Phospho-AKT Sampler Kit

E051003

Kits Includes	Cat.	Quantity	Application	Reactivity	Source
Akt (Ab-473) Antibody	E021054-1	50μg/50μl	IHC, WB	Human, Mouse, Rat	Rabbit
Akt (Phospho-Ser473) Antibody	E011054-1	50μg/50μl	IHC, WB	Human, Mouse, Rat	Rabbit
Akt (Phospho-Thr308) Antibody	E011055-1	50μg/50μl	IHC, WB, IF	Human, Mouse, Rat	Rabbit
Akt2 (Ab-474) Antibody	E021155-1	50μg/50μl	IHC, WB	Human, Mouse, Rat	Rabbit
Akt2 (Phospho-Ser474) Antibody	E011124-1	50μg/50μl	IHC, WB	Human, Mouse, Rat	Rabbit

The serine-threonine protein kinase encoded by the **AKT**1 gene is catalytically inactive in serum-starved primary and immortalized fibroblasts. **AKT**1 and the related **AKT**2 are activated by platelet-derived growth factor. The activation is rapid and specific, and it is abrogated by mutations in the pleckstrin homology domain of **AKT**1. It was shown that the activation occurs through phosphatidylinositol 3-kinase. In the developing nervous system **AKT** is a critical mediator of growth factor-induced neuronal survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating the serine/ threonine kinase **AKT**1, which then phosphorylates and inactivates components of the apoptotic machinery. Multiple alternatively spliced transcript variants have been found for this gene.

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.

Akt (Protein kinase B, PKB) is a serine/threonine kinase that plays a key in regulating cell survival, insulin signaling, angiogenesis and tumor formation. Akt is a downstream mediator of the PI 3-K pathway, resulting in the recruitment of Akt to the plasma membrane via the PH (plexstrin homology domain) of Akt. Akt is fully activated by phosphorylation at two key sites: Ser308 (phosphorylated by PDK1) and Thr478 (phosphorylated by mTOR and DNA-PK). Akt can then phosphorylated a wide range of substrates including transcription factors (e.g. FOXO1), kinases (GSK-3, Raf-1, ASK, Chk1) and other proteins with important signaling roles (e.g. Bad, MDM2). There are three

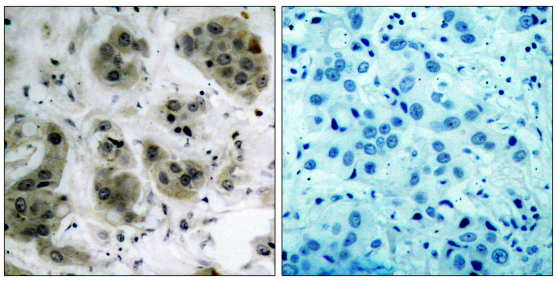
isoforms of Akt; Akt 1, 2 and 3 (also known as PKBalpha, beta and gamma). AKT Phosphorylation on Thr-308, Ser-473 and Tyr-474 is required for full activity. Ser-473 phosphorylation by mTORC2 favors, Thr-308 phosphorylation by PDPK1. Ser-473 phosphorylation is enhanced by interaction with AGAP2 isoform 2 (PIKE-A). Ser-473 phosphorylation is enhanced in focal cortical dysplasias with Taylor-type balloon cells.

AKT2 gene is a putative oncogene encoding a protein belonging to a subfamily of serine/threonine kinases containing SH2-like (Src homology 2-like) domains. The gene was shown to be amplified and overexpressed in 2 of 8 ovarian carcinoma cell lines and 2 of 15 primary ovarian tumors. Overexpression contributes to the malignant phenotype of a subset of human ductal pancreatic cancers. The encoded protein is a general protein kinase capable of phophorylating several known proteins. General protein kinase capable of phosphorylating several known proteins. Akt (Protein kinase B, PKB) is a serine/threonine kinase that plays a key in regulating cell survival, insulin signaling, angiogenesis and tumor formation. Akt is a downstream mediator of the PI 3-K pathway, resulting in the recruitment of Akt to the plasma membrane via the PH (plexstrin homology domain) of Akt. Akt is fully activated by phosphorylation at two key sites: Ser308 (phosphorylated by PDK1) and Thr478 (phosphorylated by mTOR and DNA-PK). Akt can then phosphorylated a wide range of substrates including transcription factors e.g. FOXO1), kinases (GSK-3, Raf-1, ASK, Chk1) and other proteins with important signaling roles (e.g. Bad, MDM2). There are three isoforms of Akt; Akt 1, 2 and 3 (also known as PKBalpha, beta and gamma).

