

#7526 Store at -20C

UBE3A (D10D3) 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 M R Mk	Endogenous	98	Rabbit IgG	#Q05086	7337

Product Usage Information

Application

Western Blotting

Dilution

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

UBE3A (D10D3) Rabbit mAb recognizes endogenous levels of total UBE3A protein. Based upon sequence alignment, this antibody is predicted to cross-react with all UBE3A splice variants.

Species predicted to react based on 100% sequence homology

Bovine, Dog, Horse, Rabbit

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human UBE3A protein.

Background

UBE3A, also commonly referred to as E6AP (E6 Associated Protein), is an E3 ubiquitin protein ligase and founding member of the HECT (Homologous to the E6 Carboxyl Terminus) family of E3 ligases (1). UBE3A has been shown to be hijacked by the oncogenic E6 protein of high-risk human papillomaviruses (HPV16 and HPV18) that causes the ubiquitination activity of UBE3A to be inappropriately directed toward several specific cellular proteins, the most notable of which, with respect to carcinogenesis, is p53 (2). Although the DNA-repair enzyme, HHR23A (human homolog A of Rad23), was the first described E6-independent substrate of UBE3A, very few E6-independent targets of UBE3A have been identified. This continues to be an active area of research, particularly because mutations or disruption in expression of UBE3A in the brain are the cause of Angelman syndrome (AS), a severe form of mental retardation (3-6). Although UBE3A is expressed in most human tissues from both parental alleles, it is expressed from the maternal allele in subregions of the brain, with the paternal allele being epigenetically silenced. AS is caused by disruptions in expression of the maternal *UBE3A* allele, generally by large chromosomal deletion, but also by point mutations within the *UBE3A* coding sequence. This strongly suggests that lack of ubiquitination of one or more UBE3A substrates in neuronal tissue is responsible for the AS phenotype (7). Indeed, a recent study identified several new neuronal substrates of UBE3A including Arc and Ephexin-5 (8). The immediate early gene Arc (activity-regulated cytoskeleton-associated protein) is rapidly upregulated after robust neuronal stimulation and promotes internalization of AMPA-type glutamate receptors (AMPA), resulting in reduction in synaptic strength. UBE3A ubiquitinates Arc and promotes its degradation by the 26S proteasome, thus preventing AMPAR internalization (8). Disruption in neuronal UBE3A function leads to an increase in Arc expression and a decrease in AMPARs at excitatory synapses, which may contribute to the neurological symptoms of AS.

Background References

- Huibregtse, J.M. et al. (1995) *Proc Natl Acad Sci U S A* 92, 5249.
- Huibregtse, J.M. et al. (1993) *Mol Cell Biol* 13, 775-84.
- Fang, P. et al. (1999) *Hum Mol Genet* 8, 129-35.
- Jiang, Y. et al. (1999) *Am J Hum Genet* 65, 1-6.
- Jiang, Y.H. et al. (1998) *Neuron* 21, 799-811.
- Kumar, S. et al. (1999) *J Biol Chem* 274, 18785-92.
- Mabb, A.M. et al. (2011) *Trends Neurosci* 34, 293-303.
- Greer, P.L. et al. (2010) *Cell* 140, 704-16.

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

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.
All other trademarks are the property of their respective owners. Visit 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.