Revision 2

Store at +4C

#7140

PathScan® Phospho-p38α MAPK (Thr180/Tyr182) Sandwich ELISA Kit

Cell Signaling TECHNOLOGY®

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UniProt ID: #Q16539 **Entrez-Gene Id:** #1432

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

Product Includes	Product #	Quantity	Color	Storage Temp
TMB Substrate	7004	11 ml	Colorless	+4C
STOP Solution	7002	11 ml	Colorless	+4C
Sealing Tape	54503	2 ea		+4C
ELISA Wash Buffer (20X)	9801	25 ml	Colorless	+4C
Cell Lysis Buffer (10X)	9803	15 ml	Yellowish	-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® Phospho-p38¿ MAP Kinase (Thr180/Tyr182) Sandwich ELISA Kit is a solid phase sandwich enzyme-linked immunosorbent assay (ELISA) that detects endogenous levels of phospho-p38¿ MAP kinase (Thr180/Tyr182) protein. A p38¿ MAP Kinase Antibody* has been coated onto the microwells. After incubation with cell lysates, p38¿ MAP kinase protein is captured by the coated antibody. Following extensive washing, Phospho-p38 MAPK (Thr180/Tyr182) mouse mAb* is added to detect the captured phospho-p38¿ MAP kinase protein. HRP-linked Anti-mouse Antibody (#7076) 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 phospho-p38¿ MAP kinase (Thr180/Tyr182) protein.
* Antibodies in kit are custom formulations specific to kit.

Specificity/Sensitivity

CST's PathScan® Phospho-p38α MAP kinase (Thr180/Tyr182) Sandwich ELISA Kit detects endogenous levels of phospho-p38α MAP kinase (Thr180/Tyr182) protein. Using this Sandwich ELISA Kit #7140, a significant induction of phospho-p38α MAP kinase (Thr180/Tyr182) in NIH/3T3 cells treated with UV light is detected. However, levels of total p38α MAP kinase protein (phospho and nonphospho) remain unchanged, as shown by Western analysis using p38α MAP kinase Antibody #9218 (Figure 1). Both C6 and 293 cells treated either UV light or anisomycin show similar results (data not shown). This kit detects proteins from the indicated species, as determined through in-house testing, but may also detect homologous proteins from other species.

Background

p38 MAP kinase (MAPK), also called RK (1) or CSBP (2), is the mammalian orthologue of the yeast HOG kinase that participates in a signaling cascade controlling cellular responses to cytokines and stress (1-4). Four isoforms of p38 MAPK, p38α, β, γ (also known as Erk6 or SAPK3), and δ (also known as SAPK4) have been identified. Similar to the SAPK/JNK pathway, p38 MAPK is activated by a variety of cellular stresses, including osmotic shock, inflammatory cytokines, lipopolysaccharide (LPS), UV light, and growth factors (1-5). MKK3, MKK6, and SEK activate p38 MAPK by phosphorylation at Thr180 and Tyr182. Activated p38 MAPK has been shown to phosphorylate and activate MAPKAP kinase 2 (3) and to phosphorylate the transcription factors ATF-2 (5), Max (6), and MEF2 (5-8). SB203580 (4-(4-fluorophenyl)-2-(4-methylsulfinylphenyl)-5-(4-pyridyl)-imidazole) is a selective inhibitor of p38 MAPK. This compound inhibits the activation of MAPKAPK-2 by p38 MAPK and subsequent phosphorylation of HSP27 (9). SB203580 inhibits p38 MAPK catalytic activity by binding to the ATP-binding pocket, but does not inhibit phosphorylation of p38 MAPK by upstream kinases (10).

Background References

1. Rouse, J. et al. (1994) *Cell* 78, 1027-37.
2. Han, J. et al. (1994) *Science* 265, 808-11.
3. Lee, J.C. et al. (1994) *Nature* 372, 739-46.
4. Freshney, N.W. et al. (1994) *Cell* 78, 1039-49.
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7. Zhao, M. et al. (1999) *Mol Cell Biol* 19, 21-30.
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Limited Uses

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