abcam

ab193379

# Anti-p27 KIP 1 antibody [SX53G8]

KO Validated

## Key facts

| | |
|---|---|
| **Isotype** | IgG1 |
| **Host species** | Mouse |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: PBS, 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | Recombinant Full Length Protein corresponding to Human CDKN1B. Database link P46527 |
| **Clone number** | SX53G8 |
| **Purification technique** | Affinity purification Protein G |
| **Specificity** | ab193379 is highly specific and shows no cross-reaction with other related mitotic inhibitors. |
| **Light chain type** | kappa |
| **Concentration** | 0.2 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |

| | |
|---|---|
| **Dilution info** | 0.5-1 µg/mL |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Cat, Dog, Monkey, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1-2 µg/mL |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Cat, Dog, Monkey, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## IP

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat, Monkey, Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Cat, Dog |
| **Dilution info** | - |
| **Notes** | - |

# Flow Cyt

## Expected

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. |

| | |
|---|---|
| **Species** | Monkey |
| **Dilution info** | - |
| **Notes** | ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. |

## Predicted

| | |
|---|---|
| **Species** | Cat, Dog |
| **Dilution info** | - |
| **Notes** | - |

# WB

## Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 0.5-1 µg/mL |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Cat, Dog, Monkey, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat, Monkey, Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Cat, Dog |
| **Dilution info** | - |
| **Notes** | - |

## IHC-Fr

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat, Monkey, Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Cat, Dog |
| **Dilution info** | - |
| **Notes** | - |

# Target data

See full target information CDKN1B

| | |
|---|---|
| **Function** | Important regulator of cell cycle progression. Inhibits the kinase activity of CDK2 bound to cyclin A, but has little inhibitory activity on CDK2 bound to SPDYA (PubMed:28666995). Involved in G1 arrest. Potent inhibitor of cyclin E- and cyclin A-CDK2 complexes. Forms a complex with cyclin type D-CDK4 complexes and is involved in the assembly, stability, and modulation of CCND1-CDK4 complex activation. Acts either as an inhibitor or an activator of cyclin type D-CDK4 complexes depending on its phosphorylation state and/or stoichometry. |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | The protein known as p27 KIP1 also referred to as p27 CDKN1B or KIP1 is a member of the kinase inhibitory protein family. It plays an important role in cell cycle regulation by inhibiting cyclin-dependent kinases (CDKs). p27 KIP1 weighs approximately 27 kDa and can be found in various tissues where it regulates cell proliferation. The protein functions as a suppressor by binding to cyclin-CDK complexes preventing the transition from G1 phase to S phase in the cell division cycle. |
| **Biological function summary** | The function of p27 KIP1 involves its role in controlling cell growth and division. It achieves this by becoming a part of larger protein complexes involving CDKs and cyclins. By directly interacting with these complexes p27 KIP1 modulates cell cycle progression therefore acting as a brake on cellular proliferation. The protein is important in maintaining proper cell cycle checkpoints and preventing uncontrolled cell growth which is essential for normal cellular functioning. |
| **Pathways** | The involvement of p27 KIP1 centers on cell cycle regulation and signaling pathways such as the PI3K/AKT pathway. Its interaction with CDKs and cyclins situates it within the core mechanisms that determine cell division timing. p27 |

| | |
|---|---|
| | KIP1 operates alongside other proteins like cyclin D and CDK4/6 fitting into the regulatory intricacies of these pathways. Proper functioning of these pathways ensures cellular homeostasis and prevents the development of oncogenic processes. |
| **Associated diseases and disorders** | Dysfunction of p27 KIP1 has links to cancer and neurodegenerative diseases. Low levels or mutations can lead to uncontrolled cell proliferation contributing to the development and progression of cancers such as breast cancer. p27 KIP1's role in neurodegenerative diseases involves its regulation of neuronal cell cycle re-entry with abnormalities potentially exacerbating conditions like Alzheimer's disease. In these contexts its interaction with proteins such as cyclin E and CDK2 becomes particularly relevant in understanding disease mechanisms. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

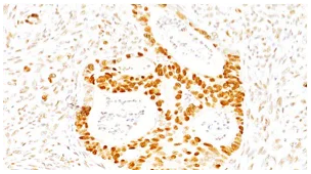
We do not recommend this combination. It is not covered by our product promise.

