

Product datasheet for **RR204754**

Rac1 (NM_134366) Rat Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Rac1 (NM_134366) Rat Tagged ORF Clone
Tag: Myc-DDK
Symbol: Rac1
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
Cell Selection: Neomycin
ORF Nucleotide Sequence: >RR204754 representing NM_134366
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATG**CAGGCCATCAAGTGTGTGGTGGGAGACGGAGCCGTTGGTAAACCTGCCTGCTCATCAGTTACA**
CGACCAATGCGTTCCTGGAGAGTACATCCCCACCGTCTTTGACAACATTTCTGCCAATGTTATGGTAGA
TGGAAAACCAAGTGAATCTGGCCCTCTGGGACACAGCTGGACAGGAAGATTATGACAGACTGCGTCCCTC
TCCTACCCGCAAACAGAGTGTCTTAATTTGCTTTTCCCTTGTGAGTCCTGCATCATTTGAAAATGTCC
GTGCAAAGTGGTATCCTGAAGTACGACACCACTGTCCCAATACTCCCATCATCCTAGTGGGACGAAGCT
TGATCTTAGGGATGATAAGGACACGATTGAGAAGCTGAAGGAGAAGAAGCTGACTCCATTACCTACCCG
CAGGGGCTAGCCATGGCGAAAGAGATCGGTGCTGTCAAATACCTGGAGTGCTCAGCACTCACACAGCGAG
GACTCAAGACAGTGTGGATGAAGCTATCCGAGCCGTTCTCTGTCCCCTCTGTTAAGAAGAGGAAGAG
AAAATGCCTGCTGTTG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RR204754 representing NM_134366
Red=Cloning site Green=Tags(s)

MQAIKCVVVDGAVGKTCLLISYTTNAFPGEYIPTVFDNYSANVMVDGKPVNGLWDTAGQEDYDRLRPL
SYPQTDVFLICFSLVSPASFENVRKWPYEVRRHCPNTP IILVGTKLDLRDDKDTIEKLKEKLLTPITYP
QGLAMAKEIGAVKYLECSALTQRGLKTVFDEAIRAVLCPVPVKKRKRKCLLL

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: Sgfl-MluI

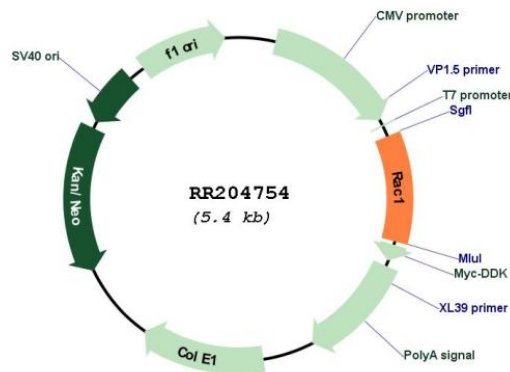


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Cloning Scheme:



Plasmid Map:



ACCN: NM_134366

ORF Size: 576 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:	<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:	<u>NM_134366.1</u> , <u>NP_599193.1</u>
RefSeq Size:	792 bp
RefSeq ORF:	579 bp
Locus ID:	363875
UniProt ID:	<u>Q6RUV5</u>
Cytogenetics:	12p11
MW:	21.5 kDa
Gene Summary:	Plasma membrane-associated small GTPase which cycles between active GTP-bound and inactive GDP-bound states. In its active state, binds to a variety of effector proteins to regulate cellular responses such as secretory processes, phagocytosis of apoptotic cells, epithelial cell polarization, neurons adhesion, migration and differentiation, and growth-factor induced formation of membrane ruffles (PubMed:16040606, PubMed:16549782). Rac1 p21/rho GDI heterodimer is the active component of the cytosolic factor sigma 1, which is involved in stimulation of the NADPH oxidase activity in macrophages. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. Stimulates PKN2 kinase activity (By similarity). In concert with RAB7A, plays a role in regulating the formation of RBs (ruffled borders) in osteoclasts (PubMed:16040606). In glioma cells, promotes cell migration and invasion (PubMed:20696765). In podocytes, promotes nuclear shuttling of NR3C2; this modulation is required for a proper kidney functioning (PubMed:19029984). Required for atypical chemokine receptor ACKR2-induced LIMK1-PAK1-dependent phosphorylation of cofilin (CFL1) and for up-regulation of ACKR2 from endosomal compartment to cell membrane, increasing its efficiency in chemokine uptake and degradation (By similarity). In neurons, is involved in dendritic spine formation and synaptic plasticity (PubMed:25498153). In synapses, seems to mediate the regulation of F-actin cluster formation performed by SHANK3 (PubMed:24089484).[UniProtKB/Swiss-Prot Function]