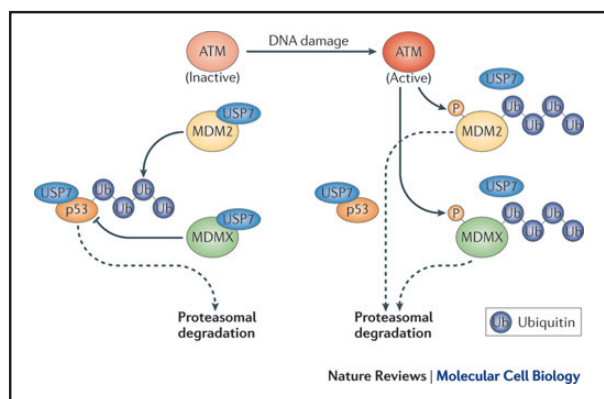


## PRODUCT HIGHLIGHT

2013

p53 Related Research • Heat Shock Proteins and Ubiquitin • Newest Offerings

### p53 and Ubiquitin



Tumor suppressor protein p53 plays an important role in the regulation of cell cycle and is frequently mutated or inactivated in many cancers. Numerous post-translational modifications modulate p53 activity including ubiquitination, phosphorylation, acetylation and methylation. Stability of p53 is regulated via the Ubiquitin Proteasome System (UPS). MDM2 is an oncogenic Ubiquitin E3 ligase that ubiquitinates p53, inhibits its transcriptional activity and promotes its degradation. The enzyme USP7 (HAUSP) stabilizes p53 by deubiquitination and induces p53-dependent cell growth repression and apoptosis. Additional factors such as p14ARF and MDM4 also modulate p53 function via Ubiquitin Proteasome System (UPS).

#### Enzymes

E-305	UBE1- Ubiquitin E1 Activator	25 µg
E2-627	UbcH5c/UBE2D3 - Ubiquitin E2 Carrier	50 µg
E3-230	His <sub>6</sub> -E6AP/UBE3A - Ubiquitin E3 Ligase	50 µg
E-519	His <sub>6</sub> -USP7 - Deubiquitinase	25 µg
AP-120	HPV16 E6 Protein - Ubiquitin Ligase Subunit	25 µg

#### Substrates

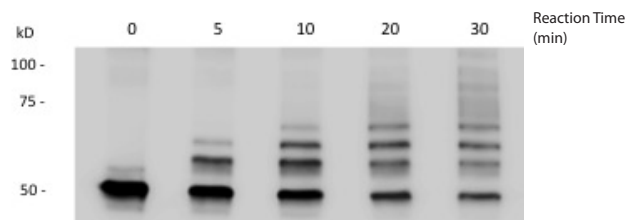
SP-450	His <sub>6</sub> -p53	20 µg
SP-452	His <sub>6</sub> -FLAG-p53	20 µg
SP-400	His <sub>6</sub> -S5a/Angiocidin	100 µg
SP-405	S5a/Angiocidin Biotin	250 µg

#### Detection Antibodies

MAB2959	α-SUMO	100 µg
MAB1355	α-p53	100 µg
AF5540	α-S5a/Angiocidin	100 µg
HAF017	HRP α-goat 2°	1 mL

