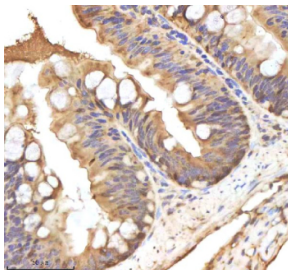


Zebrafish Hand2 Antibody / Heart and neural crest derivatives expressed 2 (RZ1227)

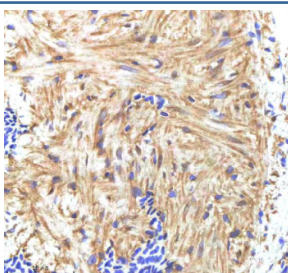
Catalog No.	Formulation	Size
RZ1227	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

[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	P57102
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Hand2 antibody is available for research use only.



IHC staining of zebrafish Hand2 protein using Zebrafish Hand2 antibody, HRP-labeled secondary and DAB substrate. Hand2 was detected in a paraffin-embedded section of zebrafish colon tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of zebrafish Hand2 protein using Zebrafish Hand2 antibody, HRP-labeled secondary and DAB substrate. Hand2 was detected in a paraffin-embedded section of zebrafish heart tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Hand2 antibody targets Hand2, a basic helix-loop-helix transcription factor essential for cardiac morphogenesis, neural crest development, and mesodermal patterning in *Danio rerio*. Zebrafish, also known as *Danio rerio*, express *hand2* as a key regulator of myocardial differentiation, left-right asymmetry, and craniofacial formation. Hand2 localizes to the nucleus, where it binds E-box regulatory sequences to activate gene expression programs governing early heart field development and neural crest-derived tissue formation. Its activity is required for proper formation of the heart tube, looping morphogenesis, and differentiation of myocardial and pericardial progenitors.

Hand2 belongs to the Twist-related bHLH transcription factor family, a conserved group controlling cell fate decisions within the mesoderm and neural crest lineages. In zebrafish embryos, *hand2* expression is detected in the anterior lateral plate mesoderm, developing cardiac mesoderm, branchial arch progenitors, and migrating cranial neural crest cells. A Zebrafish Hand2 antibody is suitable for examining nuclear localization patterns in early cardiogenic and neural crest territories, providing insight into lineage specification events during embryogenesis.

Functionally, Hand2 is indispensable for the formation and expansion of the myocardial progenitor pool. It promotes differentiation of ventricular cardiomyocytes, regulates cardiac chamber identity, and participates in establishing left-right asymmetry signals that guide heart tube looping. In the neural crest, Hand2 directs the differentiation of craniofacial cartilage, sympathetic neurons, and pigment cell lineages by integrating signaling inputs from Bmp, Fgf, and Shh pathways. Loss of *hand2* disrupts heart tube formation, reduces ventricular myocardium, and alters craniofacial arch patterning, underscoring its broad developmental influence.

Structurally, zebrafish Hand2 contains the canonical bHLH domain that mediates dimerization with E-protein partners and binding to DNA regulatory motifs. This enables Hand2 to coordinate transcriptional programs that control proliferation, migration, and differentiation within cardiac and neural crest tissues. Zebrafish *hand2* maps to chromosome 6, with enhancer elements responsive to mesoderm induction signals and cranial neural crest patterning cues. Co-localization studies often identify Hand2 alongside cardiac markers such as *nkx2.5*, *gata4*, and *vmhc*, as well as neural crest markers including *sox10* and *dlx2a*, highlighting its dual function in cardiogenesis and craniofacial development.

A Zebrafish Hand2 antibody is suitable for detecting Hand2 in research focused on heart field formation, myocardial differentiation, neural crest development, and early embryonic patterning in *Danio rerio*. Because Hand2 expression marks progenitor populations at critical lineage decision points, its spatial patterns help define cardiogenic territories, track cranial neural crest migration, and characterize mutant phenotypes affecting cardiac or craniofacial structures. Its regulatory role in both muscular and neural crest-derived tissues makes Hand2 an important marker for studies examining transcription factor networks, signaling pathway integration, and vertebrate cardiac morphogenesis. This reagent is supplied for research use by NSJ Bioreagents.

Application Notes

Optimal dilution of the Zebrafish Hand2 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Hand2 recombinant protein (amino acids M1-Q208) was used as the immunogen for the Zebrafish Hand2 antibody.

Storage

After reconstitution, the Zebrafish Hand2 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.

