

Rabbit Anti-CDKN1A/p21 antibody

SL0741R

Product Name CDKN1A/p21

Chinese Name p21 蛋白抗体

Alias CDKN1A_HUMAN; Cyclin-dependent kinase inhibitor 1; CDKN1A; CAP20; CDKN1; CIP1; MDA6; MDA-6; PIC1; SDI1; WAF1; p21CIP1; CDK-interacting protein 1; Melanoma differentiation-associated protein 6 (MDA-6);

Research Area Tumour Cell biology Signal transduction Apoptosis Cyclin

Immunogen Species Rabbit

Clonality Polyclonal

React Species Human, Mouse, Rat, (predicted: Chicken, Dog, Cow,)

IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,Flow-Cyt=1µg/Test
(Paraffin sections need antigen repair)

Applications not yet tested in other applications.
optimal dilutions/concentrations should be determined by the end user.

Theoretical molecular weight 18kDa

Cellular localization The nucleus cytoplasmic

Form Liquid

Concentration 1mg/ml

immunogen KLH conjugated synthetic peptide derived from human P21: 101-164/164

Lsotype IgG

Purification affinity purified by Protein A

Buffer Solution 1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.

Storage Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

Attention This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

PubMed [PubMed](#)

This gene encodes a potent cyclin-dependent kinase inhibitor. The encoded protein binds to and inhibits the activity of cyclin-cyclin-dependent kinase2 or -cyclin-dependent kinase4 complexes, and thus functions as a regulator of cell cycle progression at G1. The expression of this gene is tightly controlled by the tumor suppressor protein p53, through which this protein mediates the p53-dependent cell cycle G1 phase arrest in response to a variety of stress stimuli. This protein can interact with proliferating cell nuclear antigen, a DNA polymerase accessory factor, and plays a regulatory role in S phase DNA replication and DNA damage repair. This protein was reported to be specifically cleaved by CASP3-like caspases, which thus leads to a dramatic activation of cyclin-dependent kinase2, and may be instrumental in the execution of apoptosis following caspase activation. Mice that lack this gene have the ability to regenerate damaged or missing tissue. Multiple alternatively spliced variants have been found for this gene. [provided by RefSeq, Sep 2015]

Function:

May be the important intermediate by which p53/TP53 mediates its role as an inhibitor of cellular proliferation in response to DNA damage. Binds to and inhibits cyclin-dependent kinase activity, preventing phosphorylation of critical cyclin-dependent kinase substrates and blocking cell cycle progression. Functions in the nuclear localization and assembly of cyclin D-CDK4 complex and promotes its kinase activity towards RB1. At higher stoichiometric ratios, inhibits the kinase activity of the cyclin D-CDK4 complex.

Subunit:

Interacts with HDAC1; the interaction is prevented by competitive binding of C10orf90/FATS to HDAC1 facilitating acetylation and protein stabilization of CDKN1A/p21. Interacts with MKRN1. Interacts with PSMA3. Interacts with PCNA. Component of the ternary complex, cyclin D-CDK4-CDKN1A. Interacts (via its N-terminal domain) with CDK4; the interaction promotes the assembly of the cyclin D-CDK4 complex, its nuclear translocation and promotes the cyclin D-dependent enzyme activity of CDK4. Binding to CDK2 leads to CDK2/cyclin E inactivation at the G1-S phase DNA damage checkpoint, thereby arresting cells at the G1-S transition during DNA repair. Interacts with PIM1.

Subcellular Location:

Cytoplasmic and Nuclear.

Tissue Specificity:

Expressed in all adult tissues, with 5-fold lower levels observed in the brain.