#### Small Molecule Inhibitor

3503	HLI 373 (MDM2 Inhibitor)	10 mg
4285	HBX 41108 (USP7 Inhibitor)	10 mg



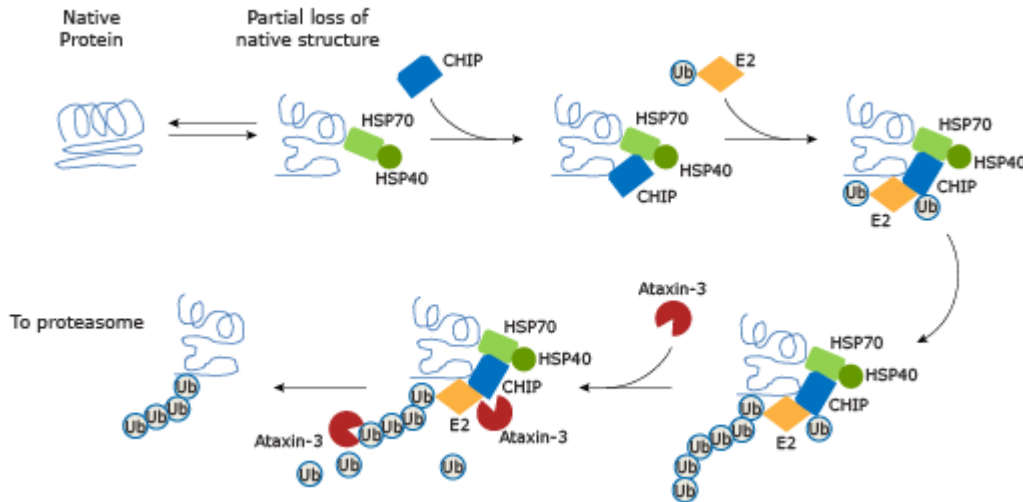
Ubiquitination of p53 by the E6AP/E6 E3 ligase using kit K-240

#### E3 Ubiquitination Kits

K-200B	MDM2/p53 Ubiquitination Kit	1 Kit
K-210	MDM2/S5a Ubiquitination Kit	1 Kit
K-230	E6AP/S5a Ubiquitination Kit	1 Kit
K-240	E6AP/p53 Ubiquitination Kit	1 Kit

## Heat Shock Proteins and Ubiquitin

Misfolded proteins can form aggregates that are toxic to cells and have been linked to several neurodegenerative diseases. Heat shock proteins, including HSP70 and HSP40, attempt to refold proteins back into their native conformation. If this process fails, then the unfolded proteins can be ubiquitinated by the CHIP E3 ligase and degraded via the proteasome to avoid the formation of toxic protein aggregates. Ataxin-3, a deubiquitinating enzyme, may also be important for the regulation of this pathway via modifying the ubiquitination status of CHIP substrates and CHIP itself.



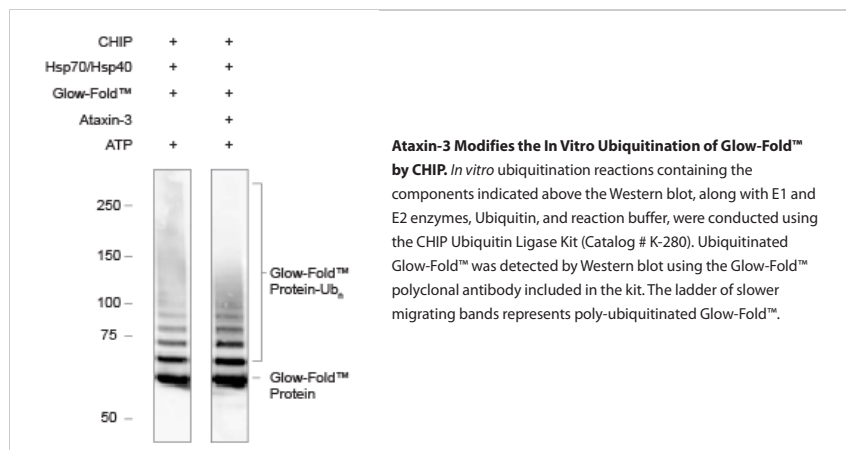
## E3 Ubiquitination Ligase Kits

K-280

CHIP Ubiquitin Ligase Kit - Glow-Fold™ Substrate

1 Kit

The CHIP Ubiquitin Ligase Kit (Catalog # K-280) includes everything required to carry out an *in vitro* ubiquitination reaction with a user-supplied substrate protein.

