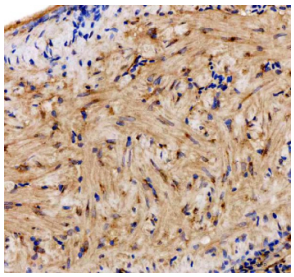
Zebrafish Bag5 Antibody / BAG family molecular chaperone regulator 5 (RZ1041)

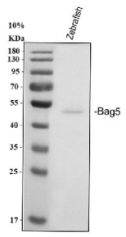
Catalog No.	Formulation	Size
RZ1041	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	F1QGM6
Localization	Cytoplasm, Nucleus
Applications	Western blot: 0.5-1 ug/ml Immunohistochemistry (FFPE): 2-5 ug/ml
Limitations	This Zebrafish Bag5 antibody is available for research use only.



Zebrafish Bag5 Antibody Heart IHC. Immunohistochemistry staining of FFPE zebrafish heart tissue with Zebrafish Bag5 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Bag5 Antibody WB. Western blot analysis of Zebrafish Bag5 protein using Zebrafish Bag5 antibody and whole zebrafish tissue lysate. Predicted molecular weight ~57 kDa and ~51 kDa.

Description

Zebrafish (Danio rerio) Bag5 antibody recognizes BAG family molecular chaperone regulator 5, a co-chaperone encoded by the zebrafish bag5 gene. Bag5 is a member of the Bcl-2-associated athanogene family, characterized by BAG domains that interact with Hsp70 and other heat shock-associated chaperone systems. In Danio rerio, Bag5 is expressed during early embryogenesis and is enriched in developing brain, neural tube, somites, cardiac primordia, notochord, and rapidly differentiating endodermal tissues such as liver and pancreas. Subcellular localization is mainly cytoplasmic, with additional presence at mitochondrial and perinuclear regions where Bag5 coordinates protein-folding, stress-response, and anti-apoptotic pathways.

BAG family molecular chaperone regulator 5 modulates Hsp70 ATPase activity, helping determine whether client proteins are refolded, held in a partially unfolded state, or directed toward degradation pathways. In zebrafish embryos, Bag5 contributes to proteostasis during periods of rapid proliferation and morphological change. By regulating chaperone activity, Bag5 influences cytoskeletal protein maturation, metabolic enzyme stability, and the folding of transcriptional regulators essential for early development. These functions are particularly important during gastrulation, neural tube formation, and somite segmentation, where proper protein quality control supports tissue organization and differentiation.

Bag5 additionally participates in stress-protective signaling. Under oxidative stress, metabolic challenge, or thermal insult, Bag5 helps stabilize mitochondrial proteins and limit activation of apoptotic cascades. Vertebrate studies indicate that Bag5 can inhibit pro-apoptotic factors and promote mitochondrial resilience, suggesting conserved functions in zebrafish tissues experiencing high metabolic load such as developing heart and muscle. In neural progenitors, Bag5-mediated chaperone regulation supports survival and differentiation during phases of intense transcriptional and structural remodeling.

Bag5 is also involved in modulating signaling pathways that shape embryonic patterning. Through interactions with kinases, transcriptional regulators, and molecular chaperones, Bag5 influences pathways such as MAPK, NF-kappaB, and apoptosis-regulating networks. These effects help coordinate cellular stress responses with developmental programs. In zebrafish, altered bag5 expression has been associated with impaired cardiac development, increased sensitivity to mitochondrial dysfunction, and reduced viability under metabolic perturbations. Because mitochondrial integrity and chaperone-controlled proteostasis strongly affect cell fate decisions, Bag5 contributes to aligning metabolic state with developmental outcomes.

In muscle and cardiac tissues, Bag5 supports mitochondrial organization, sarcomere stability, and the folding of contractile and metabolic proteins. These roles are essential for early heart morphogenesis and muscle fiber formation. In neural tissues, Bag5 may regulate synaptic protein stability and cytoskeletal remodeling, reinforcing its importance in early brain development. The protein's activity intersects with ubiquitin-proteasome pathways, linking Bag5 to the controlled turnover of misfolded or regulatory substrates that influence tissue maturation.

This Zebrafish Bag5 antibody is suitable for detecting BAG family molecular chaperone regulator 5 in research focused on proteostasis, stress-response biology, mitochondrial homeostasis, neural development, cardiac morphogenesis, and cytoskeletal maturation in zebrafish. It supports studies examining Hsp70 co-chaperone activity, stress adaptation mechanisms, and developmental phenotypes resulting from altered protein quality control. NSJ Bioreagents provides this reagent within its zebrafish and chaperone-regulation antibody collection.

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

Application Notes

Optimal dilution of the Zebrafish Bag5 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Bag5 recombinant protein (amino acids K453-Y511) was used as the immunogen for the Zebrafish Bag5 antibody.

Storage

After reconstitution, the Zebrafish Bag5 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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