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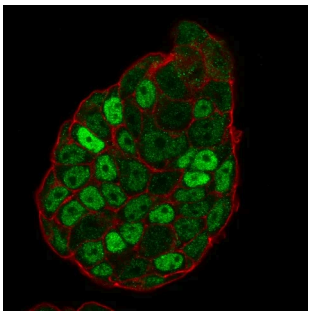
## 4 product images



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p27 KIP 1 antibody [SX53G8] (ab193379)

P27 KIP 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-p27 KIP 1 antibody

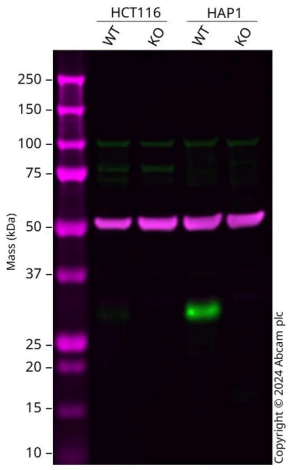
Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human colon tissue labeling p27 KIP 1 with ab193379 at 1 µg/mL.



## Immunocytochemistry - Anti-p27 KIP 1 antibody [SX53G8] (ab193379)

P27 KIP 1 Immunocytochemistry staining using mouse Anti-p27 KIP 1 antibody

Immunocytochemical analysis of PFA-fixed MCF-7 cells labeling p27 KIP 1 with ab193379 at 1 µg/mL. A Goat anti-mouse IgG CF488 antibody (Green) was used as a secondary antibody. The membrane is stained with Phalloidin-CF640




## Western blot - Anti-p27 KIP 1 antibody [SX53G8] (ab193379)

P27 KIP 1 Western blot staining using mouse Anti-p27 KIP 1 antibody

Western blot: Anti-CDKN1B antibody [SX53G8] (ab193379) staining at 1 ug/ml, shown in green; Rabbit anti-alpha Tubulin antibody [EP1332Y] (ab52866) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab193379 was shown to bind specifically to CDKN1B. A band was observed at 30 kDa in wild-type HCT 116 cell lysates with no signal observed at this size in CDKN1B knockout cell line. To generate this image, wild-type and CDKN1B knockout HCT 116 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Mouse IgG H&L 800CW and Goat anti-Rabbit IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-p27 KIP 1 antibody [SX53G8] (ab193379) at 1 µg/mL

Lane 1:
Wild-type HCT 116 cell lysate at 20 µg

Lane 2:
CDKN1B knockout HCT 116 cell lysate at 20 µg

Lane 3:
Wild-type HAP1 cell lysate at 20 µg

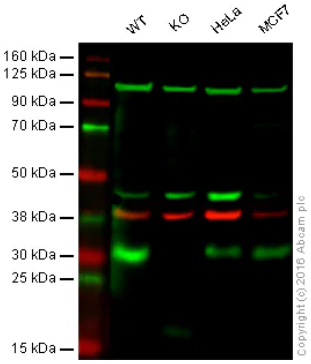
Lane 4:
CDKN1B knockout HAP1 cell lysate at 20 µg

Secondary

All lanes:
Goat anti-Mouse IgG H&L 800CW and Goat anti-Rabbit IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 30 kDa




# Western blot - Anti-p27 KIP 1 antibody [SX53G8] (ab193379)

P27 KIP 1 Western blot staining using mouse Anti-p27 KIP 1 antibody

**Lane 1:** Wild-type HAP1 whole cell lysate (20 µg)
**Lane 2:** CDKN1B knockout HAP1 whole cell lysate (20 µg)
**Lane 3:** HeLa whole cell lysate (20 µg)
**Lane 4:** MCF7 whole cell lysate (20 µg)
**Lanes 1 - 4:** Merged signal (red and green). Green - ab193379 observed at 30 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab193379 was shown to specifically recognize CDKN1B in wild-type HAP1 cells as well as additional cross-reactive bands. No bands were observed when CDKN1B knockout samples were used. Wild-type and CDKN1B knockout samples were subjected to SDS-PAGE. ab193379 and ab181602 (Rabbit anti GAPDH loading control) were incubated overnight at 4°C at 1 µg/mL and 1/10,000 dilution respectively. Blots were developed with 800CW Goat anti Rabbit and 680CW Goat anti Mouse secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-p27 KIP 1 antibody [SX53G8] (ab193379)

Predicted band size: 22 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.