Post-translational modifications:

Phosphorylation of Thr-145 by Akt or of Ser-146 by PKC impairs binding to PCNA. Phosphorylation at Ser-114 by GSK3-beta enhances ubiquitination by the DCX(DTL) complex. Phosphorylation of Thr-145 by PIM2 enhances CDKN1A stability and inhibits cell proliferation. Phosphorylation of Thr-145 by PIM1 results in the relocation of CDKN1A to the cytoplasm and enhanced CDKN1A protein stability. Ubiquitinated by MKRN1; leading to polyubiquitination and 26S proteasome-dependent degradation. Ubiquitinated by the DCX(DTL) complex, also named CRL4(CDT2) complex,

**Product
Detail**

leading to its degradation during S phase or following UV irradiation. Ubiquitination by the DCX(DTL) complex is essential to control replication licensing and is PCNA-dependent: interacts with PCNA via its PIP-box, while the presence of the containing the 'K+4' motif in the PIP box, recruit the DCX(DTL) complex, leading to its degradation. Acetylation leads to protein stability. Acetylated in vitro on Lys-141, Lys-154, Lys-161 and Lys-163. Deacetylation by HDAC1 is prevented by competitive binding of C10orf90/FATS to HDAC1.

Similarity:

Belongs to the CDI family.

SWISS:

P39689

Gene ID:

1026

Database links:

[Entrez Gene: 1026](#) Human

[Entrez Gene: 12575](#) Mouse

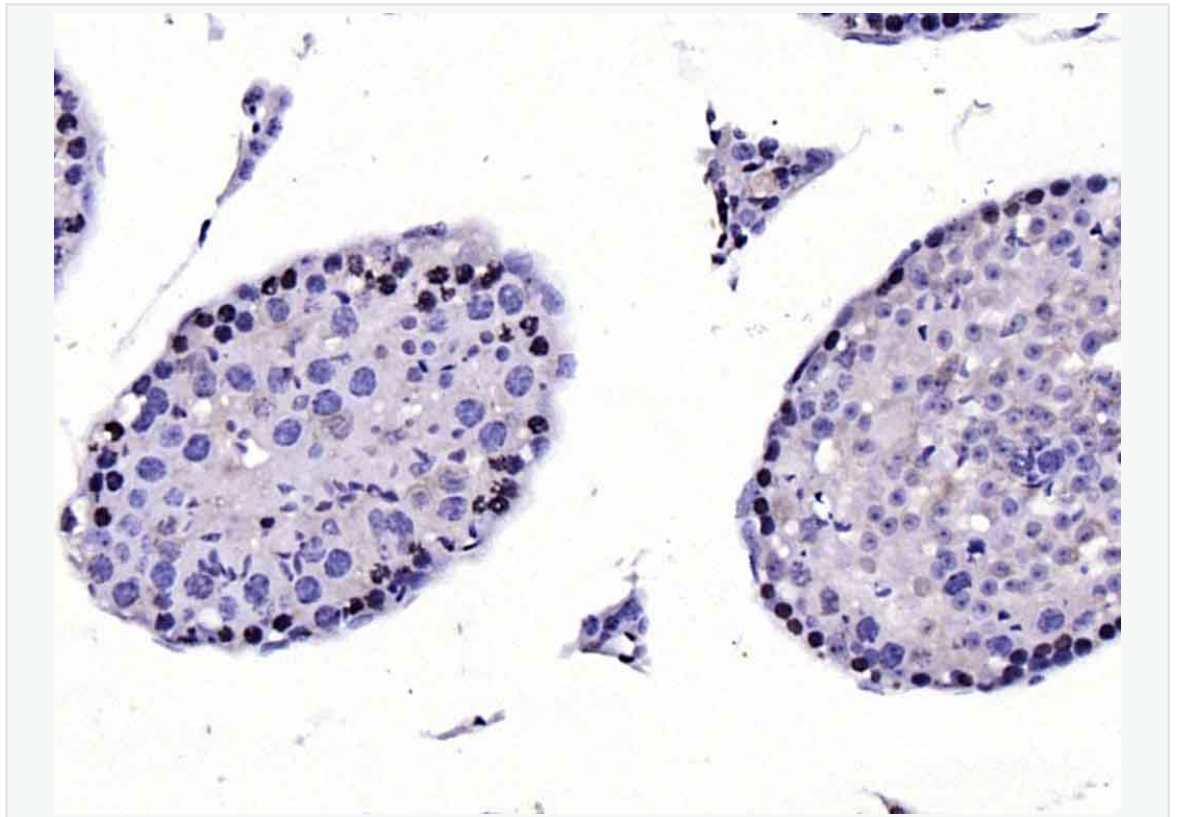
[Entrez Gene: 114851](#) Rat

[SwissProt: P38936](#) Human

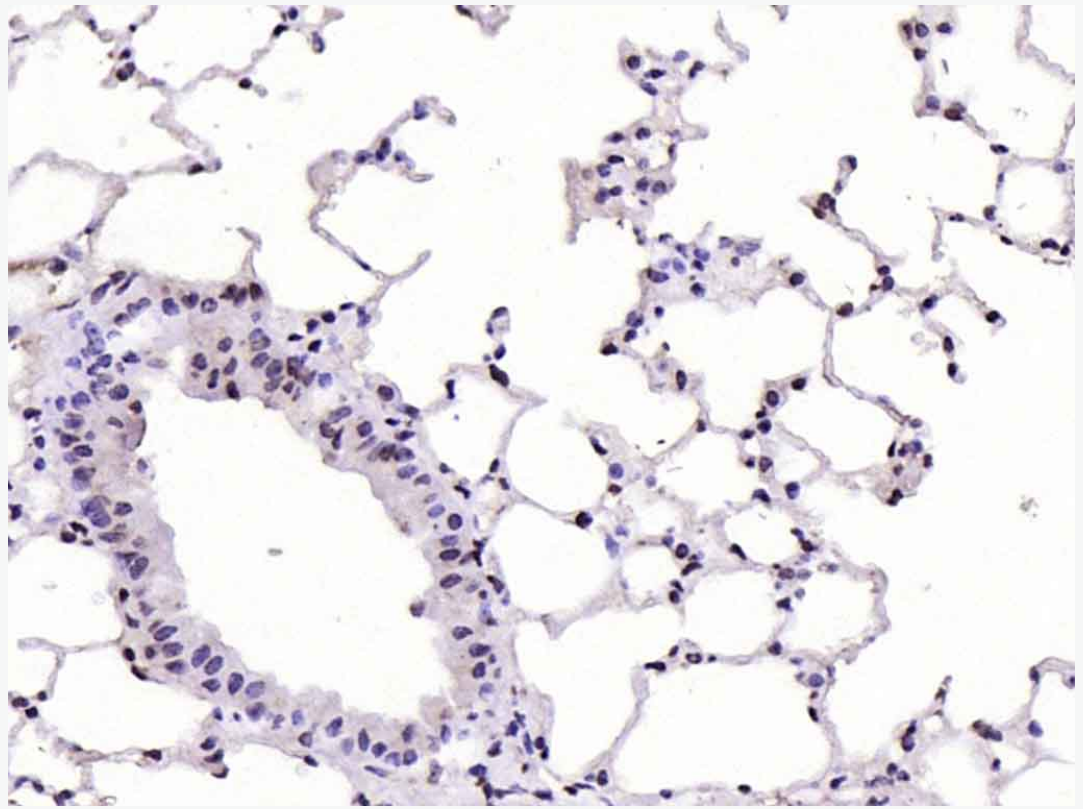
[SwissProt: P39689](#) Mouse

p21 蛋白的过度表达与 Tumour 的类型、恶性度、分期以及病人的预后密切相关。主要用于胃肠道癌肿、乳腺癌、肺癌等恶性 Tumour 的研究。

