

Product datasheet for **SC323676**

LIM kinase 2 (LIMK2) (NM_016733) Human Untagged Clone

Product data:

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|---------------------------|---|
| Product Type: | Expression Plasmids |
| Product Name: | LIM kinase 2 (LIMK2) (NM_016733) Human Untagged Clone |
| Tag: | Tag Free |
| Symbol: | LIM kinase 2 |
| Mammalian Cell Selection: | None |
| Vector: | <u>pCMV6-XL4</u> |
| E. coli Selection: | Ampicillin (100 ug/mL) |



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Fully Sequenced ORF: >OriGene ORF within SC323676 sequence for NM_016733 edited (data generated by NextGen Sequencing)

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ATGGGGAGTTACTTGTTCAGTCCCGGCTTACTTCACCTCCAGAGACCTGTTTCGGTGTTCA
GAATGCCAGGATCCCTCACCACTGGTACTATGAGAAGGATGGGAAGCTCTACTGCCCC
AAGGACTACTGGGGGAAGTTTGGGGAGTTCTGTCATGGGTGCTCCCTGCTGATGACAGGG
CCTTTTATGGTGGCTGGGGAGTTCAAGTACCACCCAGAGTGCTTTGCCTGTATGAGCTGC
AAGGTGATCATTGAGGATGGGGATGCATATGCACTGGTGCAGCATGCCACCCTCTACTGT
GGGAAGTGCCACAATGAGGTGGTGGTGGCACCCATGTTTGAGAGACTCTCCACAGAGTCT
GTTTCAGGAGCAGCTGCCCTACTCTGTACGCTCATCTCCATGCCGGCCACCACTGAAGGC
AGGCGGGGCTTCTCCGTGTCCGTGGAGAGTGCCTGCTCCAACACGCCACCACTGTGCAA
GTGAAAGAGGTCAACCGGATGCACATCAGTCCCAACAATCGAAACGCCATCCACCCTGGG
GACCGCATCTGGAGATCAATGGGACCCCGTCCGCACACTTCGAGTGGAGGAGGTGGAG
GATGCAATTAGCCAGACGAGCCAGACACTTCAGCTGTTGATTGAACATGACCCCGTCTCC
CAACGCCTGGACCAGCTCGCGCTGGAGGCCGGCTCGCTCCTCACATGCAGAATGCCGGA
CACCCCAACGCCCTCAGCACCTGGACACCAAGGAGAATCTGGAGGGGACACTGAGGAGA
CGTTCCCTAAGGCGCAGTAACAGTATCTCCAAGTCCCCTGGCCCCAGCTCCCAAAGGAG
CCCCTGCTGTTACGCCGTGACATCAGCCGCTCAGAATCCCTTCGTTGTTCCAGCAGCTAT
TCACAGCAGATCTTCCGGCCCTGTGACCTAATCCATGGGGAGGTCTGGGGAAGGGCTTC
TTTGGGACGGCTATCAAGGTGACACACAAAGCCACGGGCAAAAGTGATGGTCATGAAAGAG
TTAATTCGATGTGATGAGGAGACCCAGAAAACCTTTTCTGACTGAGGTGAAAGTGATGCGC
AGCCTGGACACCCCAATGTGCTCAAGTTCATTGGTGTGCTGTACAAGGATAAGAAGCTG
AACCTCCTGACAGAGTACATTGAGGGGGGCACACTGAAGGACTTCTGCGCAGTATGGAT
CCGTTCCCTGGCAGCAGAAGGTCAAGTTTGCCAAAGGAATCGCCTCCGGATGGCCTAT
TTGCACTCTATGTGCATCATCCACCGGGATCTGAACTCGCACAACTGCCTCATCAAGTTG
GACAAGACTGTGGTGGTGGCAGACTTTGGGCTGTACGGCTCATAGTGAAGAGAGGAAA
AGGGCCCCATGGAGAAGGCCACCAAGAAACGCACCTTGCAGCAAGAACGACCGCAAG
AAGCGCTACACGGTGGTGGGAAACCCCTACTGGATGGCCCTGAGATGCTGAACGGAAAG
AGCTATGATGAGACGGTGGATATCTTCTCCTTTGGGATCGTTCTCTGTGAGATCATTGGG
CAGGTGTATGCAGATCCTGACTGCCTTCCCGAACACTGGACTTTGGCCTCAACGTGAAG
CTTTTCTGGGAGAAGTTTGTCCACAGATTGTCCCGCGCTTCTTCCCGCTGGCCGCC
ATCTGCTGCAGACTGGAGCCTGAGAGCAGACCAGCATTCTCGAAATTGGAGGACTCCTTT
GAGGCCCTCTCCCTGTACCTGGGGGAGCTGGGCATCCCGCTGCCTGCAGAGCTGGAGGAG
TTGGACCACACTGTGAGCATGCAGTACGGCCTGACCCGGGACTCACCTCCCTAG
    
