

Product datasheet for **MC216646**

Nr1h4 (NM_009108) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Nr1h4 (NM_009108) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Nr1h4
Synonyms:	AI957360; Fxr; HRR1; RIP14; Rxrip14
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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Fully Sequenced ORF: >MC216646 representing NM_009108
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGCATCGCC**

ATGGTGATGCAGTTTCAGGGTTTAGAAAATCCAATTCAGATTAGTCTTCACCACAGCCACCGGCTGTCAG
GATTTGTGCCGGAAGGGATGAGTGTGAAGCCAGCTAAAGGTATGCTAACAGAACACGCGCAGGCCCTCT
GGGCAGAAATCTGGATTTGGAATCGTACTCCCCATAACAATGTCCCGTTTCCTCAAGTTCAGCCACAG
ATTTCTCCTCGTCTTACTATTCCAACCTGGGCTTCTACCCCAACAACCGGAAGACTGGTATTCTCCTG
GCATCTATGAACTCAGGCGAATGCCGCTGAGACTGGGTACCAGGGAGAGACTGAGGTATCAGAGATGCC
TGTGACAAAGAAGCCGCAATGGCCGCGCATCGGCAGGCAGAATAAAAGGGGATGAGCTGTGTGTGTGTC
TGTGGAGACAGGGCCTCTGGGTACCACTACAACGCGCTCACCTGTGAGGGCTGCAAAGTTTCTCCGAA
GAAGCATTACCAAGAACCCGTGTACAAGTGAAGAACGGGGCAACTGCGTGATGGACATGTACATGCC
CAGGAAGTGCCAGGAGTCCGGCTAAGGAAGTGAAGAGATGGGGATGTTGGCTGAATGTTTGTAACT
GAAATCCAGTGTAAATCTAAACGGCTAAGGAAAATGTGAAGCAGCACGCTGATCAGACAGCTAATGAGG
ACGACAGCGAAGGGCGTGACTTGCAGACAAGTGACCTCCACAACCAAGTTTTCAGGGAGAAAACGGAAT
CACGGCAGACCAACAGACCCTCCTGGATTATATTATGGATTTCGTACAACAAACAGAGAATGCCTCAGGAA
ATCACAATAAAAATCTTAAAAGAAGAAATTTAGTGCAGAAGAAAATTTTCTCATATTAACAGAAATGGCAA
CCAGTCATGTACAGATTCTCGTAGAATTCACAAAAAGCTTCCAGGGTTTCAGACTGGATCACGAAGA
TCAGATTGCTTTGCTCAAAGGGTCCGAGTGGAGGCCATGTTTCTCGTTCGGCGGAGATTTTCAATAAG
AAACTTCTGCCGGTCATGCAGACCTGTTGGAAGAAAGAATTCGAAAGAGTGGTATCTCTGATGAGTATA
TAACCCCGATGTTTCAGTTTCTATAAAAAGTGTGGAGAACTCAAATGACTCAGGAGGAGTACGCTGCTGCT
CACAGCGATCGTATCCTCTCTCCAGACAGACAATACATCAAGGACAGAGAGGGCGGTGGAGAAGCTGCAG
GAGCCCTGCTTGATGTGCTACAAAAGCTGTGCAAGATGTACCAGCCTGAGAACCCGAGCATTTGCGCT
GCCTCCTGGGTCGCTGACGGAACCTCCGGACATTCACCATCACCACGCTGAGATGCTGATGTCTTGAG
AGTGAATGATCACAAGTTCACCCGCTCCTCTGTGAGATCTGGGATGTGCAGTGA

ACCGGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI

ACCN: NM_009108

Insert Size: 1455 bp

OTI Disclaimer: Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

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_009108.2](#), [NP_033134.2](#)

