

BACKGROUND

p21WAF1/Cip1 belongs to the Cip/Kip family of cyclin-kinase inhibitors (CKI) (p21Waf1/Cip1, p27Kip1, p57Kip1). p21Waf1/Cip1 was first described as a potent and universal inhibitor of cyclin-dependent kinases (Cdks). Two forms of functionally active p21 has been localized and described: a nuclear and acytoplasmic forms. p21 functions as a checkpoint in the cell cycle by inhibiting cdks at the G1/S and G2/M interfaces.¹ p21 has been shown to bind to cyclin-cdk complexes, preventing phosphorylation of the retinoblastoma protein. When this happens, the E2F pathway is blocked and the cell cycle is arrested at the G1/S interface.

p21 expression is usually controlled at the transcriptional level by either the p53-dependent or -independent pathway,² but p21 expression can also be regulated at the post-transcriptional level. Short wavelength UVC was found to induce p21 in a p53-dependent fashion by post-transcriptional modifications that led to enhanced stability of p21 mRNA.³ The transcription factors C/EBPa and C/EBPb were found to interact with p21 protein and protect it from proteolytic degradation. In a number of other cell lines, post-transcriptional events strongly influence p21 expression following genotoxic stress. Stress activated kinases p38 α and JNK 1 were shown to stabilize p21 by phosphorylation at serine 130. p21 was shown to promote apoptosis, protect cells from undergoing apoptosis, inhibit or promote differentiation.⁴

References:

1. Harper, J.W. et al: Cell 75:805-816, 1993
2. Blundell, R.A.:Am. J. Biochem. Biotech. 2:33-40, 2006
3. Wang, W. et al: Mol. Cell. Biol. 20:760-771, 2000
4. Cox, L. S.: J. Path. 183:134-140, 1999

TECHNICAL INFORMATION

Source:

P21WAF1/Cip1 Antibody is a rabbit antibody raised against a short peptide from human p21WAF1/Cip1 N-terminal sequence.

Specificity and Sensitivity:

This antibody detects endogenous levels of p21WAF1/Cip1 proteins from normal primary cells without cross-reactivity with other family members.

Storage Buffer: Solution in phosphate-buffered saline containing 0.02% sodium azide and 50% glycerol

Storage:

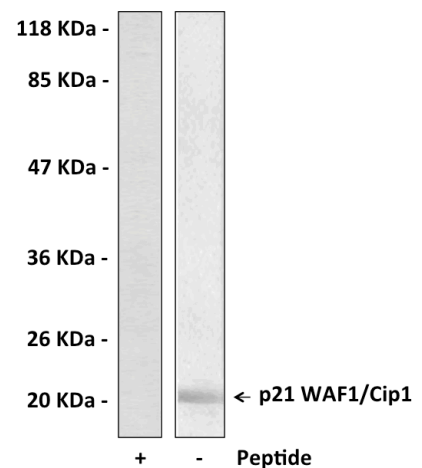
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:500-1:1000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Analysis of extracts from HeLa cells using Anti-CDKN1A (Ab-145) antibody and the same antibody preincubated with blocking peptide.

