

Product datasheet for **MG209534**

Grhl2 (NM_026496) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Grhl2 (NM_026496) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Grhl2
Synonyms:	0610015A08Rik; BOM; clft3; Tcfcp2l3
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG209534 representing NM_026496
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGTCACAAGAGTCGGACAATAATAAAAGACTAGTGGCCTTAGTGCCCATGCCAGTGACCTCCCTTCA
 ACACCCGAAGAGCCTACACAAGTGAGGATGAGGCCTGGAAGTCATATCTGGAGAACCCCTGACTGCGGC
 CACCAAGGCGATGATGAGCATCAACGGGACGAGGACAGTGCTGCCGCCCTGGGCCTGCTCTATGACTAC
 TACAAGTTCTCGAGACAAGAGACTTCTGTCTGTGAGCAAAGCAAGTGACAGCCAAGAAGACCAGGATA
 AAAGAACTGCCTTGGCACCAGTGAAGCCAGATCAATTTGAGCGGAGGCGAGAACAGAGTGCAGGTTCT
 GAAGACTGTCCCGGTGAACCTCTGTCTAAGTCAAGACCACATGGAGAATTCGAAGCGGAGCAGTACAGT
 GTATCCATCACCGAGAGCTCTGCCGTATCCCCGTGTGAGGCATCACCGTGGTAAAGCCGAGGATTTCA
 CACCGGTGTTTATGGCGCCCCGGTGCCTATCCCCGCGGACAGTGAAGGACGAGCGGTTATCTT
 TGAACAGACTCAGTACGACTGCCCTCCATAGCCAGCCACAGCTCCTATCTCAAGGACGACGAGCGCAGC
 ACGCCGGACAGCACCTACAGCGAGAGCTTAAAGGACGGCCCTCGGAGAAATTCGGAGTACTTCTGTTG
 GTGCTGACGAGTATACATATGACCAGACGGGAAGTGGTACATTTCAAGTACACCCTGGAAGCCACCAATC
 TCTCCGTGAGAAGCAGGGGAGGGCCCCATGACCTACCTCAACAAAGGACAATTCATGCCATAACACTC
 AGTGAGACTGGAGACAACAAATGCTTCCGACACCCCATCAGCAAAGTCAGGAGTGTGGTGTGGTGGTCT
 TTAGTGAAGACAAAAACCGAGATGAGCAGCTGAAATACTGGAAGTACTGGCACTCCCGGCAGCACACTGC
 CAAGCAGAGGGTCTTGCATTGCTGATTACAAGGAGAGCTTCAACACCATCGGGAACATTGAAGAGATC
 GCATACAATGCTGTTTCCCTTACCTGGGATGTGAACGAGGAGGCAAAGATTTTTATCACCGTGAATTGCC
 TGAGTACAGATTTCTCTCCAAAAGGGTGTAAAAGGACTTCCCCTGATGATTGATGATGATGATGATGATG
 CTACAACAACCGCAGCAATAAACCCATCCACAGAGCATACTGCCAGATCAAGGTCTTCTGTGACAAGGGA
 GCAGAAAGAAAAATCCGGGATGAAGAGAGAAAGCAGAACAGAAAGAAAGGAAAGGCCAGGCCTCTCAAG
 CCCAGTGAACAACCTCTGATGGGAAGATGGCCGCCATACCGTTACAGAAGAAGAGTGACATCACGTA
 CTTCAAAACCATGCCCGACTGCACTCACAGCCTGTGCTTTCATACCAGATGTTCACTTTGCAAACCTA
 CAGAGGACCGGACAGGTTTATTACAACACAGACGATGAGCGAGAAGGCAGCAGCGTCTTGTAAAGCGGA
 TGTTCAAGCCCATGGAAGAGGAGTTTGGTCCAACACCGTCTAAGCAGATCAAAGAAGAAAACGTAACCG
 AGTGCTTTTATATGTGAGGAAGGAGAACGATGACGTCTTCGATGCTCTGATGCTGAAATCACCCACGGT
 AAGGGTCTGATGGAAGCGCTGTCTGAGAAGTATGGGCTGCCAGTGAGAAATCACAAGCTTTATAAGA
 AGAGCAAAAAGGCGATCCTGGTCAACATGGATGACAACATCATTGAGCACTATTCAAATGAGGACACCTT
 CATCTCAACATGGAGAGCATGGTGAAGGCTTCAAGATCACGCTGATGGAGATC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG209534 representing NM_026496
 Red=Cloning site Green=Tags(s)

