGCAGTCTCGGGTACCCCTCACCCCTCACCAAGGGGTAGTCCCCTTCTACCCC  
CAAAGGGACGCCTGTCCACACGCCAAAGGAGAGCCAGCTGGCACACCCAACCCACACCACCATCCAGC  
CCTAGTGTGGAGGAGTGCCCTGGCGGACAGACTGAACTCCATCAAGAACAGCTTCTGGGCTCACCTC  
GATTCACCGCCGAAACTCCAAGTTCACGCCAGAGGAGATGTCCAACCTGACCCAGAATCCTCTCC  
AGAGCTGGCCAAGAAATCGTGGTTCGGGAACTTCAACCTGGAGAAGGAGGAGCAGATCTTTGTGGTG  
ATCAAGGACAAGCCCTGAGCTCCATCAAGGCTGACATCGTTCATGCCTTCTGTGATCCCCAGCCTCA  
GCCACAGCGTTATTTCCAGACAAGCTTCAAGGCTGAATACAAGGCCACAGGGGGCCAGCAGTGTCCA  
GAAGCCGGTCAAGTTCAGGTGGACATCACTTACTGAGGGCGGAGAGGCCAGAAGGAGAATGGCATC  
TACTCAGTCACATTTACTTCTCAGGCCCCAGTCGCCGCTTCAAGAGGGTGGTGGAGACCATCCAGG  
CCCAGCTGTTAAGCACCCATGACCAGCCATCAGCCAGCACCTGTGAGGAATTATCCCGAAAAGT

ACGCGTACGCGGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >MR230853 representing NM\_001276763  
 Red=Cloning site Green=Tags(s)

MTSTGKDGGAQHAQYVGPYRLEKTLGKGQTGLVKLGIHCVTCQKVAIKIVNREKLSSEVLMKVEREIAI  
 LKLIIEHPHVLKLDVYENKKYLVLVLEHVS GGELFDYL VKKGRL TPKEARKFFRQIISALDFCHSHSICH  
 RDLKPENLLLDERNNIRIADFGMASLQVGDLSLETSCGSPHYACPEVIRGEKYDGRKADVWSCGVILFAL  
 LVGALPFDDDLRQLLEKVKRGVFHMPHFIPPDCQSLLRGMIEVDAARRLLEHIQKHIWYIGGKNEPEP  
 EQPIPRKVQIRSLPSLEDIDPDVLDMSHSLGCFRDRNKLLQDLLSEEENQEKMIYFLLDRKERYPSHED  
 EDLPPRNEIDPPRKRVDSPMLNRHGKRRPERKSMEVLSVTDGGSPVPARAIEMAQHGSKAVFSKSLDI  
 AEAHQPFSKEDRSRSISGASSGLSTSPLSSPRVTPHPSRGSPLPTPKGTPVHTPKESPAGTPNPTPPSS  
 PSVGGVWRTRLNSIKNSFLGSPRFHRRKLQVPTPEEMSNLTPESSELAKKSWFGNFINLEKEEQIFVV  
 IKDKPLSSIKADIVHAFSLIPSLSHSVISQTSFRAEYKATGGPAVFQKPKVQVDITYTEGGEAQKENG  
 IYSVFTLLSGPSRRFRKRVVETIQALLSTHDQPSAQLSGIIPKS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

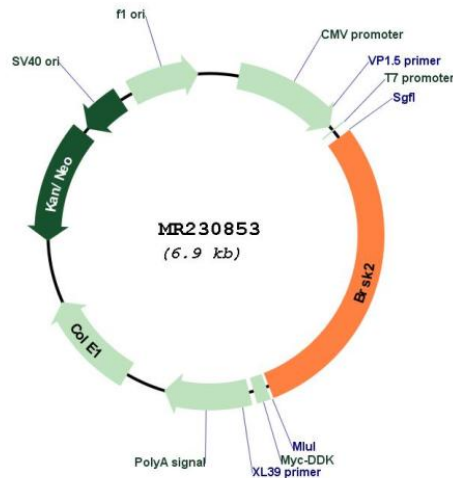
**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**



## Plasmid Map:



ACCN: NM\_001276763

ORF Size: 2025 bp

**OTI Disclaimer:** 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\\_001276763.1](#), [NP\\_001263692.1](#)

RefSeq Size: 4113 bp

RefSeq ORF: 2028 bp

Locus ID: 75770

Cytogenetics: 7 F5

MW: 76 kDa

**Gene Summary:** Serine/threonine-protein kinase that plays a key role in polarization of neurons and axonogenesis, cell cycle progress and insulin secretion. Phosphorylates CDK16, CDC25C, MAPT/TAU, PAK1 and WEE1. Following phosphorylation and activation by STK11/LKB1, acts as a key regulator of polarization of cortical neurons, probably by mediating phosphorylation of microtubule-associated proteins such as MAPT/TAU at 'Thr-504' and 'Ser-554'. Also regulates neuron polarization by mediating phosphorylation of WEE1 at 'Ser-642' in post-mitotic neurons, leading to down-regulate WEE1 activity in polarized neurons. Plays a role in the regulation of the mitotic cell cycle progress and the onset of mitosis. Plays a role in the regulation of insulin secretion in response to elevated glucose levels, probably via phosphorylation of CDK16 and PAK1. While BRSK2 phosphorylated at Thr-175 can inhibit insulin secretion (PubMed:22798068), BRSK2 phosphorylated at Thr-261 can promote insulin secretion (PubMed:22669945). Regulates reorganization of the actin cytoskeleton. May play a role in the apoptotic response triggered by endoplasmic reticulum (ER) stress.  
[UniProtKB/Swiss-Prot Function]