



Customer Service: 1-800 786 1236
 Technical Service: 214 387 8105
 Fax: 214 387 0870
Info@fabgennix.com
www.fabgennix.com

FabGennix Inc.
INTERNATIONAL

Anti-p14ARF (Alternate Reading Frame) Antibodies

Anti-p14 alternate reading frame (p14-ARF) Antibodies (Cat # ARF-101AP, ARF-112AP, ARF-121AP)

Alternate Nomenclature: CDKN2A (Note: p14ARF will not be labeled by ARF-101AP as this epitope is not expressed on p14ARF)

Tumor suppressor proteins (TSPs) in normal cells prevent tumor formation in cells that are damaged by chemotherapeutic compounds or radiation. These TSPs act by inducing programmed cell death in cancer cells called, apoptosis. By this way, tumor suppressor genes protect the body from un-controlled cell division and growth. One of the family members of this gene family include p53, a well studied tumor suppressor protein, that becomes lost and/or mutated in a minority of breast cancers (1). A small population of breast cancer cells show normal p53 expression that led to the search for other genes/proteins associated with the 'p53 pathway' that play a central role in cancer progression. One of the candidate is a p14arf (alternative reading frame) gene that appears to bind and stabilize p53 function. This protein appears to be missing in many cancers that have normal p53 expression, thus these cells despite having normal p53, lost the ability to undergo apoptosis in response to various chemotherapy. P14ARF is also altered in the early stages, & play an important role in the pathogenesis of hepatocellular carcinoma (2). P14ARF is also a valuable marker for monitoring the progression of cervical neoplasia (3). Role of nucleolus in sensing stress signals via p14ARF is just emerging. Cellular stress causes nucleolar disruption, triggering the release of regulatory factors to the nucleoplasm. These factors, especially ARF (alternative reading frame), inhibit the degradation of p53, thereby facilitating its intracellular accumulation (4).

The p14arf tumor suppressor acts by accumulating p53 followed by induction of p53-mediated apoptosis. A decrease in p53 or p14arf led to uncontrolled cell growth in most of the cancerous cells. In breast cancer, where normal p53 is usually retained, loss of p14ARF is likely to be frequent, and therapies based on restoring p14ARF function hold promise as highly effective, biologically specific, and non-toxic alternatives to conventional therapy. The inactivation of p14arf-MDM2-p53 path way is also affected in hallmark of Burkitt lymphoma (BL) which is mediated by c-myc expression (1). p14ARF protein primarily localized to the nucleoli and extranucleolar inclusions bodies. P14ARF is highly arginine enriched, 173 amino acid long protein (approximate MW 21-23kDa). There are three peptide antibodies corresponding to 3 epitopes spanning the P14ARF protein are available from FabGennix International Inc. For antibody ARF-101AP, the epitope (GRCVGPLQLRGQEWRC) in the regions (42 amino acids) form N-terminal that is not translated and therefore this antibody will not label endogenous p14ARF (5).

These antibody epitopes corresponds to amino (amino acid 4-21) mid-region (amino acid 53-70) and a close to C-terminal (amino acid 94-111) portion of the P14ARF protein. The P14ARF antibodies are also available in affinity purified form for immunohistochemistry and confocal microscopic applications. FabGennix International Inc. has also produced antibodies to several other related genes such as src, ras, kip etc. FabGennix International Inc. also has phosphor-specific antibodies to kip14, and ras proteins. FabGennix Inc employs cyclic peptide methodology for generating antibodies, which results in higher titer and specificity (6). FabGennix, Inc., will also provide Western blot positive controls for most of these antibodies in ready-to-use buffer for easy identification of respective proteins. Limited quantities of antigens are also available. Please enquire for their availability before ordering.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Volume
ARF-101AP	Rabbit	Affinity purified p14ARF Antibody (epitope absent in p14ARF)	R, M, H	100 l	150-175 ul
ARF-112AP	Rabbit	Affinity purified p14ARF Antibody (mid-region)	R, M, H	100ug	150-175 ul
ARF-121AP	Rabbit	Affinity purified p14ARF Antibody (C-terminal)	R, M, H	100 ug	150-175 ul
P-ARF101	Rabbit	Antigenic blocking peptides for ARF-101AP	n/a	250 ug	100-200ul
P-ARF112	Rabbit	Antigenic blocking peptides for ARF-112AP	n/a	250 ug	100-200ul
P-ARF121	Rabbit	Antigenic blocking peptides for ARF-121AP	n/a	250 ug	100-200ul

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

(Note: Antigenic blocking peptides for all three antibodies are also available in limited quantities. Please inquire about their availability).

Immunogen: Synthetic peptide for P-ARF101: (GRCVGPS LQLRGQEWRC S -amide; cyclic peptide); Synthetic peptide for P-ARF112: (RRACGPPR VRVFFVHPIR -amide; synthetic peptide for P-ARF121: (QLRGQP LPRRPGHDDG Q -amide). These peptides corresponding to the highly basic p14 ARF protein sequence. Peptide sequences are available upon request.

concentration: ARF-101AP; ARF-112AP; ARF-121AP IgG concentration 1-1.25 mg/ml in 50% antibody, stabilization buffer.

Applications: Antibodies ARF-112AP and ARF-121AP are used for WB applications at 1:500 dilutions. Other applications for this antibody have not been tested. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay in his/her laboratory. P14ARF antibodies have not been characterized for IMM and IHC applications. Recommended dilutions: WB 1:500; IMM and i.p pull-down assays: n.d

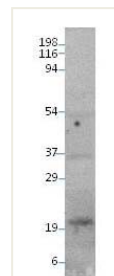
Reactivity: The ARF-112AP and ARF-121AP detects an approximately 14-16kDa protein in western blot positive controls for p14ARF samples. Antibody ARF-101AP will not label p14ARF in samples as this epitope was absent in endogenously expressed p14ARF proteins due to use of an alternate initiation codon starting at meth 42.

Note: Briefly centrifuge to collect liquid, heat or boil PC-TLR6 tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher MW immunoreactive bands.

New Reagents: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripObuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating required. Block in 5X diluObuffer and you are ready for blotting with a new antibody

References:

- Lindstrom MS, Klangby U, Wiman KG. Oncogene. 2001 Apr 19;20(17):2171-7
- Anzola M, Cuevas N, Lopez-Martinez M, et. Al., Eur J Gastroenterol. Hepatol. 2004 16(1):19-26.
- Wang JL, Zheng BY, Li XD, Angstrom T, Lindstrom MS, Wallin KL. Clin Cancer Res. 2004 Apr 1;10(7):2407-14.
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- Sherr, Nat Reviews Cancer 2006 or Gallagher et al, Cell Cycle, 2005.



Western blot of ARF1 using ARF-101AP antibody at 1:500 in diluObuffer and PC-ARF1. MW of ARF1 is 20 kDa

* For users who may require large amounts of ARF-101AP, ARF-112AP and ARF-121AP antibodies, please inquire about bulk material discounts. This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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5850 Town and Country Blvd. Suite 301. Frisco, TX 75034

Customer service: 1800 786 1236; Technical Support: 214 387 8105