

#66310 Store at -20°C

USP15 (D1K6S) Rabbit mAb**Cell Signaling**
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R Mk	Endogenous	120	Rabbit IgG	#Q9Y4E8	9958

Product Usage Information**Application****Dilution**

Western Blotting

1:1000

Immunoprecipitation

1:200

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

USP15 (D1K6S) Rabbit mAb recognizes endogenous levels of total USP15 protein. This antibody does not cross-react with either USP4 or USP11 proteins.

Species predicted to react based on 100% sequence homology:

Dog, Pig

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human USP15 protein.

Background

Protein ubiquitination and deubiquitination are reversible processes catalyzed by ubiquitinating enzymes (UBEs) and deubiquitinating enzymes (DUBs), respectively (1,2). DUBs are categorized into five subfamilies based on catalytic domain structure: USP, UCH, OTU, MJD, and JAMM. Ubiquitin carboxyl-terminal hydrolase 15 (USP15) is a USP subfamily deubiquitinating enzyme with similar domain structure to the paralogous DUBs, USP4, and USP11. The *USP15* gene is amplified in glioblastoma and other solid tumors and its high expression correlates with a poor prognosis (3,4). Research studies demonstrate that USP15 is a positive regulator of oncogenic TGF-β signaling and that USP15 deubiquitinates monoubiquitinated R-SMADs to enhance target gene promoter binding (5). USP15 also promotes oncogenic TGF-β signaling by opposing SMURF2-mediated ubiquitination of the type I TGF-β receptor, which facilitates receptor stabilization (3,4). USP15 contributes to oncogenesis by negatively regulating T cell-mediated antitumor responses through the deubiquitination and stabilization of the E3 ubiquitin ligase MDM2. This observation supports USP15 as a potential target for cancer therapeutics (6).

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. Zhang, L. et al. (2013) *Mol Cell* 51, 559-72.
4. Eichhorn, P.J. et al. (2012) *Nat Med* 18, 429-35.
5. Inui, M. et al. (2011) *Nat Cell Biol* 13, 1368-75.
6. Zou, Q. et al. (2014) *Nat Immunol* 15, 562-70.

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 **IP:** Immunoprecipitation**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

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