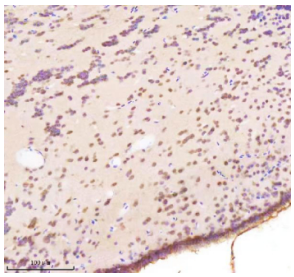
Zebrafish Bap1 Antibody / BRCA1-Associated Protein 1 (RZ1028)

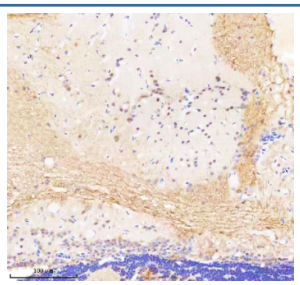
Catalog No.	Formulation	Size
RZ1028	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	A1L2G3
Localization	Nuclear, cytoplasmic
Applications	Immunohistochemistry (FFPE) : 2-5 ug/ml
Limitations	This Zebrafish Bap1 antibody is available for research use only.



Immunohistochemical analysis of Bap1 protein using Zebrafish Bap1 antibody and paraffin-embedded zebrafish brain tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



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Description

Zebrafish (Danio rerio) Bap1 antibody recognizes Brca1-associated protein 1, a conserved deubiquitinating enzyme encoded by the zebrafish bap1 gene located on chromosome 5. Bap1 is a nuclear-localized ubiquitin carboxy-terminal hydrolase that functions in chromatin regulation, transcriptional control, DNA damage repair, and cell cycle progression. In Danio rerio, Bap1 is expressed from early embryogenesis and shows enriched expression in neural progenitors, mesodermal tissues, craniofacial mesenchyme, developing musculature, and endoderm-derived organ primordia. Subcellular localization is primarily nuclear, consistent with its role in epigenetic and chromatin-associated functions, although Bap1 also associates with cytoplasmic complexes under specific developmental conditions.

Brca1-associated protein 1 is a key regulator of chromatin accessibility through its interactions with histone-modifying complexes. Bap1 partners with Asxl proteins to form the Polycomb deubiquitinase complex, which removes monoubiquitin from histone H2A and modulates gene repression. In zebrafish embryos, this activity is essential for the regulation of transcriptional networks that govern neural differentiation, somite patterning, craniofacial development, and organ morphogenesis. Bap1 also regulates transcription factors involved in growth and lineage specification, influencing signaling pathways such as Wnt, FGF, and Hedgehog through epigenetic modulation of target gene accessibility.

Developmental studies indicate that Bap1 is required for proper neural patterning and brain regionalization. Loss of bap1 function produces severe defects in forebrain and midbrain development, impaired retinal organization, and widespread apoptosis in neuroepithelial populations. Because Bap1 integrates chromatin regulation with DNA repair and cell survival pathways, disrupted Bap1 activity affects proliferation and differentiation cycles throughout early development. In craniofacial tissues, Bap1 influences neural crest-derived cartilage formation and pharyngeal arch patterning by controlling chromatin states that regulate chondrogenic gene expression programs.

Bap1 plays an essential role in maintaining genomic stability by participating in DNA damage repair pathways. Through interactions with Brca1-associated complexes, Bap1 contributes to the repair of double-strand breaks and supports cell survival during periods of replication stress. Zebrafish models demonstrate that decreased Bap1 function heightens sensitivity to DNA damaging agents and disrupts normal tissue morphogenesis. Bap1 also regulates cell cycle transitions and apoptosis, linking chromatin state to proliferation during rapid embryonic growth.

Beyond its developmental and genomic stability functions, Bap1 influences metabolic regulation and mitochondrial homeostasis. Vertebrate studies have shown that Bap1 controls genes involved in oxidative phosphorylation and metabolic adaptation, and these roles are likely conserved in zebrafish. Isoform variation or differential post translational regulation may tailor Bap1 activity to specific tissues or developmental stages. Because epigenetic mechanisms underpin lineage commitment, Bap1 provides a mechanistic connection between chromatin state, developmental signaling, and tissue-specific morphogenesis in zebrafish embryos.

This Zebrafish Bap1 antibody is suitable for detecting Brca1-associated protein 1 in research focused on chromatin remodeling, epigenetic regulation, neural development, craniofacial biology, DNA repair mechanisms, and early embryonic patterning in zebrafish. It supports studies examining Polycomb deubiquitinase activity, transcriptional regulation, and developmental phenotypes resulting from altered chromatin states. NSJ Bioreagents provides this antibody within its zebrafish and epigenetics-focused research collection.

Application Notes

Optimal dilution of the Zebrafish Bap1 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Bap1 recombinant protein (amino acids M1-D278) was used as the immunogen for the Zebrafish Bap1 antibody.

Storage

After reconstitution, the Zebrafish Bap1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.