**DESCRIPTION**

**Species Reactivity**  
Human

**Specificity**  
Detects human p21/CIP1/CDKN1A in direct ELISAs and Western blots.

**Source**  
Monoclonal Mouse IgG2A Clone # 195720

**Purification**  
Protein A or G purified from hybridoma culture supernatant

**Immunogen**  
E. coli-derived recombinant human p21/CIP1/CDKN1A Ser2-Pro164  
Accession # P38936

**Formulation**  
Supplied as a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.  
*Small pack size (SP) is supplied either lyophilized or 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.

<table>
<thead>
<tr>
<th>Recommended Concentration</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>2 µg/mL See Below</td>
</tr>
<tr>
<td>Immunohistochemistry</td>
<td>8-25 µg/mL See Below</td>
</tr>
<tr>
<td>Immunoprecipitation</td>
<td>4 µg/500 µg cell lysate MCF-7 human breast cancer cell line treated with camptothecin (CPT), see our available Western blot detection antibodies</td>
</tr>
</tbody>
</table>

**Intracellular Staining by Flow Cytometry**  
0.25 µg/10⁶ 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 # FC010G). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC014) 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\(^{\text{CIP1}}\), 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\(_1\) 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.