

Product datasheet for **RC202056**

MSX2 (NM_002449) Human Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: MSX2 (NM_002449) Human Tagged ORF Clone
Tag: Myc-DDK
Symbol: MSX2
Synonyms: CRS2; FPP; HOX8; MSH; PFM; PFM1
Mammalian Cell Selection: Neomycin
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
ORF Nucleotide Sequence: >RC202056 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGCATCGCC**

ATGGCTTCTCCGTCCAAAGGCAATGACTTGTTTTCGCCCGACGAGGAGGGCCAGCAGTGGTGGCCGGAC
CAGGCCCGGGCCTGGGGCGCCGAGGGGGCCGCGGAGGAGCGCCGCGTCAAGGTCTCCAGCCTGCCCTT
CAGCGTGGAGGCGCTCATGTCCGACAAGAAGCCGCCCAAGGAGGCGTCCCGCTGCCGGCCGAAAGCGCC
TCGGCCGGGGCCACCCTGCGGCCACTGCTGCTGTCGGGGCACGGCGCTCGGGAAGCGCACAGCCCCGGG
CGCTGGTGAAGCCCTTCGAGACCGCCTCGGTCAAGTCGGAATAATCAGAAGATGGAGCGGCGTGGATGCA
GGAACCCGGCCGATATTCGCCCGCCGCAAGACATACGAGCCCTACCACCTGCACCCTGAGGAAACACAAG
ACCAATCGGAAGCCGCGCACGCCCTTACCACATCCCAGCTCCTCGCCCTGGAGCGCAAGTTCCTGTCAGA
AACAGTACCTCTCCATTGCAGAGCGTGCAGAGTTCTCCAGCTCTCTGAACCTCACAGAGACCCAGGTCAA
AATCTGGTTCCAGAACCGAAGGGCCAAGGCGAAAAGACTGCAGGAGGCAGAACTGGAAAAGCTGAAAATG
GCTGCAAAACCTATGCTGCCCTCCAGCTTCAGTCTCCCTTTCCCATCAGCTCGCCCTGCAGGCAGCGT
CCATATATGGAGCATCTACCCGTTCCATAGACCTGTGCTTCCATCCCGCCTGTGGGACTCTATGCCAC
GCCAGTGGGATATGGCATGTACCACCTGTCC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA



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Protein Sequence: >RC202056 protein sequence
Red=Cloning site Green=Tags(s)

MASPSKGNLDFSPDEEGPAVVAGPGPGGAEGAAEERRVKVSSLPFVEALMSDKKPPKEASPLPAESA
 SAGATLRPLLLSGHGAREAHSPGPLVKPFETASVKSENEDGAAWMQEPGRYSPPPRHTSPTTCTLRKHK
 TNRKPRTPFTTSQLLALERKFRQKQYLSIAERAEFSSSLNLTTETQVKIWFQNRRAKAKRLQEALEKLM
 AAKPMLPSSFSLPFPISSPLQAASIYGASYPFHRPVLPIPPVGLYATPVGYGMYHLS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6012_a05.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_002449

ORF Size: 801 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_002449.5](#)

RefSeq Size: 2224 bp

RefSeq ORF: 804 bp

Locus ID: 4488

UniProt ID: [P35548](#)

Cytogenetics: 5q35.2

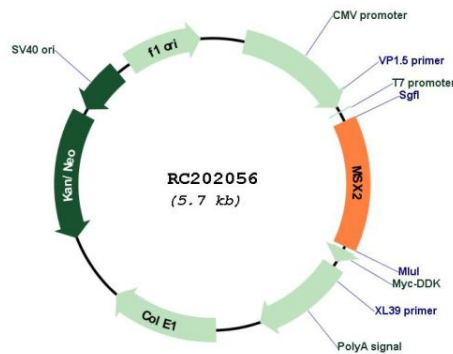
Domains: homeobox

Protein Families: Druggable Genome, Transcription Factors

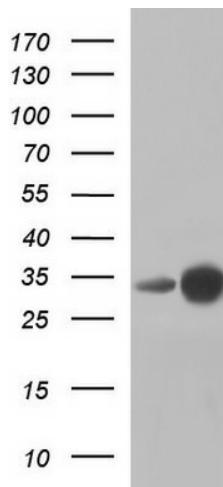
MW: 28.9 kDa

Gene Summary: This gene encodes a member of the muscle segment homeobox gene family. The encoded protein is a transcriptional repressor whose normal activity may establish a balance between survival and apoptosis of neural crest-derived cells required for proper craniofacial morphogenesis. The encoded protein may also have a role in promoting cell growth under certain conditions and may be an important target for the RAS signaling pathways. Mutations in this gene are associated with parietal foramina 1 and craniosynostosis type 2. [provided by RefSeq, Jul 2008]

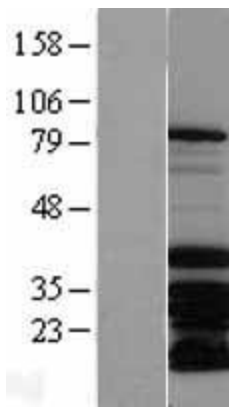
Product images:



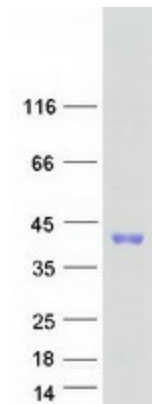
Circular map for RC202056



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY MSX2 (Cat# RC202056, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-MSX2 (Cat# [TA590130]). Positive lysates [LY400874] (100ug) and [LC400874] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY400874]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC202056 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified MSX2 protein (Cat# [TP302056]). The protein was produced from HEK293T cells transfected with MSX2 cDNA clone (Cat# RC202056) using MegaTran 2.0 (Cat# [TT210002]).