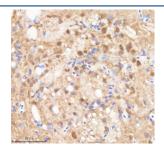


Zebrafish Smarca4a Antibody / Smarca4 (RZ1310)

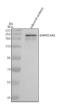
Catalog No.	Formulation	Size
RZ1310	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

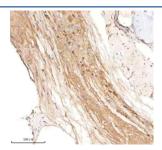
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q7ZSY3
Localization	Nuclear
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunofluorescence : 5ug/ml
Limitations	This Zebrafish Smarca4a antibody is available for research use only.



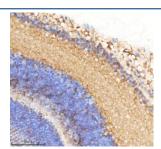
IHC staining of zebrafish Smarca4a protein using Zebrafish Smarca4a antibody, HRP-labeled secondary and DAB substrate. Smarca4a was detected in a paraffin-embedded section of zebrafish brain tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



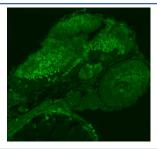
Western blot analysis of Smarca4a protein using Zebrafish Smarca4a antibody and zebrafish embryo tissue lysates. Predicted molecular weight ~185 kDa, commonly observed at 185-220 kDa. (human similarity)



IHC staining of zebrafish Smarca4a protein using Zebrafish Smarca4a antibody, HRP-labeled secondary and DAB substrate. Smarca4a was detected in a paraffin-embedded section of zebrafish spinal cord tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of zebrafish Smarca4a protein using Zebrafish Smarca4a antibody, HRP-labeled secondary and DAB substrate. Smarca4a was detected in a paraffin-embedded section of zebrafish eye tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Immunofluorescent staining of Smarca4a protein using Zebrafish Smarca4a antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Zebrafish Smarca4a is an ATP dependent chromatin remodeling enzyme that functions as the catalytic core of the Swi Snf type remodeling complexes. By using the energy of ATP hydrolysis, Smarca4a repositions or evicts nucleosomes to regulate access of transcription factors and the transcriptional machinery to DNA. Through this activity Smarca4a controls gene expression programs that are essential for early embryogenesis, tissue differentiation, stem cell maintenance, and responses to developmental and environmental signals.

Smarca4a in zebrafish is an ortholog of the human SMARCA4 protein also widely known as Brg1. The zebrafish protein shows strong sequence and functional conservation with the human enzyme, supporting the use of zebrafish as a model to study conserved mechanisms of chromatin remodeling and their roles in development and disease. Zebrafish also carries a related paralog named Smarca4b, which allows comparative analyses of partially overlapping and partially specialized functions within the genome duplication context of teleosts.

Smarca4a is broadly expressed during zebrafish development, with higher levels in rapidly proliferating and differentiating tissues where large scale transcriptional reprogramming is required. Loss of Smarca4a function disrupts body patterning, organogenesis, and cell fate specification, underscoring its central role in controlling chromatin structure and transcription.

Antibodies directed against zebrafish Smarca4a are valuable reagents for studying epigenetic regulation, transcriptional control, and developmental pathways. Typical applications include western blot to assess protein abundance, immunohistochemistry and immunofluorescence to map spatial expression in embryos and tissues, chromatin immunoprecipitation to define genomic binding sites, and immunoprecipitation based assays to characterize Swi Snf complex composition.

Because zebrafish Smarca4a is an ortholog of human SMARCA4, findings obtained with these antibodies can inform research on human developmental disorders, cancer, and other diseases linked to defects in chromatin remodeling.

Application Notes

Optimal dilution of the Zebrafish Smarca4a antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Smarca4a recombinant protein (amino acids Q573-E775) was used as the immunogen for the Zebrafish Smarca4a antibody.

Storage

After reconstitution, the Zebrafish Smarca4a antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.