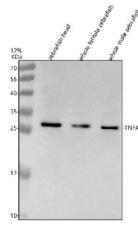


## Zebrafish Tnfa Antibody / Tnf alpha (RZ1321)

Catalog No.	Formulation	Size
RZ1321	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	Q08CQ3
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Tnfa antibody is available for research use only.



Western blot analysis of Tnfa protein using Zebrafish Tnfa antibody and 1) zebrafish head, 2) whole female zebrafish and 3) whole male zebrafish tissue lysate. Predicted molecular weight ~26 kDa.

## Description

Zebrafish Tnfa antibody targets Tumor necrosis factor alpha (Tnfa), a pro-inflammatory cytokine that plays a central role in innate immune signaling, inflammation, and host defense. In zebrafish, also known as *Danio rerio*, Tnfa functions as a key mediator of immune responses to infection, tissue injury, and environmental stress. Tnfa is synthesized as a type II transmembrane protein that can be cleaved to release a soluble cytokine, allowing it to signal in both membrane-bound and secreted forms. The protein is primarily associated with immune cells and inflammatory sites, where it exerts pleiotropic effects on cell survival, apoptosis, and cytokine production.

Tnfa signaling in zebrafish is mediated through conserved tumor necrosis factor receptors, activating downstream pathways that include NF-kappa B signaling, stress-activated kinases, and transcriptional programs regulating inflammation and immune cell recruitment. Expression of tnfα is rapidly induced in macrophages, neutrophils, and other immune-related cell types following pathogen exposure or tissue damage. This rapid induction makes Tnfa a widely used marker of inflammatory activation and innate immune responses in zebrafish research. A Zebrafish Tnfa antibody supports studies examining immune signaling dynamics in *Danio rerio*.

Zebrafish has emerged as a powerful model for studying inflammation due to its conserved immune pathways and optical transparency, which allows real-time visualization of immune cell behavior. Altered Tnfa expression in zebrafish has been linked to changes in leukocyte migration, pathogen clearance, and resolution of inflammation. Excessive or prolonged Tnfa signaling can contribute to tissue damage, while insufficient signaling may impair host defense. These features underscore the importance of tightly regulated Tnfa activity in maintaining immune balance.

From a biological and disease-relevance perspective, Tnfa is extensively studied in mammals for its involvement in autoimmune disease, chronic inflammation, infection, and cancer. Zebrafish Tnfa provides a conserved comparative system for investigating how inflammatory cytokine signaling shapes immune responses and tissue outcomes *in vivo*. Studies using zebrafish have contributed to understanding the temporal and spatial regulation of Tnfa during acute and chronic inflammatory states, as well as during development and regeneration.

At the molecular level, zebrafish Tnfa is encoded by the tnfα gene and produces a protein of approximately 256 amino acids in its full-length form. The protein contains a conserved tumor necrosis factor homology domain responsible for receptor binding and signaling activity. Regulation of Tnfa expression occurs at both transcriptional and post-translational levels in response to immune and environmental cues. A Zebrafish Tnfa antibody supports research applications focused on inflammation, immune regulation, and cytokine signaling in zebrafish, with NSJ Bioreagents providing reagents intended for research use.

## Application Notes

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

## Immunogen

*E. coli*-derived zebrafish Tnfa recombinant protein (amino acids M1-K226) was used as the immunogen for the Zebrafish Tnfa antibody.

## Storage

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