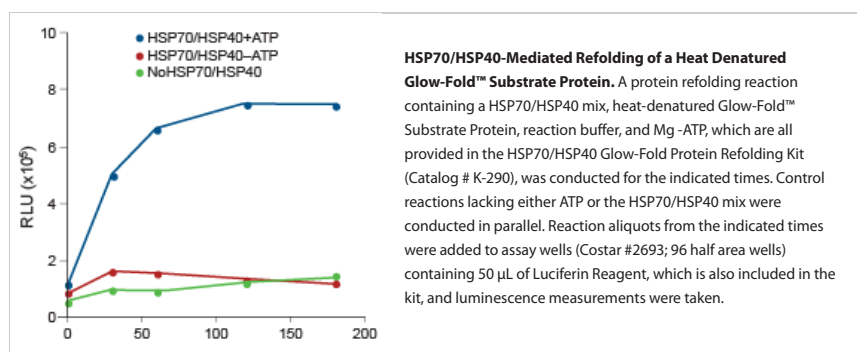


## Heat Shock Protein Kits

K-290	HSP70/HSP40 Glow-Fold™ Refolding Kit	1 Kit
K-300	HSP60/HSP10 Glow-Fold™ Refolding Kit	1 Kit
K-310	HSP90/p23 Glow-Fold™ Refolding Kit	1 Kit

### Boston Biochem Now Offers Glow-Fold™ Protein Refolding Kits

Our new HSP70/HSP40 Glow-Fold™ Protein Refolding Kit (Catalog # K-290), HSP60/HSP10 Glow-Fold™ Protein Refolding Kit (Catalog # K-300), and HSP90/p23 Glow-Fold™ Protein Refolding Kit (Catalog # K-310) include everything required to refold a user-supplied substrate. The Glow-Fold™ control substrate allows for the measurement of refolding activity by luminescence.



## Related Heat Shock Protein Products

### Accessory Proteins

AP-100	Recombinant Human HSP70/HSPA1A	50 $\mu$ g, 100 $\mu$ g
AP-110	Recombinant Human DNAJB1/HSP40	50 $\mu$ g
AP-140	Recombinant Human HSP60/HSPD1	25 $\mu$ g
AP-150	Recombinant Human HSP10/EPF	50 $\mu$ g
AP-160	Recombinant Human HSP90 $\alpha$ /HSP90AA1	50 $\mu$ g
AP-170	Recombinant Human p23/PTGES3	50 $\mu$ g

### Buffers

B-72	HSP70 Reaction Buffer	5 mL
B-73	HSP60 Reaction Buffer	5 mL
B-74	HSP90 Reaction Buffer	5 mL

### E3 Ligase Enzymes

E3-220	Recombinant Human CHIP/Stub1	50 $\mu$ g
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### Deubiquitinating Enzymes

E-341	Recombinant Human His <sub>6</sub> -Ataxin-3	50 $\mu$ g
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# Newest Offerings

