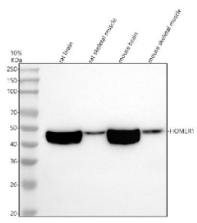
HOMER1 Antibody / SYN47 [clone 30H34] (FY13294)

Catalog No.	Formulation	Size
FY13294	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	30H34
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	Q86YM7
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200 Immunoprecipitation : 1:50
Limitations	This HOMER1 antibody is available for research use only.



Western blot analysis of HOMER1 using anti-HOMER1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat brain tissue lysates, Lane 2: rat skeletal muscle tissue lysates, Lane 3: mouse brain tissue lysates, Lane 4: mouse skeletal muscle tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HOMER1 antibody at 1:500 overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A predominant band is detected between an approximately 45 and 50 kDa in all samples, running above the predicted ~40 kDa mass but consistent with the higher apparent molecular weight of the long HOMER1b/c isoforms, which are strongly enriched in brain.

Description

HOMER1 antibody detects Homer protein homolog 1, encoded by the HOMER1 gene. Homer protein homolog 1 is a postsynaptic density scaffolding protein that plays a central role in synaptic signaling, calcium homeostasis, and plasticity. HOMER1 antibody provides researchers with a highly specific reagent for investigating synapse biology, learning and memory, and neurological disease.

Homer protein homolog 1 binds to proline rich motifs in receptors and signaling proteins at the postsynaptic density. Research using HOMER1 antibody has demonstrated that it directly interacts with metabotropic glutamate receptors, inositol trisphosphate receptors, and Shank family proteins. These interactions assemble macromolecular signaling complexes that coordinate calcium dynamics and synaptic responses. Through these scaffolding functions, HOMER1 is essential for coupling surface receptors to intracellular calcium stores and signaling pathways.

Alternative splicing of the HOMER1 gene produces both constitutively expressed long forms and inducible short forms. Studies with HOMER1 antibody have revealed that the long isoforms provide structural stability, while the short isoform Homer1a is an immediate early gene product induced by neuronal activity. Homer1a functions as a dominant negative regulator that disrupts multimeric complexes, thereby promoting synaptic remodeling and plasticity. This dual regulation highlights the versatility of HOMER1 in controlling neuronal signaling.

Dysregulation of Homer protein homolog 1 has been associated with neurological and psychiatric disorders. Research using HOMER1 antibody has shown that altered expression contributes to conditions such as schizophrenia, autism spectrum disorders, and depression. Abnormal Homer1a induction has also been implicated in epilepsy models, where it disrupts synaptic signaling balance. These findings underscore the importance of HOMER1 in maintaining normal brain function.

In addition to neurological disorders, HOMER1 influences cardiovascular physiology. Studies with HOMER1 antibody have indicated that Homer protein homolog 1 participates in excitation contraction coupling in cardiomyocytes by regulating calcium signaling between the sarcoplasmic reticulum and plasma membrane. Dysregulation of HOMER1 in cardiac cells may contribute to arrhythmias and heart failure.

HOMER1 antibody is widely used in western blotting, immunohistochemistry, and immunofluorescence. Western blotting distinguishes isoform expression, immunohistochemistry demonstrates postsynaptic enrichment in brain tissue, and immunofluorescence highlights colocalization with synaptic markers. These applications make HOMER1 antibody valuable for research into synaptic physiology and pathology.

By supplying validated HOMER1 antibody reagents, NSJ Bioreagents supports research into synaptic plasticity, neurological disorders, and signaling networks. Detection of Homer protein homolog 1 provides insight into how synaptic scaffolding proteins regulate communication and disease.

Application Notes

Optimal dilution of the HOMER1 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Homer1 was used as the immunogen for the HOMER1 antibody.

Storage

Store the HOMER1 antibody at -20oC.

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