

Product datasheet for **RC210763**

Catalase (CAT) (NM_001752) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Catalase (CAT) (NM_001752) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Catalase
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



[View online »](#)

ORF Nucleotide Sequence:

>RC210763 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCTGACAGCCGGGATCCCGCCAGCAGCAGATGCAGCACTGGAAGGAGCAGCGGGCCGCGCAGAAAAG
 CTGATGTCCTGACCACTGGAGCTGGTAACCCAGTAGGAGACAAACTTAATGTTATTACAGTAGGGCCCCG
 TGGCCCCCTTCTTGTTCAGGATGTGGTTTTCACTGATGAAATGGCTCATTTTGACCGAGAGAGAATTCCT
 GAGAGAGTTGTGCATGCTAAAGGAGCAGGGCCTTTGGCTACTTTGAGGTCACACATGACATTACCAAAT
 ACTCCAAGGCAAAGGATTTGAGCATATTGAAAGAAGACTCCCATCGCAGTTCGGTTCTCCACTGTTGC
 TGGAGAATCGGGTTCAGCTGACACAGTTCGGGACCCTCGTGGGTTTGCAGTGAATTTTACACAGAAGAT
 GGTAACGGGATCTCGTTGAAAATAACACCCCATTTTCTTCATCAGGGATCCCATTGTTTCCATCTT
 TTATCCACAGCCAAAAGAGAAATCCTCAGACACATCTGAAGGATCCGGACATGGTCTGGGACTTCTGGAG
 CCTACGTCCTGAGTCTGCATCAGTTTCTTTCTTGTTCAGTGCAGGGGATTCCAGATGGACATCGC
 CACATGAATGGATATGGATCACATACTTTCAAGCTGGTTAATGCAAATGGGGAGGAGTTTATTGCAAAT
 TCCATTATAAGACTGACCAGGGCATCAAAAACCTTTCTGTTGAAGATGCGGCGAGACTTTCCAGGAAGA
 TCCTGACTATGGCATCCGGGATCTTTTAAACGCCATTGCCACAGGAAAGTACCCCTCCTGGACTTTTAC
 ATCCAGGTCATGACATTTAATCAGGCAGAAACTTTTCCATTTAATCCATTCGATCTACCAAGGTTTGGC
 CTCACAAGGACTACCTCTCATCCAGTTGGTAAACTGGTCTTAAACCGGAATCCAGTTAATTACTTTGC
 TGAGGTTGAACAGATAGCCTTCGACCAAGCAACATGCCACCTGGCATTGAGGCCAGTCTGACAAAATG
 CTTCAGGGCCGCCTTTTGCCTATCCTGACACTACCCGCATCGCCTGGGACCAATTATCTTCATATA
 CTTGTGAACGTCCCTACCGTGTCTGAGTGGCCAACACTACCAGCTGACGGCCCGATGTGCATGAGGACAA
 TCAGGGTGGTGTCCAAATTAACCCCAACAGCTTTGGTGTCCGGAACAACAGCCTTCTGCCCTGGAG
 CACAGCATCCAATATTCTGGAGAAGTGGGAGATTCAACACTGCCAATGATGATAACGTTACTCAGTGC
 GGGCATTCTATGTGAACGTGCTGAATGAGGAACAGAGGAAACGTCTGTGTGAGAACATTGCCGGCCACT
 GAAGGATGCACAAATTTTCATCCAGAAGAAAGCGGTCAAGAACTCACTGAGGTCACCCTGACTACGGG
 AGCCACATCCAGGCTCTTCTGGACAAGTACAATGCTGAGAAGCCTAAGAATGCGATTACACCTTTGTGC
 AGTCCGGATCTCACTTGGCGCAAGGGAGAAGGCAATCTG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC210763 protein sequence
 Red=Cloning site Green=Tags(s)

MADSRDPASDQMHWKEQRAAQKADVLTTGAGNPVGDKLNIVITVGPRGPLLVQDVVFTDEMAHFDREIP
 ERVVHAKGAGAFGYFEVTHDITKYSKAKVFEHIGKKTPIAVRFSTVAGESGADTVRDRGFVVKFYTED
 GNWDLVGNNTPIFFIRDPILFPSFIHSQKRNPQTHLKDPMVWDFWSLRPELHQVSFLFSDRGIPDGHR
 HMNGYGSHTFKLVNANGEAVYCKFHYKTDQGIKNLSVEDAARLSQEDPDYGIRDLFNAIATGKYPSTWTFY
 IQVMTFNQAEFFPNPFDLTKVWPHKDYPLIPVGKLVLRNPNVNYFAEVEQIAFDPSNMPPGIEASPDKM
 LQGRLFAYPDTHRHLGPNYLHIPPVNCYPYRVRVANYQRDGPMMQDNQGGAPNYYPNFSFGAPEQQPSALE
 HSIQYSGEVRRFNTANDDNVTQVRAFVYVNLNEEQRKRLCENIAGHLKDAQIFIQKKAVKNFTEVHPDYG
 SHIQALLDKYNAEKPKNAIHTFVQSGSHLAAREKANL

