

Product datasheet

Anti-Src (phospho Y418) antibody ab4816

★★★★☆ 4 Abreviews 19 References 4 Images

Overview

Product name	Anti-Src (phospho Y418) antibody
Description	Rabbit polyclonal to Src (phospho Y418)
Tested applications	Suitable for: IHC-P, IHC-FoFr, WB
Species reactivity	Reacts with: Mouse, Chicken, Human
Immunogen	Synthetic peptide derived from the region of Src that contains tyrosine 418 (tyrosine 419 including the initiating methionine). The sequence is conserved in human, mouse, rat, chicken and frog.
Positive control	Chick embryo fibroblast (CEF) cells expressing human wild-type Src protein.
General notes	<p>Src (also known as pp60src) is a non-receptor tyrosine kinase involved in signal transduction in many biological systems and implicated in the development of human tumors. Tyrosine 418 is located in the catalytic domain and is one of the autophosphorylation sites. Full catalytic activity of Src requires phosphorylation of tyrosine 418 (tyrosine 414 on frog Src, tyrosine 416 on chicken Src, and tyrosine 424 on mouse Src). This region of Src is also highly conserved in all of the related Src-family kinases, and thus prior immunoprecipitation may be required to identify which Src family member is being activated.</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.05% Sodium Azide Constituents: 50% Glycerol, PBS, 1mg/ml BSA. pH 7.3
Purity	Immunogen affinity purified
Purification notes	Purified from rabbit serum by sequential epitope-specific chromatography. The antibody has been negatively pre-adsorbed using (i) a non-phosphopeptide corresponding to the site of phosphorylation to remove antibody that is reactive with non-phosphorylated Src, and (ii) a generic tyrosine phosphorylated peptide to remove antibody that is reactive with phosphotyrosine, irrespective of the sequence. The final product is generated by affinity chromatography using a Src-derived peptide that is phosphorylated at tyrosine 418.
Primary antibody notes	Src (also known as pp60src) is a non-receptor tyrosine kinase involved in signal transduction in

many biological systems and implicated in the development of human tumors. Tyrosine 418 is located in the catalytic domain and is one of the autophosphorylation sites. Full catalytic activity of Src requires phosphorylation of tyrosine 418 (tyrosine 414 on frog Src, tyrosine 416 on chicken Src, and tyrosine 424 on mouse Src). This region of Src is also highly conserved in all of the related Src-family kinases, and thus prior immunoprecipitation may be required to identify which Src family member is being activated.

Clonality	Polyclonal
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab4816** in the following tested applications.

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

Application	Abreviews	Notes
IHC-P		1/10 - 1/100.
IHC-FoFr		Use at an assay dependent concentration. PubMed: 21901128
WB	★★★★☆	1/1000. Detects a band of approximately 60 kDa (predicted molecular weight: 60 kDa).

Target

Function

Non-receptor protein tyrosine kinase that plays pivotal roles in numerous cellular processes such as proliferation, migration, and transformation. In concert with PTK2B, plays an important role in osteoclastic bone resorption. Both the formation of a SRC-PTK2B complex, and SRC kinase activity are necessary for this function. Once it is recruited to the activated integrins, by PTK2B, it phosphorylates CBL which in turn induces the activation and recruitment of phosphatidylinositol 3-kinase to the cell membrane in a signaling pathway that is critical for osteoclast function. Promotes energy production in osteoclasts by activating mitochondrial cytochrome C oxidase. Phosphorylates RUNX3 and COX2 on tyrosine residues, TNK2 on 'Tyr-284' and CBL on 'Tyr-731'. Enhances DDX58/RIG-I-elicited antiviral signaling.

Sequence similarities

Belongs to the protein kinase superfamily. Tyr protein kinase family. SRC subfamily.
Contains 1 protein kinase domain.
Contains 1 SH2 domain.
Contains 1 SH3 domain.

