

p14 ARF (14P02): sc-73434

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 G₁ and G₂/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.

REFERENCES

- Sherr, C.J. 1993. Mammalian G₁ cyclins. *Cell* 73: 1059-1065.
- Hunter, T. 1993. Braking the cycle. *Cell* 75: 839-841.
- Larsen, C.J. 1997. Contribution of the dual coding capacity of the p16^{INK4a}/MTS1/CDKN2 locus to human malignancies. *Prog. Cell Cycle Res.* 3: 109-124.
- Kamijo, T., et al. 1997. Tumor suppression at the mouse INK4a locus mediated by the alternative reading frame product p19^{ARF}. *Cell* 91: 649-659.

CHROMOSOMAL LOCATION

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

SOURCE

p14 ARF (14P02) is a mouse monoclonal antibody raised against the N-terminus of p14 ARF 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.

APPLICATIONS

p14 ARF (14P02) 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (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.

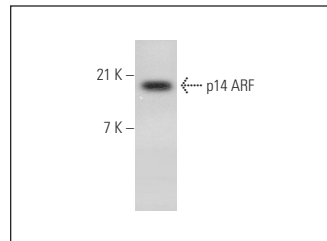
Molecular Weight of p14 ARF: 14 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232, Saos-2 cell lysate: sc-2235 or BJAB whole cell lysate: sc-2207.

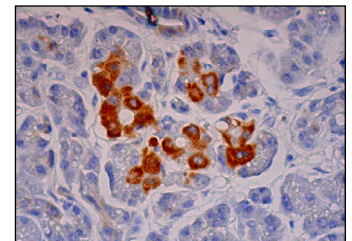
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



p14 ARF (14P02): sc-73434. Western blot analysis of p14 ARF expression in MDA-MB-231 whole cell lysate.



p14 ARF (14P02): sc-73434. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of subset of exocrine glandular cells.

SELECT PRODUCT CITATIONS

- Madapura, H.S., et al. 2016. cMyc-p53 feedback mechanism regulates the dynamics of T lymphocytes in the immune response. *Cell Cycle* 15: 1267-1275.
- Zhang, H.Y., et al. 2017. Knockdown of GluA2 induces apoptosis in non-small-cell lung cancer A549 cells through the p53 signaling pathway. *Oncol. Lett.* 14: 1005-1010.
- Mu, X., et al. 2017. *Angelica sinensis* polysaccharide prevents hematopoietic stem cells senescence in D-galactose-induced aging mouse model. *Stem Cells Int.* 2017: 3508907.
- Li, Z., et al. 2021. Discovery and validation of novel biomarkers for detection of cervical cancer. *Cancer Med.* E-published.

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.



See **p14 ARF (ARF 4C6/4): sc-53392** for p14 ARF antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.