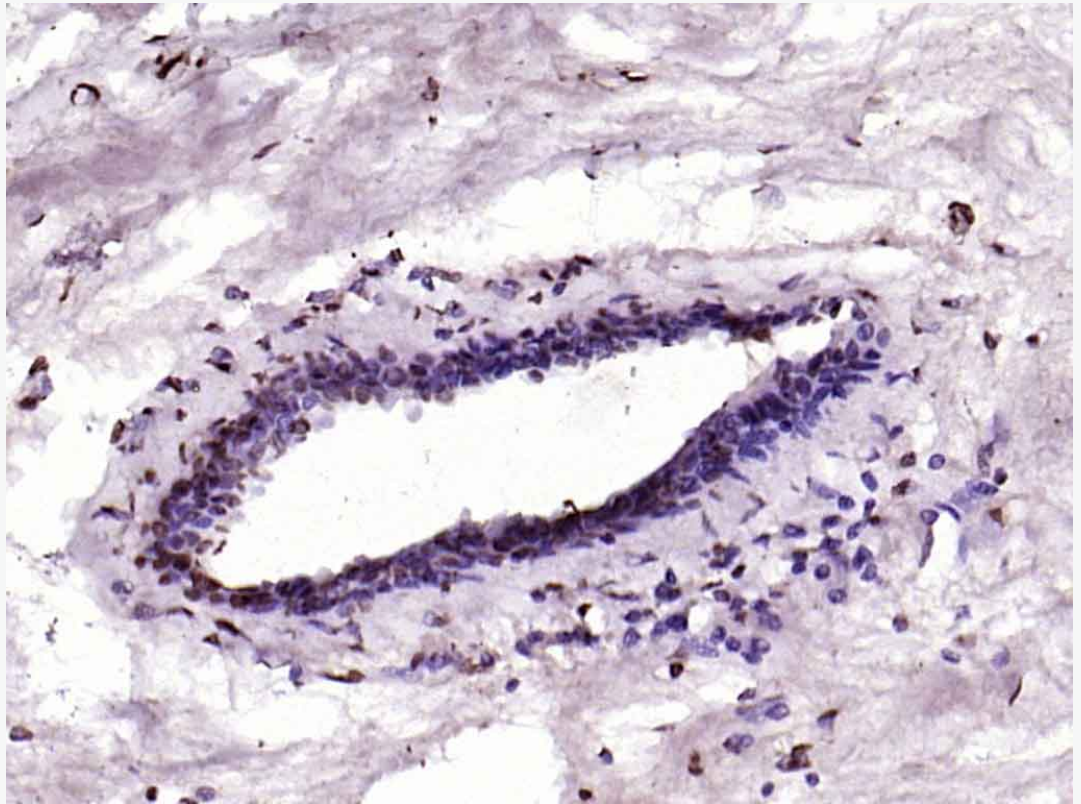
**Product
Picture**



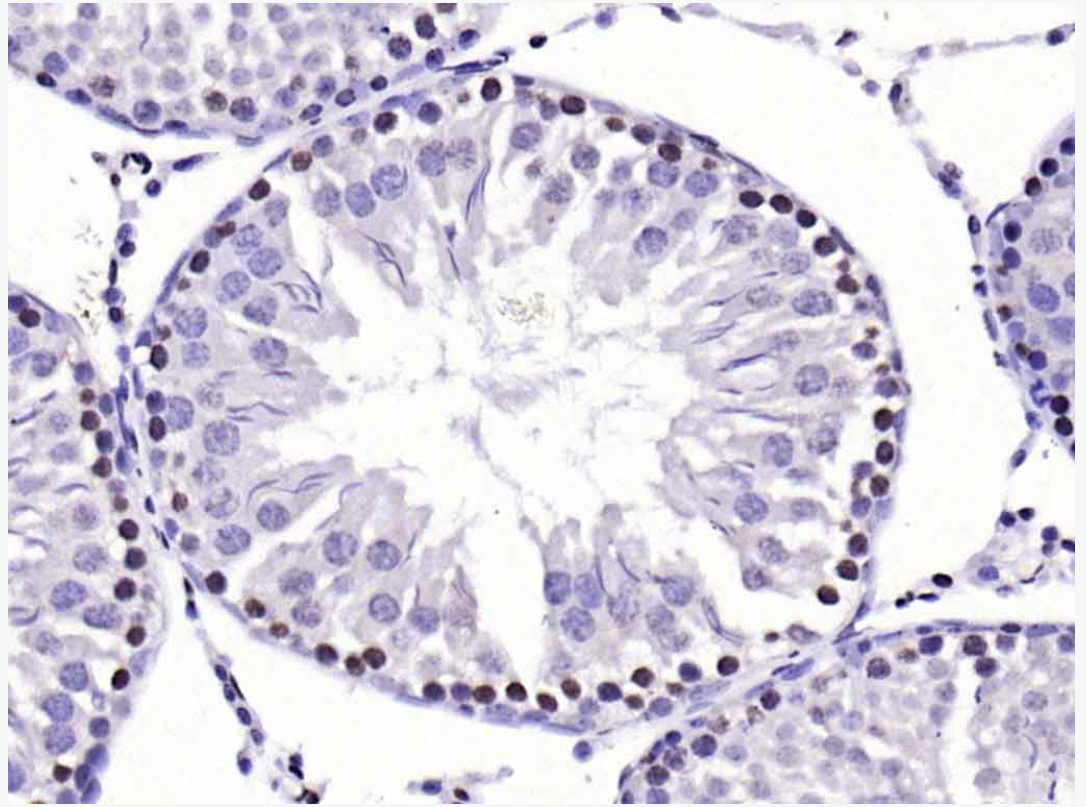
Paraformaldehyde-fixed, paraffin embedded (mouse testis); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CDKN1A) Polyclonal Antibody, Unconjugated (SL0741R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



