Revision 3

Store at +4C

#7167

PathScan® Total p21 Waf1/Cip1 Sandwich ELISA Kit

Cell Signaling TECHNOLOGY®

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1 Kit (96 assays)

Species Cross Reactivity: H
UniProt ID: #P38936
Entrez-Gene Id: #1026

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Color	Storage Temp
p21 Waf1/Cip1 Mouse mAb Coated Microwells	17491	96 tests		+4C
p21 Waf1/Cip1 Rabbit Detection mAb	13039	1 ea	Green (Lyophilized)	+4C
Anti-rabbit IgG, HRP-linked Antibody (ELISA Formulated)	13272	1 ea	Red (Lyophilized)	+4C
Detection Antibody Diluent	13339	11 ml	Green	+4C
HRP Diluent	13515	11 ml	Red	+4C
TMB Substrate	7004	11 ml		+4C
STOP Solution	7002	11 ml		+4C
Sealing Tape	54503	2 ea		+4C
ELISA Wash Buffer (20X)	9801	25 ml		+4C
ELISA Sample Diluent	11083	25 ml	Blue	+4C
Cell Lysis Buffer (10X)	9803	15 ml		-20C

Kit contents scale proportionally with size, except sealing tape.
Example: The V1 kit contains 5X the listed quantities above, but will exclude the sealing tape.

The microwell plate is supplied as 12 8-well modules - Each module is designed to break apart for 8 tests.

Description

CST's PathScan® Total p21 Waf1/Cip1 Sandwich ELISA Kit is a solid phase sandwich enzyme-linked immunosorbent assay (ELISA) that detects endogenous levels of total p21 Waf1/Cip1 protein. A p21 Waf1/Cip1 mouse mAb has been coated onto the microwells. After incubation with cell lysates, total p21 Waf1/Cip1 protein is captured by the coated antibody. Following extensive washing, a p21 Waf1/Cip1 antibody is added to detect the captured total p21 Waf1/Cip1 protein. Anti-rabbit IgG, HRP-linked Antibody is then used to recognize the bound detection antibody. HRP substrate, TMB, is added to develop color. The magnitude of absorbance for this developed color is proportional to the quantity of total p21 Waf1/Cip1 protein.

*Antibodies in this kit are custom formulations specific to kit.

Specificity/Sensitivity

CST's PathScan® Total p21 Waf1/Cip1 Sandwich ELISA Kit #7167 detects endogenous levels of total p21 Waf1/Cip1 protein. As shown in Figure 1, cell lysates from 293, HeLa, K562 and THP1 are analyzed using PathScan® Total p21 Waf1/Cip1 Sandwich ELISA Kit #7167. Measured levels of total p21 Waf1/Cip1 protein correlate with levels detected by Western blot analysis. In Figure 3, Western blot analysis of protein captured in the p21 Waf1/Cip1 antibody coated microwell shows a major band corresponding to the p21 Waf1/Cip1 protein.
This kit detects proteins from the indicated species, as determined through in-house testing, but may also detect homologous proteins from other species.

Background

The tumor suppressor protein p21 Waf1/Cip1 acts as an inhibitor of cell cycle progression. It functions in stoichiometric relationships forming heterotrimeric complexes with cyclins and cyclin-dependent kinases. In association with CDK2 complexes, it serves to inhibit kinase activity and block progression through G1/S (1). However, p21 may also enhance assembly and activity in complexes of CDK4 or CDK6 and cyclin D (2). The carboxy-terminal region of p21 is sufficient to bind and inhibit PCNA, a subunit of DNA polymerase, and may coordinate DNA replication with cell cycle progression (3). Upon UV damage or during cell cycle stages when cdc2/cyclin B or CDK2/cyclin A are active, p53 is phosphorylated and upregulates p21 transcription via a p53-responsive element (4). Protein levels of p21 are downregulated through ubiquitination and proteasomal degradation (5).

Background References

1. Pestell, R.G. et al. (1999) *Endocrine Rev.* 20, 501-34.
2. Cheng, J. et al. (1999) *EMBO J.* 18, 1571-83.

3. Flores-Rozas, H. et al. (1994) *Proc. Natl. Acad. Sci. USA* 91, 8655-9.
4. Wang, Y. and Prives, C. (1995) *Nature* 376, 88-91.
5. Sheaff, R.J. et al. (2000) *Cell* 5, 403-10.
6. Pechnick, R.N. et al. (2008) *Proc Natl Acad Sci U S A* 105, 1358-63.

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Limited Uses