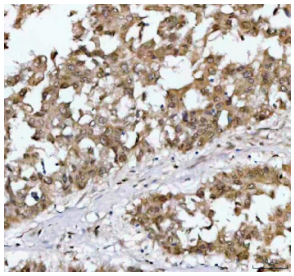
NR1D2 Antibody / Rev-erb beta / Nuclear receptor subfamily 1 group D member 2 (FY13279)

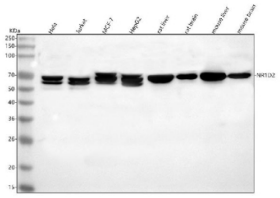
Catalog No.	Formulation	Size
FY13279	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

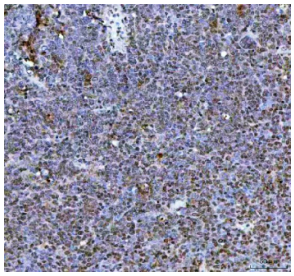
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q14995
Localization	Nuclear, cytoplasmic
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This NR1D2 antibody is available for research use only.



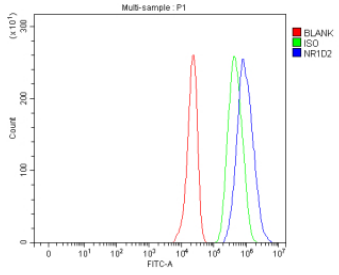
Immunohistochemical staining of NR1D2 using anti-NR1D2 antibody. NR1D2 was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-NR1D2 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



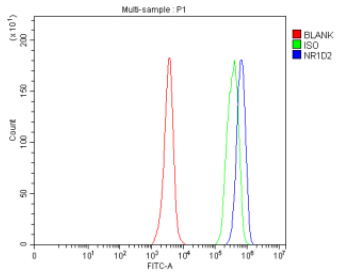
Western blot analysis of NR1D2 using anti-NR1D2 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human Jurkat whole cell lysates, Lane 3: human MCF-7 whole cell lysates, Lane 4: human HepG2 whole cell lysates, Lane 5: rat liver tissue lysates, Lane 6: rat brain tissue lysates, Lane 7: mouse liver tissue lysates, Lane 8: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-NR1D2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. Predominant bands are detected between an approximately 65 and 70 kDa in all samples, consistent with the predicted size of NR1D2. Human cell lysates show closely spaced doublets in this range, likely reflecting different post translationally modified or transcript variants of full length NR1D2, whereas rodent tissues display a single major band at a similar apparent molecular weight.



Immunohistochemical staining of NR1D2 using anti-NR1D2 antibody. NR1D2 was detected in a paraffin-embedded section of human cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-NR1D2 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Flow Cytometry analysis of HepG2 cells using anti-NR1D2 antibody. Overlay histogram showing HepG2 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-NR1D2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Flow Cytometry analysis of JK cells using anti-NR1D2 antibody. Overlay histogram showing JK cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-NR1D2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Description

NR1D2 antibody detects Nuclear receptor subfamily 1 group D member 2, a transcriptional repressor involved in circadian rhythm regulation, lipid metabolism, and inflammatory control. The UniProt recommended name is Nuclear receptor subfamily 1 group D member 2 (NR1D2). Also known as Rev-erb beta, this orphan nuclear receptor functions as a ligand-sensitive transcription factor that integrates metabolic and circadian signaling in peripheral tissues and the central clock.

Functionally, NR1D2 antibody identifies a 579-amino-acid protein that binds to Rev-erb response elements (RREs) in the promoters of target genes to repress transcription. NR1D2 interacts with the nuclear receptor co-repressor complex (NCoR/HDAC3), recruiting histone deacetylases to chromatin and silencing gene expression. It regulates genes involved in lipid synthesis, gluconeogenesis, mitochondrial function, and the circadian machinery, particularly in coordination with

its paralog NR1D1 (Rev-erb alpha).

The NR1D2 gene is located on chromosome 3p24.2 and is expressed rhythmically in liver, muscle, adipose tissue, and brain. Expression oscillates in antiphase to the transcriptional activators BMAL1 and CLOCK, ensuring temporal control of metabolic and circadian genes. NR1D2 also responds to heme as a natural ligand, linking metabolic redox state to transcriptional regulation.

Pathologically, altered NR1D2 function contributes to circadian rhythm disorders, metabolic syndrome, and inflammatory diseases. Reduced activity disrupts daily metabolic cycles and leads to increased lipid accumulation and insulin resistance. Conversely, overactivation suppresses inflammatory gene expression and may offer therapeutic benefits in metabolic inflammation. Research using NR1D2 antibody supports studies in chronobiology, metabolism, and transcriptional regulation.

NR1D2 antibody is validated for western blotting, immunofluorescence, and chromatin immunoprecipitation to detect nuclear transcription factors. NSJ Bioreagents provides NR1D2 antibody reagents optimized for research in circadian control, lipid metabolism, and gene repression mechanisms.

Structurally, Nuclear receptor subfamily 1 group D member 2 contains a conserved DNA-binding domain with two zinc fingers, a ligand-binding domain for heme interaction, and a repressor interface for co-repressor complex recruitment. Its activity oscillates with diurnal rhythm, influencing both chromatin accessibility and transcriptional output. This antibody enables exploration of NR1D2's role in circadian transcriptional repression and metabolic synchronization.

Application Notes

Optimal dilution of the NR1D2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NR1D2 recombinant protein (Position: K56-E501) was used as the immunogen for the NR1D2 antibody.

Storage

After reconstitution, the NR1D2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Copyright © NSJ Bioreagents. All rights reserved.