

## Product datasheet for **RC403221**

### RET (NM\_020975) Human Mutant ORF Clone

#### Product data:

Product Type:	Mutant ORF Clones
Product Name:	RET (NM_020975) Human Mutant ORF Clone
Mutation Description:	L56M
Affected Codon#:	56
Affected NT#:	166
Nucleotide Mutation:	RET Mutant (L56M), Myc-DDK-tagged ORF clone of Homo sapiens ret proto-oncogene (RET), transcript variant 2 as transfection-ready DNA
Effect:	Hirschsprung disease
Symbol:	RET
Synonyms:	CDHF12; CDHR16; HSCR1; MEN2A; MEN2B; MTC1; PTC; RET-ELE1
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_020975
ORF Size:	3342 bp
Restriction Sites:	SgfI-MluI
ORF Nucleotide Sequence:	>RC403221 representing NM_020975 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGCGAAGGCGACGTCCGGTGCCGCGGGCTGCGTCTGCTGTTGCTGCTGCTGCCGCTGCTAGGCA  
AAGTGGCATTGGGCTCTACTTCTCGAGGGATGCTTACTGGGAGAAGCTGTATGTGGACCAGGCGGCCGG  
CACGCCCTTGCTGTACGTCCATGCCATGCGGGACGCCCTGAGGAGGTGCCAGCTTCCGCTGGCCAG  
CATCTCTACGGCACGTACCGCACACGGCTGCATGAGAACAAGTGGATCTGCATCCAGGAGGACACCGGCC  
TCCTCTACCTTAACCGGAGCCTGGACCATAGCTCCTGGGAGAAGCTCAGTGTCCGCAACCGCGGCTTTCC  
CCTGCTACCGTCTACCTCAAGGTCTTCTGTACCCACATCCCTTCGTGAGGGCGAGTGCCAGTGGCCA  
GGCTGTGCCCGGTATACTTCTCCTTCTCAACACCTCCTTTCCAGCCTGCAGCTCCCTCAAGCCCCGGG



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AGCTCTGCTTCCCAGAGACAAGGCCCTCCTCCGCATTCCGGAGAACCGACCCCCAGGCACCTTCCACCA  
GTTCCGCCTGCTGCCTGTGCAGTTCTTGTGCCCAACATCAGCGTGGCCTACAGGCTCCTGGAGGGTGG  
GGTCTGCCCTTCCGCTGCGCCCCGGACAGCCTGGAGGTGAGCACGCGCTGGGCCCTGGACCGCGAGCAGC  
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CTTCCCGGTGACCGTGTACGACGAGGACGACTCGGCCCCACCTTCCCGCGGGCGTGCACACCGCCAGC  
GCCGTGGTGGAGTTCAAGCGGAAGGAGGACACCGTGGTGGCCACGCTGCTCCCGGGGACACCTGGGCCAGCA  
TACCTGCATCAGGGGAGCTGGTGGCCGATACACAAGCAGCCTGCTCCCGGGGACACCTGGGCCAGCA  
GACCTTCCGGGTGGAACACTGGCCCAACGAGACCTCGGTCCAGGCCAACGGCAGCTTCGTGCGGGCGACC  
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GCTGCCGGTACGCTGCACCTGCCAGTACCTACTCCCTCTCCGTGAGCAGGAGGGCTCGCCGATTTGCC  
CAGATCGGAAAGTCTGTGTGAAAAGTCCAGGCATTAGTGGCATCAACGTCCAGTACAAGCTGCATT  
CCTCTGGTGCCAACTGCAGCACGCTAGGGTGGTACCTCAGCCGAGGACACCTCGGGATCCTGTTTGT  
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GCTGCCCCCTGTCTGTGAGTACGCAAGAGACGGCTGGAGTGTGAGGAGTGTGGCGGCCCTGGGCTCCCC  
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CACCTGCAACTGCTTCCCTGAGGAGGAGAAGTCTTCTGCGAGCCGAAGACATCCAGGATCCACTGTGC  
GACGAGCTGTGCCGACGGTGTGCGAGCCGCTGCTCTTCTCTTTCATCGTCTCGGTGCTGCTGTCTG  
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GCCCTCCCTTCCACATGGATTGAAAACAACTCTATGGCATGTCAGACCCGAACCTGGCCGGAGAGATG  
CTGTACCACTCAGAGAGCTGATGGCACTAACACTGGGTTTCCAAGATATCCAATGATAGTGTATATGC  
TAACTGGATGCTTTCACCTCAGCGGCAAAATTAATGGACACGTTTGATAGT

AGCGGACCGACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:** >RC403221 representing NM\_020975  
Red=Cloning site Green=Tags(s)

