

p14 ARF (3F16): sc-71797

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/p16INK4a) 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/CDK2 locus to human malignancies. *Prog. Cell Cycle Res.* 3: 109-124.
- Serrano, M. 1997. The tumor suppressor protein p16 INK4A. *Exp. Cell Res.* 237: 7-13.
- 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.
- Stott, F.J., et al. 1998. The alternative product from the human CDKN2A locus, p14 ARF, participates in a regulatory feedback loop with p53 and MDM2. *EMBO J.* 17: 5001-5014.
- Weber, H.O., et al. 2002. Human p14 ARF-mediated cell cycle arrest strictly depends on intact p53 signaling pathways. *Oncogene* 21: 3207-3212.
- Woods, Y.L., et al. 2004. p14 ARF promotes small ubiquitin-like modifier conjugation of Werners helicase. *J. Biol. Chem.* 279: 50157-50166.

CHROMOSOMAL LOCATION

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

SOURCE

p14 ARF (3F16) is a mouse monoclonal antibody raised against recombinant 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.

STORAGE

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

APPLICATIONS

p14 ARF (3F16) 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.

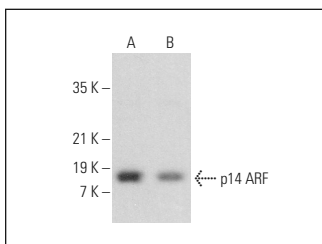
Molecular Weight of p14 ARF: 14 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232, HEK293 whole cell lysate: sc-45136 or BJAB whole cell lysate: sc-2207.

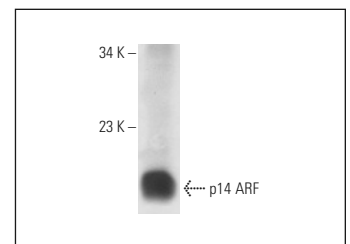
RECOMMENDED SUPPORT REAGENTS

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.

DATA



p14 ARF (3F16): sc-71797. Western blot analysis of p14 ARF expression in MDA-MB-231 (A) and HEK293 (B) whole cell lysates.



p14 ARF (3F16): sc-71797. Western blot analysis of p14 ARF expression in BJAB whole cell lysate.

SELECT PRODUCT CITATIONS

- Yang, H.W., et al. 2019. Senescent cells differentially translate senescence-related mRNAs via ribosome heterogeneity. *J. Gerontol. A, Biol. Sci. Med. Sci.* 74: 1015-1024.

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.