NR1D2 Antibody / 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
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
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.

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.