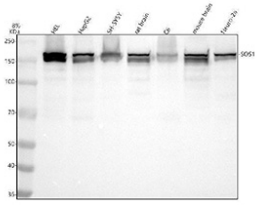
Son of Sevenless 1 Antibody / SOS1 [clone ABBE-19] (FY13462)

Catalog No.	Formulation	Size
FY13462	Rabbit IgG in stabilizing components, phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	ABBE-19
Purity	Affinity purification
UniProt	P01106
Localization	Nuclear
Applications	Western blot: 1:500-1:2000
Limitations	This Son of Sevenless 1 / SOS1 antibody is available for research use only.



Son of Sevenless 1 Antibody / SOS1 western blot analysis. Lane 1: human HEL whole cell lysate, Lane 2: human HepG2 whole cell lysate, Lane 3: human SH-SY5Y whole cell lysate, Lane 4: rat brain tissue lysate, Lane 5: rat C6 whole cell lysate, Lane 6: mouse brain tissue lysate, Lane 7: mouse Neuro-2a whole cell lysate. Proteins were separated by SDS-PAGE on an 8% gel under reducing conditions and transferred to a nitrocellulose membrane. The membrane was blocked with 5% non-fat milk in TBS and incubated with rabbit monoclonal Son of Sevenless 1 antibody overnight at 4oC, followed by HRP-conjugated goat anti-rabbit secondary antibody detection and chemiluminescent substrate development. A band is detected at approximately 170 kDa, consistent with the predicted molecular weight of Son of Sevenless 1 / SOS1 of approximately 152 kDa. SOS1 frequently appears as a doublet on western blot due to phosphorylation-dependent mobility shifts associated with activation of Ras signaling pathways. The presence of SOS1 in brain tissue lysates and neuronal cell lines is consistent with the known role of this Ras guanine nucleotide exchange factor in receptor tyrosine kinase signaling and MAPK pathway activation.

Description

Son of Sevenless 1 (SOS1) is a cytoplasmic signaling protein encoded by the human SOS1 gene and functions as a Ras guanine nucleotide exchange factor that activates Ras proteins during growth factor receptor signaling. Son of Sevenless 1 Antibody / SOS1 (clone ABBE-19) targets this critical Ras pathway regulator that mediates GDP-GTP exchange on Ras proteins, enabling downstream signaling through the MAPK and ERK pathways. SOS1 belongs to the Son of Sevenless family of Ras activators and is widely expressed in many tissues where it participates in receptor tyrosine kinase signaling and cellular proliferation pathways.

SOS1 antibody, also referred to as Son of Sevenless homolog 1 antibody in the literature, recognizes a signaling protein that serves as a central mediator linking activated receptor complexes to Ras activation. SOS1 interacts with adaptor proteins such as GRB2 following activation of receptors including EGFR and other receptor tyrosine kinases. This interaction recruits SOS1 to the plasma membrane where it promotes the exchange of GDP for GTP on Ras, converting Ras into its active signaling state. Through this mechanism, SOS1 plays an essential role in transmitting extracellular growth signals to intracellular kinase cascades.

The SOS1 protein contains multiple functional domains that regulate Ras activation and membrane recruitment. These include a Dbl homology domain and pleckstrin homology domain involved in membrane association, a Ras exchanger motif responsible for catalytic nucleotide exchange, and proline-rich regions that mediate binding to SH3 domain-containing adaptor proteins. Structural studies have demonstrated that SOS1 adopts an autoinhibited conformation that becomes activated upon membrane recruitment and interaction with Ras-GTP, creating a positive feedback mechanism that amplifies Ras signaling.

SOS1 functions within the Ras-MAPK signaling pathway, a fundamental regulatory system controlling cell growth, differentiation, and survival. Dysregulation of Ras signaling can lead to abnormal cellular proliferation and is strongly associated with oncogenic transformation. Alterations in SOS1 activity have been implicated in developmental disorders such as Noonan syndrome as well as in multiple cancer types where Ras signaling pathways are aberrantly activated.

In addition to its role in growth factor signaling, SOS1 contributes to broader cellular signaling networks that regulate cytoskeletal organization and cell migration. The protein can interact with multiple adaptor proteins and signaling complexes, allowing it to integrate signals from different receptor pathways. These interactions position SOS1 as an important hub in cellular signaling networks controlling proliferation and differentiation.

A recombinant rabbit monoclonal clone ABBE-19 antibody targets SOS1 and can be used to investigate Ras pathway signaling, receptor tyrosine kinase activation, and downstream MAPK signaling mechanisms. Detection of SOS1 expression is valuable for studying signaling networks involved in cell growth, oncogenic transformation, and developmental signaling pathways.

Learn more about our SOS1 Antibody, a Son of Sevenless 1 Antibody for studying RAS activation, growth factor signaling, and MAPK pathway regulation.

Application Notes

Optimal dilution of the Son of Sevenless 1 / SOS1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide derived from human SOS1 protein was used as the immunogen for the Son of Sevenless 1 / SOS1 antibody.

Storage

Store the Son of Sevenless 1 / SOS1 antibody at -20oC for one year, or at 4oC for one month.

Alternate Names

SOS1 antibody, Son of Sevenless 1 antibody, Son of Sevenless homolog 1 antibody, SOS Ras guanine nucleotide exchange factor antibody

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