Revision 1

Store at -20C

#9965

HSP/Chaperone Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
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Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
HSP60 (D6F1) XP® Rabbit mAb	12165	20 µl	60 kDa	Rabbit IgG
HSP70 Antibody	4872	20 µl	72, 73 kDa	Rabbit
HSF1 Antibody	4356	20 µl	82 kDa	Rabbit
BiP (C50B12) Rabbit mAb	3177	20 µl	78 kDa	Rabbit IgG
HSP40 (C64B4) Rabbit mAb	4871	20 µl	40 kDa	Rabbit
HSP90 (C45G5) Rabbit mAb	4877	20 µl	90 kDa	Rabbit IgG
Calnexin (C5C9) Rabbit mAb	2679	20 µl	90 kDa	Rabbit IgG
PDI (C81H6) Rabbit mAb	3501	20 µl	57 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The HSP/Chaperone Sampler Kit provides an economical means to investigate protein folding within the cell. The kit contains enough primary and secondary antibodies to perform two Western blot experiments with each antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

HSP70 and HSP90 are molecular chaperones expressed constitutively under normal conditions to maintain protein homeostasis and are induced upon environmental stress (1). HSP70 and HSP90 interact with unfolded proteins to prevent irreversible aggregation and catalyze the refolding of their substrates in an ATP-dependent manner (1). HSP40 family proteins bind unfolded proteins and prevent their aggregation, and deliver unfolded protiens to HSP70 (2). HSP60 has primarily been known as a mitochondrial protein that is important for folding key proteins after import into the mitochondria (3). HSP60 is also present in the cytosol of many cells and is induced by stress, inflammatory and immune responses, autoantibodies correlated with Alzheimer's, coronary artery diseases, MS, and diabetes (4-7). Secretory and transmembrane proteins are synthesized on polysomes and translocate into the endoplasmic reticulum (ER) where they are often modified by the formation of disulfide bonds, amino-linked glycosylation and folding. The ER contains a pool of molecular chaperones including calnexin, BiP and protein disulfide isomerase (PDI). Calenxin is a calcium-binding protein embedded in the ER membrane that retains newly synthesized glycoproteins inside the ER to ensure proper folding and quality control (8,9). When protein folding is disturbed inside the ER, Bip synthesis is increased. Subsequently, BiP binds to misfolded proteins to prevent them from forming aggregates and assists them to refold properly (10). PDI catalyzes the formation and isomerization of disulfide bonds required to reach a proteins native state (11). Heat shock gene transcription is regulated by a familly of heat shock factors (HSFs), transcriptional activators that bind to heat shock response elements (HSEs) located upstream of all heat shock genes (12). During attenuation from the heat shock response, HSF1 is repressed by direct binding of HSP70, HSP40/Hdj-1 and HSF binding protein 1 (HSBP1) (13).

Background References

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Limited Uses