Revision 1

#5433 Store at -20C

TERF2IP (D9H4) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R Mk	Endogenous	55	Rabbit IgG	#Q9NYB0	54386

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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

TERF2IP (D9H4) Rabbit mAb detects endogenous levels of total TERF2IP protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of human TERF2IP protein.

Background

Telomeric repeat-binding factor 2-interacting protein (TERF2IP, also known as RAP1) is a component of the Shelterin Complex, a multi-protein complex that binds and organizes telomeres into T-loop structures to prevent them from being recognized by the cell as DNA double stranded breaks (1,2). The Shelterin Complex is composed of TERF2IP, TIN2 and TPP2 proteins, in addition to three DNA binding proteins that function to recruit the complex to telomeres: TRF1 and TRF2 bind double-stranded TTAGGG repeats found at telomeres, while the POT1 protein binds single-stranded TTAGGG repeats found at the very end of the telomeres (2). Together, these proteins function to protect telomeres and ensure proper replication and processing of chromosome ends. Recent studies have shown that TERF2IP is dispensable for maintenance of telomere length, organization of telomeric chromatin, and regulation of telomeric transcription (3,4). However, TERF2IP is required for inhibition of homology-directed repair (HDR), which can create undesirable telomeric sister chromatid exchange (3,4). In addition to its role in telomere maintenance, TERF2IP is also found in the cytoplasm, where it functions as an IκB kinase (IKK) adaptor protein and regulates NF-κB-dependent gene expression (5). TERF2IP forms a complex with IKKs and is critical for proper recruitment of IKKs to and activation of the p65 subunit of NF-κB. Elevated levels of TERF2IP have been found in breast cancer cells with NF-κB hyperactivity, and knockdown of TERF2IP sensitizes these cells to apoptosis, further identifying TERF2IP as a potential cancer therapeutic target (5).

Background References

1. Li, B. et al. (2000) *Cell* 101, 471-83.
2. de Lange, T. (2005) *Genes Dev* 19, 2100-10.
3. Sfeir, A. et al. (2010) *Science* 327, 1657-61.
4. Martinez, P. et al. (2010) *Nat Cell Biol* 12, 768-80.
5. Teo, H. et al. (2010) *Nat Cell Biol* 12, 758-67.

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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