

DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human p21/CIP1/CDKN1A in direct ELISAs and Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>2A</sub> Clone # 195720
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human p21/CIP1/CDKN1A Ser2-Pro164 Accession # P38936
<b>Formulation</b>	Supplied as a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

**APPLICATIONS**

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	2 µg/mL	See Below
<b>Immunohistochemistry</b>	8-25 µg/mL	See Below
<b>Immunoprecipitation</b>	4 µg/500 µg cell lysate	MCF-7 human breast cancer cell line treated with camptothecin (CPT), see our available <a href="#">Western blot detection antibodies</a>
<b>Intracellular Staining by Flow Cytometry</b>	0.25 µg/10 <sup>6</sup> cells	See Below

**DATA**

**Western Blot**

**Detection of Human p21/CIP1/CDKN1A by Western Blot.** Western blot shows lysates of MCF-7 human breast cancer cell line untreated (-) or treated (+) with 1 µM camptothecin (CPT) for 16 hours. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human p21/CIP1/CDKN1A Monoclonal Antibody (Catalog # MAB1047), followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for p21/CIP1/CDKN1A at approximately 21 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

**Immunohistochemistry**

**p21/CIP1/CDKN1A in Human Breast Cancer Tissue.** p21/CIP1/CDKN1A was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Mouse Anti-Human p21/CIP1/CDKN1A Monoclonal Antibody (Catalog # MAB1047) at 15 µg/mL overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

**Intracellular Staining by Flow Cytometry**

**Detection of p21/Cip1/CDKN1A in MCF-7 Human Cell Line by Flow Cytometry.** MCF-7 human breast cancer cell line either treated with 1 µM camptothecin (CPT) for 16 hours (filled histogram) or untreated (open histogram) was stained with Mouse Anti-Human p21/CIP1/CDKN1A Monoclonal Antibody (Catalog # MAB1047), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005). View our protocol for [Staining Intracellular Molecules](#).

## PREPARATION AND STORAGE

**Shipping** The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.  
\*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C, as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.
- 6 months, -20 to -70 °C under sterile conditions after opening.

## BACKGROUND

p21<sup>CIP1</sup>, also called CIP1 (CDK-interacting protein 1) and CDKN1A, is a 21 kDa Cyclin/Cyclin-dependent kinase (Cdk) inhibitor that blocks cell cycle progression from G<sub>1</sub> to S phase in the cell cycle. Because p21 is a transcriptional target of the p53 tumor suppressor, p21 expression increases in cells that contain stabilized p53 due to genotoxic stress exposure.