SANTA CRUZ BIOTECHNOLOGY, INC.

p14 ARF (DCS-240): sc-53639

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The progression of cells through the cell cycle is regulated by a family of proteins designated cyclin-dependent kinases (Cdks). Sequential activation of individual members of this family and their consequent phosphorylation of critical substrates promotes orderly progression through the cell cycle. Multiple proteins are encoded by the tumor suppressor gene CDKN2A (MTS1/p16^{INK4a}) via translation of alternate reading frames, resulting in the production of the p19 ARF protein in mice and the p14 ARF protein in humans. p14 ARF induces an increase in MDM2 and p21 levels and leads to cell cycle arrest in both G_1 and G_2/M. p14 ARF is negatively regulated by p53 and is known to bind directly to MDM2. CDKN2A also encodes the mitotic protein p16, which binds to and inhibits the Cdk4/cyclin D complex.

CHROMOSOMAL LOCATION

Genetic locus: CDKN2A (human) mapping to 9p21.3.

SOURCE

p14 ARF (DCS-240) is a mouse monoclonal antibody raised against the N-terminus of p14 ARF 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.

p14 ARF (DCS-240) is available conjugated to agarose (sc-53639 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53639 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53639 PE), fluorescein (sc-53639 FITC), Alexa Fluor® 488 (sc-53639 AF488), Alexa Fluor® 546 (sc-53639 AF546), Alexa Fluor® 594 (sc-53639 AF594) or Alexa Fluor® 647 (sc-53639 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53639 AF680) or Alexa Fluor® 790 (sc-53639 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p14 ARF (DCS-240) is recommended for detection of p14 ARF 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for p14 ARF/p16 siRNA (h): sc-37622, p14 ARF/p16 shRNA Plasmid (h): sc-37622-SH and p14 ARF/p16 shRNA (h) Lentiviral Particles: sc-37622-V.

Molecular Weight of p14 ARF: 14 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, DU 145 cell lysate: sc-2268 or BJAB whole cell lysate: sc-2207.

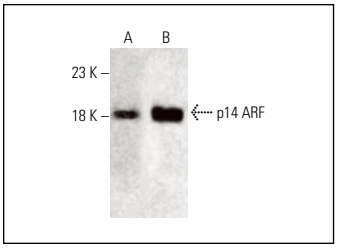
STORAGE

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

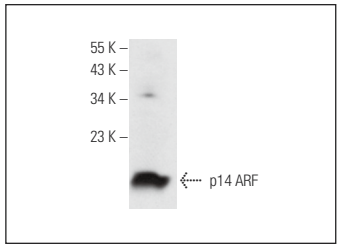
RESEARCH USE

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

DATA



p14 ARF (DCS-240): sc-53639. Western blot analysis of p14 ARF expression in DU 145 whole cell lysate (**A**) and HeLa nuclear extract (**B**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



p14 ARF (DCS-240): sc-53639. Western blot analysis of p14 ARF expression in BJAB whole cell lysate.

SELECT PRODUCT CITATIONS

1. Capparelli, C., et al. 2012. CTGF drives autophagy, glycolysis and senescence in cancer-associated fibroblasts via HIF1 activation, metabolically promoting tumor growth. Cell Cycle 11: 2272-2284.
2. Maglic, D., et al. 2013. Prognostic value of the hDMP1-ARF-Hdm2-p53 pathway in breast cancer. Oncogene 32: 4120-4129.
3. Henriques, A.F., et al. 2015. Expression of tumor-related Rac1b antagonizes B-Raf-induced senescence in colorectal cells. Cancer Lett. 369: 368-375.
4. Shankar, S., et al. 2017. TALEN based HPV-E7 editing triggers necrotic cell death in cervical cancer cells. Sci. Rep. 7: 5500.
5. Gnanasundram, S.V., et al. 2020. MDM2's dual mRNA binding domains co-ordinate its oncogenic and tumour suppressor activities. Nucleic Acids Res. 48: 6775-6787.
6. Pascucci, F.A., et al. 2021. MageC2 protein is upregulated by oncogenic activation of MAPK pathway and causes impairment of the p53 transactivation function. Biochim. Biophys. Acta Mol. Cell Res. 1868: 118918.
7. Farooq, U., et al. 2021. An interdependent network of functional enhancers regulates transcription and EZH2 loading at the INK4a/ARF locus. Cell Rep. 34: 108898.
8. Li, H., et al. 2021. Icaritin promotes apoptosis and inhibits proliferation by down-regulating AFP gene expression in hepatocellular carcinoma. BMC Cancer 21: 318.
9. Franza, M., et al. 2023. The clinically relevant CHK1 inhibitor MK-8776 induces the degradation of the oncogenic protein PML-RARα and overcomes ATRA resistance in acute promyelocytic leukemia cells. Biochem. Pharmacol. 214: 115675.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.