Revision 1

#14667 Store at -20C

TPP1 (D4E2R) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H Mk	Endogenous	58	Rabbit IgG	#Q96AP0	65057

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

TPP1 (D4E2R) Rabbit mAb recognizes endogenous levels of total TPP1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Glu169 of human TPP1 protein.

Background

TPP1 is encoded by the the *ACD* gene, and is one of six core proteins of the shelterin complex (TRF1, TRF2, Rap1, TIN2, POT1 and TPP1) that regulates telomere length and integrity. This nuclear protein complex localizes to telomeres, and protects the natural ends of chromosomes from inappropriate processing by DNA repair pathways (1). TPP1 was identified in screens for proteins that bind TIN2, which is considered to be the central component of the shelterin complex (1). TPP1 contains two protein-protein interaction domains that facilitate shelterin complex function: a carboxy-terminal TIN2-binding domain and a more central POT1-binding domain. Heterodimerization of TPP1 with POT1 promotes binding to single-stranded telomeric DNA, which facilitates telomere elongation and protection by the shelterin complex. The TPP1 protein also contains a TEL patch, a collection of surface amino acids that recruits telomerase and modulates its processivity (2). In addition to playing an important role in normal development (3), TPP1 is implicated in the etiology of selected diseases. For example, mutations in *ACD* that alter the composition of the TEL patch have been linked to Hoyeraal-Hreidarsson syndrome, a clinically severe form of dyskeratosis congenita characterized by hematopoietic stem cell dysfunction, bone marrow failure, and a predisposition to cancer (4,5).

Background References

1. de Lange, T. (2005) *Genes Dev* 19, 2100-10.
2. Nandakumar, J. et al. (2012) *Nature* 492, 285-9.
3. Tejera, A.M. et al. (2010) *Dev Cell* 18, 775-89.
4. Kocak, H. et al. (2014) *Genes Dev* 28, 2090-102.
5. Guo, Y. et al. (2014) *Blood* 124, 2767-2774.

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

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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