

**USP Antibody Sampler Kit**

**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

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
HAUSP (D17C6) XP <sup>®</sup> Rabbit mAb	4833	20 µl	135, 140 kDa	Rabbit IgG
USP1 (D37B4) Rabbit mAb	8033	20 µl	110 kDa	Rabbit IgG
USP2 Antibody	8036	20 µl	68 kDa	Rabbit
USP8 Antibody	8728	20 µl	130 kDa	Rabbit
USP9X Antibody	5751	20 µl	270 kDa	Rabbit
USP10 (D7A5) Rabbit mAb	8501	20 µl	110 kDa	Rabbit IgG
USP18 (D4E7) Rabbit mAb	4813	20 µl	34, 39 kDa	Rabbit IgG
USP28 Antibody	4217	20 µl	135 kDa	Rabbit
USP14 (D8Q6S) Rabbit mAb	11931	20 µl	60 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit [cellsignal.com](http://cellsignal.com) for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

**Description**

The USP Antibody Sampler Kit provides an economical means of detecting members of the ubiquitin-specific protease (USP) family. The kit includes enough primary antibody to perform two western blot experiments per primary 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**

Ubiquitinating enzymes (UBEs) catalyze protein ubiquitination, a reversible process countered by deubiquitinating enzyme (DUB) action (1,2). The ubiquitin-specific protease (USP) subfamily is one of five distinct groups of DUB enzymes. Ubiquitin-specific-processing protease 1 (USP1) is regulated in a cell cycle dependent manner by both transcriptional and ubiquitin-proteasomal mechanisms (3). Nuclear USP1 localizes to chromatin where it deubiquitinates monoubiquitinated FANCD2 and plays an important role in DNA damage repair and Chk1 protein stability (3,4). Ubiquitin-specific-processing protease 2 (USP2) contains C19 peptidase activity and is involved in ubiquitin recycling and disassembly of polymeric ubiquitin and ubiquitin-like protein complexes (5). USP2 is a putative oncoprotein that is highly over expressed in prostate cancer and drives tumor growth by binding and stabilizing fatty acid synthase through deubiquitination (6,7).

Herpesvirus-associated ubiquitin-specific protease (HAUSP, USP7) binds and deubiquitinates transcription factor p53 and regulator protein Mdm2, stabilizing both proteins (8,9). HAUSP modifies other ubiquitinated proteins, including FoxO family forkhead transcription factors and the mitotic stress checkpoint protein CHFR (10,11). Ubiquitin-specific protease 8 (USP8, UBP<sub>y</sub>) is a cysteine protease and growth-regulated enzyme that is essential for cell proliferation and survival (12,13). The catalytic domain of USP9X possesses cysteine peptidase activity that cleaves ubiquitin and polyubiquitin conjugates. USP9X may help stabilize adherens and tight junction molecules during epithelial cell polarization (14,15). USP10 is regulated at the posttranslational level through protein-protein interactions and phosphorylation. Interaction of USP10 with the Ras-GAP SH3 domain binding protein (G3BP) inhibits the ability of USP10 to catalyze ubiquitin chain disassembly (16). ATM-mediated phosphorylation of USP10 at Thr42 and Ser337 promotes USP10 stabilization and relocation from the cytoplasm to the nucleus, where it functions in p53 deubiquitination, stabilization, and activation in response to genotoxic stress (17).

USP14 is recruited to the proteasome through association with the PSMD2 (S2/hRPN1) subunit of the 19S regulatory particle, where it may antagonize substrate degradation (18,19). USP14 trims ubiquitin residues from distal polyubiquitin chain ends, decreasing chain affinity for proteasome ubiquitin receptors and allowing for enhanced substrate stability (20,21). USP18 (UBP43) catalyzes the removal of the interferon-regulated, ubiquitin-like protein ISG15 from conjugated proteins (22). Removal of ISG15 from target proteins maintains a critical balance of cellular ISG15-conjugated proteins, which is

important for normal development and brain function (23,24). USP28 can bind, deubiquitinate and stabilize several DNA-damage pathway proteins, including p53BP1 and Chk2 (25). USP28 plays an important role in Myc-related signaling as it catalyzes Myc deubiquitination and promotes Myc stabilization, which contributes to tumor-cell growth (26).

## Background References

1. Nijman, S.M. et al. (2005) *Cell* 123, 773-86.
2. Nalepa, G. et al. (2006) *Nat Rev Drug Discov* 5, 596-613.
3. Nijman, S.M. et al. (2005) *Mol Cell* 17, 331-9.
4. Guerville, J.H. et al. (2011) *Hum Mol Genet* 20, 2171-81.
5. Wilkinson, K.D. (1997) *FASEB J* 11, 1245-56.
6. Graner, E. et al. (2004) *Cancer Cell* 5, 253-61.
7. Priolo, C. et al. (2006) *Cancer Res* 66, 8625-32.
8. Li, M. et al. (2002) *Nature* 416, 648-53.
9. Brooks, C.L. et al. (2007) *Oncogene* 26, 7262-6.
10. van der Horst, A. et al. (2006) *Nat Cell Biol* 8, 1064-73.
11. Oh, Y.M. et al. (2007) *Biochem Biophys Res Commun* 357, 615-9.
12. Naviglio, S. et al. (1998) *EMBO J* 17, 3241-50.
13. Niendorf, S. et al. (2007) *Mol Cell Biol* 27, 5029-39.
14. Murray, R.Z. et al. (2004) *Mol Biol Cell* 15, 1591-9.
15. Théard, D. et al. (2010) *EMBO J* 29, 1499-509.
16. Soncini, C. et al. (2001) *Oncogene* 20, 3869-79.
17. Yuan, J. et al. (2010) *Cell* 140, 384-96.
18. Lee, B.H. et al. (2010) *Nature* 467, 179-84.
19. Koulich, E. et al. (2008) *Mol Biol Cell* 19, 1072-82.
20. Hanna, J. et al. (2006) *Cell* 127, 99-111.
21. Thrower, J.S. et al. (2000) *EMBO J* 19, 94-102.
22. Malakhov, M.P. et al. (2002) *J Biol Chem* 277, 9976-81.
23. Rempel, L.A. et al. (2007) *Reprod Biol Endocrinol* 5, 13.
24. Ritchie, K.J. et al. (2002) *Genes Dev* 16, 2207-12.
25. Zhang, D. et al. (2006) *Cell* 126, 529-42.
26. Popov, N. et al. (2007) *Nat Cell Biol* 9, 765-74.

---

## Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.