SANTA CRUZ BIOTECHNOLOGY, INC.

CDKN3 (39): sc-135864

BACKGROUND

Cyclin-dependent kinase inhibitor 3 (CDKN3), also designated Cdk2-associated dual specificity phosphatase, cyclin-dependent kinase interactor 1 (CDI1), CIP2, KAP or KAP1, belongs to the protein-tyrosine phosphatase family. CDKN3, a cyclin-dependent kinase inhibitor, interacts and dephosphorylates Cdk2 kinase, which prevents Cdk2 kinase activation. CDKN3 is important in cell cycle regulation. It is a dual specificity phosphatase that is active toward substrates which contain phosphotyrosine or phosphoserine residues. CDKN3 does not interact with Cdk4, but can interact with other cyclin-dependent kinases such as Cdc2, Cdk2 and Cdk3. The gene encoding for the CDKN3 protein maps to chromosome 14q22.2. This gene has been noted to be mutated, overexpressed or deleted in many cancers. Defects in the CDKN3 gene may may be implicated in hepatocellular carcinoma (HCC).

REFERENCES

1. Gyuris, J., et al. 1993. Cdi1, a human G_1 and S phase protein phosphatase that associates with Cdk2. Cell 75: 791-803.
2. Hannon, G.J., et al. 1994. KAP: a dual specificity phosphatase that interacts with cyclin-dependent kinases. Proc. Natl. Acad. Sci. USA 91: 1731-1735.
3. Demetrick, D.J., et al. 1995. Chromosomal mapping of the genes for the human cell cycle proteins cyclin C (CCNC), cyclin E (CCNE), p21 (CDKN1) and KAP (CDKN3). Cytogenet. Cell Genet. 69: 190-192.
4. Yeh, C.T., et al. 2000. Aberrant transcripts of the cyclin-dependent kinase-associated protein phosphatase in hepatocellular carcinoma. Cancer Res. 60: 4697-4700.
5. Maak, S., et al. 2002. Rapid communication: nucleotide sequence and physical mapping of the porcine cyclin-dependent kinase inhibitor 3 (CDKN3) gene. J. Anim. Sci. 80: 1698-1699.
6. Maak, S., et al. 2003. Characterization of the porcine CDKN3 gene as a potential candidate for congenital splay leg in piglets. Genet. Sel. Evol. 35: S157-S165.

CHROMOSOMAL LOCATION

Genetic locus: CDKN3 (human) mapping to 14q22.2; Cdkn3 (mouse) mapping to 14 C1.

SOURCE

CDKN3 (39) is a mouse monoclonal antibody raised against amino acids 1-212 representing full length CDKN3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

CDKN3 (39) is recommended for detection of CDKN3 of mouse, rat and 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

CDKN3 (39) is also recommended for detection of CDKN3 in additional species, including canine and avian.

Suitable for use as control antibody for CDKN3 siRNA (h): sc-43877, CDKN3 siRNA (m): sc-45278, CDKN3 shRNA Plasmid (h): sc-43877-SH, CDKN3 shRNA Plasmid (m): sc-45278-SH, CDKN3 shRNA (h) Lentiviral Particles: sc-43877-V and CDKN3 shRNA (m) Lentiviral Particles: sc-45278-V.

Molecular Weight (predicted) of CDKN3: 24 kDa.

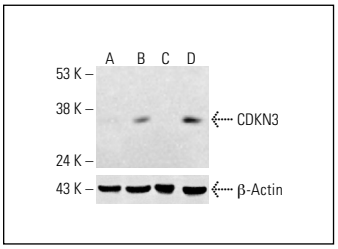
Molecular Weight (observed) of CDKN3: 34 kDa.

Positive Controls: MDCK cell lysate: sc-2252, HeLa whole cell lysate: sc-2200 or human testis extract: sc-363781.

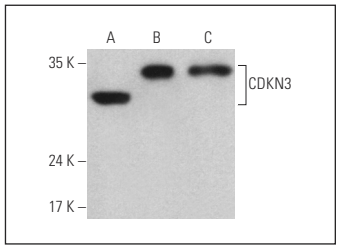
RECOMMENDED SUPPORT REAGENTS

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, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CDKN3 (39): sc-135864. Western blot analysis of CDKN3 expression in untreated K-562 (**A**), chemically-treated K-562 (**B**), untreated HCT-116 (**C**) and chemically-treated HCT-116 (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



CDKN3 (39): sc-135864. Western blot analysis of CDKN3 expression in MDCK (**A**) and HeLa (**B**) whole cell lysates and human testis tissue extract (**C**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Ma, J., et al. 2023. PSMD12 interacts with CDKN3 and facilitates pancreatic cancer progression. Cancer Gene Ther. 30: 1072-1083.

RESEARCH USE

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