Revision 1

Store at -20C

#4889

Protein Folding and Stability Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Skp1 Antibody	2156	20 µl	19 kDa	Rabbit
Skp2 (D3G5) XP® Rabbit mAb	2652	20 µl	48 kDa	Rabbit IgG
ISG15 (22D2) Rabbit mAb	2758	20 µl	15 kDa	Rabbit IgG
NEDD8 (19E3) Rabbit mAb	2754	20 µl	9 kDa	Rabbit IgG
Ubiquitin (P4D1) Mouse mAb	3936	20 µl		Mouse IgG1
UBC3 Antibody	4997	20 µl	32 kDa	Rabbit
SUMO-1 Antibody	4930	20 µl		Rabbit
SUMO-2/3 (18H8) Rabbit mAb	4971	20 µl		Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat
Anti-mouse IgG, HRP-linked Antibody	7076	100 µl		Horse

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

Description

This sampler kit provides an economical means to investigate protein folding and stability. The kit contains primary and secondary antibodies to perform two Western blots 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

The small regulatory protein ubiquitin is often covalently linked to many cellular proteins, labeling these targeted proteins for proteasome-mediated degradation. Ubiquitin is first activated by forming a thiolester complex with the E1 activation component. Activated ubiquitin is subsequently transferred to the ubiquitin-carrier protein E2, and then to an E3 ubiquitin ligase for final delivery to the ε-NH2 of the target protein lysine residue (1). The ubiquitin-proteasome pathway has been implicated in a wide range of both normal biological processes and diseases (2,3).

The ubiquitin-like protein family contains three small ubiquitin-related modifier proteins (SUMO-1, -2 and -3), neural precursor cell-expressed developmentally down-regulated protein 8 (NEDD8) and interferon-stimulated 15 kDa protein (ISG15) (4-6). Their covalent attachment to target proteins is a reversible, multi-step process that is analogous to protein ubiquitination. Mature molecules are linked to the activating enzyme E1, conjugated to E2 and ligated to the target proteins by E3 (7-10). Ubiquitin is the predominant regulator for the degradation of a wide range of target proteins (8) while SUMO, NEDD8 and ISG15 modify a limited set of substrates to regulate various other biological processes (4, 11-18).

During ubiquitination, the combinatorial interaction of different E2 and E3 proteins produces variable substrate specificity (4). UBC3 and UBC3B are E2 ubiquitin-carrier proteins (19, 20). The SCF (Skp1/CUL1/F-box) E3 ubiquitin ligase protein complex is composed of three protein components, including the S phase kinase associated protein 1 (Skp1), Cullin homolog 1 (CUL1) and the Skp2 F-box protein (21-23).

Background References

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