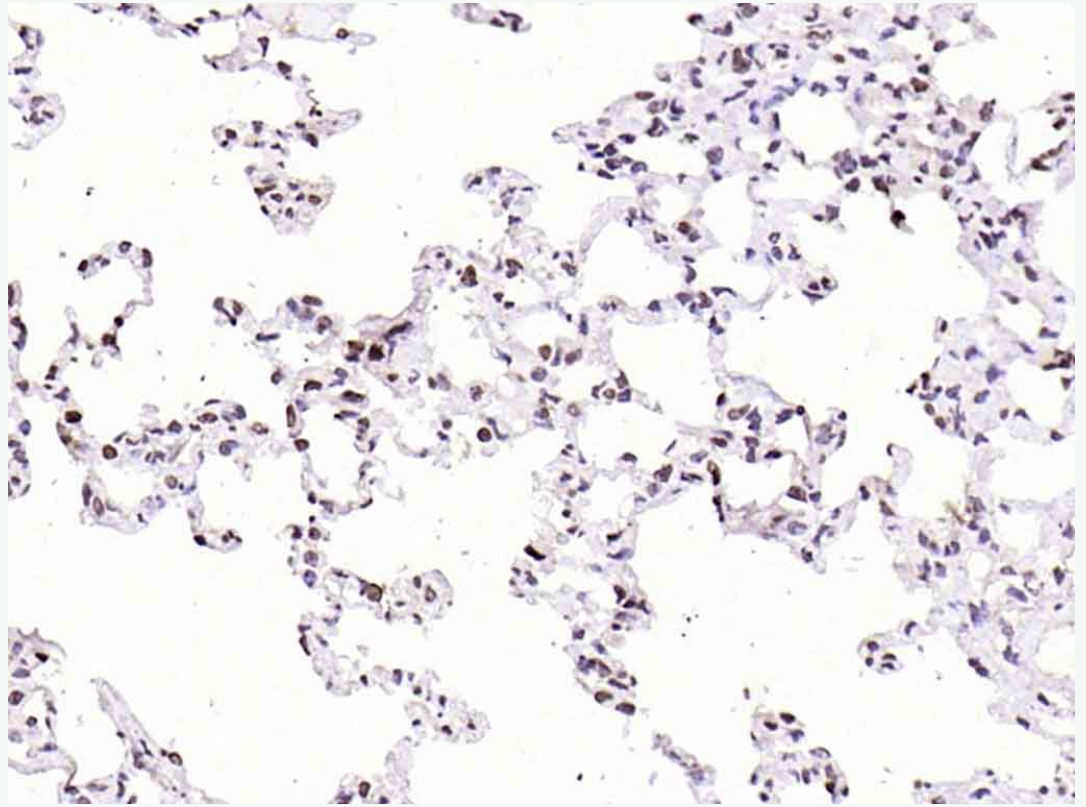
Paraformaldehyde-fixed, paraffin embedded (mouse lung); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CDKN1A) Polyclonal Antibody, Unconjugated (SL0741R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



