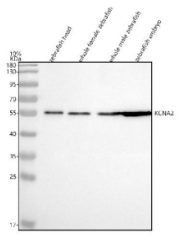
Zebrafish Kv1.2 Antibody / Kcna2a (RZ1151)

Catalog No.	Formulation	Size
RZ1151	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	E7F8M2
Applications	Western blot: 0.5-1 ug/ml
Limitations	This Zebrafish Kv1.2 antibody is available for research use only.



Zebrafish Kv1.2 Antibody Tissue WB. Western blot analysis of Kv1.2/Kcna2a protein using Zebrafish Kv1.2 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~57 kDa.

Description

Zebrafish (Danio rerio) Kv1.2 antibody detects Kv1.2, a voltage-gated potassium channel subunit essential for regulating membrane excitability, action potential firing, and neuronal signaling. In zebrafish, Kv1.2 is encoded by kcna2a, a homolog of mammalian KCNA2 that contributes to the Shaker-related Kv1 family. Kv1.2 channels help repolarize the membrane following depolarization, set firing thresholds, and shape the timing and frequency of electrical activity in neurons. Because finely tuned electrical signaling is crucial during neural development and circuit refinement, Zebrafish Kv1.2 antibody reagents support research in neurophysiology, ion channel biology, and vertebrate nervous system development.

Kv1.2 channels assemble as tetrameric complexes, either as homotetramers or heteromers with additional Kv1-family subunits. This composition allows variability in channel kinetics, conductance, and gating properties. In zebrafish embryos, kcna2a is expressed in multiple neuronal populations, including spinal motor circuits, hindbrain nuclei, sensory pathways, and peripheral nerves. These expression domains highlight the importance of Kv1.2 in shaping electrical patterns that direct locomotor behaviors, sensory processing, and early synaptic coordination.

During development, neuronal activity influences axon guidance, synapse formation, and network consolidation. Kv1.2 regulates these processes by controlling resting membrane potential, limiting excessive excitability, and refining spike patterns. Disruptions in Kv1-family channel function can lead to hyperexcitability, altered rhythmic firing, or impaired locomotor behavior. In vertebrate models, KCNA2 dysfunction has been linked to ataxia, seizures, and developmental delay. Zebrafish kcna2a provides a useful model for studying conserved channel properties and the developmental consequences of altered potassium conductance.

At the molecular level, Kv1.2 consists of six transmembrane segments per subunit, with a voltage-sensing domain (S1-S4) and a pore-forming region (S5-S6). Channel gating is driven by changes in membrane voltage, which shift the position of charged residues within the voltage-sensing domain. The cytoplasmic N and C termini contain regulatory motifs and binding sites for auxiliary proteins that influence channel trafficking, stability, and clustering at synaptic or axonal sites. In zebrafish neurons, Kv1.2 localizes to axons, somata, and specific membrane microdomains where it controls excitability thresholds and spike repolarization.

Kv1.2 also interacts with beta subunits and scaffolding proteins that shape channel localization and kinetics. These interactions are essential for establishing proper electrical gradients across developing circuits. In zebrafish, where spinal and hindbrain networks mature rapidly, optimal Kv1.2 function supports coordinated muscular responses and sensory-motor integration. Perturbing kcna2a expression can alter swimming behavior, reduce neuronal firing precision, or affect the maturation of stimulus-driven responses.

Beyond its neuronal roles, Kv1.2 contributes to excitability in non-neural tissues, including endocrine and muscle cells, where potassium flux helps regulate membrane potential and calcium entry. These broader physiological roles reflect the evolutionary conservation of Kv1-family channels across vertebrates.

A Zebrafish Kv1.2 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining ion channel expression, neuronal excitability, and circuit development. This antibody targets Kv1.2 for studies involving electrophysiology, neural patterning, and vertebrate developmental neurobiology. NSJ Bioreagents provides the Zebrafish Kv1.2 antibody to support research in ion channel function and neuronal signaling.

Learn more about the role of Kv1.2 in regulating neuronal membrane excitability and electrical signaling on our Kv1.2 Antibody / Voltage-Gated Potassium Channel Antibody page.

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

Application Notes

Optimal dilution of the Zebrafish Kv1.2 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Kv1.2/Kcna2a recombinant protein (amino acids E437-V493) was used as the immunogen for the Zebrafish Kv1.2 antibody.

Storage

After reconstitution, the Zebrafish Kv1.2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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