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Goat Anti-Sak / STK18 / PLK4 Antibody

Peptide-affinity purified goat antibody
Catalog # AF1953a

Specification

Goat Anti-Sak / STK18 / PLK4 Antibody - Product Information

Application	**WB**
Primary Accession	O00444
Other Accession	NP_055079, 10733
Reactivity	**Human**
Predicted	**Dog, Cow**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**108972**

Goat Anti-Sak / STK18 / PLK4 Antibody - Additional Information

Gene ID 10733

Other Names
Serine/threonine-protein kinase PLK4, 2.7.11.21, Polo-like kinase 4, PLK-4, Serine/threonine-protein kinase 18, Serine/threonine-protein kinase Sak, PLK4, SAK, STK18

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-Sak / STK18 / PLK4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-Sak / STK18 / PLK4 Antibody - Protein Information

Name PLK4 (HGNC:11397)

Synonyms SAK, STK18

Function
Serine/threonine-protein kinase that plays a central role in centriole duplication. Able to trigger procentriole formation on the surface of the parental centriole cylinder, leading to the recruitment of centriole biogenesis proteins such as SASS6, CENPJ/CPAP, CCP110, CEP135 and gamma-tubulin.

When overexpressed, it is able to induce centrosome amplification through the simultaneous generation of multiple procentrioles adjoining each parental centriole during S phase. Phosphorylates 'Ser-151' of FBXW5 during the G1/S transition, leading to inhibit FBXW5 ability to ubiquitinate SASS6. Its central role in centriole replication suggests a possible role in tumorigenesis, centrosome aberrations being frequently observed in tumors. Also involved in deuterosome-mediated centriole amplification in multiciliated that can generate more than 100 centrioles. Also involved in trophoblast differentiation by phosphorylating HAND1, leading to disrupt the interaction between HAND1 and MDFIC and activate HAND1. Phosphorylates CDC25C and CHEK2. Required for the recruitment of STIL to the centriole and for STIL-mediated centriole amplification (PubMed:22020124). Phosphorylates CEP131 at 'Ser-78' and PCM1 at 'Ser- 372' which is essential for proper organization and integrity of centriolar satellites (PubMed:30804208).

Cellular Location
Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole. Nucleus, nucleolus {ECO:0000250|UniProtKB:Q64702}. Cleavage furrow {ECO:0000250|UniProtKB:Q64702}. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Component of the deuterosome, a structure that promotes de novo centriole amplification in multiciliated cells that can generate more than 100 centrioles Associates with centrioles throughout the cell cycle. According to PubMed:16244668, it is not present at cleavage furrows

Goat Anti-Sak / STK18 / PLK4 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-Sak / STK18 / PLK4 Antibody - Images



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AF1953a (2 µg/ml) staining of Human Colon lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

Goat Anti-Sak / STK18 / PLK4 Antibody - Background

This gene encodes a member of the polo family of serine/threonine protein kinases. The protein localizes to centrioles, complex microtubule-based structures found in centrosomes, and regulates centriole duplication during the cell cycle. Three alternatively spliced transcript variants that encode different protein isoforms have been found for this gene.

Goat Anti-Sak / STK18 / PLK4 Antibody - References

Centrosome-related genes, genetic variation, and risk of breast cancer. Olson JE, et al. Breast Cancer Res Treat, 2010 May 28. PMID 20508983.
Plk4 is required for cytokinesis and maintenance of chromosomal stability. Rosario CO, et al. Proc Natl Acad Sci U S A, 2010 Apr 13. PMID 20348415.
Autophosphorylation of polo-like kinase 4 and its role in centriole duplication. Sillibourne JE, et al. Mol Biol Cell, 2010 Feb 15. PMID 20032307.
Cullin 1 functions as a centrosomal suppressor of centriole multiplication by regulating polo-like kinase 4 protein levels. Korzeniewski N, et al. Cancer Res, 2009 Aug 15. PMID 19679553.
Gamma-tubulin-containing abnormal centrioles are induced by insufficient Plk4 in human HCT116 colorectal cancer cells. Kuriyama R, et al. J Cell Sci, 2009 Jun 15. PMID 19454482.