

ARG51558 anti-Akt phospho (Ser473) antibody

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes Akt phospho (Ser473)
Tested Reactivity	Hu, Ms, Rat
Tested Application	ICC/IF, IHC-P, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	Akt
Species	Human
Immunogen	Peptide sequence around phosphorylation site of serine 473 (Q-F-S(p)-Y-S) derived from Human Akt.
Conjugation	Un-conjugated
Alternate Names	Protein kinase B alpha; Proto-oncogene c-Akt; RAC; PKB alpha; RAC-ALPHA; CWS6; PRKBA; AKT; PKB; RAC-PK-alpha; PKB-ALPHA; RAC-alpha serine/threonine-protein kinase; EC 2.7.11.1; Protein kinase B

Application Instructions

Application table	Application	Dilution
	ICC/IF	Assay-dependent
	IHC-P	1:50 - 1:100
	WB	1:500 - 1:1000
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	

Properties

Form	Liquid
Purification	Antibodies were produced by immunizing rabbits with KLH-conjugated synthetic phosphopeptide. Antibodies were purified by affinity-chromatography using epitope-specific phosphopeptide. In addition, non-phospho specific antibodies were removed by chromatography using non-phosphopeptide.
Buffer	PBS (without Mg ²⁺ and Ca ²⁺ , pH 7.4), 150mM NaCl, 0.02% Sodium azide and 50% Glycerol.
Preservative	0.02% Sodium azide
Stabilizer	50% Glycerol
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw

cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note

For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol

AKT1

Gene Full Name

v-akt murine thymoma viral oncogene homolog 1

Background

General protein kinase capable of phosphorylating several known proteins. Phosphorylates TBC1D4. Signals downstream of phosphatidylinositol 3-kinase (PI3K) to mediate the effects of various growth factors such as platelet-derived growth factor (PDGF), epidermal growth factor (EGF), insulin and insulin-like growth factor I (IGF-I). Plays a role in glucose transport by mediating insulin-induced translocation of the GLUT4 glucose transporter to the cell surface. Mediates the antiapoptotic effects of IGF-I. Mediates insulin-stimulated protein synthesis by phosphorylating TSC2 at 'Ser-939' and 'Thr-1462', thereby activating mTORC1 signaling and leading to both phosphorylation of 4E-BP1 and in activation of RPS6KB1. Promotes glycogen synthesis by mediating the insulin-induced activation of glycogen synthase.

Function

Plays a role as a key modulator of the AKT-mTOR signaling pathway controlling the tempo of the process of newborn neurons integration during adult neurogenesis, including correct neuron positioning, dendritic development and synapse formation (By similarity). General protein kinase capable of phosphorylating several known proteins. Phosphorylates TBC1D4. Signals downstream of phosphatidylinositol 3-kinase (PI(3)K) to mediate the effects of various growth factors such as platelet-derived growth factor (PDGF), epidermal growth factor (EGF), insulin and insulin-like growth factor I (IGF-I). Plays a role in glucose transport by mediating insulin-induced translocation of the GLUT4 glucose transporter to the cell surface. Mediates the antiapoptotic effects of IGF-I. Mediates insulin-stimulated protein synthesis by phosphorylating TSC2 at 'Ser-939' and 'Thr-1462', thereby activating mTORC1 signaling and leading to both phosphorylation of 4E-BP1 and in activation of RPS6KB1. Promotes glycogen synthesis by mediating the insulin-induced activation of glycogen synthase. The activated form can suppress FoxO gene transcription and promote cell cycle progression. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. [UniProt]

Highlight

Related Antibody Duos and Panels:

[ARG30038 Phospho Akt Antibody Duo \(pS473 pT308\)](#)

[ARG30151 Glucose uptake: Insulin Receptor Dependent Pathway Antibody Panel \(GLUT4, AKT pS473, IRS1 pS636\)](#)

Related products:

[Akt antibodies: Akt Duos / Panels: Anti-Rabbit IgG secondary antibodies:](#)

Related news:

[JunB as a novel gate keeper for prostate cancer progression](#)

[Asymmetric division makes different types of T cells](#)

[More effective cocktail therapy for cancer immune evasion](#)

[Baking soda restores circadian clock in tumor cells](#)

Research Area

Cancer antibody; Cell Death antibody; Gene Regulation antibody; Metabolism antibody; Signaling Transduction antibody; Glucose uptake: Insulin Receptor Dependent Pathway Study antibody

Calculated Mw

56 kDa

PTM

O-GlcNAcylation at Thr-305 and Thr-312 inhibits activating phosphorylation at Thr-308 via disrupting the interaction between AKT1 and PDPK1. O-GlcNAcylation at Ser-473 also probably interferes with phosphorylation at this site.

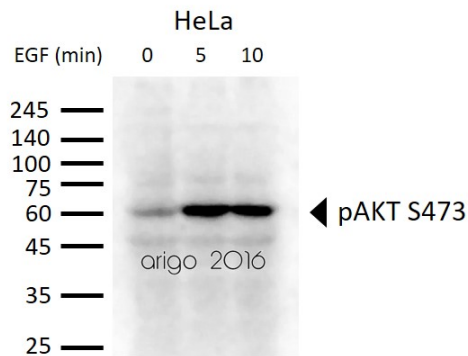
Phosphorylation on Thr-308, Ser-473 and Tyr-474 is required for full activity. Activated TNK2 phosphorylates it on Tyr-176 resulting in its binding to the anionic plasma membrane phospholipid PA. This phosphorylated form localizes to the cell membrane, where it is targeted by PDPK1 and PDPK2 for further phosphorylations on Thr-308 and Ser-473 leading to its activation. Ser-473 phosphorylation by mTORC2 favors Thr-308 phosphorylation by PDPK1. Phosphorylated at Thr-308 and Ser-473 by IKBKE and TBK1. Ser-473 phosphorylation is enhanced by interaction with AGAP2 isoform 2 (PIKE-A). Ser-473 phosphorylation is enhanced in focal cortical dysplasias with Taylor-type balloon cells. Ser-473 phosphorylation is enhanced by signaling through activated FLT3. Dephosphorylated at Thr-308 and Ser-473 by PP2A phosphatase. The phosphorylated form of PPP2R5B is required for bridging AKT1 with PP2A phosphatase. Ser-473 is dephosphorylated by CPPED1, leading to termination of signaling.

