

## Product datasheet for **MR226132**

### **Ntrk2 (NM\_008745) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Ntrk2 (NM_008745) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Ntrk2
Synonyms:	GP145-TrkB/GP95-TrkB; Tkrb; trk-B; trkB
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>MR226132 representing NM\_008745  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGTCGCCTGGCTGAAGTGGCATGGACCCGCCATGGCGGGCTCTGGGGCTTATGCCTGCTGGTCTTGG  
 GCTTCTGAGGGCTCTCTCGCCTGCCCGACCTCTGCAAATGCAGTTCCGCTAGGATTTGGTGTACTGA  
 GCCTTCTCCAGGCATCGTGGCATTCCCGAGGTTGGAACCTAACAGCGTTGACCCGGAGAACATCACGGAA  
 ATTCTCATTGCAAACCAGAAAAGGCTAGAAATCATCAATGAAGATGACGTTGAAGCTTACGTGGGGCTGA  
 GAAACCTTACAATTGTGGATTCCGGCTTAAAGTTTGTGGCTTACAAAGCGTTTCTGAAAAACAGCAACCT  
 GCGGCACATAAATTTACACGAAACAAGCTGACGAGTTTGTCCAGGAGACATTTCCGCCACCTTGACTTG  
 TCTGACCTGATCCTGACGGTAATCCGTTACGTGCTCCTGCGACATCATGTGGCTCAAGACTCTCCAGG  
 AGACTAAATCCAGCCCCGACACTCAGGATTTGTACTGCCTCAATGAGAGCAGCAAGAACATGCCCTGGC  
 GAACTGCAGATACCAATTGTGGTCTGCCATCTGCACGTCTGGTGTCTCTAACCTCACGTGGAGGAA  
 GAAAGTCTGTGACCCTTCTCTGCAAGTGTGGGGGTGACCCACTCCACCTTGTACTGGGACGTTGGGA  
 ATTTGGTTTCAAGCACATGAATGAAACAAGCCACACACAGGGCTCCTTAAGGATAACGAACATTTTCATC  
 TGATGACAGTGGAAAGCAAATCTTGTGTGGCAGAAAACCTTGTAGGAGAAGATCAAGATTCTGTGAAC  
 CTCACTGTGCATTTTGCGCCAATATCACGTTTCTCGAGTCTCCAACCTCAGATCACCCTGGTGCATTC  
 CATTCACTGTGAGAGGCAACCCCAAGCCTGCGCTTCACTGGTTCTACAATGGGGCCATACTGAATGAGTC  
 CAAGTACATCTGTACTAAGATCCACGTCACCAATCACACGGAGTACCATGGCTGCCTCCAGCTGGATAAC  
 CCCACTCATGAATAACGGAGACTACACCCTGATGGCCAAGAACGAGTATGGGAAGGATGAGAGACAGA  
 TCTCCGCTCACTCATGGCCCGGCTGGAGTCTGACTACGAGACAAACCCAAATACCTGGAAGCTCTCTA  
 TGAAGACTGGACCACGCCAAGTACATTGGGGTACTACGAACAAAAGTAAATGAAATCCCCTCCAGGGAT  
 GTTGCTGACCAAAGCAATCGGGAGCATCTCTCGGTCTATGCCGTGGTGGTATTGCATCTGTGGTGGAT  
 TCTGCCTGCTGGTGTGTGCTCCTGCTCAAGTTGGCAGACATTCGAAGTTGGCATGAAAGGTTTTGT  
 TTTGTTTCATAAGATCCCACTGGATGGG

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>MR226132 representing NM\_008745  
 Red=Cloning site Green=Tags(s)

MSPWLKWHGPAMARLWGLCLLVLFWRASLACPTSCKSSARIWCTEPPGIVAFPRLEPNSVDPENITE  
 ILIANQKRLIINEDDVEAYVGLRNLTIIVDSGLKFVAYKAFLKNSNLRHINFTRNKLTSLSRRHFRHLDL  
 SDLILTGPNFTCSCDIMWLKTLQETKSSPDTQDLYCLNESSKNMPLANLQIPNCGLPSARLAAPNLVVEE  
 GKSVTLSCSVGGDPLPTLYWDVGNLVSKHMNETSHTQGSRLITNISDDSGKQISCVENLVGEDQDSVN  
 LTVHFAPTITFLESPTSDDHHCIPFTVRGNPKPALQWFYNGAILNESKYICTKIHVNTNHTYHGCLQLDN  
 PTHMNGDYTLMAKNEYGKDERQISAHFMGRPGVDYETNPNYPEVLYEDWTTPTDIDGDTTNKSNEIPSTD  
 VADQSNREHLSVYAVVVIASVVGFCLLVMLLLKLARHSKFGMKGFVLFHKIPLDG

**TRTRPLEQKLI**SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

SgfI-MluI

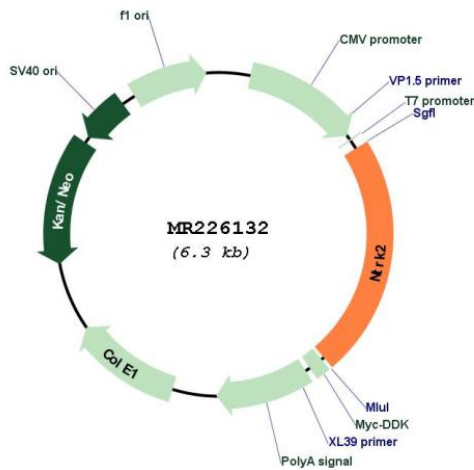
Cloning Scheme:

Cloning sites used for ORF Shuttling:



\* The last codon before the Stop codon of the ORF

Plasmid Map:



ACCN: NM\_008745

ORF Size: 1428 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](mailto: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\\_008745.3](#)

**RefSeq Size:** 7022 bp

**RefSeq ORF:** 1431 bp

**Locus ID:** 18212

**UniProt ID:** [P15209](#)

**Cytogenetics:** 13 31.2 cM

**MW:** 53.6 kDa

**Gene Summary:**

Receptor tyrosine kinase involved in the development and the maturation of the central and the peripheral nervous systems through regulation of neuron survival, proliferation, migration, differentiation, and synapse formation and plasticity. Receptor for BDNF/brain-derived neurotrophic factor and NTF4/neurotrophin-4. Alternatively can also bind NTF3/neurotrophin-3 which is less efficient in activating the receptor but regulates neuron survival through NTRK2. Upon ligand-binding, undergoes homodimerization, autophosphorylation and activation. Recruits, phosphorylates and/or activates several downstream effectors including SHC1, FRS2, SH2B1, SH2B2 and PLCG1 that regulate distinct overlapping signaling cascades. Through SHC1, FRS2, SH2B1, SH2B2 activates the GRB2-Ras-MAPK cascade that regulates for instance neuronal differentiation including neurite outgrowth. Through the same effectors controls the Ras-PI3 kinase-AKT1 signaling cascade that mainly regulates growth and survival. Through PLCG1 and the downstream protein kinase C-regulated pathways controls synaptic plasticity. Thereby, plays a role in learning and memory by regulating both short term synaptic function and long-term potentiation. PLCG1 also leads to NF-Kappa-B activation and the transcription of genes involved in cell survival. Hence, it is able to suppress anoikis, the apoptosis resulting from loss of cell-matrix interactions. Isoform GP95-TRKB may also play a role in neurotrophin-dependent calcium signaling in glial cells and mediate communication between neurons and glia. [UniProtKB/Swiss-Prot Function]