

## Product datasheet for SC323422

### ERK2 (MAPK1) (NM\_138957) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	ERK2 (MAPK1) (NM_138957) Human Untagged Clone
Tag:	Tag Free
Symbol:	ERK2
Synonyms:	ERK; ERK-2; ERK2; ERT1; MAPK2; NS13; p38; p40; p41; p41mapk; p42-MAPK; P42MAPK; PRKM1; PRKM2
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>OriGene ORF within SC323422 sequence for NM_138957 edited (data generated by NextGen Sequencing)

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ATGGCGGGCGGGCGGGCGGGCGGGCGGGCCCGGAGATGGTCCGCGGGCAGGTGTTTCGAC
GTGGGGCCCGCTACACCAACCTCTCGTACATCGGCGAGGGCGCCTACGGCATGGTGTGC
TCTGCTTATGATAATGTCAACAAAGTTCGAGTAGCTATCATGAAAATCAGCCCCTTTGAG
CACCAGACCTACTGCCAGAGAACCCTGAGGGAGATAAAAATCTTACTGCGCTTCAGACAT
GAGAACATCATTGGAATCAATGACATTATTCGAGCACCAACCATCGAGCAAATGAAAGAT
GTATATATAGTACAGGACCTCATGGAAACAGATCTTTACAAGCTTTGAAGACACAACAC
CTCAGCAATGACCATATCTGCTATTTTCTCTACCAGATCCTCAGAGGGTTAAAATATATC
CATTTCAGCTAACGTTCTGCACCGTGACCTCAAGCCTTCCAACCTGCTGCTCAACACCACC
TGTGATCTCAAGATCTGTGACTTTGGCCTGGCCCGTGTTCGAGATCCAGACCATGATCAC
ACAGGGTTCCTGACAGAATATGTGGCCACACGTTGGTACAGGGCTCCAGAAATTATGTTG
AATTCCAAGGGCTACACCAAGTCCATTGATATTTGGTCTGTAGGCTGCATTCTGGCAGAA
ATGCTTTCTAACAGGCCATCTTTCCAGGAAGCATTATCTTGACCAGCTGAACCACATT
TTGGGTATTCTTGATCCCCATCACAAGAAGACCTGAATTGTATAATAAAATTTAAAAGCT
AGGAACTATTTGCTTTCTCTTCCACACAAAAATAAGGTGCCATGGAACAGGCTGTTCCCA
AATGCTGACTCCAAAGCTCTGGACTTATTGGACAAAATGTTGACATTCAACCCACACAAG
AGGATTGAAGTAGAACAGGCTCTGGCCACCCATATCTGGAGCAGTATTACGACCCGAGT
GACGAGCCCATCGCCGAAGCACCATTCAAGTTCGACATGGAATTGGATGACTTGCCTAAG
GAAAAGCTCAAAGAACTAATTTTTGAAGAGACTGCTAGATTCCAGCCAGGATACAGATCT
TAA

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Clone variation with respect to NM\_138957.2  
161 a=>t



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<b>5' Read Nucleotide Sequence:</b>	>OriGene 5' read for mutant NM_138957 unedited ACCGCCCGTCTCAGCAAAGGGCGGTAGGCGCTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGT GAACCGTCAGAATTTTGTAAACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGCAGGCAGGCAG GCAATCGGTCCGAGTGGCTGTCCGCTCTCAGCTCTCCGCTCGGCGTCTTCTTCTCTCCCGGTCAG CGTCGGCGGCTGCACCGCGGCGGCGCAGTCCCTGCGGGAGGGGCGACAAGAGCTGAGCGGCGGCCGCG AGCGTCGAGCTCAGCGCGGCGAGGCGGCGGCGGCCGCGCAACATGGGGGCGGGGGCGGGGCGG GCCCGGAGAAGGACGAGGCCAAGGAATGAAACGGGGCCGCCCTACCCAACCTATAGGGAAGCCGCAAGGG GCCAAAAGACTGATGTGAGATAAAAAAAAAAGAAACAAACGAAGAA
<b>Kinase Domain Sequence:</b>	>SC323422 kinase domain raw sequence. By performing <a href="#">BLASTX</a> analysis with this sequence against NCBI reference protein database, you can confirm the presence of the kinase-deficient mutation CYATGMMGCAATGGCGGTAGGCGGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGT CAGAATTTTGTAAACGACTCACTATAGGGCGGCCGGAATTCGGCACGAGGCAGGCAGGCAGGCAATCG GTCCGAGTGGCTGTCCGCTCTCAGCTCTCCGCTCGGCGTCTTCTTCTCTCTCCCGGTCAGCGTCGGC GGCTGCACCGGCGGCGGCGCAGTCCCTGCGGGAGGGGCGACAAGA
<b>Restriction Sites:</b>	Please inquire
<b>ACCN:</b>	NM_138957
<b>Insert Size:</b>	5000 bp
<b>OTI Disclaimer:</b>	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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> 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. <a href="#">More info</a>
<b>OTI Annotation:</b>	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." <a href="#">Cell</a> . 2008 May p536-548.
<b>Components:</b>	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).

<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_138957.2</a> , <a href="#">NP_620407.1</a>
<b>RefSeq Size:</b>	1499 bp
<b>RefSeq ORF:</b>	1083 bp
<b>Locus ID:</b>	5594
<b>UniProt ID:</b>	<a href="#">P28482</a>
<b>Cytogenetics:</b>	22q11.22
<b>Domains:</b>	pkinase, TyrKc, S_TKc
<b>Protein Families:</b>	Druggable Genome, Protein Kinase
<b>Protein Pathways:</b>	Acute myeloid leukemia, Adherens junction, Alzheimer's disease, Axon guidance, B cell receptor signaling pathway, Bladder cancer, Chemokine signaling pathway, Chronic myeloid leukemia, Colorectal cancer, Dorso-ventral axis formation, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Fc gamma R-mediated phagocytosis, Focal adhesion, Gap junction, Glioma, GnRH signaling pathway, Insulin signaling pathway, Long-term depression, Long-term potentiation, MAPK signaling pathway, Melanogenesis, Melanoma, mTOR signaling pathway, Natural killer cell mediated cytotoxicity, Neurotrophin signaling pathway, NOD-like receptor signaling pathway, Non-small cell lung cancer, Oocyte meiosis, Pancreatic cancer, Pathways in cancer, Prion diseases, Progesterone-mediated oocyte maturation, Prostate cancer, Regulation of actin cytoskeleton, Renal cell carcinoma, T cell receptor signaling pathway, TGF-beta signaling pathway, Thyroid cancer, Toll-like receptor signaling pathway, Type II diabetes mellitus, Vascular smooth muscle contraction, VEGF signaling pathway

**Gene Summary:**

This gene encodes a member of the MAP kinase family. MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. The activation of this kinase requires its phosphorylation by upstream kinases. Upon activation, this kinase translocates to the nucleus of the stimulated cells, where it phosphorylates nuclear targets. One study also suggests that this protein acts as a transcriptional repressor independent of its kinase activity. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions. Two alternatively spliced transcript variants encoding the same protein, but differing in the UTRs, have been reported for this gene. [provided by RefSeq, Jan 2014]

Transcript Variant: This variant (2) contains a different 3' UTR region, compared to variant 1. Both variants 1 and 2 encode the same protein.