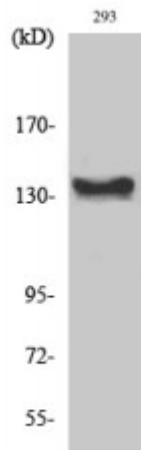


Anti-c-Abl antibody



Description	Rabbit polyclonal to c-Abl.
Model	STJ91950
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IF, IHC, WB
Immunogen	Synthesized peptide derived from human c-Abl
Immunogen Region	830-910 aa, C-terminal
Gene ID	25
Gene Symbol	ABL1
Dilution range	WB 1:500-1:2000IHC 1:100-1:300IF 1:200-1:1000ELISA 1:20000
Specificity	c-Abl Polyclonal Antibody detects endogenous levels of c-Abl protein.
Tissue Specificity	Widely expressed.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Tyrosine-protein kinase ABL1 Abelson murine leukemia viral oncogene homolog 1 Abelson tyrosine-protein kinase 1 Proto-oncogene c-Abl p150
Molecular Weight	123 kDa
Clonality	Polyclonal

Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:76OMIM:189980
Alternative Names	Tyrosine-protein kinase ABL1 Abelson murine leukemia viral oncogene homolog 1 Abelson tyrosine-protein kinase 1 Proto-oncogene c-Abl p150
Function	Non-receptor tyrosine-protein kinase that plays a role in many key processes linked to cell growth and survival such as cytoskeleton remodeling in response to extracellular stimuli, cell motility and adhesion, receptor endocytosis, autophagy, DNA damage response and apoptosis. Coordinates actin remodeling through tyrosine phosphorylation of proteins controlling cytoskeleton dynamics like WASF3 (involved in branch formation); ANXA1 (involved in membrane anchoring); DBN1, DBNL, CTTN, RAPH1 and ENAH (involved in signaling); or MAPT and PXN (microtubule-binding proteins). Phosphorylation of WASF3 is critical for the stimulation of lamellipodia formation and cell migration. Involved in the regulation of cell adhesion and motility through phosphorylation of key regulators of these processes such as BCAR1, CRK, CRKL, DOK1, EFS or NEDD9. Phosphorylates multiple receptor tyrosine kinases and more particularly promotes endocytosis of EGFR, facilitates the formation of neuromuscular synapses through MUSK, inhibits PDGFRB-mediated chemotaxis and modulates the endocytosis of activated B-cell receptor complexes. Other substrates which are involved in endocytosis regulation are the caveolin (CAV1) and RIN1. Moreover, ABL1 regulates the CBL family of ubiquitin ligases that drive receptor down-regulation and actin remodeling. Phosphorylation of CBL leads to increased EGFR stability. Involved in late-stage autophagy by regulating positively the trafficking and function of lysosomal components. ABL1 targets to mitochondria in response to oxidative stress and thereby mediates mitochondrial dysfunction and cell death. ABL1 is also translocated in the nucleus where it has DNA-binding activity and is involved in DNA-damage response and apoptosis. Many substrates are known mediators of DNA repair: DDB1, DDB2, ERCC3, ERCC6, RAD9A, RAD51, RAD52 or WRN. Activates the proapoptotic pathway when the DNA damage is too severe to be repaired. Phosphorylates TP73, a primary regulator for this type of damage-induced apoptosis. Phosphorylates the caspase CASP9 on 'Tyr-153' and regulates its processing in the apoptotic response to DNA damage. Phosphorylates PSMA7 that leads to an inhibition of proteasomal activity and cell cycle transition blocks. ABL1 acts also as a regulator of multiple pathological signaling cascades during infection. Several known tyrosine-phosphorylated microbial proteins have been identified as ABL1 substrates. This is the case of A36R of Vaccinia virus, Tir (translocated intimin receptor) of pathogenic E.coli and possibly Citrobacter, CagA (cytotoxin-associated gene A) of H.pylori, or AnkA (ankyrin repeat-containing protein A) of A.phagocytophilum. Pathogens can hijack ABL1 kinase signaling to reorganize the host actin cytoskeleton for multiple purposes, like facilitating intracellular movement and host cell exit. Finally, functions as its own regulator through autocatalytic activity as well as through

phosphorylation of its inhibitor, ABI1.

Cellular Localization

Cytoplasm, cytoskeleton. Nucleus. Mitochondrion. Shuttles between the nucleus and cytoplasm depending on environmental signals. Sequestered into the cytoplasm through interaction with 14-3-3 proteins. Localizes to mitochondria in response to oxidative stress . Isoform IB: Nucleus membrane. Lipid-anchor. The myristoylated c-ABL protein is reported to be nuclear.

Post-translational Modifications

Acetylated at Lys-711 by EP300 which promotes the cytoplasmic translocation. Phosphorylation at Tyr-70 by members of the SRC family of kinases disrupts SH3 domain-based autoinhibitory interactions and intermolecular associations, such as that with ABI1, and also enhances kinase activity. Phosphorylation at Tyr-226 and Tyr-393 correlate with increased activity. DNA damage-induced activation of ABL1 requires the function of ATM and Ser-446 phosphorylation . Phosphorylation at Ser-569 has been attributed to a CDC2-associated kinase and is coupled to cell division . Phosphorylation at Ser-618 and Ser-619 by PAK2 increases binding to CRK and reduces binding to ABI1. Phosphorylation on Thr-735 is required for binding 14-3-3 proteins for cytoplasmic translocation. Phosphorylated by PRKDC . Polyubiquitinated. Polyubiquitination of ABL1 leads to degradation.