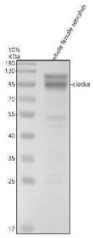
Zebrafish CLOCK Antibody / CLOCKA Antibody (RZ1338)

Catalog No.	Formulation	Size
RZ1338	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/ml.
UniProt	A0A8M9PH45
Applications	Western blot: 0.5-1ug/ml
Limitations	This Zebrafish CLOCK Antibody / CLOCKA Antibody is available for research use only.



Zebrafish CLOCK / CLOCKA Antibody Circadian Rhythm WB. Western blot analysis of whole female zebrafish tissue lysate using Zebrafish CLOCK Antibody demonstrates a prominent immunoreactive band at approximately 100 kDa, consistent with the predicted molecular weight of Circadian Locomotor Output Cycles Kaput A (CLOCKA). CLOCKA is a core circadian transcription factor that regulates rhythmic gene expression and functions within the molecular clock machinery controlling biological timing, metabolism, development, and behavioral rhythms. Additional weak higher molecular weight immunoreactive bands are observed and may represent modified forms of CLOCKA associated with transcriptional regulation and circadian signaling. Electrophoresis was performed on a 10% SDS-PAGE gel under reducing conditions followed by transfer to a nitrocellulose membrane. Signal was detected using an HRP-conjugated secondary antibody and enhanced chemiluminescent substrate.

Description

Zebrafish CLOCK Antibody / CLOCKA Antibody recognizes Circadian Locomotor Output Cycles Kaput A (CLOCKA), a transcription factor that serves as a core component of the molecular circadian clock. CLOCKA belongs to the basic helix-loop-helix PAS family of transcription factors and functions through heterodimerization with BMAL proteins to regulate rhythmic expression of genes involved in circadian timing. Through control of transcriptional feedback loops, CLOCKA helps coordinate daily oscillations in physiology, metabolism, behavior, and development. The highly conserved nature of

circadian clock mechanisms has established zebrafish as an important vertebrate model for studying CLOCKA function and biological timekeeping processes.

Circadian rhythms allow organisms to synchronize physiological functions with predictable environmental cycles such as light and darkness. In zebrafish, CLOCKA contributes to regulation of sleep-wake behavior, locomotor activity, feeding patterns, hormone secretion, metabolism, and developmental timing. Expression of CLOCKA is frequently examined in studies investigating circadian biology, photoperiod responses, and environmental regulation of gene expression. Because zebrafish embryos and larvae are directly responsive to light cues, they provide unique opportunities to investigate circadian clock function in vivo.

CLOCKA operates within a complex transcriptional network that includes BMAL, PER, CRY, and additional circadian regulatory proteins. Together these factors generate oscillating patterns of gene expression that maintain circadian rhythmicity throughout the organism. Disruption of CLOCKA activity can alter biological timing mechanisms and influence numerous physiological processes. Consequently, CLOCKA remains an important target in studies focused on chronobiology, developmental regulation, metabolism, and environmental adaptation.

Beyond regulation of daily rhythms, circadian signaling pathways influence cellular proliferation, energy utilization, immune responses, and tissue homeostasis. Researchers frequently monitor CLOCKA expression during investigations of developmental physiology, environmental stress responses, sleep regulation, and metabolic control. Because many components of circadian regulation are highly conserved among vertebrates, zebrafish models provide valuable insight into the molecular mechanisms governing biological clocks and rhythmic gene expression.

At NSJ Bioreagents, we provide highly validated antibodies for developmental biology, neuroscience, metabolism, and zebrafish research. Zebrafish CLOCK Antibody / CLOCKA Antibody targets a key transcription factor involved in circadian rhythm regulation and biological timekeeping. CLOCKA expression is widely studied in the context of chronobiology, sleep research, developmental timing, metabolic regulation, and circadian gene expression. Continued investigation of this important circadian regulator is expanding our understanding of the molecular mechanisms that coordinate physiological rhythms and vertebrate adaptation to environmental cycles.

This Zebrafish antibody is part of a broader Zebrafish / Danio rerio antibody panel offered by NSJ Bioreagents.

Application Notes

The optimal working dilution of the Zebrafish CLOCK Antibody / CLOCKA Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish CLOCKA recombinant protein (amino acids M1-Q562) was used as the immunogen for the Zebrafish CLOCK / CLOCKA Antibody.

Storage

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

Alternate Names

Zebrafish CLOCKA Antibody, Zebrafish Circadian Locomotor Output Cycles Kaput A Antibody, Zebrafish Circadian Rhythm Transcription Factor Antibody, Zebrafish Biological Clock Protein Antibody, Zebrafish Circadian Regulator Antibody, Zebrafish Circadian Transcription Factor Antibody

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