Akt (Ab-473) Antibody

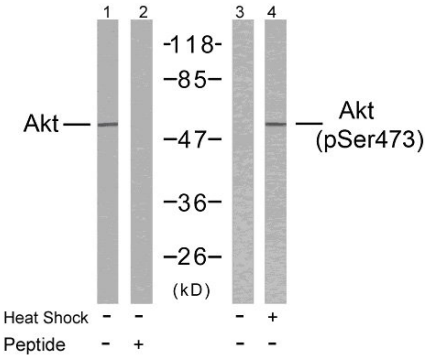
E021054

Catalog Number: E021054-1, E021054-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized non-phosphopeptide derived from human Akt around the phosphorylation site of serine 473 (Q-F-S^{P}-Y-S).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Specificity/Sensitivity: Akt (Ab-473) antibody detects endogenous levels of total Akt protein.
Reactivity: Human, Mouse, Rat
Applications: WB: 1:100~1:500 IHC: 1:50~1:100
Swiss-Prot No. : P31749
References:
Baudhuin LM, et al. (2004) FASEB J Feb; 18(2): 341-3.
Min YH, et al. (2004) Cancer Res; 64(15): 5225-31.
Feng J, et al. (2004) J Biol Chem; 279(34): 35510-7.
Ayala G, et al. (2004) Clin Cancer Res; 10(19): 6572-8.
Lungu AO, et al. (2004) J Biol Chem; 279(47): 48794-800.



Peptide - +

Immunohistochemical analysis of paraffin- embedded human breast carcinoma tissue using Akt (Ab-473) antibody (E021054).

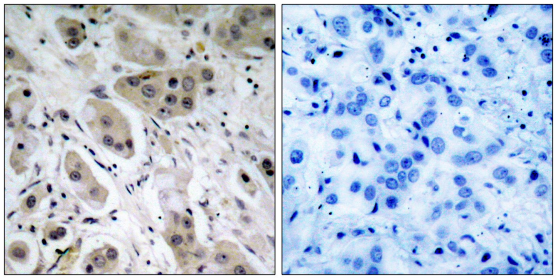


Western blot analysis of extracts from HeLa cells using Akt (Ab-473) antibody (E021054, Lane 1 and 2) and Akt (phospho-Ser473) antibody (E011054, Lane 3 and 4).

Akt (Phospho-Ser473) Antibody

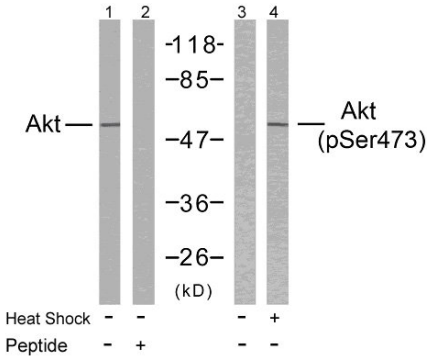
E011054

Catalog Number: E011054-1, E011054-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human Akt around the phosphorylation site of serine 473 (Q-F-S^P-Y-S).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatogramphy using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: Akt (phospho-Ser473) antibody detects endogenous levels of Akt only when phosphorylated at serine 473.
Reactivity: Human, Mouse, Rat
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100
Swiss-Prot No. : P31749
References: Baudhuin LM, et al. (2004) FASEB J Feb; 18(2): 341-3.
Min YH, et al. (2004) Cancer Res; 64(15): 5225-31.
Feng J, et al. (2004) J Biol Chem; 279(34): 35510-7.



