abcam

ab174309

Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR10376
Purification technique	Affinity purification Protein A
Concentration	0.101 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/5000
Notes	-

Species	Recombinant full length protein - Human
Dilution info	1/1000 - 1/5000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat, Recombinant full length protein - Human
Dilution info	-
Notes	-

Target data

See full target information NR1D1

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, CLOCK and CRY1. Also regulates genes involved in metabolic functions, including lipid and bile acid metabolism, adipogenesis, gluconeogenesis and the macrophage 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 nucleotides (RevDR-2). Acts as a potent competitive repressor of ROR alpha (RORA) function and regulates the levels of its ligand heme by repressing the expression of PPARGC1A, a potent inducer of heme synthesis. Regulates lipid metabolism by repressing the expression of APOC3 and by influencing the activity of sterol response element binding proteins (SREBPs); represses INSIG2 which interferes with the proteolytic activation of SREBPs which in turn govern the rhythmic expression of enzymes with key functions in sterol and fatty acid synthesis. Regulates gluconeogenesis via repression of G6PC1 and PEPCK and adipocyte differentiation via repression of PPARG. Regulates glucagon release in pancreatic alpha-cells via the AMPK-NAMPT-SIRT1 pathway and the proliferation, glucose-induced insulin secretion and expression of key lipogenic genes in pancreatic-beta cells. Positively regulates bile acid synthesis by increasing hepatic expression of CYP7A1 via repression of NR0B2 and NFIL3 which are negative regulators of CYP7A1. Modulates skeletal muscle oxidative capacity by regulating mitochondrial biogenesis and autophagy; controls mitochondrial biogenesis and respiration by interfering with the STK11-PRKAA1/2-SIRT1-PPARGC1A signaling pathway. Represses the expression of SERPINE1/PAI1, an important modulator of cardiovascular disease and the expression of inflammatory cytokines and chemokines in macrophages. Represses gene expression at a distance in macrophages by inhibiting the transcription of enhancer-derived RNAs (eRNAs). Plays a role in the circadian regulation of body temperature and negatively regulates thermogenic transcriptional programs in brown adipose tissue (BAT); imposes a circadian oscillation in BAT activity, increasing body temperature when awake and depressing thermogenesis during sleep. In concert with NR2E3, regulates transcriptional networks critical for photoreceptor development and function. In addition to its activity as a repressor, can also act as a transcriptional activator. In the ovarian granulosa cells acts as a transcriptional activator of STAR which plays a role in steroid biosynthesis. In collaboration with SP1, activates GJA1

transcription in a heme-independent manner. Represses the transcription of CYP2B10, CYP4A10 and CYP4A14 (By similarity). Represses the transcription of CES2 (By similarity). Represses and regulates the circadian expression of TSHB in a NCOR1-dependent manner (By similarity). Negatively regulates the protein stability of NR3C1 and influences the time-dependent subcellular distribution of NR3C1, thereby affecting its transcriptional regulatory activity (By similarity). Plays a critical role in the circadian control of neutrophilic inflammation in the lung; under resting, non-stress conditions, acts as a rhythmic repressor to limit inflammatory activity whereas in the presence of inflammatory triggers undergoes ubiquitin-mediated degradation thereby relieving inhibition of the inflammatory response (By similarity). Plays a key role in the circadian regulation of microglial activation and neuroinflammation; suppresses microglial activation through the NF-kappaB pathway in the central nervous system (By similarity). Plays a role in the regulation of the diurnal rhythms of lipid and protein metabolism in the skeletal muscle via transcriptional repression of genes controlling lipid and amino acid metabolism in the muscle (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	NR1D1 and NR1D2 also known as RVR (Rev-erb) act as nuclear receptors involved in transcriptional regulation. Each has a mass ranging from 65 to 70 kDa. You can find NR1D1 and NR1D2 broadly expressed in multiple tissues with liver adipose tissue and muscles showing higher expression. These receptors play a role in regulating circadian rhythms and metabolism by repressing target gene expression through DNA binding.
Biological function summary	These nuclear receptors function as transcription repressors and are an essential part of the circadian clock complex. They interact with specific promoter regions competing with retinoic acid receptor-related orphan receptors to suppress gene transcription. Additionally they influence processes such as lipid metabolism and energy homeostasis by regulating genes involved in these pathways.
Pathways	NR1D1 and NR1D2 operate in the circadian rhythm pathway and lipid metabolism pathway. They directly interact with components of the core clock machinery such as BMAL1 and CLOCK proteins to maintain circadian rhythm stability. By repressing genes like lipogenic enzymes they facilitate optimal lipid metabolism. ROR proteins are closely linked to their function creating a feedback loop within these pathways.
Associated diseases and disorders	NR1D1 and NR1D2 have links to metabolic diseases and mood disorders. Abnormal expression levels or mutations can result in conditions such as obesity and depression due to their important role in maintaining metabolic balance and circadian regulation. Dysfunctions in these receptors can engage E4BP4 affecting immune response and neuroinflammation in these disorders. Engaging these pathways opens potential therapeutic avenues for managing related conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