RefSeq Size: 1973 bp

RefSeq ORF: 1455 bp

Locus ID: 20186

Cytogenetics: 10 44.98 cM

Gene Summary: Ligand-activated transcription factor. Receptor for bile acids (BAs) such as chenodeoxycholic acid (CDCA), lithocholic acid, deoxycholic acid (DCA) and allocholic acid (ACA). Plays an essential role in BA homeostasis through the regulation of genes involved in BA synthesis, conjugation and enterohepatic circulation. Also regulates lipid and glucose homeostasis and is involved in innate immune response (PubMed:11030617, PubMed:21383957, PubMed:22820415). The FXR-RXR heterodimer binds predominantly to farnesoid X receptor response elements (FXREs) containing two inverted repeats of the consensus sequence 5'-AGGTCA-3' in which the monomers are spaced by 1 nucleotide (IR-1) but also to tandem repeat DR1 sites with lower affinity, and can be activated by either FXR or RXR-specific ligands. It is proposed that monomeric nuclear receptors such as NR5A2/LRH-1 bound to coregulatory nuclear responsive element (NRE) half-sites located in close proximity to FXREs modulate transcriptional activity (PubMed:20091679, PubMed:20483916). In the liver activates transcription of the corepressor NROB2 thereby indirectly inhibiting CYP7A1 and CYP8B1 (involved in BA synthesis) implicating at least in part histone demethylase KDM1A resulting in epigenomic repression, and SLC10A1/NTCP (involved in hepatic uptake of conjugated BAs). Activates transcription of the repressor MAFG (involved in regulation of BA synthesis) (PubMed:21383957, PubMed:25651182, PubMed:25545350). Activates transcription of SLC27A5/BACS and BAAT (involved in BA conjugation), ABCB11/BSEP (involved in bile salt export) by directly recruiting histone methyltransferase CARM1, and ABCC2/MRP2 (involved in secretion of conjugated BAs) and ABCB4 (involved in secretion of phosphatidylcholine in the small intestine) (PubMed:21383957). In ileal enterocytes activates FABP6/IBABP (involved in cytosolic transport), SLC51A/OSTA and SLC51B/OSTB (involved in secretion of conjugated BAs to the portal blood), and repressor NROB2/SHP thereby indirectly inhibiting SLC10A2/ASBT (involved in BA uptake) (By similarity). In the intestine activates FGF15 expression and secretion leading to hepatic CYP7A1 repression; the function also involves the coordinated induction of hepatic KLB/beta-klotho expression (PubMed:16213224, PubMed:26505219). Transcriptional activation of FABP6/IBAP and SCD1 but not of ABCB11 is isoform-specific (PubMed:12393883). Regulates transcription of liver UGT2B4 and SULT2A1 involved in BA detoxification; binding to the UGT2B4 promoter seems to imply a monomeric transactivation independent of RXRA (By similarity). Modulates lipid homeostasis by activating liver NROB2/SHP-mediated repression of SREBF1 isoform SREBP-1C (involved in de novo lipogenesis), expression of PLTP (involved in HDL formation), SCARB1 (involved in HDL hepatic uptake), APOE, APOC1, APOC4, VLDLR and SDC1 (involved in the hepatic uptake of LDL and IDL remnants), and inhibiting expression of MTP (involved in VLDL assembly) (PubMed:12421815, PubMed:15146238). Increases expression of APOC2 (promoting lipoprotein lipase activity implicated in triglyceride clearance) (PubMed:11579204). Transrepresses APOA1 probably involving a monomeric competition with NR2A1 for binding

to a DR1 element (PubMed:21804189). Also reduces triglyceride clearance by inhibiting expression of ANGPTL3 and APOC3 (both involved in inhibition of lipoprotein lipase) (PubMed:12891557, PubMed:15146238). Involved in glucose homeostasis by modulating hepatic gluconeogenesis through activation of NR0B2/SHP-mediated repression of respective genes. Modulates glycogen synthesis (inducing phosphorylation of glycogen synthase kinase-3). Modulates glucose-stimulated insulin secretion and is involved in insulin resistance (PubMed:15564327, PubMed:16446356, PubMed:16557297, PubMed:16410358, PubMed:20447400). Involved in intestinal innate immunity. Plays a role in protecting the distal small intestine against bacterial overgrowth and preservation of the epithelial barrier (PubMed:16473946, PubMed:21242261). Down-

Transcript Variant: This variant (3), alternatively referred to as beta 2 and alpha 4, uses an alternate in-frame splice site in the coding region, compared to variant 1. This results in a shorter isoform (2), compared to isoform 1. Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.