

Product datasheet for **RC203949**

PHGDH (NM_006623) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	PHGDH (NM_006623) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	PHGDH
Synonyms:	3-PGDH; 3PGDH; HEL-S-113; NLS; NLS1; PDG; PGAD; PGD; PGDH; PHGDHD; SERA
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC203949 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGGCTTTTGCAATCTGCGAAAGTGCTCATCAGTGACAGCCTGGACCCTTGCTGCCGGAAGATCTTGC
 AAGATGGAGGGCTGCAGGTGGTGGAAAAGCAGAACCTTAGCAAAGAGGAGCTGATAGCGGAGCTGCAGGA
 CTGTGAAGGCCTTATTGTTTCGCTCTGCCACCAAGGTGACCGCTGATGTCATCAACGCAGCTGAGAAACTC
 CAGGTGGTGGCAGGGCTGGCACAGGTGTGGCAATGTGGATCTGGAGGCCGCAACAAGGAAGGGCATCT
 TGGTTATGAACACCCCAATGGGAACAGCCTCAGTGCCGCAGAACTCACTTGGAATGATCATGTGCCCT
 GGCCAGGCAGATCCCCAGGCGACGGCTTCGATGAAGGACGGCAATGGGAGCGGAAGAAGTTTCATGGGA
 ACAGAGCTGAATGGAAAGACCTGGGAATCTTGGCCTGGGCAGGATTGGGAGAGAGGTAGTACCCGGA
 TGCAGTCTTTGGGATGAAGACTATAGGTATGACCCCATCATTCAGGAGGCTCGGCCCTCTTTGG
 TGTTTCAGCAGCTGCCCTGGAGGAGATCTGGCCTCTCTGTGATTCATCACTGTGCACACTCTCTCCTG
 CCCTCCACGACAGGCTTGTGAATGACAACACCTTTGCCAGTGCAAGAAGGGGGTGCCTGTGGTGAAT
 GTGCCCTGGAGGGATCGTGGACGAAGGCGCCCTGCTCCGGGCCCTGCAGTCTGGCCAGTGTGCCGGGGC
 TGCACTGGACGTGTTACGGAAGAGCCGCCACGGGACCGGGCCTTGGTGGACCATGAGAATGTCATCAGC
 TGTCCCCACCTGGGTGCCAGCACAAGGAGGCTCAGAGCCGCTGTGGGGAGGAAATTGCTGTTCAAGTTCC
 TGGACATGGTGAAGGGGAAATCTCTCACGGGGTTGTGAATGCCAGGCCCTTACCAGTGCCTTCTCTCC
 ACACCAAGCCTTGATTTGGTCTGGCAGAAGCTCTGGGGACACTGATGCGAGCCTGGGCTGGTCCCCC
 AAAGGGACCATCCAGGTGATAACACAGGGAACATCCCTGAAGAATGCTGGGAAGTGCCTAAGCCCCGAG
 TCATTGTCCGGCTCTCTGAAAGAGGCTTCAAGCAGGCGGATGTGAAGTGGTGAACGCTAAGCTGCTGGT
 GAAAGAGGCTGGCTCAATGTCAACACCTCCACAGCCCTGCTGCACCAGGGGAGCAAGGCTTCGGGGAA
 TGCTCTGGCCCTGGCCCTGGCAGGCGCCCTTACCAGGCTGTGGGCTTGGTCCAGGCACTACACCTG
 TACTGCAGGGCTCAATGGAGCTGTCTTACAGCCAGAAGTGCCTCTCCGACAGGACCTGCCCTGCTCT
 ATTCCGGACTCAGACCTTGACCCTGCAATGCTGCCTACCATGATTGGCCTCTGGCAGAGGCAGGCGTG
 CGGCTGCTGCTACCAGACTTCACTGGTGTGAGATGGGAGACCTGGCACGTCATGGGCATCTCTCTCT
 TGCTGCCAGCCTGGAAGCGTGAAGCAGCATGTGACTGAAGCCTTCCAGTTCACCTT

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC203949 protein sequence
 Red=Cloning site Green=Tags(s)

