

p-ARK-1 (95.Thr 288): sc-293126

BACKGROUND

ARK-1 (aurora related kinase-1) and ARK-2 (aurora related kinase 2) are centrosome-associated serine/threonine kinases that regulate centrosome separation, bipolar spindle assembly and chromosome segregation during mitosis. ARK-1 and -2 are expressed in the nucleus and localize to distinct portions of mitotic machinery such as the centrosome, spindle poles (ARK-1) and midbody (ARK-2) during mitosis. ARK-1 and -2 transcripts are present at high levels in human thymus and fetal liver. ARK-2 protein levels are maximal during both S and G₂/M phases, whereas ARK-1 protein is degraded after G₂/M via the ubiquitin-proteasome pathway. ARK-2 has a unique genetic loci relative to ARK-1, suggesting that these two kinases, with oncogenic potential, have different roles in cell cycle progression. ARK-2 is phosphorylated on Threonine 288.

REFERENCES

1. Bischoff, J.R., et al. 1998. A homologue of *Drosophila* aurora kinase is oncogenic and amplified in human colorectal cancers. *EMBO J.* 17: 3052-3065.
2. Zhou, H., et al. 1998. Tumour amplified kinase STK15/BTAK induces centrosome amplification, aneuploidy and transformation. *Nat. Genet.* 20: 189-193.
3. Kimura, M., et al. 1998. Identification and characterization of STK12/Aik2: a human gene related to aurora of *Drosophila* and yeast IPL1. *Cytogenet. Cell Genet.* 82: 147-152.
4. Shindo, M., et al. 1998. cDNA cloning, expression, subcellular localization, and chromosomal assignment of mammalian aurora homologues, aurora-related kinase (ARK) 1 and 2. *Biochem. Biophys. Res. Commun.* 244: 285-292.
5. Giet, R., et al. 1999. Aurora/Ipl1p-related kinases, a new oncogenic family of mitotic serine-threonine kinases. *J. Cell Sci.* 112: 3591-3601.

CHROMOSOMAL LOCATION

Genetic locus: AURKA (human) mapping to 20q13.2.

SOURCE

p-ARK-1 (95.Thr 288) is a mouse monoclonal antibody raised against a short amino acid sequence containing Thr 288 phosphorylated ARK-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-ARK-1 (95.Thr 288) is available conjugated to agarose (sc-293126 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-293126 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

p-ARK-1 (95.Thr 288) is recommended for detection of Thr 288 phosphorylated ARK-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ARK-1 siRNA (h): sc-29731, ARK-1 shRNA Plasmid (h): sc-29731-SH and ARK-1 shRNA (h) Lentiviral Particles: sc-29731-V.

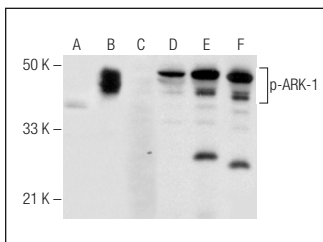
Molecular Weight of p-ARK-1: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Daudi cell lysate: sc-2415 or SK-BR-3 cell lysate: sc-2218.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of ARK-1 phosphorylation in untreated (A,D), nocodazole treated (B,E) and nocodazole and lambda protein phosphatase (sc-200312A) treated (C,F) HeLa whole cell lysates. Antibodies tested include p-ARK-1 (95.Thr 288): sc-293126 (A,B,C) and ARK-1 (H-130): sc-25425 (D,E,F).

SELECT PRODUCT CITATIONS

1. Kang, M.J., et al. 2022. Phospholipase D1 promotes astrocytic differentiation through the FAK/AURKA/STAT3 signaling pathway in hippocampal neural stem/progenitor cells. *Biochim. Biophys. Acta Mol. Cell Res.* 1869: 119361.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

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