

Product datasheet

Anti-AKT1 (phospho S473) antibody ab66138

★★★★☆ 17 Abreviews 25 References 画像数 2

製品の概要

製品名	Anti-AKT1 (phospho S473) antibody
製品の詳細	Rabbit polyclonal to AKT1 (phospho S473)
由来種	Rabbit
特異性	The motif corresponding to the major autophosphorylation site of the human AKT1 kinase protein. Ser473 corresponds to QFSYS in human, rat, mouse, chicken and canis of AKT/PKB proteins. Recent lab re-tests showed negative results in mouse and rat and IHC-P. Therefore, these species and application cannot be guarantee. The region of AKT1 surrounding S473 has a high degree of similarity to the corresponding regions in AKT2 and AKT3 and thus may cross react with these proteins if phosphorylated on the corresponding serine residue.
アプリケーション	適用あり: ICC/IF, ELISA, Dot blot, IHC-Fr, WB, IP 適用なし: IHC-P
種交差性	交差種: Chicken, Dog, Human
免疫原	Synthetic peptide within Human AKT1 (C terminal) (phospho S473). The exact sequence is proprietary. Sequence: QFSYS Run BLAST with Run BLAST with
ポジティブ・コントロール	WB: Whole cell lysate from PDGF stimulated 3T3 cells. ICC/IF: Methanol fixed MCF-7 cells.

製品の特性

製品の状態	Liquid
保存方法	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
バッファー	Preservative: None Constituents: Tris buffered saline, pH 7.2, containing antibody stabilizer.
精製度	Protein A purified
特記事項(精製)	Site-directed adsorption and epitope affinity purification.
ポリ/モノ	ポリクローナル
アイソタイプ	IgG

アプリケーション

Our [Abpromise guarantee](#) covers the use of **ab66138** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

アプリケーション	Abreviews	特記事項
ICC/IF	★★★★★	Use a concentration of 1 µg/ml.
ELISA		Use a concentration of 0.01 - 0.1 µg/ml.
Dot blot		1/2000.
IHC-Fr	★★★★☆	1/100 - 1/200.
WB	★★★★☆	Use a concentration of 0.1 - 0.2 µg/ml. Predicted molecular weight: 55 kDa. Blocking is recommended with BSA. Non-fat dry milk and PBS should be avoided.
IP		Use a concentration of 2 - 5 µg/ml.
追加情報		Is unsuitable for IHC-P.

ターゲット情報

機能

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.

組織特異性

Expressed in all human cell types so far analyzed. The Tyr-176 phosphorylated form shows a significant increase in expression in breast cancers during the progressive stages i.e. normal to hyperplasia (ADH), ductal carcinoma in situ (DCIS), invasive ductal carcinoma (IDC) and lymph node metastatic (LNMM) stages.

関連疾患

Defects in AKT1 are a cause of susceptibility to breast cancer (BC) [MIM:114480]. A common malignancy originating from breast epithelial tissue. Breast neoplasms can be distinguished by their histologic pattern. Invasive ductal carcinoma is by far the most common type. Breast cancer is etiologically and genetically heterogeneous. Important genetic factors have been indicated by familial occurrence and bilateral involvement. Mutations at more than one locus can be involved in different families or even in the same case.

Defects in AKT1 are associated with colorectal cancer (CRC) [MIM:114500].

Defects in AKT1 are associated with susceptibility to ovarian cancer [MIM:604370]; also called susceptibility to familial breast-ovarian cancer type 1 (BROVCA1).

配列類似性

Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. RAC subfamily.
Contains 1 AGC-kinase C-terminal domain.
Contains 1 PH domain.
Contains 1 protein kinase domain.

ドメイン

Binding of the PH domain to the phosphatidylinositol 3-kinase alpha (PI(3)K) results in its targeting to the plasma membrane. The PH domain mediates interaction with TNK2 and Tyr-176 is also essential for this interaction.

The AGC-kinase C-terminal mediates interaction with THEM4.

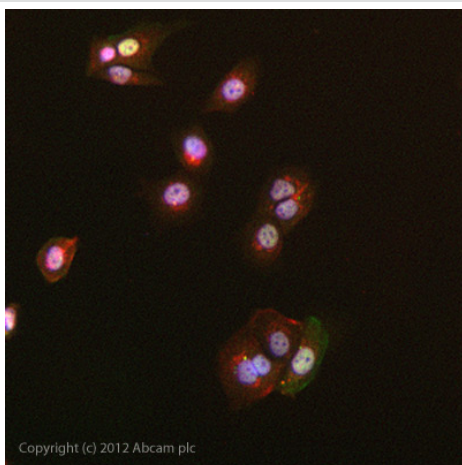
翻訳後修飾

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. 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. 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.

細胞内局在

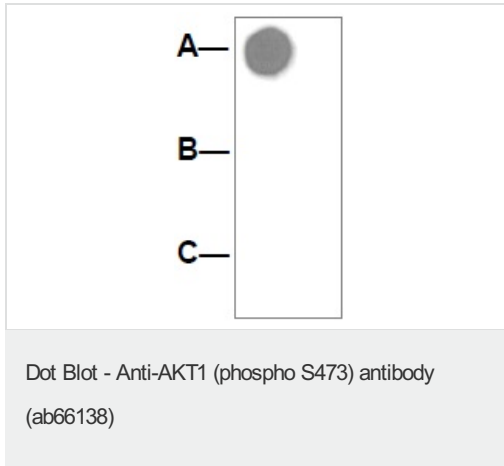
Cytoplasm. Nucleus. Cell membrane. Nucleus after activation by integrin-linked protein kinase 1 (ILK1). Nuclear translocation is enhanced by interaction with TCL1A. Phosphorylation on Tyr-176 by TNK2 results in its localization to the cell membrane where it is targeted for further phosphorylations on Thr-308 and Ser-473 leading to its activation and the activated form translocates to the nucleus.

画像



Immunocytochemistry/ Immunofluorescence - Anti-AKT1 (phospho S473) antibody (ab66138)

ICC/IF image of [ab66138](#) stained MCF-7 cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody [ab66138](#) at 1µg/ml overnight at +4°C. The secondary antibody (green) was DyLight® 488 goat anti- rabbit ([ab96899](#)) IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



1 μ g peptide blotted onto a nitrocellulose membrane, followed by ab66138 at 1:2000 dilution. A: AKT1 (pS473) peptide B: AKT1 non-phosphopeptide C: non-related phosphopeptide

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