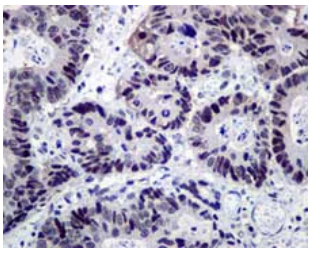
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

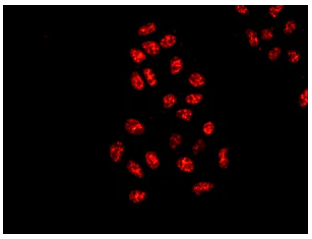
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309)

NR1D1 + NR1D2 / RVR Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NR1D1 + NR1D2 / RVR antibody

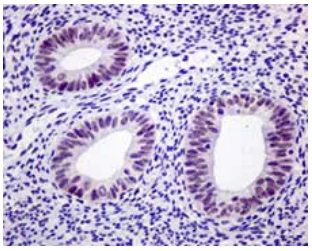
Immunohistochemical analysis of paraffin-embedded human colon carcinoma tissue labeling NR1D1 with ab174309 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309)

NR1D1 + NR1D2 / RVR Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NR1D1 + NR1D2 / RVR antibody

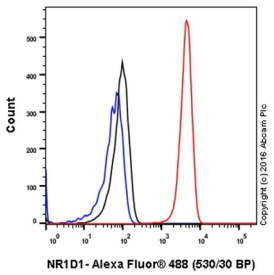
Immunofluorescent analysis of HeLa cells labeling NR1D1 with ab174309 at 1/100 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309)

NR1D1 + NR1D2 / RVR Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NR1D1 + NR1D2 / RVR antibody

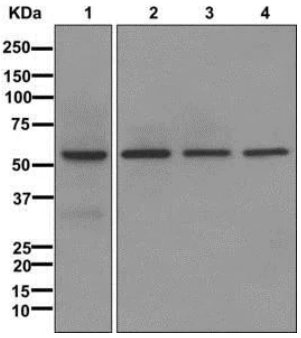
Immunohistochemical analysis of paraffin-embedded human uterus tissue labeling NR1D1 with ab174309 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309)

NR1D1 + NR1D2 / RVR Flow Cytometry (Intracellular) staining using rabbit Anti-NR1D1 + NR1D2 / RVR antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling NR1D1 with ab174309 at 1/20 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) was used as the unlabeled control.



Western blot - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309)

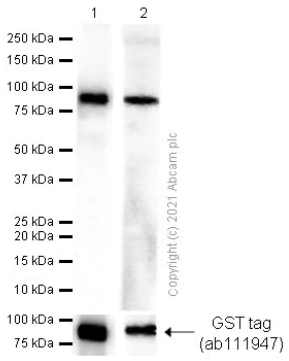
All lanes:
Western blot - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309) at 1/1000 dilution

Lane 1:
Y79 cell lysate at 10 µg

Lane 2:
Hela cell lysate at 10 µg

Lane 3:
HepG2 cell lysate at 10 µg

Lane 4:
Jurkat cell lysate at 10 µg



Western blot - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309)

NR1D1 + NR1D2 / RVR Western blot staining using rabbit Anti-NR1D1 + NR1D2 / RVR antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-NR1D1 + NR1D2 / RVR antibody [EPR10376] (ab174309) at 1/1000 dilution

Lane 1:
GST-tagged human full length recombinant NR1D1 protein at 0.015 µg

Lane 2:
GST-tagged human full length recombinant NR1D2 protein at 0.015 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 85 kDa

Exposure time: 100s

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