

## Product datasheet for **MR220190**

### **Npas4 (NM\_153553) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Npas4 (NM_153553) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Npas4
Synonyms:	LE-PAS; Nxf
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide  
Sequence:

>MR220190 representing NM\_153553  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTACCGATCCACCAAGGGCGCCTCCAAGGGCGCCGACCAGATCAACGCCGAGATTCGGAACCTCA  
 AGGAGCTGCTGCCGTTGGCTGAAGCGGACAAGGTCGGCTGTCTACCTGCACATCATGAGTCTTGCCCTG  
 CATCTACACTCGCAAGGGTGTCTCTTTGCTGGAGGCACTCCTTTGGCTGGCCCCACCGGCTTCTCTCT  
 GCTCAAGAGCTTGAAGACATTGTGGCAGCACTACCTGGATTTCTCCTTGTATTACAGCTGAGGGGAAGT  
 TGCTATACCTGTCGGAGAGTGTGAGCGAGCATCTGGCCACTCTATGGTGGACTGGTTGCCAGGGCGA  
 CAGTATCTACGATATCATTGACCCTGCTGACCATCTCACTGTGCGCCAGCAGCTCACCATGCCCTCTGCT  
 CTGGATGCTGATCGCCTTTCCGTTGTCGATTCAACACCTCCAAGTCCCTCCGGCCAGAGTTCAGGAA  
 ACAAAGTGGTGTATTTCGAGGTCGATTCCATGCTCACCCACTGGGGCCTACTGGGCAGGAAACCTGT  
 GTTCACCGCTTTCTGCGCCCACTGGAGCCAAGACCCCGCCCTGGCCCCGGCCCTGGCCCTGGCCCTGGT  
 CCTGCTTCTCTTCTCCTGGCCATGTTCCAGAGCCGGCATGCTAAGGACCTAGCCCTACTGGACGTTTCTG  
 AAAGTGTCTAATCTACCTGGGCTTTGAGCGCAGCGAACTGCTCTGTAATCATGGTATGGACTGCTACA  
 CCCCAGGACCTGGCCCAAGCTTCTTCTCAACTACCGCCTGTTGGCTGAAAGTGGAGATATTCAGGCT  
 GAAATGGTGGTGAGACTTCAAGCCAAGCATGGAGGCTGGACATGGATTTACTGCATGCTATACTCAGAAG  
 GTCCAGAAGGCCCTATTACTGCCAATACTACCCTATCAGTGACACGGAAGCCTGGAGCCTCCGCCAGCA  
 GCTAAACTCTGAAGACACCCAGGAGCCTATGTCCTAGGAACCCAGCTGTGCTACCCCTATTCTCTGAG  
 AATGTCTTCTCCAGGAGCAATGCTCTAATCCACTCTTACACCATCCCTGGGGACTCCTAGAAGTGCCA  
 GCTTCCCAGGGCTCCTGAACTAGGTGTGATCTCAACACCAGAAGAGCTTCCCAACCTCCAAAGAGAT  
 GGACTTCAGTTACCTGCCATTCCCTGCTAGGCTGAGCCTTCCCTCCAAGCAGACCTGAGCAAGGATTTG  
 GTGTGACTCCACCTTACACACCCACCAGCCAGGAGGCTGTGCCTTCTCTTACGCTCCATGAACCTT  
 TCCAGACTCACTTGGCCCTCCGTCCAGCTCTCTCCAAGAACAGCTGACACCAAGTACAGTGACTTTCTC  
 TGAACAGTTGACACCCAGCAGTGTACCTTCCAGACCCACTAACCAGTTCACACAGGACAGTTGACA  
 GAAAGCTCAGCCAGAAGCTTTGAAGACCAGTTGACTCCATGCACCTTCTCCTTCCCTGACCAGCTACTTC  
 CCAGCACTGCCACATTCCAGAGCCTCTGGGCAGCCCCGCCATGAGCAGCTGACTCCTCCAGCACAGC  
 ATTCCAGGCTCATCTGAACAGCCCCAGCCAAACCTTCCAGAGCAACTGAGCCCCAATCCTACCAAGACT  
 TACTTCGCCCAGGAGGGATGCAGTTTTCTCTATGAGAAGTTGCCCAAGTCTAGCAGCCCTGGTAATG  
 GGGACTGTACACTCCTGGCCCTAGCTCAGCTCCGGGGCCCTCTCTGTGGATGTCCCCCTGGTGGCCGA  
 AGGCTGCTCACACCTGAGGCCTCTCCAGTCAAGCAAAGTTTCTTCCACTACACAGAGAAAGAGCAAAT  
 GAGATAGATCGTCTCATTAGCAGATCAGCCAGTTGGCTCAGGGCGTGGACAGGCCCTTCTCAGCTGAGG  
 CTGGCACTGGGGGGCTGGAGCCACTTGGAGGGCTGGAGCCCTGAACCTAACCTGTCCCTGTCAGGGGC  
 TGGACCCCTGTGCTTAGCCTGGATCTTAAACCTGGAATGCCAGGAGCTGGACTTCTGGTTGACCTT  
 GATAATTTATTCTGGAAGAGACGCCAGTGAAGACATCTTATGGATCTTTCTACTCCAGACCCCAATG  
 GGAATGGGGTTCAGGGGATCCTGAGGCAGAGGTCAGGAGGGACCCTGTCACCTTGAACAACCTGTC  
 CCCAGAAGATCACAGCTTCTGGAGGACTTGGCCACCTATGAAACCGCCTTTGAGACAGGTGTCTCAACA  
 TTCCCCTACGAAGGGTTTGTGATGAGTTGCATCAACTCCAGAGCCAAGTTCAGACAGCTTCCATGAAG  
 ATGGAAGTGGAGGGGAACCAACGTTT

