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NR1H4 Rabbit pAb

Catalog # AP99986

Product Information

Application	WB
Primary Accession	Q96RI1
Other Accession	Q96RI1
Reactivity	Human, Mouse
Predicted	Rat, Pig, Dog, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	55914
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human FXR/Bile Acid Receptor NR1H4
Epitope Specificity	175-280/486
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the nuclear hormone receptor family. NR1 subfamily. Contains 1 nuclear receptor DNA-binding domain.
SUBUNIT	eterodimer of NR1H4 and RXR. After activation by agonist binding, interacts with a coactivator, NCOA1 or NCOA2 (By similarity). Interacts with CARM1 and SMARD1.
Post-translational modifications	Methylation may increase transactivation of target genes.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The steroid receptor superfamily acts through direct association with DNA sequences known as hormone response elements (HREs) and binds DNA as either homo- or heterodimers. The promiscuous mediator of heterodimerization, RXR, is the receptor for 9-cis retinoic acid, and dimerizes with VDR, TR, PPAR, and several novel receptors including LXR (also referred to as RLD-1) and FXR. FXR and LXR fall into a category of proteins termed “orphan receptors” because of their lack of a defined function, and in the case of LXR, the lack of a defined ligand. FXR has been shown to bind a class of lipid molecules called farnesoids. LXR/RXR heterodimers have highest affinity for DR-4 DNA elements while FXR/RXR heterodimers bind IR-1 elements. Both LXR/RXR and FXR/RXR heterodimers retain their responsiveness to 9-cis retinoic acid.

Additional Information

Gene ID	9971
Other Names	BAR; FXR; HRR-1; HRR1; PFIC5; RIP14; Rxrip14; NR1H4_HUMAN; NR1H4; Farnesoid X-activated receptor; Farnesol receptor HRR-1; Nuclear receptor

subfamily 1 group H member 4; Retinoid X receptor-interacting protein 14 (RXR-interacting protein 14); Q3V1T8_MOUSE; Retinoid X receptor-interacting protein 14; NR1H4_MOUSE; Q5XI75_RAT; NR1H4_RAT; nuclear receptor subfamily 1, group H, member 4; farnesoid X receptor; bile acid receptor

Dilution WB=1:500-2000,Flow-Cyt=2ug/test,ICC/IF=1:50-200

Storage Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name NR1H4

Synonyms BAR, FXR, HRR1, RIP14

Function Ligand-activated transcription factor. Receptor for bile acids (BAs) such as chenodeoxycholic acid (CDCA), lithocholic acid, deoxycholic acid (DCA) and allocholic acid (ACA). Plays a 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 innate immune response (PubMed:10334992, PubMed:10334993, 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) halfsites located in close proximity to FXREs modulate transcriptional activity (By similarity). In the liver activates transcription of the corepressor NR0B2 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) (By similarity). 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:12754200, PubMed:15471871, PubMed:17895379). 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:10514450, PubMed:15239098, PubMed:16269519). In the intestine activates FGF19 expression and secretion leading to hepatic CYP7A1 repression (PubMed:12815072, PubMed:19085950). The function also involves the coordinated induction of hepatic KLB/beta-klotho expression (By similarity). 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 (PubMed:12806625, PubMed:16946559). Modulates lipid homeostasis by activating liver NR0B2/SHP-mediated repression of SREBF1 (involved in de novo lipogenesis), expression of PLTP (involved in HDL formation), SCARB1 (involved in HDL hepatic uptake), APOE, APOC1, APOC4, PPARA (involved in beta-oxidation of fatty acids), VLDLR and SDC1 (involved in the hepatic uptake

of LDL and IDL remnants), and inhibiting expression of MTTP (involved in VLDL assembly (PubMed:12554753, PubMed:12660231, PubMed:15337761). Increases expression of APOC2 (promoting lipoprotein lipase activity implicated in triglyceride clearance) (PubMed:11579204). Transrepresses APOA1 involving a monomeric competition with NR2A1 for binding to a DR1 element (PubMed:11927623, PubMed:21804189). Also reduces triglyceride clearance by inhibiting expression of ANGPTL3 and APOC3 (both involved in inhibition of lipoprotein lipase) (PubMed:12891557). 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) (By similarity). Modulates glucose-stimulated insulin secretion and is involved in insulin resistance (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 (By similarity). Down-regulates inflammatory cytokine expression in several types of immune cells including macrophages and mononuclear cells (PubMed:21242261). Mediates trans- repression of TLR4-induced cytokine expression; the function seems to require its sumoylation and prevents N-CoR nuclear receptor corepressor clearance from target genes such as IL1B and NOS2 (PubMed:19864602). Involved in the TLR9-mediated protective mechanism in intestinal inflammation. Plays an anti-inflammatory role in liver inflammation; proposed to inhibit pro-inflammatory (but not antiapoptotic) NF-kappa-B signaling) (By similarity).

Cellular Location

Nucleus. [Isoform 2]: Nucleus [Isoform 4]: Nucleus

Tissue Location

Liver and hepatocyte-related cells express mainly FXRalpha1-type isoforms with isoform 3 and isoform 4 in approximately equal proportions. In intestine and kidney mainly FXRalpha2-type isoforms are expressed with isoform 1 and isoform 2 in approximately equal proportions. Expressed in pancreatic beta cells and macrophages

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