Autophagy Proteins and Enzymes		
E-318	His6-ATG7 (Apg7), isoform 1	50 µg
UL-400	pro-GABARAPL1	500 µg
E2 Conjugating		
E2-700	His <sub>6</sub> -UBE2G1/E2-17K	50 µg
E2-705	His <sub>6</sub> -UBE2D4 (UbcH5D)	50 µg
E2-710	His <sub>6</sub> -UBE2J2	50 µg
E2-715	His <sub>6</sub> -UBE2R2/CDC34B	50 µg
E2-720	His <sub>6</sub> -UBE2Q1, isoform 2	50 µg
E2-725	His <sub>6</sub> -UBE2W (Ubc16), isoform 2	50 µg
E2-730	His <sub>6</sub> -UBE2V2/MMS2	50 µg
E2-740	His <sub>6</sub> -UBE2W (Ubc16), isoform 1	50 µg
E2-745	His <sub>6</sub> -UBE2Q2, isoform 1	50 µg
E2-750	His <sub>6</sub> -UBE2J1	50 µg
E2-755	His <sub>6</sub> -UBE2Q1, isoform 1	50 µg
Deubiquitinating Enzymes (DUBs)		
E-546	USP25-His <sub>6</sub>	50 µg
E-548B	AMSH	50 µg
E-549	GST AMSH/STAMBIP	50 µg
E-550	STAM-1	50 µg
E-552	USP9x-His <sub>6</sub>	25 µg
E-554	His <sub>6</sub> -Otubain-2, isoform 1	50 µg
E-556	His <sub>6</sub> -CYLD, isoform 1	50 µg
E-558	FAM105B/OTULIN	50 µg
E-560	ZRANB1/Trabid	50 µg
E-562	His <sub>6</sub> -OTUD7B/Cezanne	50 µg
E-564	His <sub>6</sub> -USP1	50 µg
E-566	His <sub>6</sub> -UAF1	50 µg
E-568	His <sub>6</sub> -USP1/UAF1 complex	50 µg
E-570	His <sub>6</sub> -USP28	100 µg
Inhibitors		
I-502	Nedd8 - E1 Enzyme (NAE Inhibitor)	1 mg
I-200	PS-341	5 mg
Ubiquitin Derivatives		
U-214	Ubiquitin-Propargylamide	50 µg
UM-L73P	Ubiquitin Mutant L73P	1 mg
SUMO Chains		
ULN-220	Poly-SUMO2 Hydrolysis-Resistant Chains (3-8)	50 µg
ULN-320	Poly-SUMO3 Hydrolysis-Resistant Chains (3-8)	50 µg

E3 Ligase Activity Kits		
K-102	MuRF1/TRIM63 Ubiquitin Ligase Kit - S5a Substrate	1 Kit
K-200B	MDM2/HDM2 Ubiquitin Ligase Kit - p53 Substrate	1 Kit
K-210	MDM2 Ubiquitin Ligase Kit - S5a Substrate	1 Kit
K-220	RNF4 Ubiquitin Ligase Kit - di-SUMO3 Substrate	1 Kit
K-230	E6AP Ubiquitin Ligase Kit - S5a Substrate	1 Kit
K-240	E6AP/E6 Ubiquitin Ligase Kit - p53 Substrate	1 Kit
K-250	XIAP Ubiquitin Ligase Kit - Diablo Substrate	1 Kit
K-260	clAP - 1/HIAP2 Ubiquitin Ligase Kit	1 Kit
K-280	CHIP Ubiquitin Ligase Kit - Glow-Fold™ Substrate	1 Kit
K-290	HSP70/HSP40 Glow-Fold™ Protein Refolding Kit	1 Kit
K-300	HSP60/HSP10 Glow-Fold™ Protein Refolding Kit	1 Kit
K-310	HSP90/p23 Glow-Fold™ Protein Refolding Kit	1 Kit
E3 Ligase Enzymes		
E3-202	GST-Mdm2/Hdm2	50 µg
E3-204	Mdm2/Hdm2	50 µg
E3-210	RNF4	50 µg
E3-220	CHIP/Stub1	50 µg
E3-230	E6AP/UBE3A	50 µg
E3-240	His <sub>6</sub> -MBP-HOIP Catalytic Domain	100 µg
E3-250	NleL Catalytic Domain	100 µg
E3-260	ITCH/AIP4, isoform 2	100 µg
E3 Ligase Accessory Proteins		
AP-100	HSP70/HSPA1A	50 µg
AP-110	DNAJB1/HSP40	50 µg
AP-120	E6, Human Papillomavirus type 16	25 µg
AP-140	HSP60/HSPD1	50 µg
AP-150	HSP10/HSPE1	50 µg
AP-160	HSP90α/HSP90AA1	50 µg
AP-170	P23/Prostaglandin E Synthase 3	50 µg
Substrate Proteins		
SP-452	His <sub>6</sub> -FLAG-p53	20 µg
SP-454	p53	20 µg
SP-480	His <sub>6</sub> -α-Synuclein	500 µg
URM1		
UL-950	URM1, isoform 1	250 µg
FUB1		
UL-930	FUB1/(MNSFβ)	250 µg

[www.bostonbiochem.com](http://www.bostonbiochem.com)

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