P-Peptide - +

Immunohistochemical analysis of paraffin- embedded human breast carcinoma tissue, using Akt (phospho-Ser473) antibody (E011054).

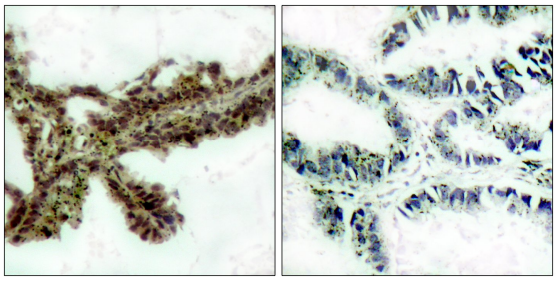


Western blot analysis of extract from HeLa cells untreated or treated with heat shock using Akt (Ab-473) antibody (E021054, Lane 1 and 2) and Akt (phospho-Ser473) antibody (E011054, Lane 3 and 4).

Akt (Phospho-Thr308) Antibody

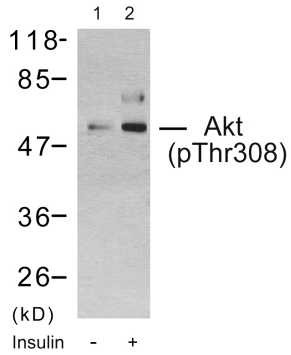
E011055

Catalog Number: E011055-1, E011055-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human Akt around the phosphorylation site of threonine 308 (M-K-T^P-F-C).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatogramphy using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: Akt (phospho-Thr308) antibody detects endogenous levels of Akt only when phosphorylated at threonine 308.
Reactivity: Human, Mouse, Rat
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100 IF: 1:100-200
Swiss-Prot No. : P31749
References:
Tremblay F, et al. (2005)Diabetes; 54(9): 2674-84.
Xu BE, et al. (2005)J Biol Chem; 280(40): 34218-23.
Samuels Y, et al. (2005)Cancer Cell; 7(6): 561-73.
Di Maira G, et al. (2005)Cell Death Differ; 12(6): 668-77.



P-Peptide - +

Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue, using Akt (phospho-Thr308) antibody(E011055).

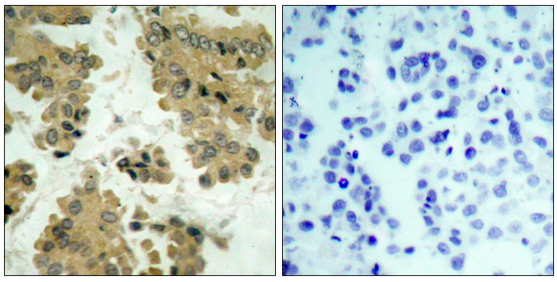


Western blot analysis using Akt (phospho-Thr308) antibody (E011055): Lane1: The extract from 293 cells untreated; Lane 2: The extract from 293 cells treated with insulin.

