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Product Information

Anti-POT1
produced in rabbit, IgG fraction of antiserum

Product Number **P0096**

Product Description

Anti-POT1 is produced in rabbit using as immunogen a synthetic peptide corresponding to a fragment of human POT1 (GeneID: 25913) conjugated to KLH. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-POT1 recognizes human POT1 variant 3 by immunoblotting (55–58 kDa). Detection of the POT1 band is specifically inhibited by the immunizing peptide.

The ends of linear eukaryotic chromosomes are capped by specialized DNA structures, the telomeres, having important functions, primarily in the protection, replication, and stabilization of the chromosome ends. Telomeres are composed of TTAGGG repeats and associated proteins, which together with telomerase, control telomere length. Human telomeres contain 2-30 kb of tandem double-stranded (DS) 5′TTAGGG-3′. The G-rich repeat strand is 50–400 nucleotides longer than the complementary strand, resulting in a single-stranded (SS) 3′ overhang.[1]

POT1 (Protection of Telomere 1, also known as POTE1 and POT1-like telomere end-binding protein) is a highly conserved single-strand telomeric binding protein and is required for both chromosomal end protection and telomere length regulation. POT1 is one of the six core telomere-binding proteins termed the telosome[2] or shelterin,[3] which also includes RF1, TRF2, TIN2, TTP1, and Rap1.

POT1 binds single-stranded telomeric DNA through two NH_2-terminal oligonucleotide-binding folds, and interacts with TTP1 through the COOH-terminal region. POT1 was originally discovered in *S. pombe,* and POT1 homologs have been identified in a large variety of eukaryotes.[4] In contrast to mice that carry two *POT1* genes encoding two proteins (POT1a and POT1b), human genome contains one gene that encodes for four alternative splice variants (v2, v3, v4, and v5). However, little is known about their functions.[5]

Genetic disruption of the two *POT1* genes in mice revealed two different phenotypes. Knockout of Pot1a alone results in embryonic lethality, whereas mice lacking Pot1b were alive.[6] Pot1a/b double knockout cells showed enhanced telomere dysfunction induced foci.[7]

Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1:1,000 to 1:2,000 is recommended using a lysate of C2 or HeLa Nuclear extract.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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5. Yang, Q., et al. *Cancer Res*., **67**, 11677-11686 (2007).
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7. Wu, L. et al., *Cell,* **126**, 49-62 (2006).

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