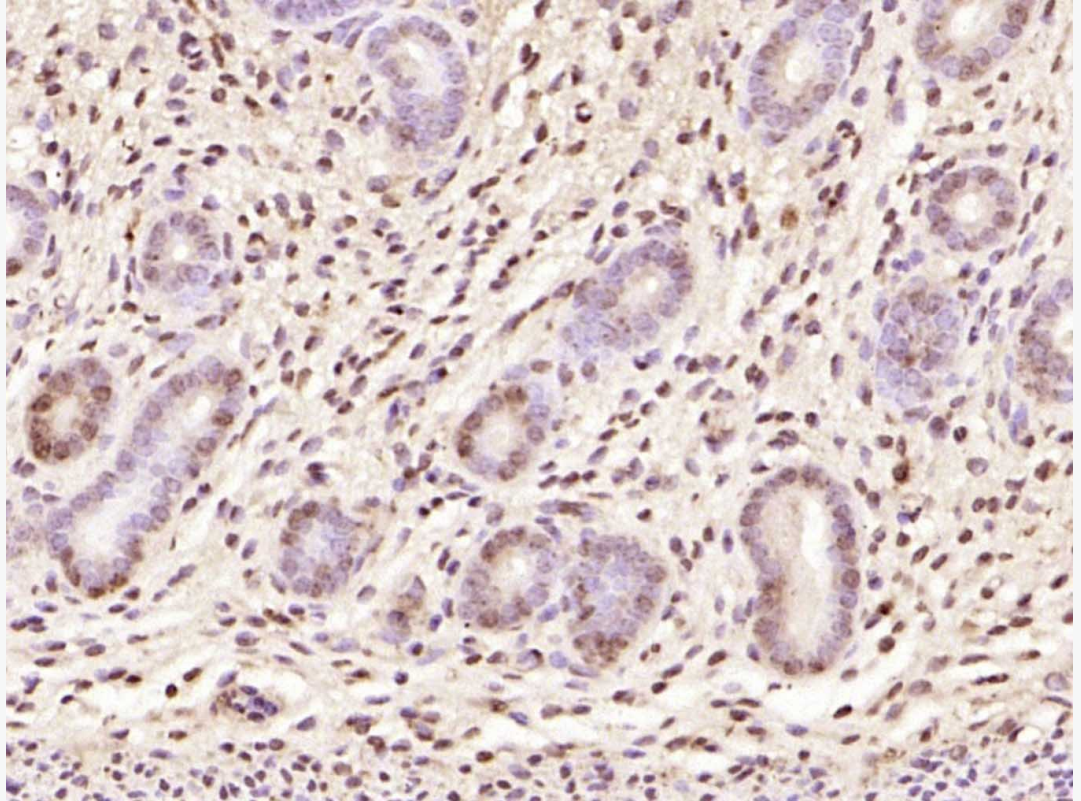
Paraformaldehyde-fixed, paraffin embedded (human breast carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CDKN1A) Polyclonal Antibody, Unconjugated (SL0741R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



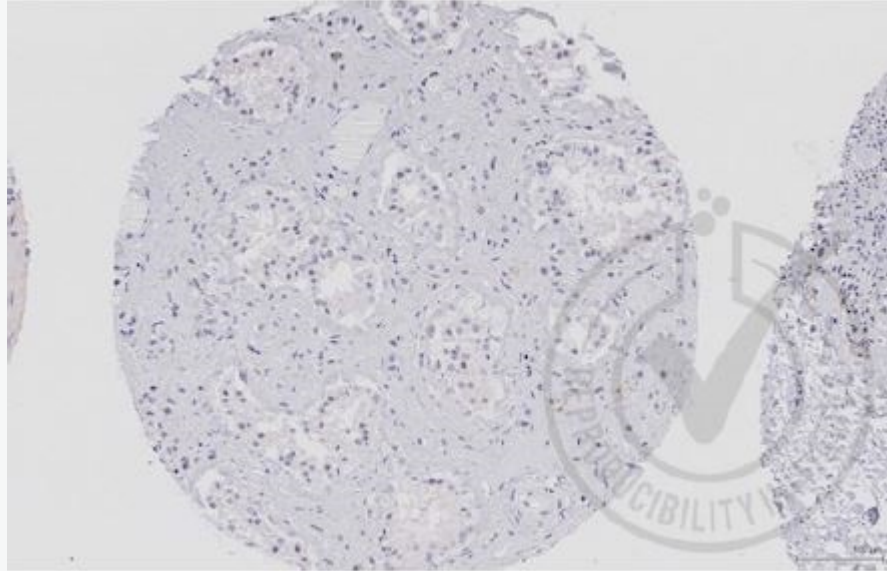
Paraformaldehyde-fixed, paraffin embedded (rat testis); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CDKN1A) Polyclonal Antibody, Unconjugated (SL0741R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