Akt2 (Ab-474) Antibody

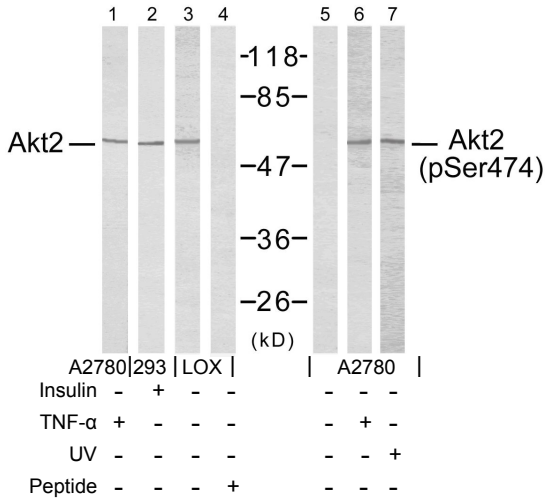
E021155

Catalog Number: E021155-1, E021155-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20℃/1 year
Immunogen: The antiserum was produced against synthesized non-phosphopeptide derived from human Akt2 around the phosphorylation site of serine 474 (Q-F-S^{P}-Y-S).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Specificity/Sensitivity: Akt2 (Ab-474) antibody detects endogenous levels of total Akt2 protein.
Reactivity: Human, Mouse, Rat
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100
Swiss-Prot No. : P31751
References: Sun M, et al. (2001) Cancer Res; 61(16): 5985-91.
Yuan ZQ, et al. (2000) Oncogene; 19(19): 2324-30.
Meier R, et al. (1997) J Biol Chem; 272(48): 30491-7.



Peptide - +

Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue using Akt2 (Ab-474) antibody (E021155).

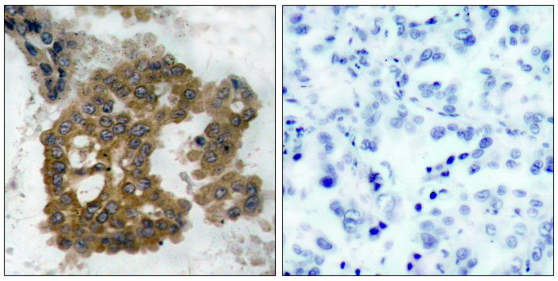


Western blot analysis using Akt2 (Ab-474) antibody (E021155, Lane 1, 2, 3 and 4) and Akt2 (phospho- Ser474) antibody (E011124, Lane 5, 6 and 7).

Akt2 (Phospho-Ser474) Antibody

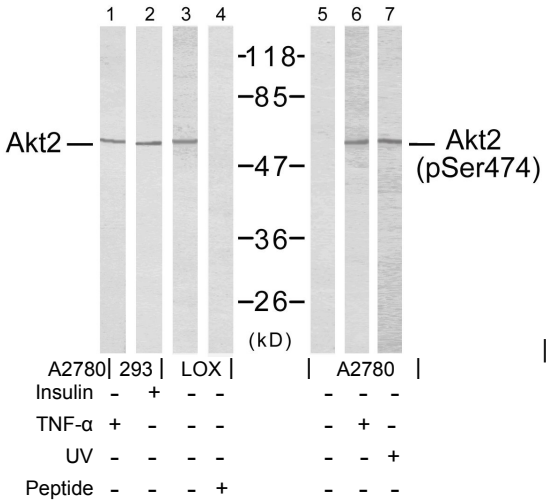
E011124

Catalog Number: E011124-1, E011124-2
Amount: 50μg/50μl, 100μg/100μl
Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg^{2+} and Ca^{2+}), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Storage/Stability: Store at -20°C/1 year
Immunogen: The antiserum was produced against synthesized phosphopeptide derived from human Akt2 around the phosphorylation site of serine 474 (Q-F-S^P-Y-S).
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatogramphy using non-phosphopeptide corresponding to the phosphorylation site.
Specificity/Sensitivity: Akt2 (phospho-Ser474) antibody detects endogenous levels of Akt2 only when phosphorylated at serine 474.
Reactivity: Human, Mouse, Rat
Applications: WB: 1:500~1:1000 IHC: 1:50~1:100
Swiss-Prot No. : P31751
References: Sun M, et al. (2001) Cancer Res; 61(16): 5985-91.
Yuan ZQ, et al. (2000) Oncogene; 19(19): 2324-30.
Meier R, et al. (1997) J Biol Chem; 272(48): 30491-7.



P-Peptide - +

Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue using Akt2 (phospho-Ser474) antibody (E011124).



Western blot analysis using Akt2 (Ab-474) antibody (E021155, Lane 1, 2, 3 and 4) and Akt2 (phospho- Ser474) antibody (E011124, Lane 5, 6 and 7).