Datasheet

Anti-MDC1 Antibody, Mouse Monoclonal

Clone MDC1-50, purified from hybridoma cell culture

M2444

Product Description

Monoclonal Anti-MDC1 (mouse IgG2a isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a recombinant human MDC1 fragment (amino acids 2-200). The isotype is determined using ImmunoType™ Kit (Cat. No. ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Cat. No. ISO-2).

Monoclonal Anti-MDC1 recognizes human and monkey MDC1. The antibody epitope resides within amino acids 2-200 of human MDC1.The antibody may be used in ELISA, immunoblotting (approx. 250 kDa, 2-3 bands), immunoprecipitation, and immunocytochemistry.

Genomic instability caused by the disruption of mechanisms that regulate cell-cycle checkpoints, DNA repair and apoptosis may lead to the development of cancer. ATM and ATR protein kinases are mediated to DNA damage sites by molecular adapters or mediators proteins such as Histone H2AX, Claspin and BRCTmotif containing molecules such as 53BP1, BRCA1, and MDC1 (mediator of DNA damage checkpoint protein 1).[1, 2] MDC1 contains 2089 amino-acid residues with a predicted molecular weight of 226.4 kDa.[3] The protein contains a FHA (forkhead-associated) domain at its amino terminus and two BRCT (BRCA1 carboxylterminal) domains at its carboxy terminus. These domains are found in proteins involved in DNA damage responses and cell-cycle control. MDC1 was found to interact with the MRE11 complex (containing MRE11, RAD50 and NBS1 proteins).[3] The MRE11 complex is involved in the detection repair and signaling of DNA damage. Upon ionizing radiation MDC1 is hyperphos-phorylated by ATM and localizes to nuclear foci together with the MRE11 complex, phosphorylated H2AX and 53BP1. A radio resistant DNA synthesis (RDS) phenotype in cells is formed by down regulation of MDC1 protein expression by siRNA.[3]

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: Approx. 2 mg/mL.

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 prolonged storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also 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

By immunoblotting, a working antibody concentration of 1-2 µg/mL is recommended using total cell extract of G361 cells.

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

References

1. 1. Bardbury, J.M., and Jackson, S.P., Biochem. Soc. Trans., 31, 40-44 (2003).
2. 2. Motoyama, N., and Naka, K., Curr. Opin. Genet., 14, 11-16 (2004).
3. 3. Goldberg, M., et al., Nature, 421, 952-956 (2003).

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