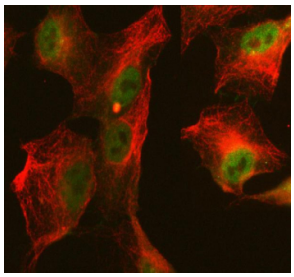
ABI2 Antibody / Abelson interactor 2 (R31179)

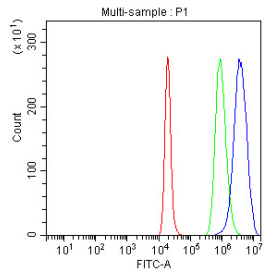
Catalog No.	Formulation	Size
R31179	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

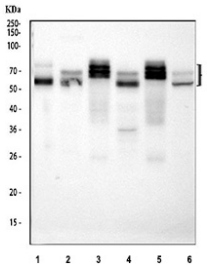
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q9NYB9
Localization	Nuclear, cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This ABI2 antibody is available for research use only.



Immunofluorescent staining of FFPE human A549 cells with ABI2 antibody (green) and Alpha Tubulin mAb (red). HIER: steam section in pH6 citrate buffer for 20 min.



Flow cytometry analysis of fixed and permeabilized human SH-SY5Y cells with ABI2 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= ABI2 antibody.



Western blot analysis of ABI2 in 1) human SH-SY5Y, 2) human 293T, 3) rat brain, 4) PC-12, 5) mouse brain, and 6) Neuro-2a lysates. The ABI2 antibody detects a major band at approximately 56 kDa in all samples, corresponding to the predicted size of Abl interactor 2, together with additional bands between ~60 and 75 kDa in brain and neuronal lysates. Multiple ABI2 species in this range have been reported in mouse brain and are attributed to alternatively spliced isoforms and post translationally modified forms of ABI2, consistent with its role as a heavily phosphorylated WAVE complex component.

Description

ABI2 antibody recognizes Abelson interactor 2, a cytoplasmic and actin-associated signaling protein encoded by the ABI2 gene. ABI2 belongs to the Abelson interactor family and is a core member of the WAVE regulatory complex, a key driver of actin polymerization downstream of Rac signaling. Through this role, it regulates cytoskeletal remodeling, lamellipodia formation, cell adhesion, and neuronal morphogenesis. The human ABI2 gene is located on chromosome 2q33.2, and alterations in ABI2 have been associated with neurodevelopmental phenotypes, impaired synaptic function, and cancer-related signaling pathways. ABI2 expression is enriched in the brain, including cortex, hippocampus, and cerebellum, where it contributes to actin-dependent shaping of dendritic spines and synaptic structures.

ABI2 functions as a scaffold that stabilizes the WAVE complex and coordinates interactions among CYFIP1, NCKAP1, BRK1, and WAVE1 or WAVE2. By linking Rac1 activation to Arp2/3-mediated actin branching, ABI2 promotes membrane protrusion and cytoskeletal reorganization during cell migration, axon guidance, and synapse formation. Loss or mutation of ABI2 disrupts WAVE complex stability and reduces actin polymerization, leading to defects in neuronal connectivity, spine density, and cortical layering. Studies in mouse models indicate that Abi2 contributes to learning, memory, and interneuron migration, and its disruption has been implicated in neurodevelopmental disorders. Beyond the nervous system, ABI2 plays roles in epithelial cell junction dynamics, endothelial remodeling, and tumor cell invasiveness.

At the subcellular level, ABI2 localizes to the cytoplasm, cell cortex, membrane ruffles, and actin-rich protrusions. It frequently co-localizes with WAVE complex proteins, Arp2/3 components, F-actin structures, and regulators of cell adhesion such as vinculin and focal adhesion kinase. In neurons, ABI2 is enriched in growth cones and dendritic spines, where it co-localizes with postsynaptic density proteins and cytoskeletal regulators. Isoform diversity in ABI2 arises from alternative splicing that can influence interaction domains and determine subcellular distribution. Developmentally, ABI2 is expressed during early neural patterning and increases throughout synaptic maturation, paralleling the establishment of actin-rich synaptic environments.

ABI2 participates in several signaling pathways beyond actin regulation. It contributes to MAPK-related responses, supports cytoskeletal remodeling during cell cycle transitions, and interacts with proteins involved in cell polarity, including components of adherens junctions. Disruption of ABI2 can alter metabolic pathways associated with cytoskeletal turnover and influence the balance of cellular growth versus differentiation. Its involvement in oncogenic processes is linked to altered actin dynamics that promote migration, invasion, and tumor progression in selected cancer models.

This ABI2 antibody is suitable for detecting Abelson interactor 2 expression in research focused on cytoskeletal biology, WAVE complex regulation, neuronal development, synaptic remodeling, cancer cell behavior, and actin-mediated signaling. NSJ Bioreagents includes this reagent within its neuroscience and cell signaling antibody portfolio.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the ABI2 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the N-terminus of human ABL Interactor 2 (RFKVSTQNMKMGGLPR) was used as the immunogen for this ABI2 antibody (100% homologous in human, mouse and rat).

Storage

After reconstitution, the ABI2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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