Ubiquitinated via 'Lys-48'-linked polyubiquitination by ZNRF1, leading to its degradation by the proteasome (By similarity). Ubiquitinated; undergoes both 'Lys-48'- and 'Lys-63'-linked polyubiquitination. TRAF6-induced 'Lys-63'-linked AKT1 ubiquitination is critical for phosphorylation and activation. When ubiquitinated, it translocates to the plasma membrane, where it becomes phosphorylated. When fully phosphorylated and translocated into the nucleus, undergoes 'Lys-48'-polyubiquitination catalyzed by TTC3, leading to its degradation by the proteasome. Also ubiquitinated by TRIM13 leading to its proteasomal degradation. Phosphorylated, undergoes 'Lys-48'-linked polyubiquitination preferentially at

Lys-284 catalyzed by MUL1, leading to its proteasomal degradation.

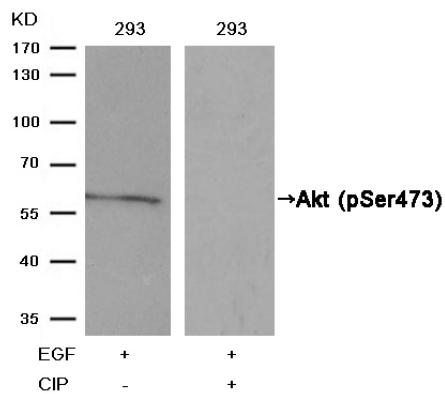
Acetylated on Lys-14 and Lys-20 by the histone acetyltransferases EP300 and KAT2B. Acetylation results in reduced phosphorylation and inhibition of activity. Deacetylated at Lys-14 and Lys-20 by SIRT1. SIRT1-mediated deacetylation relieves the inhibition. [UniProt]

Images



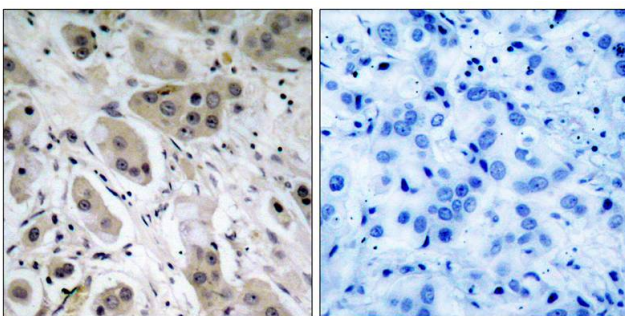
ARG51558 anti-Akt phospho (Ser473) antibody WB image

Western blot: 30 µg of HeLa cells untreated or treated with EGF. Lysates stained with ARG51558 anti-Akt phospho (Ser473) antibody at 1:500 dilution.



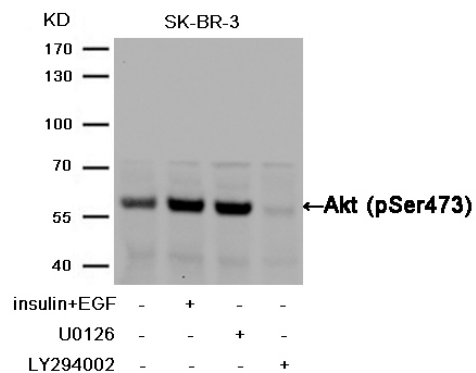
ARG51558 anti-Akt phospho (Ser473) antibody WB image

Western blot: Extracts from 293 cells, treated with EGF or calf intestinal phosphatase (CIP), stained with ARG51558 anti-Akt phospho (Ser473) antibody.



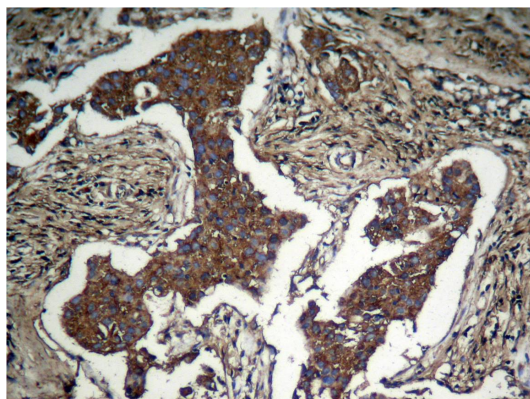
ARG51558 anti-Akt phospho (Ser473) antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human breast carcinoma tissue stained with ARG51558 anti-Akt phospho (Ser473) antibody (left) or the same antibody preincubated with blocking peptide (right).



ARG51558 anti-Akt phospho (Ser473) antibody WB image

Western blot: Extracts from SK-BR-3 cells, treated with insulin and EGF, and pretreated with U0126 and LY294002 cells stained with ARG51558 anti-Akt phospho (Ser473) antibody.



ARG51558 anti-Akt phospho (Ser473) antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human Lung carcinoma tissue stained with ARG51558 anti-Akt phospho (Ser473) antibody.