

Product datasheet for RC200725

Superoxide Dismutase 1 (SOD1) (NM_000454) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Superoxide Dismutase 1 (SOD1) (NM_000454) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Superoxide Dismutase 1
Synonyms:	ALS; ALS1; HEL-S-44; homodimer; hSod1; IPOA; SOD; STAHP
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC200725 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCCCGCATCGCC

ATGGCGACGAAGGCCGTGTGCGTGCTGAAGGGCGACGGCCAGTGCAGGGCATCATCAATTTGAGCAGA
 AGGAAAGTAATGGACAGTGAAGGTGTGGGAAGCATTAAAGGACTGACTGAAGGCCTGCATGGATTCCA
 TGTTTCATGAGTTGGAGATAATACAGCAGGCTGTACAGTGCAGGTCCTCACTTTAATCCTCTATCCAGA
 AAACACGGTGGGCCAAAGGATGAAGAGAGGCATGTTGGAGACTTGGCAATGTGACTGCTGACAAAGATG
 GTGTGGCCGATGTGTCTATTGAAGATTCTGTGATCTCACTCTCAGGAGACCATTGCATCATTGGCCGCAC
 ACTGGTGGTCCATGAAAAGCAGATGACTTGGGCAAAGGTGGAATGAAGAAAGTACAAAGACAGGAAAC
 GCTGGAAGTCGTTTGGCTTGTGGTGAATTGGGATCGCCCA

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:	>RC200725 protein sequence Red=Cloning site Green=Tags(s)
	MATKAVCVLKGDGPVQGIINFEQKESNGPVKVGSIKGLTEGLHGFHVHEFGDNTAGCTSAGPHFNPLSR KHGGPKDEERHVGDLGNVTADKDGADVSIEDSVISLGDHCIIGRTL VVHEKADDLKGKGGNEESTKTGN AGSRLACGVIGIAQ

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:	https://cdn.origene.com/chromatograms/mk6065_e08.zip
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Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_000454

ORF Size: 462 bp

OTI Disclaimer: 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 custsupport@origene.com 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. [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.

Note: Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

RefSeq: [NM_000454.5](#)

RefSeq Size: 981 bp

RefSeq ORF: 465 bp

Locus ID: 6647

UniProt ID: [P00441](#)

Cytogenetics: 21q22.11

Domains: sodcu

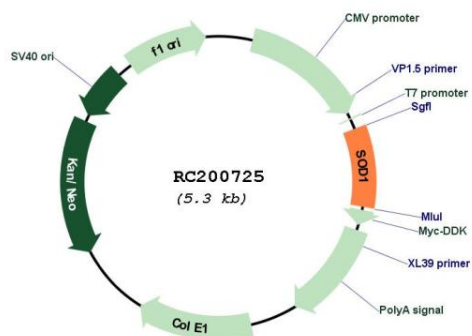
Protein Families: Druggable Genome

Protein Pathways: Amyotrophic lateral sclerosis (ALS), Huntington's disease, Prion diseases

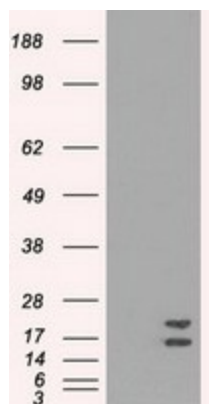
MW: 15.9 kDa

Gene Summary: The protein encoded by this gene binds copper and zinc ions and is one of two isozymes responsible for destroying free superoxide radicals in the body. The encoded isozyme is a soluble cytoplasmic protein, acting as a homodimer to convert naturally-occurring but harmful superoxide radicals to molecular oxygen and hydrogen peroxide. The other isozyme is a mitochondrial protein. In addition, this protein contains an antimicrobial peptide that displays antibacterial, antifungal, and anti-MRSA activity against *E. coli*, *E. faecalis*, *S. aureus*, *S. aureus* MRSA LPV+, *S. agalactiae*, and yeast *C. krusei*. Mutations in this gene have been implicated as causes of familial amyotrophic lateral sclerosis. Rare transcript variants have been reported for this gene. [provided by RefSeq, Jul 2020]

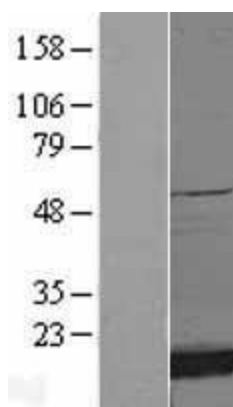
Product images:



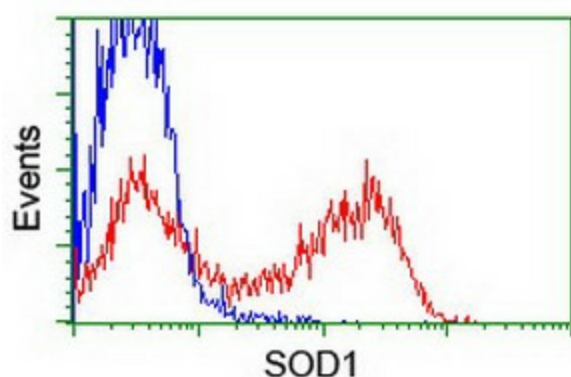
Circular map for RC200725



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY SOD1 (Cat# RC200725, 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-SOD1 (Cat# [TA500495]). Positive lysates [LY400160] (100ug) and [LC400160] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY400160]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC200725 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



HEK293T cells transfected with either RC200725 overexpress plasmid (Red) or empty vector control plasmid (Blue) were immunostained by anti-SOD1 antibody ([TA500495]), and then analyzed by flow cytometry.