

#7940	PathScan® Total eIF4E Sandwich ELISA Kit		
	UniProt ID: #P06730	Entrez-Gene Id: #1977	
Store at +4C			Orders: 877-616-CELL (2355) orders@cellsignal.com Support: 877-678-TECH (8324) Web: info@cellsignal.com cellsignal.com
3 Trask Lane Danvers Massachusetts 01923 USA			

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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
ELISA Sample Diluent	11083	25 ml	Blue	+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

The PathScan® Total eIF4E Sandwich ELISA Kit is a solid phase sandwich enzyme-linked immunosorbent assay (ELISA) that detects endogenous levels of eIF4E. An eIF4E mouse antibody has been coated onto the microwells. After incubation with cell lysates, eIF4E (phospho and nonphospho) is captured by the coated antibody. Following extensive washing, a eIF4E rabbit detection antibody is added to the captured phospho and nonphospho eIF4E protein. Anti-rabbit IgG, HRP-linked Antibody #7074 is then used to recognize the bound detection antibody. HRP substrate TMB is added to develop color. The magnitude of the absorbance for this developed color is proportional to the quantity of total eIF4E.

Specificity/Sensitivity

CST's PathScan® Total eIF4E Sandwich ELISA Kit detects endogenous levels of total eIF4E protein. As shown in Figure 1, a significant induction of eIF4E phosphorylation at Ser209 can be detected in HeLa cells following treatment with 20% FBS using the Phospho-eIF4E (Ser209) Sandwich ELISA Kit #7938. The levels of total eIF4E remain unchanged as shown by western analysis and by PathScan® Total eIF4E Sandwich ELISA Kit #7940 (Figure 1). This kit detects proteins from the indicated species, as determined through in-house testing, but may also detect homologous proteins from other species.

Background

Eukaryotic initiation factor 4E (eIF4E) binds to the mRNA cap structure to mediate the initiation of translation (1,2). eIF4E interacts with eIF4G, a scaffold protein that promotes assembly of eIF4E and eIF4A into the eIF4F complex (2). eIF4B is thought to assist the eIF4F complex in translation initiation. Upon activation by mitogenic and/or stress stimuli mediated by Erk and p38 MAPK, Mnk1 phosphorylates eIF4E at Ser209 *in vivo* (3,4). Two Erk and p38 MAPK phosphorylation sites in mouse Mnk1 (Thr197 and Thr202) are essential for Mnk1 kinase activity (3). The carboxy-terminal region of eIF4G also contains serum-stimulated phosphorylation sites, including Ser1108, Ser1148, and Ser1192 (5). Phosphorylation at these sites is blocked by the PI3 kinase inhibitor LY294002 and by the FRAP/mTOR inhibitor rapamycin.

Background References

1. Sonenberg, N. et al. (1978) *Proc. Natl. Acad. Sci. USA* 75, 4843-47.
2. Gingras, A.C. et al. (1999) *Annu. Rev. Biochem.* 68, 913-63.
3. Waskiewicz, A. et al. (1999) *Mol. Cell. Biol.* 19, 1871-80.
4. Pyronnet, S. et al. (1999) *EMBO J.* 18, 270-9.
5. Raught, B. et al. (2000) *EMBO J.* 19, 434-44.

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Revision 1

#7940

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ELISA Kit**



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