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Product Information

Anti-WRN antibody, Mouse monoclonal
clone 195C, purified from hybridoma cell culture

Product Number **W0393**

Product Description

Anti-WRN antibody, Mouse monoclonal, (mouse IgG1 isotype) is derived from the hybridoma 195C produced by the fusion of mouse myeloma cells (p3-NS1/Ag4-1) and splenocytes from BALB/c mice immunized with a recombinant fusion protein fragment of human WRN (amino acids 1074-1432) (Gene ID: 7486). The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-WRN recognizes specifically human Werner's syndrome protein. Applications include ELISA, immunoblotting (~167 kDa), immunoprecipitation, and immunohistochemistry.

Werner syndrome (WS) is a rare autosomal recessive disorder characterized by variety of premature aging phenomena and high incidence of malignant neoplsasms.[1] WS cellular characteristics include recombination changes, chromosomal alterations, and attenuated apoptosis. Furthermore, defects in DNA repair, as well as transcriptional and telomere maintenance problems have also been noted.[2] WS gene, located to chromosome 8, encodes a 167 kDa protein (WRN) that has been found to undergo non-sense mutations or frame shifts leading to truncated protein in all patients exhibiting clinical symptoms of WS.[3] The WRN protein belongs to the RecQ family of DNA helicases, and has been demonstrated to possess three known catalytic activities: 3'-5' helicase, exonuclease and ATPase activities.[4] The C-terminal region of the protein (amino acid 1370-1375) contains a nuclear localization signal (NLS), thus targeting WRN protein to the nucleus, nucleolus and nucleoplasmic foci.[5] Indeed, all mutations identified in WS patients result in a C-terminal truncated WRN protein, with loss of the NLS. A number of studies have indicated that WRN binds to proteins that are involved in DNA replication and repair as well as telomerase maintenance, apoptosis and transcription.[1, 2] These interactions can regulate WRN's catalytic activities by phosphorylation,[6] or stimulate it's 3'-5' exonuclease activity.[7] The involvement of WRN in multiple DNA metabolic process suggests its function as a tumor suppressor. In fact, WRN function was found to be abrogated in human cancer cells by transcriptional silencing associated with CpG island-promoter hypermethylation. The epigenetic inactivation of WRN leads to loss of WRN-exonuclease activity, resulting in increased chromosomal instability and hypersensitivity to chemotherapeutic drugs.[8]

Reagent

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

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at –20 °C 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 μg/mL is recommended using nuclear cell extract of HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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