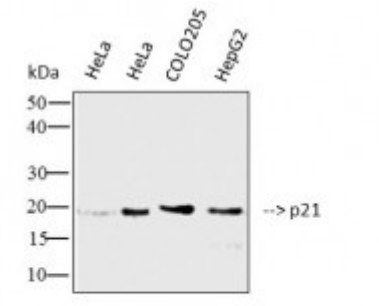
# Anti-p21 antibody




Western Blot (WB) analysis of 1)HeLa, 2)HeLa, 3)COLO205, 4)HepG2 cell lysates using p21 Antibody (STJ94862)

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| **Description** | p21 is a protein encoded by the CDKN1A gene which is approximately 18,1 kDa. p21 is localised to the cytoplasm and nucleus. It is involved in CDK-mediated phosphorylation and removal of Cdc6, RET signalling, cyclins and cell cycle regulation. It may be involved in p53/TP53 mediated inhibition of cellular proliferation in response to DNA damage. It binds to and inhibits cyclin-dependent kinase activity, preventing phosphorylation of critical cyclin-dependent kinase substrates and blocking cell cycle progression. It also functions in the nuclear localization and assembly of cyclin D-CDK4 complex and promotes its kinase activity towards RB1. p21 is expressed in all adult tissues, with lower levels expressed in the brain. Mutations in the CDKN1A gene may result in pancreatic cancer and ovarian cancer. STJ94862 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of p21 protein. |

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| **Model** | STJ94862 |
| **Host** | Rabbit |
| **Reactivity** | Human, Mouse, Rat |
| **Applications** | ELISA, WB |
| **Immunogen** | Synthesized peptide derived from human p21 around the non-phosphorylation site of T145. |
| **Immunogen Region** | 80-160 aa |
| **Gene ID** | 1026 |
| **Gene Symbol** | CDKN1A |
| **Dilution range** | WB 1:500-1:2000ELISA 1:20000 |

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| **Specificity** | p21 Polyclonal Antibody detects endogenous levels of p21 protein. |
| **Tissue Specificity** | Expressed in all adult tissues, with 5-fold lower levels observed in the brain. |
| **Purification** | The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. |
| **Note** | For Research Use Only (RUO). |
| **Protein Name** | Cyclin-dependent kinase inhibitor 1 CDK-interacting protein 1 Melanoma differentiation-associated protein 6 MDA-6 p21 |
| **Molecular Weight** | 21 kDa |
| **Clonality** | Polyclonal |
| **Conjugation** | Unconjugated |
| **Isotype** | IgG |
| **Formulation** | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide. |
| **Concentration** | 1 mg/ml |
| **Storage Instruction** | Store at -20°C, and avoid repeat freeze-thaw cycles. |
| **Database Links** | HGNC:1784OMIM:116899 |
| **Alternative Names** | Cyclin-dependent kinase inhibitor 1 CDK-interacting protein 1 Melanoma differentiation-associated protein 6 MDA-6 p21 |
| **Function** | May be involved in p53/TP53 mediated inhibition 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. Inhibits DNA synthesis by DNA polymerase delta by competing with POLD3 for PCNA binding . |
| **Sequence and Domain Family** | The PIP-box K+4 motif mediates both the interaction with PCNA and the recruitment of the DCX(DTL) complex: while the PIP-box interacts with PCNA, the presence of the K+4 submotif, recruits the DCX(DTL) complex, leading to its ubiquitination.; The C-terminal is required for nuclear localization of the cyclin D-CDK4 complex. |
| **Cellular Localization** | Cytoplasm. Nucleus. |
| **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. UV radiation-induced phosphorylation at Thr-80 by LKB1 and at Ser-146 by NUAK1 leads to its degradation. Ubiquitinated by MKRN1; leading to polyubiquitination and 26S proteasome-dependent degradation. Ubiquitinated by the DCX(DTL) complex, also named CRL4(CDT2) complex, 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. Ubiquitination at Ser-2 leads to degradation by the proteasome pathway. Ubiquitinated by RNF114; leading to proteasomal 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 .