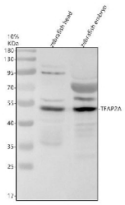
Zebrafish Tfap2a Antibody / Ap2 alpha (RZ1190)

Catalog No.	Formulation	Size
RZ1190	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	A0A2R8QRQ5
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Tfap2a antibody is available for research use only.



Western blot analysis of Tfap2a protein using Zebrafish Tfap2a antibody and 1) zebrafish head tissue lysates and 2) zebrafish embryo tissue lysates. Predicted molecular weight ~50 kDa.

Description

Zebrafish Tfap2a antibody detects Tfap2a, a transcription factor essential for neural crest development, craniofacial patterning, epidermal differentiation, and early axis formation. In zebrafish (Danio rerio), Tfap2a is widely studied as a master regulator of ectodermal gene expression and a core component of transcriptional networks that establish neural crest identity. Also known in the literature as Ap2 alpha, Tfap2a helps coordinate the balance between progenitor maintenance and lineage commitment. Because these mechanisms are conserved across vertebrates, Zebrafish Tfap2a antibody reagents support research in embryonic patterning, gene regulation, and neural crest biology.

During early embryogenesis, tfap2a is expressed in non-neural ectoderm, preplacodal regions, and neural crest progenitors. It functions upstream of key regulators including sox10, foxd3, crestin, and snai2, initiating transcriptional programs that drive neural crest cell specification and migration. Tfap2a activity is also required for establishing anterior-posterior patterning cues, and its loss disrupts neural tube morphology, pigment cell formation, and craniofacial cartilage development. In zebrafish, these phenotypes mirror those observed in mammalian systems, emphasizing the conservation of AP2-family transcription factor function.

Beyond neural crest roles, Ap2 alpha regulates epidermal gene expression and contributes to fin bud outgrowth, median fin fold formation, and placodal development. Its involvement in ectodermal boundary formation is critical for coordinating cell adhesion, epithelial integrity, and morphogen signaling. Tfap2a also participates in interactions with BMP, FGF, Wnt, and retinoic acid pathways, integrating multiple developmental signals into coherent transcriptional outputs. In scientific literature, zebrafish proteins such as Tfap2a are frequently described using Danio rerio naming, and the term Danio Tfap2a appears interchangeably with zebrafish nomenclature.

Tfap2a acts as both a transcriptional activator and repressor depending on its binding partners. It contains a basic helix-span-helix domain for DNA binding and a transcriptional activation domain that recruits chromatin remodelers, co-activators, or repressors. Through these interactions, Tfap2a regulates genes involved in cell proliferation, epithelial specification, and morphogenetic movement. Subcellular localization is nuclear, consistent with its role as a regulator of enhancer and promoter activity across ectodermal tissues.

Tfap2a also helps regulate craniofacial skeletal development by activating cartilage differentiation genes and supporting migration of pharyngeal arch mesenchyme. Mutations in tfap2a produce well-characterized craniofacial abnormalities in zebrafish, making the model system an important resource for studying congenital disorders affecting the face, skull, and sensory structures.

A Zebrafish Tfap2a antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining neural crest specification, epithelial differentiation, craniofacial development, and transcriptional regulation. This antibody targets Ap2 alpha for studies involving ectodermal patterning and vertebrate developmental gene networks. NSJ Bioreagents provides the Zebrafish Tfap2a antibody to support research in embryonic development and gene regulation.

Application Notes

Optimal dilution of the Zebrafish Tfap2a antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Tfap2a recombinant protein (amino acids M1-K450) was used as the immunogen for the Zebrafish Tfap2a antibody.

Storage

After reconstitution, the Zebrafish Tfap2a antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.