MAFANLRKVLISDSLDPCCRKILQDGLQVVEKQNL SKEELIAELQDCEGLIVRSATKVTADVINA AEKL
 QVVGRAGTGVDNVDLEAATRKGILVMNTPNGNSLSAAELTCGMIMCLARQIPQATASMKGDKWERKFKMG
 TELNGKTLGILGLGRIGREVATRMQSFGMKTIGYDPIISPEVSASFVQQLPLEEIWPLCDFITVHTPLL
 PSTTGLLNDNTFAQCKKGVVVNRCARGIVDEGALLRALQSGQCAGAALDVFTTEPPRDRALVDHENVIS
 CPHLGASTKEAQRSGEEI AVQFVDMVKGKSLTGVVNAQALTSFSPHTKPWIGLAEALGTLMRWAGSP
 KGTIQVITQGTS LKNAGNCLSPAVIVGLLKEASKQADVNLVNAKLLVKEAGLNVTTSHSPAAPGEQGFGE
 CLLAVALAGAPYQAVGLVQGTTPVLQGLNGAVFRPEVPLRRDLPLLLFRTQTS DPAMPLPTMIGLLAEAGV
 RLLSYQTSLSVSDGETWHVMGISSLLPSLEAWKQHVTEAFQFHF

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mk6147_b02.zip

Restriction Sites:

Sgfl-MluI

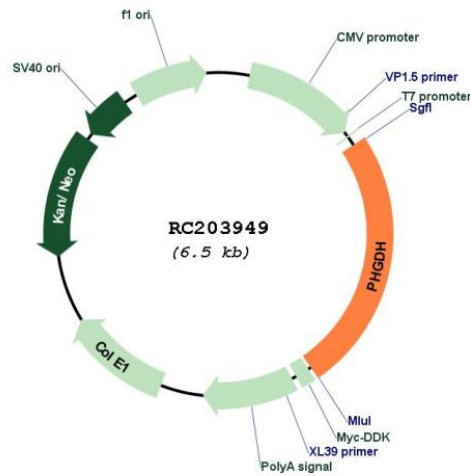
Cloning Scheme:

Cloning sites used for ORF Shuttling:



* The last codon before the Stop codon of the ORF

Plasmid Map:



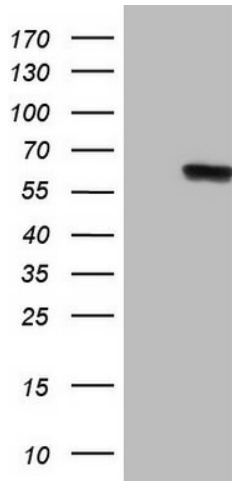
ACCN:

NM_006623

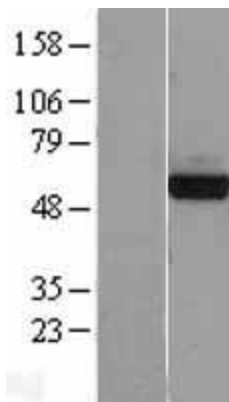
ORF Size:	1599 bp
OTI Disclaimer:	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional 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.</p> <p>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</p>
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:	NM_006623.2 , NP_006614.2
RefSeq Size:	2021 bp
RefSeq ORF:	1602 bp
Locus ID:	26227
UniProt ID:	O43175
Cytogenetics:	1p12
Domains:	2-Hacid_DH, 2-Hacid_DH_C
Protein Families:	Druggable Genome, Stem cell - Pluripotency
Protein Pathways:	Glycine, serine and threonine metabolism, Metabolic pathways
MW:	56.7 kDa

Gene Summary:

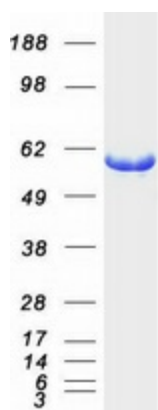
This gene encodes the enzyme which is involved in the early steps of L-serine synthesis in animal cells. L-serine is required for D-serine and other amino acid synthesis. The enzyme requires NAD/NADH as a cofactor and forms homotetramers for activity. Mutations in this gene have been found in a family with congenital microcephaly, psychomotor retardation and other symptoms. Multiple alternatively spliced transcript variants have been found, however the full-length nature of most are not known. [provided by RefSeq, Aug 2011]

Product images:


HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY PHGDH (Cat# RC203949, 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-PHGDH(Cat# [TA806763]). Positive lysates [LY401983] (100ug) and [LC401983] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY401983]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC203949 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified PHGDH protein (Cat# [TP303949]). The protein was produced from HEK293T cells transfected with PHGDH cDNA clone (Cat# RC203949) using MegaTran 2.0 (Cat# [TT210002]).