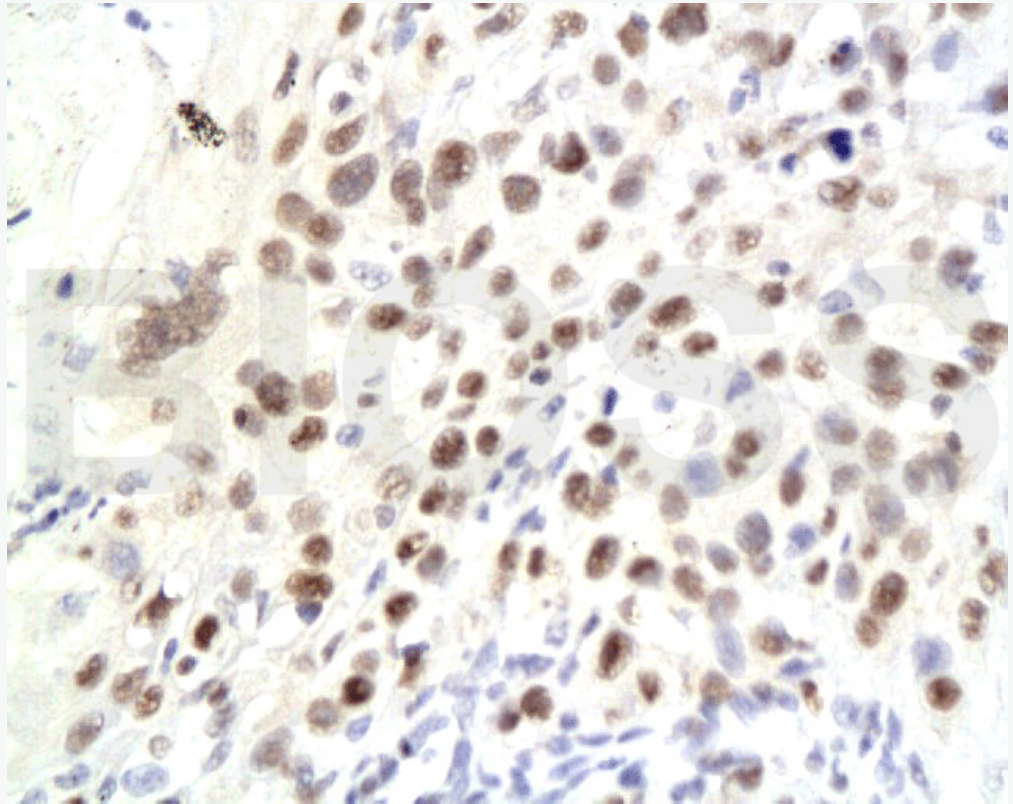
Paraformaldehyde-fixed, paraffin embedded (rat lung); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CDKN1A) Polyclonal Antibody, Unconjugated (SL0741R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



Paraformaldehyde-fixed, paraffin embedded (rat uterus); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CDKN1A) Polyclonal Antibody, Unconjugated (SL0741R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