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Clone variation with respect to NM_016733.2

5' Read Nucleotide Sequence:

>OriGene 5' read for mutant NM_016733 unedited

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CCGCCGTTGAGCAATGGGCGGTAGGCGTGTACGGCGCGGAGGTCTATATAAGCAGAGCTCGTTT
AGTGAA
CCGTGAGAAATTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGCAAA
TGAGAACATA
CAGCCGAGAATACTGCCGAAGCTGAGACTGACTACTGTGCATTAGGAAAGACCTGGAGTCA
GAGACTTTGG
TGGGATTTGGAGCTCCGAGGCAAGTAATAACTGAACAAGCAGCCCTGTCCCCTAGGCTGC
AGAAGCTTGAA
TGCATCCTCTCCAGAACCTGCCACAGGAAACTGGGGGCTTTGTGAGGTGAAGATGTCTGG
AGGGTGTCC
AGGCTGTGGGGACCACATTTGCTCCAAGCCAGATATGGGTACAGGACTGGTCAACGAAAC
CTGGGCACGG
CTCTTGCTTCGGGGTTGAGAATGCCAGGATCCCTCACAACACTGGGTAATGAGAAGGAT
GGGAAGCTTT
ACTGCCAGGACTACTGGGGGAAGTTTGGGGAGTCGGCCTGGGTGCTCCTCTGATGACGG
GCCTTTTGG
TGGCCTGGGGGAGTCAGTTACCCCAAGGCTTTCCTGTTGACCTGCAGGAATATGGGAG
AGGGAATGCT
TTGATGGGTGCACATGCCACTCTCTGTGGAAGTCCAAGAGTGTGGCGTGCCACTGTTT
GAGAACTCC
CAGTTTGTTCGAGACCTCCCTATTGTACCTAATCTAGCGCGCCACTTAGACGACGCGG
CCTTCTGGGTCGG
GGAAGCGTTGCCATACCCACATTGACCTGAAGTTAGCAGTAACAATCCACTGAGCTCCT
GGACCATC
GTATGACCCCTGGCCACTCTGAGAAGAGACTCT
    
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| Kinase Domain Sequence: | >SC323676 kinase domain raw sequence. By performing BLASTX analysis with this sequence against NCBI reference protein database, you can confirm the presence of the kinase-deficient mutation TGAWCTTCGACTGTGACTAATCCATGGGGAGGTCCTGGGGAAGGGCTTCTTTGGGCAGGCTATCAAGGTG ACACACAAAGCCACGGGCAAAGTGATGGTCATGATGGAGTTAATTCGATGTGATGAGGAGACCCAGAAAA CTTTTCTGACTGAGGTGAAAGTGATGCGCAGCCTGGACCACCCAATGTGCTCAAGTTCATTGGTGTGCT GTACAAGGATAAGAAGCTGAACCTGCTGACAGAGTACATTGAGGG |
| Restriction Sites: | Please inquire |
| ACCN: | NM_016733 |
| Insert Size: | 4130 bp |
| OTI Disclaimer: | Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP). |
| OTI Annotation: | This kinase-deficient mutant clone was generated by created by site-directed mutagenesis from the corresponding wild-type clone. See details in "Application of active and kinase-deficient kinome collection for identification of kinases regulating hedgehog signaling." Cell, 2008 May p536-548. |
| 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: | <ol style="list-style-type: none">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_016733.2 , NP_057952.1 |
| RefSeq Size: | 3848 bp |
| RefSeq ORF: | 1854 bp |
| Locus ID: | 3985 |
| UniProt ID: | P53671 |
| Cytogenetics: | 22q12.2 |
| Domains: | pkinase, TyrKc, PDZ, LIM, S_TKc |
| Protein Families: | Druggable Genome, Protein Kinase |
| Protein Pathways: | Axon guidance, Fc gamma R-mediated phagocytosis, Regulation of actin cytoskeleton |

Gene Summary:

There are approximately 40 known eukaryotic LIM proteins, so named for the LIM domains they contain. LIM domains are highly conserved cysteine-rich structures containing 2 zinc fingers. Although zinc fingers usually function by binding to DNA or RNA, the LIM motif probably mediates protein-protein interactions. LIM kinase-1 and LIM kinase-2 belong to a small subfamily with a unique combination of 2 N-terminal LIM motifs and a C-terminal protein kinase domain. The protein encoded by this gene is phosphorylated and activated by ROCK, a downstream effector of Rho, and the encoded protein, in turn, phosphorylates cofilin, inhibiting its actin-depolymerizing activity. It is thought that this pathway contributes to Rho-induced reorganization of the actin cytoskeleton. At least three transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jul 2008]

Transcript Variant: This variant (2b) differs in the 3' UTR and coding region compared to variant 1. The resulting isoform (2b) is shorter and has a distinct C-terminus compared to isoform 1.