Post-translational modifications

Dephosphorylated at Tyr-530 by PTPRJ (By similarity). Phosphorylated on Tyr-530 by c-Src kinase (CSK). The phosphorylated form is termed pp60c-src. Dephosphorylated by PTPRJ at Tyr-419. Normally maintained in an inactive conformation with the SH2 domain engaged with Tyr-530, the SH3 domain engaged with the SH2-kinase linker, and Tyr-419 dephosphorylated. Dephosphorylation of Tyr-530 as a result of protein tyrosine phosphatase (PTP) action disrupts the intramolecular interaction between the SH2 domain and Tyr-530, Tyr-419 can then become autophosphorylated, resulting in SRC activation. Phosphorylation of Tyr-530 by CSK allows this interaction to reform, resulting in SRC inactivation.
S-nitrosylation is important for activation of its kinase activity.

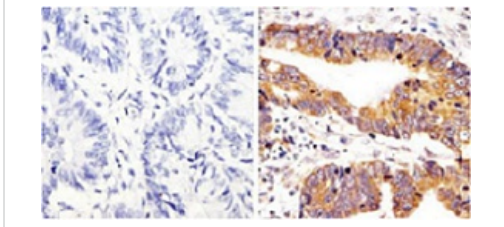
Cellular localization

Cell membrane. Mitochondrion inner membrane.

Form This protein is known to be similar in amino acid sequence to HCK (P08631), LCK (P06239),

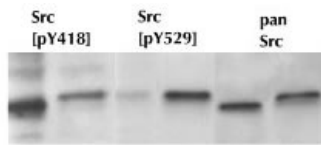
FYN (P06241), YES1 (P07947), and LYN (P07948). Therefore, cross-reactivity with these homologous proteins may be observed. We would be happy to provide immunogen alignment information upon request.

Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Src (phospho Y418) antibody (ab4816)

Immunohistochemical analysis of paraffin embedded Human colon carcinoma, labelling Src with ab4816. A negative control without ab4816 is shown on the left. Antigen retrieval performed using 10mM sodium citrate, microwaved for 8-15mins, blocked using 3% H₂O₂-methanol, then treated with ab4816 followed by an HRP-conjugated secondary antibody. Counterstaining with hematoxylin.



Western blot - Anti-Src (phospho Y418) antibody
(ab4816)

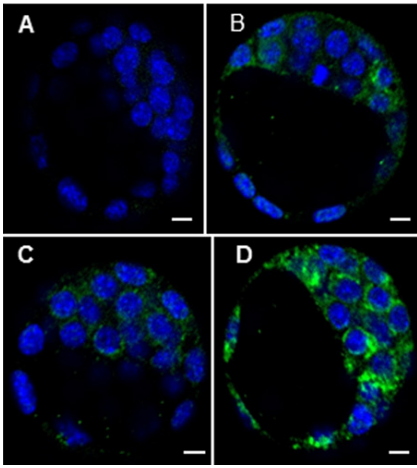
Dr. Michael Schaller, Dept. of Cell Bio. & Anat., Univ. of North Carolina, Chapel Hill, NC.

Predicted band size : 60 kDa

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Western blot detection of Src phosphorylation in extracts of chick embryo fibroblasts expressing wild-type (lanes 2,4,6) or mutant (lanes 1,3,5) pp60src. Truncation of Src at position 518 eliminated phosphorylation at the negative regulatory site [pY529], while increasing phosphorylation at the catalytic site [pY418].

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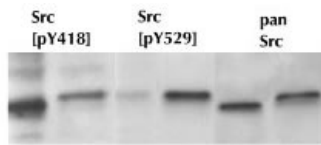


Immunohistochemistry (PFA perfusion fixed frozen sections) - Anti-Src (phospho Y418) antibody (ab4816)

Image from Giannatselis H et al., PLoS One. 2011;6(8):e23704. Epub 2011 Aug 25. Fig 2.; doi:10.1371/journal.pone.0023704; August 25, 2011, PLoS ONE 6(8): e23704.

Immunohistochemical analysis of preimplantation stage embryos collected from the reproductive tracts of superovulated female mice. (A) Blastocysts exposed to secondary antibody only, (B) blastocysts cultured in KSOMaa medium, (C) blastocysts cultured in 10^{-3} M Ouabain, (D) blastocysts cultured in 10^{-4} M Ouabain.

Src (phospho Y418) was stained using ab4816 (green) in panels B-D, at 1/100 dilution. A FITC-conjugated IgG was used as the secondary antibody. Nuclei were stained with DAPI (blue).



Western blot

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