Revision 1

#61266 Store at -20C

UBE1L/UBA7 (D6U4S) Rabbit mAb

Cell Signaling TECHNOLOGY®

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.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H Mk	Endogenous	110	Rabbit IgG	#P41226	7318

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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.

Specificity / Sensitivity

UBE1L/UBA7 (D6U4S) Rabbit mAb recognizes endogenous levels of total UBE1L/UBA7 protein. This antibody does not cross-react with either UBE1/UBA1 or UBE1L2/UBA6 proteins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human UBE1L/UBA7 protein.

Background

Interferon-stimulated 15 kDa protein (ISG15), also known as ubiquitin cross-reactive protein (UCRP), is a member of the ubiquitin-like protein family and functions in various biological pathways from pregnancy to innate immune responses (1). Expression of ISG15 is stimulated by cellular exposure to type 1 interferons α and β, in addition to infection with viruses such as influenza B (2,3). After exposure to type I interferons, both lymphocytes and monocytes, in addition to some fibroblasts and epithelial cells, release ISG15 into culture medium (1,4). ISG15 has been shown to function as a cytokine, stimulating interferon γ secretion by monocytes and macrophages, proliferation of natural killer cells, and chemotactic responses in neutrophils (4,5). ISG15 has also been shown to function intracellularly, being covalently conjugated to other proteins by E1 (Ube1L), E2 (UbcH8) and E3 ligases via a multi-step process analogous to ubiquitination (6,7). ISG15 is removed from proteins by the ubiquitin processing protease Ubp43 (8). ISG15-protein conjugation (ISGylation) is induced by type 1 interferons, and target proteins include the serine protease inhibitor Serpin 2A, PLCγ1, ERK1/2, Jak1 and Stat1 (9,10). Unlike ubiquitination, ISGylation does not target proteins for degradation, rather ISGylation increases Jak1 and Stat1 activity, enhancing the cellular response to interferons (11).
Ubiquitin-activating enzyme E1-like protein/Ubiquitin-activating enzyme 7 (UBE1L/UBA7) is the activating enzyme for ISG15. Research studies have suggested that loss of UBE1L/UBA7 expression contributes to the development of lung cancer due to compromised inhibition of cyclin D1 expression (12-15). UBE1L/UBA7 has also been implicated in the pathogenesis of acute promyelocytic leukemia through a mechanism in which UBE1L/UBA7 drives ISG15ylation of the oncogenic PML-RARα fusion protein to promote its degradation (16,17).

Background References

1. Ritchie, K.J. and Zhang, D.E. (2004) *Semin. Cell Dev. Biol.* 15, 237-246.
2. Korant, B.D. et al. (1984) *J. Biol. Chem.* 259, 14835-14839.
3. Haas, A.L. et al. (1987) *J. Biol. Chem.* 262, 11315-11323.
4. Knight, E. and Cordova, B. (1991) *J. Immunol.* 146, 2280-2284.
5. D'Cunha, J. et al. (1996) *Proc. Natl. Acad. Sci. USA* 93, 211-215.
6. Loeb, K.R. and Haas, A.L. (1992) *J. Biol. Chem.* 267, 7806-7813.
7. Zhao, C. et al. (2005) *Proc. Natl. Acad. Sci. USA* 102, 10200-10205.
8. Malakhov, M.P. et al. (2002) *J. Biol. Chem.* 277, 9976-9981.
9. Malakhov, M.P. et al. (2003) *J. Biol. Chem.* 278, 16608-16613.
10. Hamerman, J.A. et al. (2002) *J. Immunol.* 168, 2415-2423.
11. Malakhova, O.A. et al. (2003) *Genes Dev.* 17, 455-460.
12. McLaughlin, P.M. et al. (2000) *Int J Cancer* 85, 871-6.
13. Kok, K. et al. (1995) *Gene Expr* 4, 163-75.
14. Pitha-Rowe, I. et al. (2004) *Cancer Res* 64, 8109-15.
15. Feng, Q. et al. (2008) *Mol Cancer Ther* 7, 3780-8.
16. Shah, S.J. et al. (2008) *Mol Cancer Ther* 7, 905-14.
17. Kitareewan, S. et al. (2002) *Proc Natl Acad Sci U S A* 99, 3806-11.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

Trademarks and Patents

Limited Uses