TRTRPLEQK**LI**SEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mk6269_c07.zip

Restriction Sites:

SgfI-MluI

Cloning Scheme:


ACCN: NM_001752

ORF Size: 1581 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_001752.4](#)

RefSeq Size: 2300 bp

RefSeq ORF: 1584 bp

Locus ID: 847

UniProt ID: [P04040](#)

Cytogenetics: 11p13

Domains: catalase

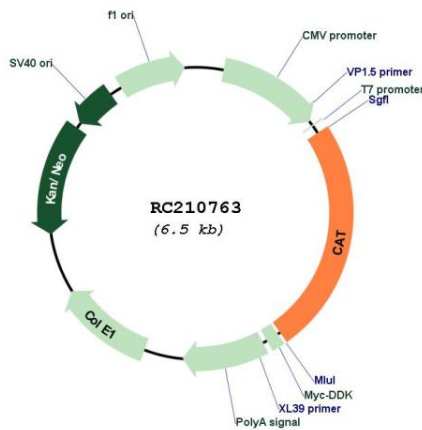
Protein Families: Druggable Genome

Protein Pathways: Amyotrophic lateral sclerosis (ALS), Metabolic pathways, Methane metabolism, Tryptophan metabolism

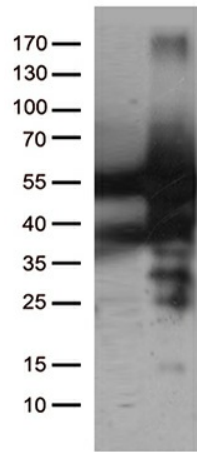
MW: 59.8 kDa

Gene Summary: This gene encodes catalase, a key antioxidant enzyme in the bodies defense against oxidative stress. Catalase is a heme enzyme that is present in the peroxisome of nearly all aerobic cells. Catalase converts the reactive oxygen species hydrogen peroxide to water and oxygen and thereby mitigates the toxic effects of hydrogen peroxide. Oxidative stress is hypothesized to play a role in the development of many chronic or late-onset diseases such as diabetes, asthma, Alzheimer's disease, systemic lupus erythematosus, rheumatoid arthritis, and cancers. Polymorphisms in this gene have been associated with decreases in catalase activity but, to date, acatalasemia is the only disease known to be caused by this gene. [provided by RefSeq, Oct 2009]

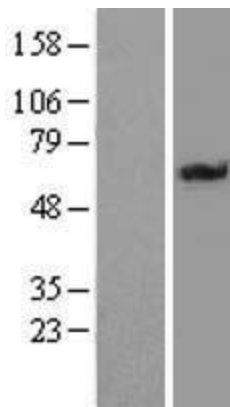
Product images:



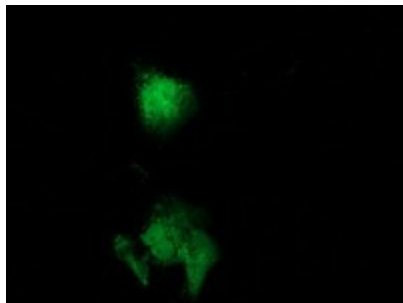
Circular map for RC210763



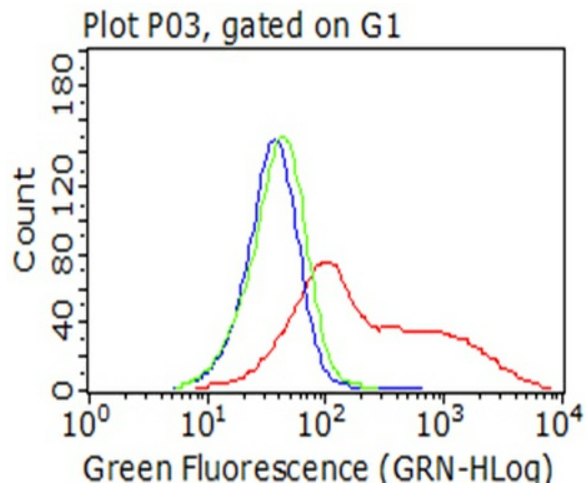
HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY CAT (Cat# RC210763, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-CAT. (1:5 (Cat# [TA502496])). Positive lysates [LY419766] (100ug) and [LC419766] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY419766]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC210763 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Anti-CAT mouse monoclonal antibody ([TA502496]) immunofluorescent staining of COS7 cells transiently transfected by pCMV6-ENTRY CAT (RC210763).



HEK293T cells transfected with either RC210763 overexpress plasmid (Red), compared to an IgG isotype control, (Green) or empty vector control plasmid (Blue) were immunostained by anti-CAT antibody ([TA502496]), and then analyzed by flow cytometry (1:100).