MAKATSGAAGRLLLLLLLPLLKGVALGLYFSRDAYWEKLYVDQAAGTPLLYVHAMRDAPEEVPSFRLGQ  
 HLYGTYRTRLHENNWICIQEDTGLLYLNRSLDHSSWEKLSVRNRGFPLLTVYLVKVFSLPTSLREGECQWP  
 GCARVYFSFFNTSFPACSSLKPRELCFPETRPSFRIENRPPGTFHQFRLLPVQFLCPNISVAYRLLEGE  
 GLPFRCAPDSLEVSTRWALDREQREKVELVAVCTVHAGAREEVVMVFPVTVYDEDDSAPTFPAGVDTAS  
 AVVEFKRKEDTVVATLRVFDADVPASGELVRRYTSTLLPGDTWAQQTFRVEHWPNETSVQANGSFVRAT  
 VHDYRLVLNRNLSISENRTMQLAVLVNDSDFQGPAGVLLLHFNVSVLPVSLHLPSTYSLSVSRARRFA  
 QIGKVCVENCQAFSGINVQYKLHSSGANCSTLGVVTSAEDTSGILFVNDTKALRRPKCAELHYMVVATDQ  
 QTSRQAQAQLLTVVEGSYVAEEAGCPLSCAVSKRRLCECECGGLGSPTRCEWRQGDGKGITRNFSTCSP  
 STKTCPDGHCDVVETQDINICPQDCLRGSIVGGHEPGEPRGIKAGYGTNCNCFPEEEKCFCEPEDIQDPLC  
 DELCRTVIAAAVLFSFIVSVLLSAFCIHCYHKFAHKPPISSAEMTFRRPAQAFVSYSSSGARRPSLDSM  
 ENQVSVDAFKILEDPKWEFPRKNLVLGKTLGEGEFGKVVKATAFHLKGRAGYTTVAVKMLKENASPSSELR  
 DLLSEFNVLKQVNHVVIKLYGACSDQGPLLLIVEYAKYGSRLRGLRESRKVGPYLGSGGSRNSSSLDH  
 PDERALTMGDLISFAWQISQGMQYLAEMKLVHRDLAARNILVAEGRKMKISDFGLSRDVEEDSYVKRSQ  
 GRIPVKWMAIESLFDHIYTTQSDVWSFGVLLWEIVTLGGNPYPGIPPERLFNLLKTGHRMERPDNCSEEM  
 YRLMLQCWKQEPDKRPVFADISKDLEKMMVKRRDYLDLAASTPSDSL IYDDGLSEEETPLVDCNNAPLPR  
 ALPSTWIENKLYGMSDPNWPGESPVPLTRADGTNTGFPRYPNDSVYANWMLSPSAAKLMDTFDS

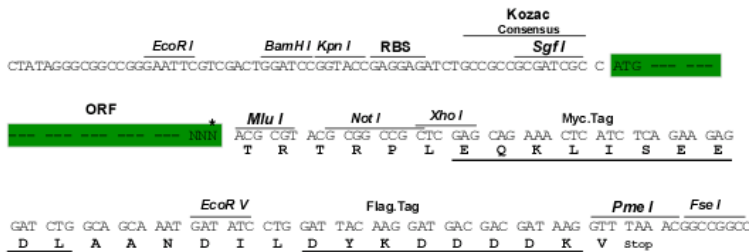
SGPTRTRRLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

**Sgfi-MluI**

**Cloning Scheme:**

Cloning sites used for ORF Shutting:



\* The last codon before the Stop codon of the ORF

**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.

<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>RefSeq:</b>	<a href="#">NP_066124</a>
<b>RefSeq Size:</b>	3342 bp
<b>RefSeq ORF:</b>	3345 bp
<b>Locus ID:</b>	5979
<b>Cytogenetics:</b>	10q11.21
<b>Protein Families:</b>	Druggable Genome, Protein Kinase, Transmembrane
<b>Protein Pathways:</b>	Endocytosis, Pathways in cancer, Thyroid cancer
<b>MW:</b>	122.5 kDa
<b>Gene Summary:</b>	This gene encodes a transmembrane receptor and member of the tyrosine protein kinase family of proteins. Binding of ligands such as GDNF (glial cell-line derived neurotrophic factor) and other related proteins to the encoded receptor stimulates receptor dimerization and activation of downstream signaling pathways that play a role in cell differentiation, growth, migration and survival. The encoded receptor is important in development of the nervous system, and the development of organs and tissues derived from the neural crest. This proto-oncogene can undergo oncogenic activation through both cytogenetic rearrangement and activating point mutations. Mutations in this gene are associated with Hirschsprung disease and central hypoventilation syndrome and have been identified in patients with renal agenesis. [provided by RefSeq, Sep 2017]