10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

NR1D2 Rabbit pAb

Catalog # AP99867

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q14995
Other Accession	Q14995
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	64643
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human NR1D2
Epitope Specificity	221-320/579
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	Binds DNA as a monomer or a homodimer. Interacts with NCOA5 coactivator, leading to a strong increase of transcription of target genes. Interacts (via N-terminus) with KAT5. Interacts (via C-terminus) with HDAC1. Interacts with ZNHIT1. {ECO:0000269|PubMed:11113208, ECO:0000269|PubMed:17892483, ECO:0000269|PubMed:17996965}.
Post-translational modifications	Under more reducing intracellular redox conditions, Cys-384 is in its heme-bound state, which is optimal for recruitment of the NCOR1/HDAC3 corepressor complex and repression of target genes. When subjected to oxidative stress conditions, Cys-384 undergoes oxidation to form a disulfide bridge with Cys-374, also triggering a ligand switch that results in release of bound heme and derepression 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	This gene encodes a member of the nuclear hormone receptor family, specifically the NR1 subfamily of receptors. The encoded protein functions as a transcriptional repressor and may play a role in circadian rhythms and carbohydrate and lipid metabolism. Alternatively spliced transcript variants have been described. [provided by RefSeq, Feb 2009]

Additional Information

Gene ID	9975
Other Names	BD73; EAR-1R; REVERBB; REVERBbeta; RVR; Rev-erb; NR1D2_HUMAN; NR1D2; Orphan nuclear hormone receptor BD73; Rev-erb alpha-related receptor (RVR); Rev-erb-beta; V-erbA-related protein 1-related (EAR-1R); NR1D2_MOUSE; Orphan nuclear receptor RVR; nuclear receptor subfamily 1 group D member 2; nuclear receptor subfamily 1, group D, member 2

Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
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	NR1D2 (HGNC:7963)
Function	Transcriptional repressor which coordinates circadian rhythm and metabolic pathways in a heme-dependent manner. Integral component of the complex transcription machinery that governs circadian rhythmicity and forms a critical negative limb of the circadian clock by directly repressing the expression of core clock components BMAL1 and CLOCK. Also regulates genes involved in metabolic functions, including lipid metabolism and the inflammatory response. Acts as a receptor for heme which stimulates its interaction with the NCOR1/HDAC3 corepressor complex, enhancing transcriptional repression. Recognizes two classes of DNA response elements within the promoter of its target genes and can bind to DNA as either monomers or homodimers, depending on the nature of the response element. Binds as a monomer to a response element composed of the consensus half-site motif 5'-[A/G]GGTCA-3' preceded by an A/T-rich 5' sequence (RevRE), or as a homodimer to a direct repeat of the core motif spaced by two nuclegotides (RevDR-2). Acts as a potent competitive repressor of ROR alpha (RORA) function and also negatively regulates the expression of NR1D1. Regulates lipid and energy homeostasis in the skeletal muscle via repression of genes involved in lipid metabolism and myogenesis including: CD36, FABP3, FABP4, UCP3, SCD1 and MSTN. Regulates hepatic lipid metabolism via the repression of APOC3. Represses gene expression at a distance in macrophages by inhibiting the transcription of enhancer-derived RNAs (eRNAs). In addition to its activity as a repressor, can also act as a transcriptional activator. Acts as a transcriptional activator of the sterol regulatory element-binding protein 1 (SREBF1) and the inflammatory mediator interleukin-6 (IL6) in the skeletal muscle (By similarity). Plays a role in the regulation of circadian sleep/wake cycle; essential for maintaining wakefulness during the dark phase or active period (By similarity). Key regulator of skeletal muscle mitochondrial function; negatively regulates the skeletal muscle expression of core clock genes and genes involved in mitochondrial biogenesis, fatty acid beta-oxidation and lipid metabolism (By similarity). May play a role in the circadian control of neutrophilic inflammation in the lung (By similarity).
Cellular Location	Nucleus {ECO:0000255|PROSITE-ProRule:PRU00407, ECO:0000269|PubMed:17892483, ECO:0000269|PubMed:17996965}. Cytoplasm {ECO:0000250|UniProtKB:Q60674}. Note=Phosphorylation by CSNK1E enhances its cytoplasmic localization. {ECO:0000250|UniProtKB:Q60674}
Tissue Location	Widely expressed. Expressed at high levels in the liver, adipose tissue, skeletal muscle and brain. Expression oscillates diurnally in the suprachiasmatic nucleus (SCN) of the hypothalamus as well as in peripheral tissues

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.