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USP4 Antibody

Store at -20C
#2651

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	104, 109	Rabbit	#Q13107	7375

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 and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

USP4 Antibody recognizes endogenous levels of total USP4 protein. Based upon sequence alignment, this antibody is predicted to cross-react with the UnpEL and UnpES isoforms of USP4. This antibody does not cross-react with USP15.

Species predicted to react based on 100% sequence homology

Dog

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding His666 of human USP4 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Ubiquitinating enzymes (UBEs) catalyze protein ubiquitination, a reversible process countered by deubiquitinating enzyme (DUB) action (1,2). Five DUB subfamilies are recognized, including the USP, UCH, OTU, MJD, and JAMM enzymes. USP4 was originally identified during a survey of murine genes near the Mpv20 retroviral insertion site and initially referred to as Ubiquitous Nuclear Protein (UNP). Analysis of the mouse cDNA originally identified Usp4/Unp as a proto-oncogene related to the human *tre-2/tre-17/USP6* proto-oncogene (3,4). Usp4/Unp was subsequently observed to contain the conserved Cys and His boxes of the UBP family (5,6) as well as DUB activity (7,8). In a study of primary lung tumor tissue, it was observed that the human homolog of Usp4, USP4/UNPH, had elevated gene expression levels in small cell tumors and adenocarcinomas of the lung, suggesting a causative role for USP4 in neoplasia (6). Another recent study demonstrated overexpression of USP4 in several types of human cancer and that USP4 positively contributes to cell transformation by negatively regulating p53 levels (9). Both murine and human USP4 have been shown to interact with the Rb family of tumor suppressor proteins, providing additional mechanistic evidence of a role for USP4 in cellular transformation (10, 11).

Background References

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3. Gupta, K. et al. (1994) *Oncogene* 9, 1729-31.
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5. Papa, F.R. and Hochstrasser, M. (1993) *Nature* 366, 313-9.
6. Gray, D.A. et al. (1995) *Oncogene* 10, 2179-83.
7. Gilchrist, C.A. et al. (1997) *J Biol Chem* 272, 32280-5.
8. Gilchrist, C.A. and Baker, R.T. (2000) *Biochim Biophys Acta* 1481, 297-309.
9. Zhang, X. et al. (2011) *EMBO J* 30, 2177-89.
10. Blanchette, P. et al. (2001) *Oncogene* 20, 5533-7.
11. DeSalle, L.M. et al. (2001) *Oncogene* 20, 5538-42.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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