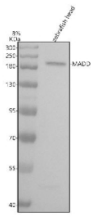
Zebrafish Madd Antibody / MAP kinase-activating death domain protein (RZ1067)

Catalog No.	Formulation	Size
RZ1067	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	A0A8M3AUB1
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Madd antibody is available for research use only.



Western blot analysis of Madd protein using Madd antibody and zebrafish head tissue lysate. The predicted molecular weight of Madd is ~183 kDa.

Description

Zebrafish (Danio rerio) Madd antibody recognizes MAP kinase-activating death domain protein, encoded by the zebrafish madd gene. Madd is a multifunctional adaptor protein that integrates Ras-MAPK signaling, vesicular trafficking, and apoptotic regulation. In Danio rerio embryos, Madd is broadly expressed in proliferative and differentiating tissues, including developing brain, neural tube, somites, heart, vasculature, and endoderm-derived organs such as liver and intestine. Subcellular localization includes cytoplasm, perinuclear regions, and membrane-associated compartments consistent with its roles in Ras activation, intracellular transport, and modulation of death receptor pathways.

MAP kinase-activating death domain protein supports Ras-mediated activation of downstream MAPK cascades that regulate growth, survival, and differentiation. As zebrafish embryos undergo rapid lineage specification and tissue growth, Madd helps coordinate these developmental signals by facilitating exchange factor activity and supporting proper signal propagation. Madd also participates in TNF receptor-associated complexes, modulating apoptotic and stress-response pathways. These functions allow Madd to integrate proliferation and survival cues during critical developmental windows.

Neural development relies extensively on Madd-mediated signaling. In the developing brain and spinal cord, Ras-MAPK pathways influence neural progenitor proliferation, neuroepithelial polarity, regional identity, and neuronal differentiation. Madd contributes to these processes by regulating Ras activation and coordinating trafficking of receptor-associated complexes. Disruption of Madd function can alter cell cycle progression, bias differentiation pathways, or impair neural circuit formation. Because neural tissues require highly dynamic responses to extracellular cues, MaddÃ¢Â€Â™s scaffolding functions are essential for signaling fidelity.

Cardiac and vascular tissues also depend on Madd. MAPK pathways regulate cardiomyocyte growth, chamber morphogenesis, contractile maturation, and responses to hemodynamic stress. In endothelial cells, Madd influences signaling nodes that guide angiogenic branching, cell polarity, and vascular remodeling. Proper Madd activity is needed for vessel patterning, lumen formation, and stabilization of endothelial junctions. Perturbation of Ras-MAPK integration can produce defects in heart looping, reduced cardiac output, or abnormal vascular branching.

Somite and muscle development are shaped by Ras-MAPK signaling, which governs myogenic commitment, myoblast proliferation, and early muscle fiber differentiation. Madd modulates these pathways by linking receptor-proximal signals to intracellular MAPK modules. Somitic patterning and myotome organization require finely tuned phosphorylation dynamics that Madd helps maintain.

Endoderm-derived organs including liver and pancreas require Madd to support differentiation and metabolic programming. Ras-MAPK pathways influence hepatocyte maturation, endocrine lineage decisions, and cellular stress adaptation. MaddÃ¢Â€Â™s dual role in trafficking and signaling ensures that endodermal tissues integrate extracellular and intracellular cues effectively during organ growth.

Beyond developmental signaling, Madd contributes to vesicular transport pathways, particularly those involving Rab GTPases and secretory trafficking. These functions influence membrane dynamics, receptor recycling, and distribution of signaling complexes across diverse tissues.

This Zebrafish Madd antibody is suitable for detecting MAP kinase-activating death domain protein in research focused on Ras-MAPK signaling, neural development, cardiac and vascular maturation, muscle formation, and endodermal organogenesis in zebrafish. NSJ Bioreagents provides this reagent within its zebrafish and signaling-adaptor antibody collection.

Application Notes

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

Immunogen

An E.coli-derived zebrafish Madd recombinant protein (amino acids K4-Y335) was used as the immunogen for the Zebrafish Madd antibody.

Storage

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