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >MR220190 representing NM\_153553  
 Red=Cloning site Green=Tags(s)

MYRSTKGASKARRDQINAEIRNLKELLPLAEADKVRLSYLHIMSLACIYTRKGVFFAGGTPLAGPTGLLS  
 AQELEDIVAALPGFLLVFTAEGKLLYLSSESVSEHLGHSMVDLVAQGDSIYDIIDPADHLTVRQQLTMP  
 LDADRLFRCRFNTSKSLRRQSSGNKLVLRGRFHAHPPGAYWAGNPVFTAFCAPLEPRPRPGPGPGPG  
 PASLFLAMFQSRHAKDLALLDVSESVLIYLGFERSELLCKSWYGLLHPEDLAQASSQHYRLLAESGDIQA  
 EMVVRLQAKHGGWTWIYCMYSEGPEGPITANNYPI SDTEAWSLRQQLNSEDQAAYVLTGTPAVLPSFSE  
 NVFSQEQC SNPLFTPSLGT PRSASFRAPELGVISTPEELPQPSKELDFSYLPF PARPEPSLQADLSKDL  
 VCTPPYTPHQPGGCAFLFSLHEPFQTHLPPSSSLQEQLTPSTVTFSEQLTPSSATFPDPLTSSLQGQLT  
 ESSARSFEDQLTPCTSSFPDQLLPSTATFPEPLGSPAHEQLTPPSTAFQAHLNSPSQTFPEQLSPNPTKT  
 YFAQEGCSFLYEKLPPSPSPGNGDCTLLALALQLRGPLSVDVPLVPEGLLTPEASPVKQSFHYTEKEQN  
 EIDRLIQQISQLAQGVDRPFSAEAGTGGLLEPLGGLEPLNPNL SL SGAGPPVLSLDLKPWKQCQLDFL VDP  
 DNL FLEETPVEDI FMDLSTDPNGEWGSGDPEAEVPGGTLSPCNNLSPEDHSFLEDLATYETAFETGVST  
 FPYEGFADELHQLQSQVQDSFHEDGSGGEPTF

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

**Restriction Sites:** Sgfl-Mlul

Cloning Scheme:



ACCN: NM\_153553

ORF Size: 2406 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\\_153553.1](#), [NM\\_153553.2](#), [NM\\_153553.3](#), [NM\\_153553.4](#), [NM\\_153553.5](#), [NP\\_705781.1](#)

**RefSeq Size:** 3292 bp

**RefSeq ORF:** 2409 bp

**Locus ID:** 225872

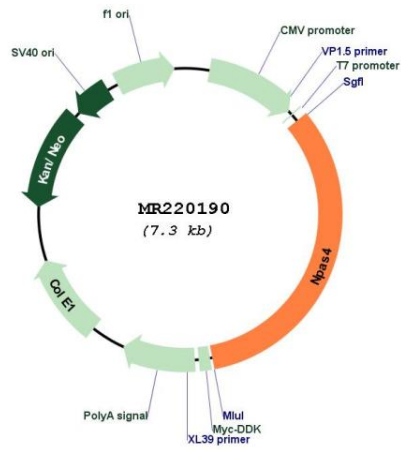
**UniProt ID:** [Q8BGD7](#)

**Cytogenetics:** 19 A

**MW:** 87.3 kDa

**Gene Summary:** Transcription factor expressed in neurons of the brain that regulates the excitatory-inhibitory balance within neural circuits and is required for contextual memory in the hippocampus (PubMed:18815592, PubMed:22194569, PubMed:23029555, PubMed:24201284, PubMed:24855953). Plays a key role in the structural and functional plasticity of neurons (PubMed:23172225). Acts as an early-response transcription factor in both excitatory and inhibitory neurons, where it induces distinct but overlapping sets of late-response genes in these two types of neurons, allowing the synapses that form on inhibitory and excitatory neurons to be modified by neuronal activity in a manner specific to their function within a circuit, thereby facilitating appropriate circuit responses to sensory experience (PubMed:24201284, PubMed:24855953). In excitatory neurons, activates transcription of BDNF, which in turn controls the number of GABA-releasing synapses that form on excitatory neurons, thereby promoting an increased number of inhibitory synapses on excitatory neurons (PubMed:18815592, PubMed:22194569, PubMed:24201284). In inhibitory neurons, regulates a distinct set of target genes that serve to increase excitatory input onto somatostatin neurons, probably resulting in enhanced feedback inhibition within cortical circuits (PubMed:24855953). The excitatory and inhibitory balance in neurons affects a number of processes, such as short-term and long-term memory, acquisition of experience, fear memory, response to stress and social behavior (PubMed:18815592, PubMed:22194569, PubMed:23029555, PubMed:24201284, PubMed:27238022). Acts as a regulator of dendritic spine development in olfactory bulb granule cells in a sensory-experience-dependent manner by regulating expression of MDM2 (PubMed:25088421). Efficient DNA binding requires dimerization with another bHLH protein, such as ARNT, ARNT2 or BMAL1 (PubMed:14701734, PubMed:15363889, PubMed:19284974). Can activate the CME (CNS midline enhancer) element (PubMed:14701734, PubMed:15363889).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR220190