Phospho-ATM (Ser1981) (10H11.E12) Mouse mAb

For Research Use Only. Not For Use In Diagnostic Procedures.

**Applications**

- **Species Cross-Reactivity**
  - H
- **Molecular Wt.**
  - 350 kDa
- **Isotype**
  - Mouse IgG1**

**Background:** Ataxia telangiectasia mutated kinase (ATM) and ataxia telangiectasia and Rad3-related kinase (ATR) are related kinases that regulate cell cycle checkpoints and DNA repair (1). Mutation in the ATM gene results in the autosomal recessive disease ataxia telangiectasia (AT). The identified substrates for ATM are p53, p95/NBS1, MDM2, Chk2, BRCA1, Chk1, and ATM itself (1). The essential requirement for the substrates of ATM/ATR is S/TQ. Hydrophobic amino acids at positions -3 and -1, and negatively charged amino acids at position +1 are positive determinants for substrate recognition by these kinases. Positively charged residues surrounding the S/TQ are negative determinants for substrate phosphorylation (3). The complex phenotype of cells derived from patients with AT suggests that ATM has additional cellular substrates (3). In unirradiated cells, ATM is present as an inactive homodimer or multimer (4). Double-stranded breaks in DNA caused by ionizing radiation cause rapid ATM kinase activation through dissociation of this complex and ATM autophosphorylation at Ser1981 (4).

**Specificity/Sensitivity:** Phospho-ATM (Ser1981) (10H11.E12) Mouse mAb detects endogenous levels of ATM only when phosphorylated at Ser1981.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser1981 of human ATM.

**Background References:**


**Recommended Antibody Dilutions:**

- Western Blotting: 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com. Please visit www.cellsignal.com for a complete listing of recommended companion products.

**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.

*Species cross-reactivity is determined by western blot.*

**Anti-mouse secondary antibodies must be used to detect this antibody.**

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**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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