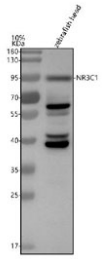
Zebrafish Glucocorticoid receptor Antibody / Gr / Nr3c1 (RZ1226)

Catalog No.	Formulation	Size
RZ1226	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q1XHK0
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Glucocorticoid receptor antibody is available for research use only.



Zebrafish Glucocorticoid receptor Antibody Head Tissue WB. Western blot analysis of Glucocorticoid receptor protein using Zebrafish Glucocorticoid receptor antibody and zebrafish head tissue lysates.

Description

The Zebrafish Glucocorticoid receptor antibody targets the glucocorticoid receptor (Gr, encoded by nr3c1), a ligand-activated transcription factor essential for stress physiology, metabolic regulation, immune responses, and early developmental programming in Danio rerio. Zebrafish, also known as Danio rerio, express nr3c1 as the primary receptor for cortisol, the major glucocorticoid hormone produced by the interrenal tissue. In its unliganded state, Gr resides in the cytoplasm bound to chaperone complexes; upon cortisol binding, it translocates to the nucleus where it regulates broad gene networks by binding glucocorticoid response elements. Gr functions across multiple tissues, influencing growth, homeostasis, stress reactivity, and organ system maturation.

Gr belongs to the nuclear receptor superfamily, a conserved group of transcription factors that regulate gene expression in response to steroid and metabolic signals. Its modular structure includes an N-terminal activation domain, a central DNA-binding domain with zinc finger motifs, a ligand-binding domain, and a C-terminal regulatory region controlling stability and co-factor recruitment. In zebrafish embryos and larvae, nr3c1 is expressed in neural tissues, the interrenal gland, liver, muscle, and developing immune system. A Zebrafish Glucocorticoid receptor antibody is suitable for research applications examining cytoplasmic-to-nuclear translocation, stress-responsive signaling patterns, and tissue-level glucocorticoid sensitivity.

Functionally, Gr regulates critical aspects of the hypothalamic-pituitary-interrenal (HPI) axis, the zebrafish equivalent of the mammalian HPA axis. Following cortisol elevation, Gr activation modulates transcriptional programs that influence metabolism, glucose balance, inflammation control, and behavioral stress responses. In early development, Gr shapes neural circuitry formation, regulates growth trajectories, and modulates immune system maturation. Loss or disruption of nr3c1 impairs stress responsiveness, alters metabolic homeostasis, and results in abnormal neural and behavioral phenotypes. Because zebrafish show transparent embryonic stages and strong genetic tractability, Gr is widely used as a marker for endocrine regulation and stress-axis function.

Structurally, zebrafish Gr contains the conserved nuclear receptor DNA-binding domain and ligand-binding regions required for cortisol recognition and transcriptional activation. Zebrafish nr3c1 maps to chromosome 14, with regulatory elements that respond to cortisol exposure, environmental stressors, and developmental cues. Co-localization studies frequently detect Gr in both cytoplasmic and nuclear compartments depending on ligand status, often overlapping with metabolic and stress-responsive markers such as fkbp5, pomca, and hsd11b2. These patterns highlight Gr's role in linking endocrine signals to transcriptional and physiological adaptation.

A Zebrafish Glucocorticoid receptor antibody is suitable for detecting Gr in studies focused on endocrine regulation, stress physiology, neural development, metabolic adaptation, and immune modulation in Danio rerio. Its dynamic localization supports investigations into cortisol signaling kinetics, environmental stress responses, and the downstream transcriptional effects that shape growth and behavior. Researchers commonly analyze Gr expression to evaluate endocrine-disrupting chemicals, characterize stress-axis mutants, and map tissue-specific glucocorticoid actions during embryogenesis and larval development. These features make the antibody an essential tool for studies in vertebrate endocrinology, developmental physiology, and stress biology, and this reagent is supplied for research use by NSJ Bioreagents.

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

Application Notes

Optimal dilution of the Zebrafish Glucocorticoid receptor antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Glucocorticoid receptor recombinant protein (amino acids M1-K746) was used as the immunogen for the Zebrafish Glucocorticoid receptor antibody.

Storage

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