MSQESDNNKRLVALVPMPSPFPNRRAYTSEDEAWKSYLENPLTAATKAMMSINGDEDSAAALGLLYDY
 YKVPDRKRLLSVSKASDSQEDQDKRNLGTSEAQINLSGGENRVQVLKTVPNLCLSQDHMENSREQYS
 VSITESSAVIPVSGITVVKAEFTPVFMAPPVHYPRADSEEQRVVIQEQYDLPSIASHSSYLKDDQRS
 TPDSTYSEFKDGASEKFRSTSVGADEYTYDQTSQTFQYTLKSLRQKQEGPMTYLNKGQFYAITL
 SETGDNKCFRHPISKVRSVVMVVFSEDKNRDEQLKYWKYWSRQHTAKQVRLDIADYKESFNTIGNIEEI
 AYNAVSTWVDNEEAKIFITVNLSTDFSSQKGVKGLPLMIQIDTYSYNNRSNPKIHRAYCQIKVFCDKG
 AERKIRDEERKQNRKKGQASQAQCNSSDGKMAAIPLQKKSIDITYFKTMDLHSQPVLFIPDVHFNAL
 QRTGQVYNTDDEREGSSVLVKRMFRPMEEFGPPTPSKQIKEENVKRVLLYVRKENDVDVFDALMLKSPT
 KGLMEALSEKYGLPVEKITKLYKSKKILVNMDNIIIEHYSNEDTFILNMEMVEGFKITLMEI

TRTRPLE - GFP Tag - V

Restriction Sites:

SgfI-MluI

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:	NM_026496.4
RefSeq Size:	4751 bp
RefSeq ORF:	1878 bp
Locus ID:	252973
UniProt ID:	Q8K5C0
Cytogenetics:	15 B3.1

Gene Summary:

Transcription factor playing an important role in primary neurulation and in epithelial development. Binds directly to the consensus DNA sequence 5'-AACCGGTT-3' acting as an activator and repressor on distinct target genes (PubMed:22696678). During embryogenesis, plays unique and cooperative roles with GRHL3 in establishing distinct zones of primary neurulation. Essential for closure 3 (rostral end of the forebrain), functions cooperatively with GRHL3 in closure 2 (forebrain/midbrain boundary) and posterior neuropore closure (PubMed:20654612). Regulates epithelial morphogenesis acting as a target gene-associated transcriptional activator of apical junctional complex components. Up-regulates CLDN3 and CLDN4, as well as of RAB25, which increases the CLDN4 protein and its localization at tight junctions (PubMed:22696678). Comprises an essential component of the transcriptional machinery that establishes appropriate expression levels of CLDN4 and CDH1 in different types of epithelia (PubMed:20978075). Exhibits functional redundancy with GRHL3 in epidermal morphogenetic events such as eyelid fusion and epidermal wound repair (PubMed:21081122). In lung, forms a regulatory loop with NKX2-1 that coordinates lung epithelial cell morphogenesis and differentiation (PubMed:22955271). In keratinocytes, plays a role in telomerase activation during cellular proliferation, regulates TERT expression by binding to TERT promoter region and inhibiting DNA methylation at the 5'-CpG island, possibly by interfering with DNMT1 enzyme activity. In addition, impairs keratinocyte differentiation and epidermal function by inhibiting the expression of genes clustered at the epidermal differentiation complex (EDC) as well as GRHL1 and GRHL3 through epigenetic mechanisms (By similarity).[UniProtKB/Swiss-Prot Function]