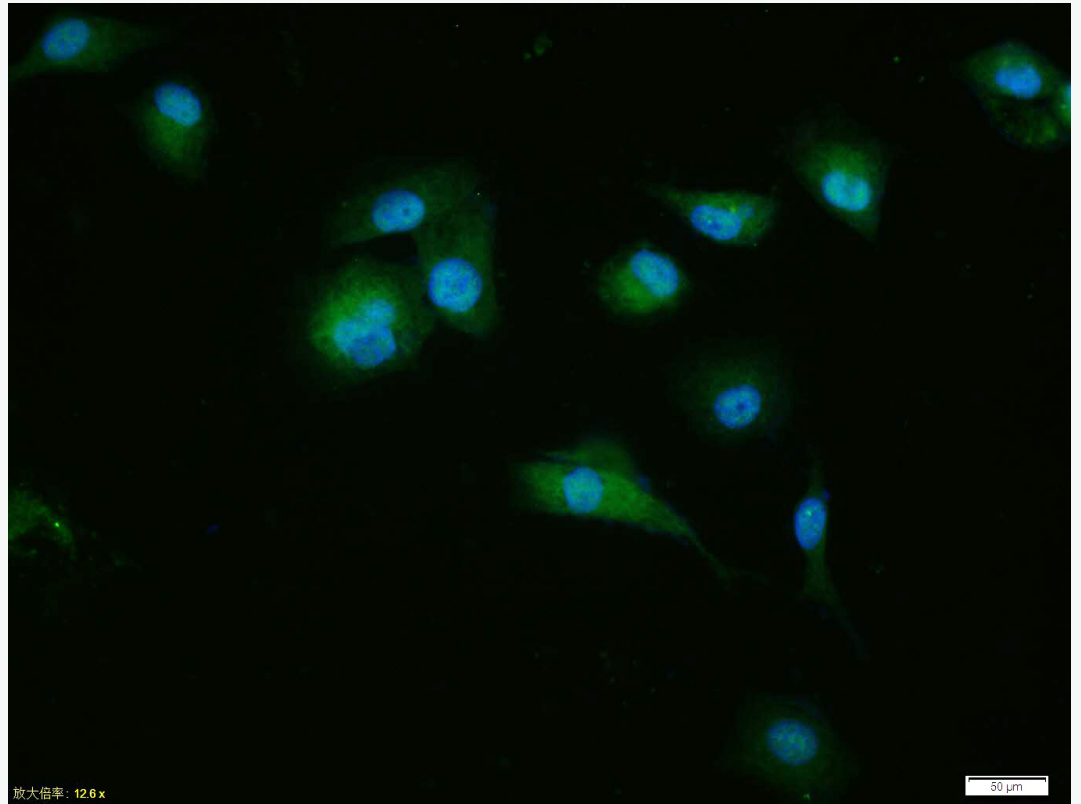
Images provided the Independent Validation Program (badge number 029649) Formalin-fixed and paraffin embedded human testis labeled with Rabbit Anti-CDKN1A Polyclonal Antibody (SL0741R) at 1:250 overnight at room temperature followed by conjugation to secondary antibody.



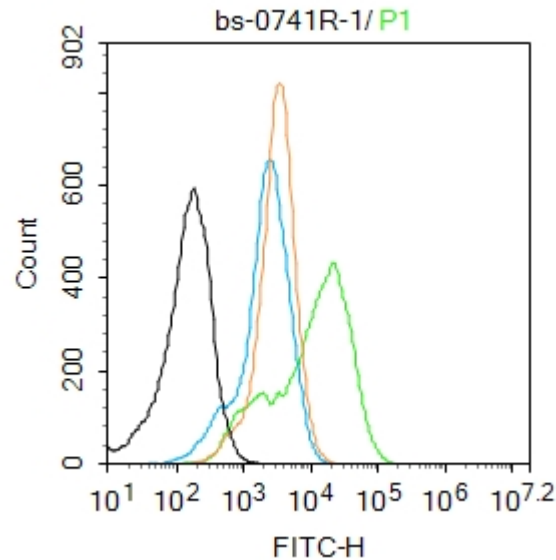
Tissue/cell: Human laryngeal squamous cell carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer (1M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;

Incubation: Anti-P21/CDKN1A Polyclonal Antibody, Unconjugated(SL0741R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Tissue/cell: HUVEC cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature for 20 min; Blocking buffer (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with (CDKN1A/p21) Polyclonal Antibody, Unconjugated (SL0741R) 1:100, 90 minutes at 37°C; followed by a conjugated Goat Anti-Rabbit IgG antibody (SL0295G-FITC) at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the cell nuclei.



Blank control: 293T.

Primary Antibody (green line): Rabbit Anti-CDKN1A/p21 antibody (SL0741R)

Dilution: 1 μ g /10⁶ cells;

Isotype Control Antibody (orange line): Rabbit IgG .

Secondary Antibody : Goat anti-rabbit IgG-FITC

Dilution: 1 μ g /test.

Protocol

The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 0.1% PBST for 20 min at room temperature. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.



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